BASIC ASSESSMENT REPORT

Basic Assessment for the proposed development of the Megora Solar Photovoltaic Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province

Prepared by:
Council for Scientific and Industrial Research (CSIR)

Touching lives through innovation

Basic Assessment for the proposed development of the Megora Solar Photovoltaic Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province

PART A: MAIN REPORT

Prepared by:
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BASIC ASSESSMENT PROCESS

for the

The proposed development of the Megora Solar PV Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province

FINAL BASIC ASSESSMENT REPORT

June 2026

Prepared for:
Megora PV (Pty) Ltd

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Report details

Title:	Basic Assessment for the proposed development of the Megora Solar PV Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province: FINAL BASIC ASSESSMENT (BA) REPORT
Purpose of this report:	The purpose of this Final BA Report is to: • Present the details of and the need for the proposed project; • Describe the affected environment at a sufficient level of detail to facilitate informed decision-making; • Provide an overview of the BA Process being followed, including public consultation; • Assess the potential positive and negative impacts of the proposed project on the environment; • Provide recommendations to avoid or mitigate negative impacts and to enhance the positive benefits of the project; and • Provide an Environmental Management Programme (EMPr) for the proposed project. • Provide the Competent Authority with a reasoned opinion as to why these proposed projects should be authorised. The Draft BA Report was made available to all Interested and Affected Parties (I&APs), Organs of State and stakeholders for a 30-day review period extending to 8 April 2026. All comments submitted during the 30-day review have been incorporated and addressed, as applicable and where relevant, into the combined Final BA Report that has been submitted to DFFE for decision-making and recorded in a detailed Comments and Responses Reports (Part C of this BA Report).
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KEY CHANGES MADE FROM THE DRAFT BA REPORT THAT WAS ISSUED FOR I&AP, STAKEHOLDER AND ORGAN OF STATE COMMENT [1]

Section of Report	Key Change
BA Report and Appendices	• The report date has been updated from "March 2026" to "June 2026".
Executive summary	• References to the Comments and Responses Report as well as the public participation process were included. • The summary of specialist studies was updated to provide additional context on identified vegetation units and proposed rehabilitation mitigation measures. • The project description table was updated to reflect the selected BESS technology alternatives.
BA Report – Section A	• Section A.1 was updated to include references to the Comments and Responses Report as well as the public participation process.
BA Report – Section B	• Table B.1 and Section B.2.5 were updated to reflect that only Lithium-ion, Sodium-ion and Solid State alternatives are being considered for the proposed project. Noting that Lithium-ion, Sodium-ion, Solid State and Redox flow technology types were considered and assessed by the project and specialist team in the BA Process. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has accordingly been submitted to the DFFE with the Final BA Report.
BA Report – Section C	• Section C.1.5.3 and Section C.1.8 were updated to reflect that only Lithium-ion, Sodium-ion and Solid State alternatives are being considered for the proposed project. Noting that Lithium-ion, Sodium-ion, Solid State and Redox flow technology types were considered and assessed by the project and specialist team in the BA Process. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has been submitted to the DFFE with the Final BA Report.
BA Report – Section D	• Section D.2.8 was updated to provide additional context on identified vegetation units and proposed rehabilitation mitigation measures. • Section D.2.12 was updated to make reference to a letter received from the SARAO which confirmed that the proposed projects lie outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas and that therefore, the relevant regulations promulgated in terms of the Astronomy Geographic Advantage Act would not apply and the facility is considered to be low risk to the SKA telescope.
BA Report – Section E	• Section E.1.1.18 was updated to make reference to a letter received from the SARAO which confirmed that the proposed projects lie outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas and that therefore, the relevant regulations promulgated in terms of the Astronomy Geographic Advantage Act would not apply and the facility is considered to be low risk to the SKA telescope. • Section E.1.1.8 was updated to reference the Appendix in which proof of submission of the integrated HIA to the HWC is included.
BA Report – Section F	• The listed activities included in Table F.1 were revised and activities which are not applicable to the proposed development were removed.

[1] Note that no significant changes have been made to the information presented in this Final BA report or its associated appendices, and no new impacts have been identified. As such, the revisions outlined in this table of key changes do not constitute significant amendments to the report in terms of Regulation 19(1)(b), as they do not introduce new or materially different information from that already presented in the 30-day public comment period which extended to 08 April 2026.

Section of Report	Key Change
	• Table F.1 was updated with additional information regarding the applicability of listed activities included in the BA Report. An amended application form has been submitted to the DFFE.
BA Report – Section I	• Updated with additional information regarding the status and progress made on the BA Report, the submission of the Application for Environmental Authorisation to the DFFE, as well as DFFE's acknowledgment of receipt of the BA Report updated with details of the Public Participation Process undertaken thus far. • Section I.7.1 was updated to include a detailed summary of the key issues raised by stakeholders during the 30 day review of the Draft BA Report as well as a summary of responses provided in the Comments and Responses Report (Part C of this BA Report).
BA Report – Section J	• Table J.2 was updated with the reference numbers assigned by the National DFFE for the BA projects. • Section J.2.5.4 (Terrestrial Biodiversity and Species Impact Assessment) was updated to include additional mitigation measures aimed at facilitating more effective and rapid rehabilitation of vegetation units. • Section J.2.12 was updated to reflect that only Lithium-ion, Sodium-ion and Solid State alternatives are being considered for the proposed project. Noting that Lithium-ion, Sodium-ion, Solid State and Redox flow technology types were considered and assessed by the project and specialist team in the BA Process. However, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies.
Appendix D	• Updated the database of I&APs, Stakeholders and Organs of State to reflect stages of consultation, commenting, as well as additions to the database. The approach followed for this I&AP database was guided by sections 3(3), 9, 12(1) and (2), 11 as well as 18 of the Protection of Personal Information Act, 2013 (Act No. 14 of 2013) (POPIA). Erring on the side of caution as recommended by the DFFE, the names and affiliations of non-governmental I&APs are redacted in the I&AP database that is being made available to the public.
Appendix F	• The following specialist reports were updated as follows based on comments received from I&APs and Organs of State: o Appendix F.2 (Terrestrial Biodiversity and Species Assessment) was updated to include additional mitigation measures aimed at facilitating more effective and rapid rehabilitation of vegetation units. o Appendix F.6 (Heritage Impact Assessment) updated to reflect public participation undertaken and engagements with Heritage Western Cape (HWC). o Appendix F.9 (Traffic Impact Assessment) was updated, where applicable, to align with the applicable road speed limits on the MR00607, with the resultant stopping sight distance calculations also updated accordingly.
Appendix G	• Updated with proof of placement of the newspaper advertisements for the release of the Draft BA Reports for comment (Appendix G.2). • Updated by adding copies and proof of submission of the Draft BA Reports and Application for EA to the DFFE and acknowledgement thereof (Appendix G.15). • Updated by adding copies and proof of correspondence sent to stakeholders (including proof of submission of the integrated heritage impact assessment (HIA) to HWC and local authorities for a 30-day consultation period) for the release of the Draft BA Report for comment (Appendix G.4.2 and G.6 respectively) • Updated by adding copies of the correspondence received from stakeholders and proof thereof during the 30-day public comment period of the Draft BA Report (Appendix G.16)
Appendix H	• Updated the Environmental Management Programme (EMPr) for the power line based on comments received from I&APs and Organs of State, following the 30-day public comment period on the Draft BA Report, with additional mitigation measures and management actions as recommended by these authorities and stakeholders. • The project description table was also updated to reflect that only Lithium-ion, Sodium-ion and Solid State alternatives are being considered for the proposed project. Noting that Lithium-ion, Sodium-ion, Solid State and Redox flow technology types were considered and assessed by the project and specialist team in the BA Process.

Section of Report	Key Change
	However, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies.
Comments and Responses Reports (Part C)	• The comments and/or issues raised by stakeholders and Interested and Affected Parties (I&APs) following the release of the Draft BA Report for the 30-day public comment period, extending to 8 April 2026 (excluding public holidays), together with the responses from the BA project team were collated into a Comments and Responses Reports that was compiled in line with guidance included in the DFFE comment letter (DFFE Reference No: 14/12/16/3/3/1/3272), which is being submitted separately from the main Final BA Report. Comments relating to the remaining Megora PV Cluster projects have been included for context or background purposes (where necessary). Copies of all comments received have been included in Appendix G of this BA Report. The Final BA Report inclusive of all relevant and required appendices is currently being submitted to the DFFE for decision-making in line with Regulation 19(1)(a) of the 2014 NEMA EIA Regulations (as amended).

Executive Summary

INTRODUCTION

Megora PV (Pty) Ltd (hereinafter referred to as "the Project Applicant[2]") is proposing the development of four solar photovoltaic (PV) facilities with a capacity of between 90 and 170 MW each, four associated 132 kV overhead power lines, and their associated infrastructure, approximately 20 km north of the town of Murraysburg in the Beaufort West Local Municipality, Central Karoo District Municipality, Western Cape province (Figure A.2 and A.3).

The proposed cluster of solar PV facilities, overhead power lines and their associated infrastructure are collectively referred to as the 'Megora Solar PV Cluster'. The proposed cluster comprises of the following projects:

- PROJECT 1: Basic Assessment for the proposed development of the Megora Solar PV Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province
- PROJECT 2: Basic Assessment for the proposed development of the Megora Solar PV Facility 1B and associated infrastructure (i.e., Megora PV 1B), near Murraysburg in the Western Cape Province
- PROJECT 3: Basic Assessment for the proposed development of the Megora Solar PV Facility 1C and associated infrastructure (i.e., Megora PV 1C), near Murraysburg in the Western Cape Province
- PROJECT 4: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2), near Murraysburg in the Western Cape Province
- PROJECT 5: Basic Assessment for the proposed development of a 132kV overhead power line and associated infrastructure between the proposed Megora Solar Facility 1A to a suitable Main Transmission Station (as advised by Transmission Authorities) (i.e., Megora EGI 1) near Murraysburg in the Western Cape Province
- PROJECT 6: Basic Assessment for the proposed development of a 132kV overhead power line and associated infrastructure between the proposed Megora Solar PV Facility 2 and the proposed Megora Solar Facility 1A (i.e., Megora EGI 2) near Murraysburg in the Western Cape Province

It is anticipated that the proposed 132 kV overhead power line connecting the proposed Megora PV 2 facility to the proposed Megora PV 1A facility (i.e., Project 6) and the 132 kV overhead power line extending from the proposed Megora PV 1A facility to a nearby suitable Main Transmission Station as advised by the National Transmission Company South Africa (NTCSA)) (i.e., Project 5); are planned to be handed over to Eskom (should Environmental Authorisation (EA) be granted). Therefore, in this regard separate BA Processes are being undertaken and separate EAs are being sought for these

[2] The 'Project Applicant' and 'Project Developer' are used synonymously through the BA Report.

projects (i.e., Projects 5 and 6). Note, however, that combined reporting has been approved by the DFFE for Megora PV 2 and EGI 2, as discussed in detail in Section A.2 of this report.

The proposed 132 kV overhead power lines connecting the proposed Megora PV 1B (Project 2) and Megora PV 1C (Project 3) to Megora PV 1A (Project 1) will be retained by the Project Applicant and as such these powerlines will be included in the respective solar PV facility assessments. Refer to Figure A which provides a summary schematic depicting the projects comprising the Megora Solar PV Cluster.

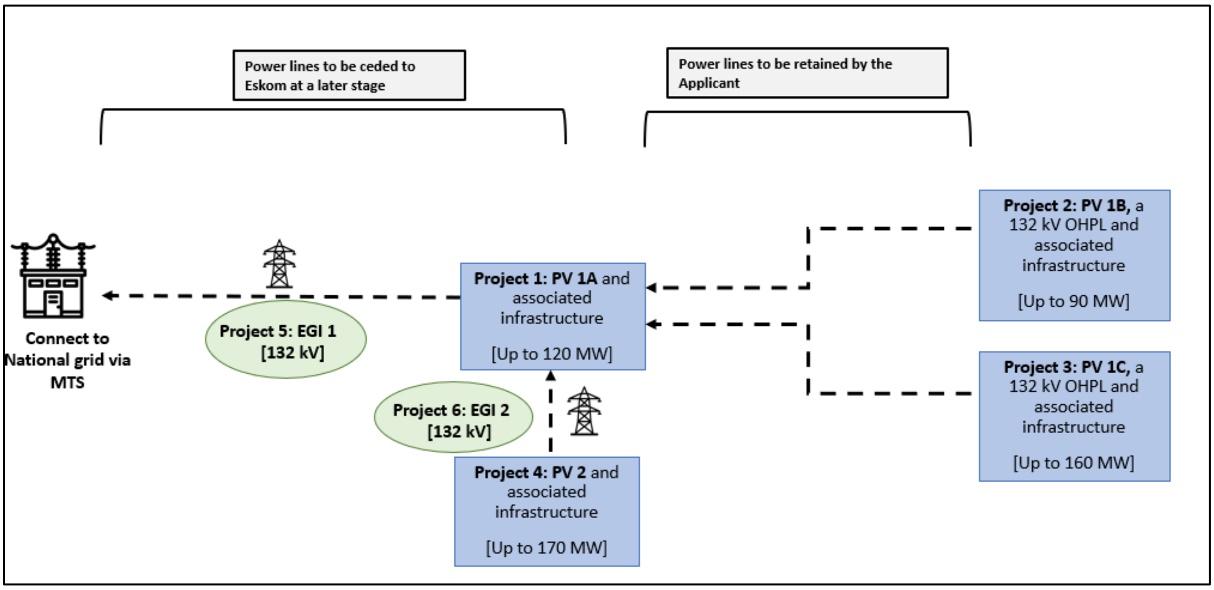

Figure A: Summary schematic of the project comprising the proposed Megora Solar PV Cluster

It is understood that the Project Applicant is currently engaging with the Eskom and the NTCSA to confirm a suitable connection point from which the power generated by the Megora Solar PV Cluster can be injected into the national grid. Once this guidance has been received, the Project Developer will finalise the proposed Megora EGI 1 route, after which the required Environmental Assessment process for this stage will be undertaken.

Therefore, at this stage only the BA Processes for the proposed Megora PV 1A-C, PV 2 and EGI 2 are being undertaken concurrently (i.e., Projects 1-4 and Project 6 listed above). The subject of this BA Report is Project 1 (i.e., Megora PV 1A and its associated infrastructure).

The entire proposed Megora PV 1A site and associated infrastructure and falls within the Renewable Energy Development Zone (REDZ) 11 (i.e., Beaufort West REDZ), one of the eleven REDZs formally gazetted in South Africa for the purpose of developing solar PV and wind energy generation facilities (GG 41445, GN 114; 16 February 2018 and GN 144; 26 February 2021). Refer to Figure B for the locality of the proposed project in relation to the REDZs. The REDZs represent areas where wind and solar PV development is being incentivised from resource, socio-economic and environmental perspectives. To date, the DFFE has gazetted 11 REDZs as well as procedures for submitting applications for EA and reduced decision-making timeframes within these REDZs, which have reduced the review timeframes by half and significantly simplified the authorisation process. The REDZs were identified in two phases, with the first 8 being identified through a Strategic Environmental Assessment (SEA) process which concluded in March 2015 and gazetted in February 2018 and the 3 additional REDZs concluded in March 2019 and gazetted in February 2021.

In addition, the entire Megora PV 1A site and associated infrastructure (including the 132 kV power line) is located within the Central Strategic Transmission Corridor, one of the five EGI Power Corridors formally gazetted for implementation on 16 February 2018 in GG 41445, GN 113. An additional two expanded corridors were gazetted in GN 1637 on 24 December 2021. In line with the gazetted process for projects located within a REDZ, the proposed project is subject to a BA Process instead of a full Scoping and Environmental Impact Assessment (EIA) process and a reduced decision making period of 57 days, in terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 NEMA EIA Regulations (as amended) promulgated in Government Gazette 40772; in GN R326, R327, R325 and R324 on 7 April 2017. A BA Process in terms of Appendix 1 of the 2014 NEMA EIA Regulations (as amended) is therefore being undertaken for the proposed project.

Section F of this BA Report contains the detailed list of activities contained in R327, R325, and R324, as amended, which may be triggered by the various project components and thus form part of the BA Process.

The Draft BA Report was released to all I&APs, Organs of State and stakeholders for a 30-day review period. All comments submitted during the 30-day review period have been captured in a detailed Comments and Responses Report (CRR) with responses provided by the Project Team and is included as Part C to this Final BA Report which is currently being submitted to the National DFFE for decision making.

PROJECT LOCATION

The locality of the proposed Megora PV 1A project is shown below in Figure B. The co-ordinates of the proposed project sites are detailed in Section B of this BA Report.

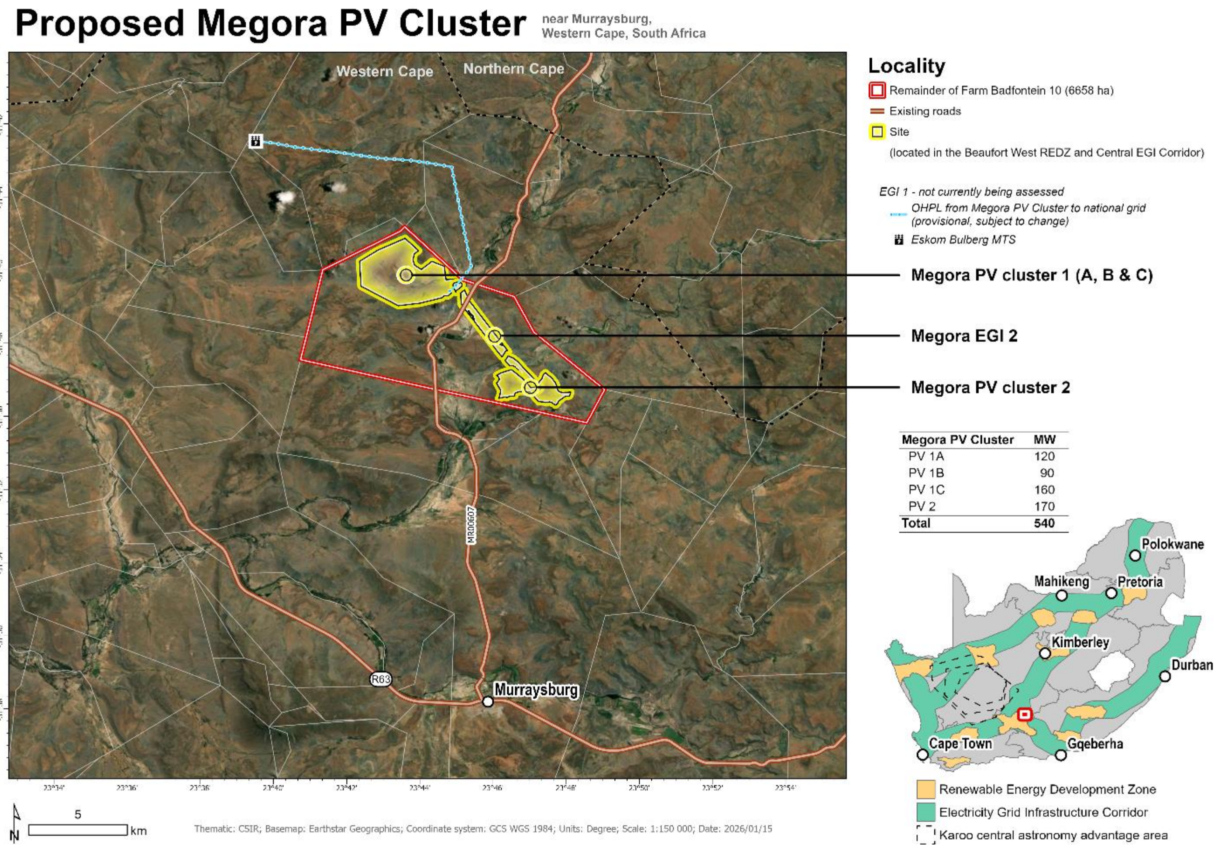

Figure B: Locality of the proposed Megora PV Cluster.

PROJECT BASIC ASSESSMENT TEAM

In accordance with Regulation 12 (1) of the 2014 NEMA EIA Regulations (as amended), the Project Developer has appointed the Council for Scientific and Industrial Research (CSIR) to undertake the required BA Processes in order to determine the biophysical, social and economic impacts associated with undertaking the proposed development. The project team, including the relevant specialists, is indicated in Table A below.

Table A: Project Team

Name	Organisation	Role/ Specialist Study
CSIR Project Team		
Paul Lochner (*Registered EAP (2019/745)*)	CSIR	EAP and Project Leader
Rohaida Abed (*Registered EAP (2021/4067)*)	CSIR	Technical Advisor and Quality Assurance
Dhiveshni Moodley (*Pr.Sci.Nat.*)	CSIR	Project Manager
Luanita Snyman-van der Walt (*Pr.Sci.Nat.*)	CSIR	Project Mapping
Suvasha Ramcharan (*Cert.Sci.Nat* and *Cand. EAP*)	CSIR	Project Officer
Helen Antonopoulos (*Cand.Sci.Nat.*)	CSIR	Project Officer
Sonto Mkize (*Cand. Planner*)	CSIR	Project Officer
Kimara Moodley (*Cand.EAP*)	CSIR	Project Officer
Specialists		
Johann Lanz and David Lakey	SoilZA	Agricultural Compliance Statement
Kamogelo Rakale	SLR Consulting	Visual Impact Assessment
John Gribble	TerraMare Consulting	Heritage Impact Assessment (Archaeology, Cultural Landscape)
Elize Butler	Banzai Environmental	Palaeontology Impact Assessment
Tarryn Martin and Amber Jackson	Biodiversity Africa	Terrestrial Biodiversity, Terrestrial Plant Species, and Terrestrial Animal Species
Russell Tate	Tate Environmental Specialist Services	Aquatic Biodiversity and Species Impact Assessment
Anja Albertyn	Holland & Associates Environmental Consultants	Avifauna Impact Assessment
Hugo van Zyl and Holly Johnson	Independent Economic Researchers	Socio-Economic Impact Assessment (only undertaken for the PV component)
Debbie Mitchell	Ishecon	BESS Risk Assessment (only undertaken for the PV component)
Iris Wink	iWink Consulting	Traffic Impact Assessment (only undertaken for the PV component)
Hardy Luttig, Dale Barrow and Shane Teek	GEOSS South Africa (Pty) Ltd	Geohydrology Assessment (only undertaken for the PV component)
Hardy Luttig and Shane Teek		Desktop Geotechnical Assessment (only undertaken for the PV component)
Dhiveshni Moodley, Helen Antonopoulos and Luanita Snyman-van der Walt	CSIR	Civil Aviation Site Sensitivity Verification
Dhiveshni Moodley, Helen Antonopoulos and Luanita Snyman-van der Walt	CSIR	Defence Site Sensitivity Verification

PROJECT DESCRIPTION

The proposed Megora PV 1A facility will be developed with a possible maximum installed capacity of 120 MW. The proposed project is expected to have a permanent development footprint of up to approximately 180 ha and a temporary development footprint approximately 5 ha. The permanent footprint will include the development of the solar field, BESS buildings, Operations and Maintenance (O&M) complex, and associated infrastructure, as detailed below. The exact number of solar panel arrays, confirmation of the foundation type and detailed design will follow as the development progresses.

During the pre-application phase of this BA Process, the study area was plotted on the National Department of Forestry, Fisheries and the Environment (DFFE) Screening Tool to identify high-level environmental sensitivities. The specialists considered these sensitivities and undertook Site Sensitivity Verifications (SSVs) within the study area, where required, in order to confirm or dispute the sensitivities identified by the Screening Tool. The specialists then formulated environmental feature and sensitivity maps for the study area. Thereafter, the Project Developer took such sensitivities, and other considerations, into account and formulated the Buildable Areas, which avoid the no-go areas identified by the specialists. The Buildable Areas were also used to inform the design of the layout that was subjected to further detailed assessments during this BA Process. The proposed project will consist of the key components displayed in Figure C below.

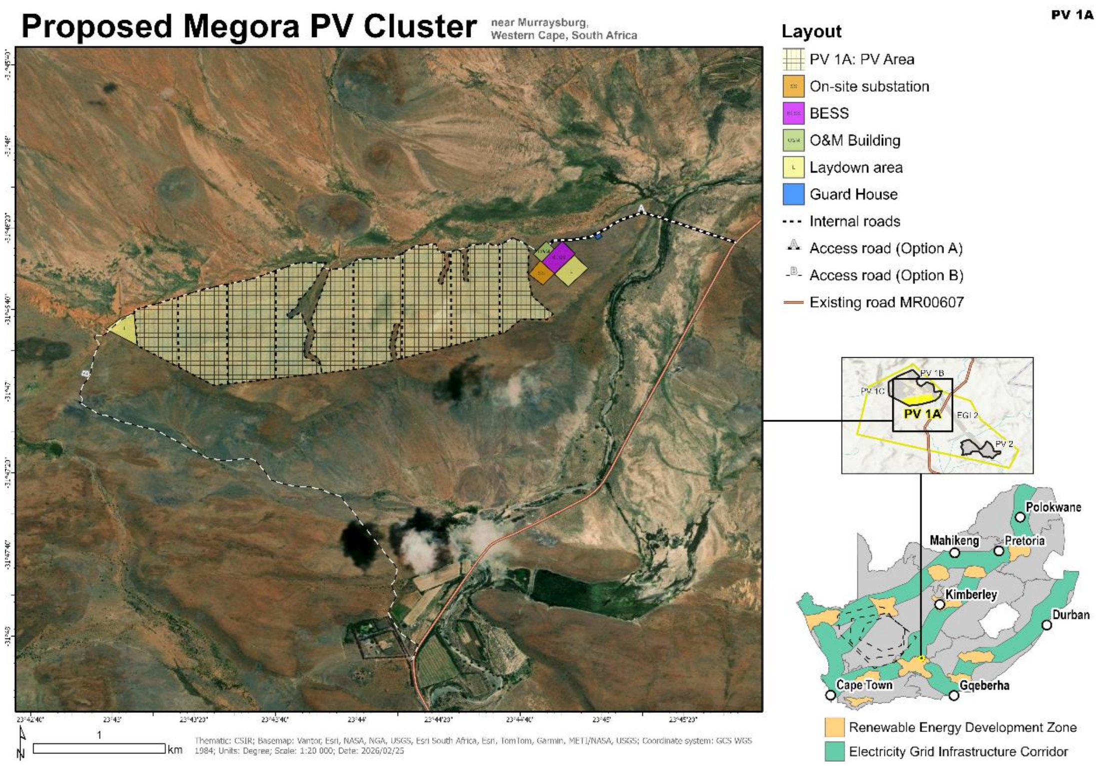

Figure C: Locality of the proposed Megora PV 1A project

A summary of the key components of the proposed Megora PV 1C and associated infrastructure and technical information is described and listed in Table B below.

Table B: Description of the Project Components

Infrastructure	**Component**	**Dimensions / Specifications**
Solar PV facility	Type of technology	Solar Photovoltaic (PV) Technology
	Height of PV panels	Maximum of ± 4.5 m
	Capacity of the PV facility	Up to 120 MW
	Area of PV Array (i.e., proposed area occupied by PV Modules)	175 ha Note: The permanent fence line will run as close as possible to the solar array demarcation and substation area. Therefore, the PV array area and the total fenced area (i.e., the area that includes all associated infrastructure within the fenced off area of the PV facility) are anticipated to be similar.
	Technology mounting structure	The following technologies are being considered: • Single Axis Tracking Structures (aligned north-south); • Dual Axis Tracking (aligned east-west and north-south); • Fixed Tilt Mounting Structures; • Mono-facial Solar Modules; or • Bifacial Solar Modules.
	Inverter-transformer stations	Up to 5 MW inverters will be located across the proposed project. The exact number of inverters is still to be confirmed however all inverter-transformers will be within the PV array.
	Area occupied by inverter-transformer stations and height	Inverter-transformer stations: 0.003 ha each The inverter stations will have a height of ± 3 m each. Note: The height mentioned above excludes the height of lightning rods. The rods installed on the stations (each with a height of ± 3 m) are expected to extend to 10 m high. Each inverter station will have 4 lightning rods.
Associated infrastructure		
Temporary construction and laydown area	Construction camp area (ha)	The proposed PV 1A facility will have two temporary construction and laydown areas, each covering 2.5 ha. - Total area: 5 ha Note: These areas will be rehabilitated after construction and will not be retained for the operational phase.
Main access roads Note: The existing road network will be used as far as practically possible and upgraded as needed.	Current width of access roads (m)	4 m
	Length of access roads (km)	- Option A (from the Southwest): 7.1 km - Option B (from the East): 1.32 km Note that the Project Applicant is proposing that both abovementioned site access roads (i.e., Option A and B) are included in the Environmental Authorisation (if granted).
	Upgraded width (m)	Up to 8 m for main access roads to the site entrances (6 m wide road surface with 1 m drain either side)
Internal roads	Width of access roads (m)	4 m
	Length of roads (km)	Approximately 20 km

Infrastructure	Component	Dimensions / Specifications
Note: The existing road network will be used as far as practically possible and upgraded as needed. Where required for turning circle/bypass areas, however, access or internal roads may be up to 10 m to allow for larger component transport.		The internal road network will be used to conduct security patrols and to access all the equipment (module cleaning and equipment maintenance).
	Upgraded width (m)	Up to 6 m
Internal medium voltage cables	All on-site medium voltage cabling (22 or 33 kV) may be buried to a maximum depth of 1.5 m or if above ground, then the cables will be mounted on an enclosed cable tray, between ground surface level and 0.5 m.	
Site offices including a warehouse/workshop and an operational and maintenance (O&M) control centre. The details provided in this section are for one site office.	Number of buildings	Site offices and O&M control centre will be located in one building. The workshop and storage area may be attached to the O&M control centre. All buildings will be located within the O&M complex/footprint.
	Maximum height (m)	Up to 10 m
	Footprint (ha)	1 ha
Guard house	Maximum height (m)	Up to 3 m
	Footprint (m^2)	± 7 m x 5 m ± 35 m^2 with an ablution facility and outside shaded area.
Ablution facilities Note: There will be ablution facilities located within the guardhouse footprints. The details provided in this section are for one ablution facility. Additional ablution facilities may be within the O&M Building complex.	Maximum height (m)	Up to 10 m
	Footprint (m^2)	± 242 m^2
Battery energy storage system (BESS)	Battery technology type	Lithium-ion, Sodium-ion and Solid State alternatives are being considered. Note that Lithium-ion, Sodium-ion, Solid State and Redox flow technology types were considered and assessed by the project and specialist team in the BA Process. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has accordingly been submitted to the DFFE with the Final BA Report.
	Approximate footprint (ha)	2.5 ha
	Maximum height (m)	Up to 10 m
	Capacity	720 MWh
On-site substation complex	A 132 kV facility substation complex will be located within the site, and will cover an area of approximately 1.5 ha and will have a height of up to 18 m.	

Infrastructure	Component	Dimensions / Specifications
Water use requirements	Estimated quantity of water required for the construction phase	30 000 m³ per annum
	Estimated quantity of water required for the operational phase	8 000 m³ per annum
	Estimated quantity of water required for the decommissioning phase	The exact amount of water required during this phase is unknown at this stage but expected to be similar to or less than that of the construction phase.
Construction period		< 24 months

NEED FOR THE BA

As noted above, in terms of the 2014 NEMA EIA Regulations (as amended) published in GN R326, R327, R325 and R324, as well as GN 114 for procedures within a REDZs, a full BA Process is required for the proposed projects. The need for the BA is triggered by, amongst others, the inclusion of Activity 1 listed in GN R325 (Listing Notice 2):

- *"The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs (a) within an urban area; or (b) on existing infrastructure".*

Section F of this BA Report contains the detailed list of activities contained in GN R327, R325 and R324 which are triggered by the various project components and thus form part of this BA Process.

The purpose of the BA is to identify, assess and report on any potential impacts the proposed project, if implemented, may have on the receiving environment. The BA therefore needs to show the Competent Authority, the DFFE; and the project proponent, Megora PV (Pty) Ltd, what the consequences of their choices will be in terms of impacts on the biophysical and socio-economic environment and how such impacts can be, as far as possible, enhanced or mitigated and managed as the case may be.

IMPACT ASSESSMENT

Full specialist studies are provided in Appendix F of this BA Report. Section D of this report provides a summary of the affected environment associated with these studies; and Section J provides a summary of the impact assessments conducted by the specialists.

A summary of the specialist studies is outlined below.

Agriculture

The Agriculture Compliance Statement was undertaken by Johann Lanz and David Lakey of SoilZa Pty (Ltd) to inform the outcome of this BA from an agricultural and soils perspective. The complete Agriculture Compliance Statement is included in Appendix F.1 of the BA report.

The following potential impact mechanisms of the proposed development are identified:

- **Loss of agricultural production potential** due to soil degradation, which includes soil erosion and loss of topsoil. This could occur predominantly in the construction and decommissioning phases of development. It can be effectively prevented by generic mitigation measures that are all inherent in the project engineering of such a development and are standard, best-practice for construction sites. Soil degradation does not therefore pose a significant impact risk.

- **Increase in agricultural production potential** due to increased financial security for farming operations through rental income generation for the farm during the operational phase of the development. This provides reliable and predictable income that is independent of variable agricultural economic factors such as weather, agricultural markets and agricultural input costs. This is a big economic advantage for a farmer and can improve farming operations and productivity on other, higher potential parts of the farm or farms owned by the same farmer, through increased investment into farming.
- **Improved security against stock theft and other crime** due to the presence of security infrastructure and security personnel at the energy facility.

In quantifying the cumulative impact, the area of land taken out of agricultural use as a result of all the projects considered in the cumulative impact assessment (total generation capacity of 2789 MW) will amount to a total of approximately 4687 hectares. This is calculated using the industry standards of 2.5 and 0.3 hectares per megawatt for solar and wind energy generation respectively, as per the Department of Environmental Affairs (DEA) Phase 1 Wind and Solar Strategic Environmental Assessment (SEA) (2015). As a proportion of the total area within a 30 km radius (approximately 282,700 ha), this amounts to only 1.66% of the surface area. This is within an acceptable limit in terms of loss of low potential agricultural land, which is only suitable for grazing, and of which there is no scarcity in the country.

The assessment found that, aside from renewable energy developments, there are limited competing land uses for agricultural land in the area. As a result, the cumulative impact associated with non-renewable developments is expected to be low.

For renewable energy projects, the potential loss of agricultural production due to soil degradation can be effectively avoided through standard, best-practice mitigation measures that are inherent to project design and construction methodologies. Soil degradation is therefore not considered a source of cumulative impact risk.

Overall, the cumulative impact related to the loss of future agricultural production potential is assessed as low and is not expected to result in an unacceptable reduction in the area's agricultural capability.

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

Visual Impact Assessment

The Visual Impact Assessments (refer to Appendix F.5) were undertaken by Kamogelo Rakale of SLR Consulting (Pty) Ltd, to inform the outcome of this BA from a visual perspective.

A broad-scale assessment of visual sensitivity, based on the physical characteristics of the study area, economic activities and land use that predominates, determined that the area would have a moderate visual sensitivity. An important factor contributing to the visual sensitivity of an area is the presence, or absence of visual receptors that may value the aesthetic quality of the landscape and depend on it to produce revenue and create jobs. No formal protected areas and relatively few sensitive or potentially sensitive receptor locations were identified in the study area, thus confirming the moderate level of visual sensitivity.

The study area is not typically valued for its tourism significance and only two guesthouses were identified within 5 kms of the proposed development. The assessment identified a total of three visual receptor locations within the study area, one of which could be regarded as a potentially sensitive visual receptor as it is located within a mostly rural / pastoral setting that will likely be altered by the proposed project. Two locations were identified as sensitive visual receptors as they were found to be nature/leisure-based tourism facilities mostly associated with the pristine and picturesque qualities of the Karoo cultural landscape. Out of the one sensitive and one potentially sensitive receptor that fall within the proposed development's viewshed, none would experience high levels of visual impact as a result of the proposed development.

The viewshed analysis conducted found that the proposed infrastructure would be visible for much of the 5 km study area. Areas experiencing the highest levels of visibility will be concentrated within the SEF development area and the areas to the north while areas to the south will experience the least levels of visibility. The localised topographic variations resulting from the hills and ridges spread across the landscape would provide some screening and would limit views of the project components to much of the southern parts sectors of the study area. As a result, views of the proposed development would potentially be obscured from receptor SR2

The assessment revealed that, visual impacts (post mitigation) associated with the proposed project are of Low significance during the decommissioning phase of the project. During construction and operation however, visual impacts resulting from the visual intrusion and alteration of the Karoo landscape, sense of place and light pollution at night, would be of Moderate significance with relatively few mitigation measures available to reduce the visual impact.

A number of additional renewable energy developments were identified within a 30 km radius of the Megora PV Cluster. These developments and their associated infrastructure, in conjunction with the proposed project and the greater Megora Solar PV Cluster, will inevitably introduce an increasingly industrial character into a largely natural, pastoral landscape, thus giving rise to significant cumulative impacts and thereby increasing the number of receptors affected by the visual intrusion of the developments. It is however expected that these developments in close proximity to each other would be seen as one large renewable energy facility rather than several separate developments and although this will not necessarily reduce impacts on the visual character of the area, it could potentially reduce the cumulative impacts on the landscape. Considering this, the cumulative impacts (post-mitigation) have also been rated as Moderate during the construction and operation phases of the project and Low during the decommissioning phase. It is however anticipated that these impacts could be mitigated to acceptable levels with the implementation of the recommended mitigation measures.

Based on the above, it is specialists' opinion that, although the potential visual impacts associated with the proposed Megora PV 1A project and associated infrastructure are negative and of moderate significance, the visual effects of the project on individual receptors have been assessed to be tolerable.

None of the roads within the study area (i.e., R63, MR00607) are specifically valued or utilised for their scenic or tourism potential and are therefore not regarded as visually sensitive. **In addition, given the low level of human habitation and the relatively low number of sensitive and potentially sensitive receptor locations however, the project is deemed acceptable from a visual perspective.**

Heritage Impact Assessment (Archaeology and Cultural Landscape)

The Heritage Impact Assessment was undertaken by John Gribble of TerreMare Archaeology (Pty) Ltd, to inform the outcome of this BA from an archaeology and cultural heritage and landscape perspective. Separate integrated Heritage Impact Assessment for the proposed PV project containing Archaeology, Cultural Landscape and Palaeontology were undertaken. However, for ease of reference, this section only deals with the Archaeology and Cultural Landscape. The complete Heritage Impact Assessments are included in Appendix F.6 of this BA Report.

The survey of the proposed footprint of the Megora PV 1A facility found very little archaeology within the project footprint and surrounding area. Three archaeological occurrences were recorded – an ephemeral Late Stone Age (LSA) scatter of hornfels artefacts, an isolated 7 m long stone alignment of indeterminate function, and a possible circular stone feature made of dolerite boulders. All these occurrences were assessed to be ungradable and thus of very low heritage significance.

No extant historical built structures are located within the Megora PV 1B project footprint. Two 350 m long earthen-walled dams with central concrete spillways were recorded just outside the southern end of the project area during the site visit. These structures are identifiable in the 1959 aerial photography of the area, therefore are estimated to be more than 60 years old. Both occurrences were assessed to be ungradable and thus of very low heritage significance.

The cultural landscape which reflects the recent historical use of the land on which the Megora PV 1A facility will be located for stock farming is not well developed. Its main features are farm infrastructure like fences, water troughs and wind pumps.

The specialist noted that, although the construction of the Megora PV 1A facility will substantially alter the existing landscape character of the project site and contrast strongly with the pre-colonial and historical human elements present in the landscape, the development will occur within a cultural landscape that is best described as a continuing landscape. The landscape surrounding the Megora PV 1A project site is already undergoing a transition towards an increasingly industrial character, driven by its location within the Beaufort West REDZ and the ongoing development of renewable energy projects in the wider area.

The Heritage Impact Assessment therefore concluded that the proposed site is a heritage environment of variable sensitivity but that significant impacts on palaeontological, archaeological and other heritage resources arising from the project are unlikely since no archaeological sites are under threat and no other heritage resources will be significantly impacted. Impacts on the cultural landscape are expected to be the most significant impacts, but these may be reduced through the implementation of suitable mitigatory measures. If the project were not implemented, the site would stay as it currently is with a neutral impact significance.

Based on the above, the heritage specialist is of the opinion that the proposed project may be authorised in full, subject to recommendations which should be included as conditions of authorisation and contained in the EMPr (Refer to Section K of this BA Report).

Palaeontology Impact Assessment

The Palaeontology Impact Assessment was undertaken by Elize Butler Banzai Environmental (Pty) Ltd, to inform the outcome of this BA from a palaeontological perspective. As noted above, an integrated Heritage Impact Assessment containing Archaeology, Cultural Landscape and Palaeontology has been undertaken for the project. However, for ease of reference, this section only deals with the Palaeontology. The detailed Palaeontological Impact Assessment is included in Appendix F.7 of this BA Report.

The palaeontological impact assessment indicates that the majority of the Megora PV 1A project site is underlain by rocks of the Teekloof Formation, Adelaide Subgroup of the Beaufort Group, with small areas are underlain by the Balfour Formation and by Jurassic dolerite which is igneous in origin. These various bedrock formations are all mantled by extensive Quaternary surficial sediments.

Several fossiliferous outcrops containing well-preserved to weathered tetrapod fossils were identified outside the northern boundary of the proposed Megora PV 1A area. These outcrops were confined to the koppies and were observed to be fairly well-preserved to weathered tetrapod and plant fossils. The site comprises a relatively flat central area with isolated koppies, surrounded by low mountain ridges. No fossils were detected on the flat central portions of the development footprint.

Although several fossiliferous outcrops were recorded north of the proposed project, the field investigation and supporting desktop review (National Museums Database and published literature) indicate that fossil occurrences of scientific or conservation significance in this area are relatively rare. In addition, the proposed project footprint avoids all fossiliferous outcrops. Available data suggest that fossil localities are generally sporadic, scattered, and unpredictable in distribution. Ex situ fossiliferous outcrops identified during the site visit were buffered out of the proposed layout as such have been completely avoided by the layout.
It is therefore considered that the proposed development will not lead to damaging impacts on the palaeontological resources of the area. **The specialist therefore recommends that the proposed development is acceptable from a palaeontological perspective, as the development footprint is not considered sensitive in terms of palaeontological resources**

Terrestrial Biodiversity and Species Impact Assessment

The Terrestrial Biodiversity and Species Assessment (refer to Appendix F.2) was undertaken Tarryn Martin and Amber Jackson of Biodiversity Africa (Pty) Ltd, to inform the outcome of this BA from a terrestrial biodiversity and species perspective.

The project area comprises three broad faunal habitat types, grassland with scrub habitat (i.e., Eastern Upper Karoo), Wash, Southern Karoo Riviere and Riparian habitat, rocky outcrops, crests and slopes (i.e., Upper Karoo Hardeveld), and seasonal inundated depressions (Temporary wet areas), reservoirs and farm dams. These habitats support a range of amphibian, reptile and mammal species that utilise these habitats either permanently or opportunistically. According to IUCN (2024) records, the area intersects with the distribution ranges of 11 amphibian, 63 reptile and 69 mammal species, with no amphibian species of conservation concern (SCC) expected to occur. One reptile SCC, the Near Threatened Tent Tortoise (*Psammobates tentorius*), has a high likelihood of occurrence and will require mitigation to prevent loss of individuals, while seven mammal SCC may occur at varying likelihoods, four of which (i.e., Black-footed Cat, Southern Mountain Reedbuck, Grey Rhebok and Cape Clawless Otter). A total of 65 plant species from 28 families were recorded within the Project Area of Influence (PAOI), dominated by the Asteraceae, Aizoaceae and Poaceae families. Three plant SCC with low to medium likelihood of occurrence were identified, although no threatened plant species were recorded during the field survey.

The specialist acknowledges that the proposed layout has undergone several iterations to reduce the impact of the project infrastructure on the environment and largely avoid Critical Biodiversity Areas (CBAs). The layout that has been assessed was designed to largely avoid sensitive features. Project infrastructure is located in areas designated as Ecological Support Area (ESA) 1 which align with drainage lines, and one temporary Laydown and Compound area is located within an area designated as CBA 1 (Terrestrial). However, the aquatic specialist has mapped the ESAs based on data gathered from the field survey and project infrastructure has been designed to avoid sensitive areas and other areas impacted by infrastructure are not deemed to be highly sensitive. In addition, the assessment confirmed that disturbance of areas in which temporary Laydown and Compound areas are planned to be established are small and localised in nature therefore natural recolonisation and recovery from adjacent intact vegetation is considered feasible and is expected to further support the rehabilitation process. Impacts on the ESAs are therefore likely to be low to negligible. In addition, the specialist is of the opinion that it is unlikely the project will impact on the underlying features driving the designation of the CBA and it is therefore unlikely to impact on their management objectives.

The biodiversity features driving the ESA and nearby CBA classifications for the project area are discussed in detail in Appendix F.2.

The specialist concluded that where feasible, avoidance mitigation has been applied to project infrastructure that was positioned in ESAs as well as within areas classified as high sensitivity. Furthermore, the residual impacts associated with the proposed development were determined to be low and very low. **As such, it is the opinion of the specialists that the development can proceed, provided that the recommendations and mitigation measures outlined in this report are implemented.**

Aquatic Biodiversity and Species Impact Assessment

The Aquatic Biodiversity Assessment was undertaken by Russell Tate of Tate Environmental Services (Pty) Ltd, to inform the outcome of this BA from an aquatic biodiversity perspective. The complete Aquatic Biodiversity and Species Assessments are included in Appendix F.3 of this BA Report.

The assessment confirmed that the proposed project is located within the L21C quaternary catchment of the Fish-Tsitsikamma Water Management Area. The nearest Sub Quaternary Reach (SQR) associated with the established Area of Interest (AoI) included the L21C-06652 of the Snyderskraal River. The watercourses form the headwaters of the Kariega River which flows into the Groot River before flowing into the Gamtoos River system and exiting into the Indian Ocean.

The outcome of this assessment delineated 4 watercourse hydrogeomorphic (HGM) units within the Area of Interest. These watercourses were derived to range from largely modified (class D) and moderately modified (class C) PES. The watercourses were classified as having High and Moderate Ecological Importance and Sensitivity ratings. A scientific buffer was calculated for the watercourses, where a 40m buffer for wetlands and 30 m for rivers was utilised to protect these sensitive environments. Based on the proposed layouts, all infrastructure avoids buffered features and as such the outcomes of the risk assessment indicate minor impacts from the proposed activities and no fatal flaws were identified from an aquatic perspective. Should avoidance and basic mitigation actions be implemented, limited impacts to aquatic biodiversity can be expected. All mitigation measures recommended in the assessment have been incorporated into the EMPrs (Appendix H of this BA Report).

Therefore, it is the opinion of the specialists that the development can proceed, provided that the recommendations and mitigation measures outlined in this report are implemented.

Avifauna Assessment

The Avifauna Impact Assessments were undertaken by Anja Albertyn of Holland & Associates Environmental Consultants (Pty) Ltd, to inform the outcome of this BA from an avifaunal perspective. The complete Avifauna Impact Assessments are included in Appendix F.4 of this BA Report.

The Site Ecological Importance rating of Medium indicates that the site is potentially suitable for development if minimisation and restoration mitigation are implemented. Impacts of medium negative impact significance are acceptable, if followed by restoration activities (SANBI 2022).

The proposed PV area site avoids all areas identified as of high sensitivity during pre-application monitoring and is considered the preferred site alternative and layout alternative from an avifaunal perspective. A Jackal Buzzard nest and two Verreaux's Eagle nests was identified south of the site, the

Jackal Buzzard nest being in close proximity to the Option A site access road. The Option B site access road crosses a NFEPA river and it's 200 m buffer, however this is acceptable from an avifaunal perspective. Site access road Option A crosses a 200 m Jackal Buzzard nest No-Go buffer and a 1 km Verreaux's Eagle nest No-Go buffer. The avifaunal assessment confirmed that the current Option A road alignment would be acceptable provided the recommended mitigation measures are implemented, such as no construction activities taking place during the winter breeding season, if the nests are active. Both nests are near existing roads, and the birds appear to be habituated to some degree to human activity. All mitigation measures stipulated in the Avifauna Impact Assessment have been incorporated into the relevant EMPrs (Appendix H of this BA Report).

Due to the footprint of the proposed development, approximately 175 ha of potential SCC habitat would be lost, and even with mitigation this impact is expected to be of medium negative significance for the SCCs that occur here (confirmed or high probability of occurrence), including Blue Crane, Karoo Korhaan, Ludwig's Bustard, Lanner Falcon, Martial Eagle, and Verreaux's Eagle. However, due to these species having much surrounding equivalent habitat available, this loss of habitat is not deemed to have unacceptably high impacts on these species, if the recommended mitigation measures are implemented.

The cumulative impact of the proposed developments in a 30 km radius on avifauna is rated as of moderate negative impact significance with and without mitigation. The contribution of the Megora PV 1C to the cumulative impact is relatively small, and the proposed Megora PV 1C development will not result in a change in impact significance for cumulative impacts.

Based on the above results of the assessment, the proposed development is deemed acceptable from an avifaunal perspective, if all of the recommended mitigation measures are included for implementation in the EMPr.

Socio-Economic Assessment

The Socio-Economic Assessment (refer to Appendix F.8) was undertaken by Hugo Van Zyl and Holly Johnson of Independent Economic Researchers (Pty) Ltd, to inform the outcome of this BA from a socio-economic perspective.

In term of wider positive impacts, the project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. In addition, the project would contribute to local socio-economic and enterprise development. These positive impacts would be especially important at a local level where unemployment remains extremely high amid low economic growth and a lack of new opportunities to assist with much needed rejuvenation. Impacts associated with expenditure on the construction and operation of the project are rated as having positive moderate and positive high significance respectively.

Negative impacts would primarily arise at a local scale. It is anticipated that, with mitigation, the risks posed to the community by the influx of people, including job seekers, would be manageable and of a low significance with mitigation. This rating comes with the caveat that the impact on individually affected community members has the potential to be high. Tourism facilities and attractions in the areas surrounding the project site are relatively limited and sparsely distributed. The tourism context combined with likely visual and associated heritage impacts in a landscape with scenic qualities should limit tourism impacts to a low significance during both construction and operations with mitigation. Impacts on surrounding landowners and communities, including to their sense of place, are expected to be low negative with mitigation during construction and operations.

It is considered most likely that the positive impacts of the project would exceed its negative impacts resulting in an overall net benefit with mitigation compared to the no-go alternative

(status quo). The project is therefore deemed acceptable in terms of socio-economic impacts and should be allowed to proceed.

Geohydrology Assessment

The Geohydrology Assessment (refer to Appendix F.12) was undertaken by Hardy Luttig of GEOSS South Africa (Pty) Ltd, to inform the outcome of this BA from a geohydrological perspective.

The regional study area of the proposed project is underlain by a fractured aquifer directly overlain by an unsaturated horizon of silty sand of variable thickness. The fractured aquifer which directly underlies the proposed project has potential average borehole yields of 0.50 L/s to 2.00 L/s. The maximum anticipated water demand of proposed project at any time between the construction- and decommissioning phase is anticipated to be 0.95 L/s. This requirement is less than the expected regional average borehole yields. As such, groundwater demand from the project is low relative to the potential regional supply. It is therefore deemed that sufficient groundwater is available to address the water requirements for the project during the different project phases.

In addition, there are several boreholes which can act as a potentially viable source of groundwater for the development of proposed project, should the use of borehole water be considered a requirement. The use of these boreholes will depend on the construction and operational requirements of the facility, negotiations with the landowners and proximity to the facility.

If the individual facilities forming part of the proposed Megora Solar PV Cluster be constructed simultaneously along with other approved renewable facilities, the utilisation of multiple boreholes on the Remainder of the Farm Badfontein No. 10 as well as its neighbouring farm portions may be considered. An additional option would be to investigate additional water sources to supplement groundwater for the water demands of the renewable facilities. The simultaneous development of the proposed Megora Solar PV Cluster along with nearby approved renewable projects should be carefully considered with regards to groundwater supply. Although the anticipated water requirements should potentially be met by the utilisation of multiple boreholes from affected farm portions the specialist notes that farming activities in the Central Karoo is highly dependable on groundwater for mainly livestock and is some cases for domestic use. Sustainable development and utilisation of groundwater for renewable energy facilities and farming to take place simultaneously is essential.

Given these conclusions, from a geohydrological perspective, the specialist recommends that development of the proposed project be authorised provided that the mitigation measures (as set out in the Geohydrological Assessment) are implemented during each phase of the project to suppress the intensity of identified potential impacts.

Desktop Geotechnical Assessment

The Geotechnical Assessment (refer to Appendix F.11) was undertaken by Hardy Luttig of GEOSS South Africa (Pty) Ltd, to inform the outcome of this BA from a geotechnical perspective.

Soil and rock conditions vary across the proposed study area, resulting in likely variations in geotechnical properties that may be encountered. These variations could influence foundation conditions and design, drainage characteristics, excavatability of soils and rock masses, and the occurrence of problem soils. It is therefore vital that an intrusive geotechnical investigation be undertaken prior to the development of the proposed project to confirm the anticipated geotechnical conditions identified in this report.

The proposed project may affect the environment through increased soil erosion and the potential contamination of geological material. However, these impacts are expected to be 'very low' significance following proper mitigation. The dominant existing land use in the area is livestock farming, and it is therefore crucial that project-related impacts remain confined within the approved development footprints of proposed facility. Although impacts from neighbouring renewable energy facilities are expected to be similar to those of proposed project, the cumulative intensity of such impacts could increase if appropriate mitigation measures are not implemented. Properly designed and enforced mitigation measures across all developments will be essential to ensure that post-mitigation impact significance remains low. Nevertheless, the implementation of the recommended mitigation and monitoring measures during all phases of the project remains critical to minimise the intensity and extent of potential impacts.

Based on the geotechnical assessment conducted, the specialist recommends that the proposed project be authorised, as no fatal flaws were identified during this desktop evaluation.

Traffic Impact Statement

The Traffic Impact Assessment (TIA) (refer to Appendix F.9) was undertaken by Iris Wink of iWink Consulting (Pty) Ltd, to inform the outcome of this BA from a traffic perspective.

The TIA found that the that the existing road network surrounding the proposed development is well established and provides an acceptable degree of mobility and access but require minor upgrades to achieve the required functionality. The proposed facility can be accessed using public roads R63 and MR00607. The MR00607 will lead construction vehicles from the R63 to the site.

The construction and decommissioning phases of the proposed project are the only significant traffic generators and therefore noise and dust pollution will be higher during these phases. The duration of these phases is of temporary nature in comparison to the operational period, i.e., the impact of the solar energy facility on the external traffic on the surrounding road network is temporary and solar facilities, when operational, do not add any significant traffic to the road network. The number of abnormal load vehicles was estimated and found to be able to be accommodated by the road network including the recommended mitigation measures.

During operation, it is expected that permanent staff will travel to site and periodically delivery of water for cleaning of panels may occur. It is expected that the generated trips can be accommodated by the external road network, and the impacts are rated very low. The traffic generated during the decommissioning phase will be similar to or even less than the construction phase traffic and the impact on the surrounding road network is considered to be of negative low impact with mitigation measures. For the cumulative impact, all approved or planned developments in a radius of 30 km from the project site were assessed for the impact rating, assuming a worst-case scenario in which they will be developed at the same time (which will in reality be unlikely). This would result in a negative high impact. A rating of a negative low impact was given with mitigation measures. Overall, no fatal flaws were identified, provided that the recommended mitigation measures are adhered to as far as possible.

It should be noted that changes to the internal layout of the facility, such as location of buildings, will not affect the traffic impact on the surrounding road network (as assessed in this report). These alternatives will have the same implications and are considered equally acceptable from a transport perspective.

The proposed project is therefore deemed acceptable from a traffic engineering perspective, provided the recommendations and mitigation measures in this report are implemented, and hence the EA should be granted for the BA application.

Impacts relating to BESS

The proposed solar PV facility will have a Battery Energy Storage System (BESS) of up to 540 MWh located adjacent the on-site substation. A high-level Safety Health and Environmental Risk Assessment (SHE RA) for the proposed development of BESS was undertaken by Deborah Mitchell of iSHEcon (Pty) Ltd and is included in Appendix F.10 of the BA Report.

Considering the nature of the project, the Project Applicant has required the assessment of all available BESS technologies that could be implemented so that the specific type/technology to be developed would be selected based on market demands and technology availability at the time of construction. Therefore, both Lithium-ion (or Sodium-ion) and Redox flow (e.g. Vanadium) are assessed as technology alternatives. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. The specific technology, or combination of technologies, to be implemented from these authorised alternatives (should authorisation be granted) will only be determined during the Engineering, Procurement and Construction (EPC) procurement phase.

The assessment concluded that here are no fatal flaws associated with the proposed Megora Solar PV 1A Battery Energy Storage Facility for either technology type, although the exact location within the proposed development footprint can be optimized to reduce risks. Detailed suggestions for managing and reducing risks that are contained in the BESS Risk Assessment (Appendix F. 10 of this BA Report) have been incorporated into the EMPrs and conditions for EA where necessary and applicable.

The assessment further noted that at a large facility, without installation of the state-of-the art battery technology that includes protective features, there can be significant risks to employees and first responders. As such the latest battery designs should be considered during the EPC phase as they include many preventative and mitigative measures to reduce these risks to tolerable levels. In addition, the final design should be subject to a full Hazard and Operability Study (HAZOP) prior to commencement of procurement.

Overall, the SHE RA found that with suitable preventative and mitigative measures in place, none of the identified potential risks are excessively high, i.e., from a SHE perspective no fatal flaws were found with either type of technology for the BESS installations at the proposed solar PV facility.

Civil Aviation

The proposed project study area was determined and verified to be of low sensitivity (as it relates to civil aviation). This was determined through a site visit and based on existing databases, and confirms the sensitivity allocated on the Screening Tool. Based on the above, in terms of GN R320, no further requirements are applicable i.e. a Compliance Statement is not required.

Defence

The proposed project study area was determined and verified to be of low sensitivity (as it relates to defence installations). This was determined through a site visit and based on existing databases, and confirms the sensitivity allocated on the Screening Tool. Based on the above, in terms of GN R320, no further requirements are applicable i.e. a Compliance Statement is not required.

EAP'S RECOMMENDATION

No negative impacts have been identified within this BA that, in the opinion of the EAPs who have conducted this BA Process, should be considered "fatal flaws" from an environmental perspective, and thereby necessitate substantial re-design or termination of the project. This echoes the findings of the specialists as summarised above.

Section 24 of the Constitutional Act states that "everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures, that prevents pollution and ecological degradation; promotes conservation; and secures ecologically sustainable development and use of natural resources while promoting justifiable economic and social development." Based on this imperative, this BA was undertaken to ensure that these principles are met through the inclusion of appropriate management and mitigation measures, and monitoring requirements. These measures will be undertaken to promote conservation by avoiding the sensitive environmental features present on site and through appropriate monitoring and management plans (refer to the Environmental Management Programmes (EMPrs) included in Appendix H of this BA Report).

It is understood that the information contained in this BA Report and appendices is sufficient to make a decision in respect of the activity applied for.

Alternatives

As noted above, in Section C of this BA report, the preferred activity alternative was determined to be the development of a renewable energy facility on site using solar PV as the preferred technology alternative. In terms of the preferred location of the site, a strategic site, location and development footprint identification process was followed, where the selection is informed by the environmental constraints identified through screening. This is based on the mitigation hierarchy approach of firstly trying to avoid impacts through careful siting. Therefore, it must be noted that different sites, location or development footprint alternatives are not ranked, but rather a strategic process was followed where sensitive features are screened out, in order to reach the preferred location or development footprint within the preferred site to ensure that the proposed developments would have the least possible overall negative impact. The specialists considered desktop data, field work, existing literature and the National Web-based Environmental Screening Tool to determine the site sensitivity. Based on this, a preferred layout for the solar PV facility was determined

The development footprint and buildable areas largely avoid the "no-go" sensitive features identified and mapped by the respective specialists, where relevant and applicable, as discussed in Section J of this BA Report. As noted above, in some cases, linear infrastructure traverse areas of high or very high sensitivity, however the relevant specialists have confirmed that this is acceptable with recommended mitigation measures. In addition, from a terrestrial biodiversity and species perspective, there is minor encroachment of non-linear infrastructure into provincial CBAs and ESAs however the Terrestrial Biodiversity and Aquatic specialist have confirmed that impacts on such features will be negligible.

Summary of Key Impact Assessment Findings

Based on the findings of the specialist studies, the proposed project is considered to have an overall moderate to very low negative environmental impact and an overall moderate positive socio-economic impact in all phases (construction, operation and decommissioning), with there being a potential high positive impact during the operational phase (with the implementation of respective mitigation and enhancement measures).

Table C below provides a summary of the impact assessment for each phase of the proposed Megora PV 1A project **post mitigation for direct impacts**. Table D provides the same information for the **cumulative impacts for the proposed project**.

Table C: Overall Impact Significance with the Implementation of Mitigation Measures for Direct Negative and Positive Impacts for the Megora PV1A project

Specialist Assessment	Construction Phase		Operational Phase		Decommissioning Phase	
DIRECT NEGATIVE IMPACTS						
Visual	**Moderate**		**Moderate**		**Low**	
Heritage (Archaeology and Cultural Landscape)	**Very Low**	**Low**	**Low**		**Low**	
Palaeontology	**Low**		**Insignificant and/or not identified and/or not applicable**		**Insignificant and/or not identified and/or not applicable**	
Terrestrial Biodiversity and Species	**Low**		**Very Low**	**Low**	**Low**	
Aquatic Biodiversity and Species	**Low**		**Low**		**Low**	
Avifauna	**Very Low**	**Moderate**	**Low**	**Very Low**	**Very Low**	**Moderate**
Socio-Economic	**Low**		**Low**		**Low**	
Geohydrology	**Very Low**		**Very Low**		**Very Low**	
Geotechnical	**Very Low**		**Very Low**		**Very Low**	
Traffic	**Low**		**Very Low**		**Low**	
DIRECT POSITIVE IMPACTS						
Socio-Economic	**Moderate**		**Moderate**	**High**	**Moderate**	

As indicated in Table C (Megora PV 1A project), the majority of the **direct negative impacts** were rated with a **low to very low post mitigation impact significance for all three phases**, with only the Avifauna and Visual impacts being rated as **moderate to very low**. In terms of positive impacts, the **Socio-Economic impacts** are rated as **moderate significance** for the construction and decommissioning phase and **moderate to high** for the operational phase.

Table D: Overall Impact Significance with the Implementation of Mitigation Measures for Cumulative Negative and Positive Impacts for the Megora PV 1A project

Specialist Assessment	Construction Phase	Operational Phase	Decommissioning Phase
CUMULATIVE NEGATIVE IMPACTS			
Visual	**Moderate**	**Moderate**	**Low**
Heritage (Archaeology and Cultural Landscape)	**Very Low**	**Very Low**	**Very Low**
Palaeontology	**Low**	**Insignificant and/or not identified and/or not applicable**	**Insignificant and/or not identified and/or not applicable**

<table>
<tr><th>Specialist Assessment</th><th colspan="2">Construction Phase</th><th colspan="2">Operational Phase</th><th colspan="2">Decommissioning Phase</th></tr>
<tr><td colspan="7">CUMULATIVE NEGATIVE IMPACTS</td></tr>
<tr><td>Terrestrial Biodiversity and Species</td><td colspan="2">Low</td><td colspan="2">Low</td><td colspan="2">Low</td></tr>
<tr><td>Aquatic Biodiversity and Species</td><td colspan="2">Low</td><td colspan="2">Low</td><td colspan="2">Low</td></tr>
<tr><td>Avifauna</td><td colspan="2">Moderate</td><td colspan="2">Moderate</td><td colspan="2">Moderate</td></tr>
<tr><td>Socio-Economic</td><td colspan="2">Moderate</td><td colspan="2">Moderate</td><td colspan="2">Moderate</td></tr>
<tr><td>Geohydrology</td><td>Very Low</td><td>Low</td><td>Very Low</td><td>Low</td><td>Very Low</td><td>Low</td></tr>
<tr><td>Geotechnical</td><td colspan="2">Low</td><td colspan="2">Low</td><td colspan="2">Low</td></tr>
<tr><td>Traffic</td><td colspan="2">Low</td><td colspan="2">Low</td><td colspan="2">Low</td></tr>
<tr><td colspan="7">CUMULATIVE POSITIVE IMPACTS</td></tr>
<tr><td>Socio-Economic</td><td colspan="2">Very High</td><td colspan="2">Very High</td><td colspan="2">High</td></tr>
</table>

Based on Table D, the majority of the **cumulative negative impacts** were rated **very low to low post mitigation impact significance** with **moderate impact significance** being recorded for the Visual, Socio-economic and Avifauna themes. In terms of **positive impacts**, the Socio-Economic impacts are rated as **Very High significance** to for the construction, and operational phase and **high** for the decommissioning phase.

All the specialists have recommended that the proposed project receives EA on condition that the recommended mitigation measures are implemented. Also, note that all conclusions and recommendations made in the respective Specialist Impact Assessment Reports have been incorporated into the project specific EMPr for adherence.

Cumulative Environmental Impact Statement

The cumulative impacts have been assessed by all the specialists on the project team. The cumulative assessment included approved renewable energy projects within a 30 km radius of the project sites, as well as existing and planned transmission lines, and also the additional proposed projects comprising the Megora PV Cluster. No cumulative impacts have been identified that were considered to be fatal flaws. The specialists recommended that the projects receive EA in terms of the EIA Regulations promulgated under the NEMA, including consideration of cumulative impacts, provided that mitigation is applied. Based on the findings of the detailed specialist assessments and technical studies, the proposed project is considered to have an overall Very Low to Moderate negative cumulative environmental impact, and an overall highly significant positive cumulative socio-economic impact (with the implementation of respective mitigation and enhancement measures).

In terms of cumulative impacts, all of the specialists have recommended that the proposed project receives EA if the recommended mitigation measures are implemented.

It is also important to note that the proposed projects are located within geographical areas that support the development of large-scale wind and solar energy developments (i.e., the Beaufort West REDZ) and are considered to be of strategic importance for large scale electricity transmission infrastructure (i.e., Central Transmission Corridor). The proposed projects are therefore in line with the national planning vision for wind and solar development in South Africa.

Overall Environmental Impact Statement

Taking into consideration the findings of the BA Process, as well as location of the proposed **Megora PV 1A** within the Beaufort West REDZ (REDZ 11) as well as the Central Strategic Transmission Corridor, it is the opinion of the EAP, that the project benefits outweigh the costs and that the projects will make a positive contribution to sustainable infrastructure development in the nearby towns (i.e., Murraysburg and Graaf-Reinet) and surrounding regions, as well as making a positive contribution to energy generation for South Africa. Provided that the specified mitigation measures are applied effectively, it is recommended that the proposed project receive EA in terms of the EIA Regulations promulgated under the NEMA.

Summary of where requirements of Appendix 1 of the 2014 NEMA EIA Regulations (as amended, GN R326) are provided in this BA Report

Appendix 1	YES / NO	SECTION IN BA REPORT
Objective of the basic assessment process 2) The objective of the basic assessment process is to, through a consultative process- a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context; b) identify the alternatives considered, including the activity, location, and technology alternatives; c) describe the need and desirability of the proposed alternatives; d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine- (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and (ii) the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; and e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to- (i) identify and motivate a preferred site, activity and technology alternative; (ii) identify suitable measures to avoid, manage or mitigate identified impacts; and (iii) identify residual risks that need to be managed and monitored.	**Yes**	**Sections A, C, E and H of the report include the Introduction, legislative review, alternatives assessment and needs and desirability** **Sections D and J include a summary of the specialist studies and associated impact assessments undertaken**
Scope of assessment and content of basic assessment reports 3) (1) A basic assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include: (a) details of: (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	**Yes**	**Section A.6**
(b) the location of the activity, including: (i) the 21-digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	**Yes**	**Section B**
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	**Yes**	**Section A.1 and Section B provide the specifications of infrastructure being proposed.**
(d) a description of the scope of the proposed activity, including all listed and specified activities triggered and being applied for; and a description of the activities to be undertaken including associated structures and infrastructure;	**Yes**	**Section B and Section F**
(e) a description of the policy and legislative context within which the development is proposed including- (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	**Yes**	**Section E**

Appendix 1	YES / NO	SECTION IN BA REPORT
f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	**Yes**	**Section H**
(g) a motivation for the preferred site, activity and technology alternative;	**Yes**	**Section C**
(h) A full description of the process followed to reach the proposed preferred alternative within the site, including - (i) details of all the alternatives considered;	**Yes**	**Section C**
(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	**Yes**	**Section I**
(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	**Yes**	**A summary of the issues raised by I&APs has been included in Section I of this Final BA Report. Note that no significant changes have been made to the information presented in this Final BA report or its associated appendices, and no new impacts have been identified. As such, the revisions outlined in this table of key changes do not constitute significant amendments to the report in terms of Regulation 19(1)(b), as they do not introduce new or materially different information from that already presented in the 30-day public comment period which extended to 08 April 2026.**
(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	**Yes**	**Section C and Section D**
(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	**Yes**	**Section J and Section C**
(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	**Yes**	
(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	**Yes**	
(viii) the possible mitigation measures that could be applied and level of residual risk;	**Yes**	
(ix) the outcome of the site selection matrix;	**Yes**	
(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	**Yes**	
(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity.	**Yes**	**Section C.1.7**

Appendix 1	YES / NO	SECTION IN BA REPORT
(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	**Yes**	**Section J**
(j) an assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	**Yes**	**Section J and Appendix F**
(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	**Yes**	**Section J and Section K**
(l) an environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	**Yes**	**Section J and Section K**
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	**Yes**	**Sections J and K**
(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	**Yes**	**Section E**
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	**Yes**	**Please refer to each specialist study included in Appendix F**
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	**Yes**	**Section K**
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	**X**	**Not Applicable.**
(r) an undertaking under oath or affirmation by the EAP in relation to - (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	**Yes**	**Appendix B**
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	**X**	**N/A**
(t) any specific information that may be required by the competent authority; and	**Yes**	**Comments raised during the 30-day review of the Draft BA Report have been addressed at relevant**

Appendix 1	YES / NO	SECTION IN BA REPORT
		points throughout the Final BA Report.
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	**X**	**Throughout the BA Report**
2) Where a government notice *gazetted* by the Minister provides for the basic assessment process to be followed, the requirements as indicated in such a notice will apply.	**Yes**	**Refer to Section E for a breakdown of the relevant gazettes that are applicable.**

SECTION A: INTRODUCTION

A.1 Introduction and Overview of the PV and EGI Cluster

Megora PV (Pty) Ltd (hereinafter referred to as “the Project Applicant[3]”) is proposing the development of four solar photovoltaic (PV) facilities with a capacity of between 90 and 170 MW each, four associated 132 kV overhead power lines, and their associated infrastructure, approximately 20 km north of the town of Murraysburg in the Beaufort West Local Municipality, Central Karoo District Municipality, Western Cape province (Figure A.2 and A.3).

The proposed cluster of solar PV facilities, overhead power lines and their associated infrastructure are collectively referred to as the ‘Megora Solar PV Cluster’. The proposed cluster comprises of the following projects:

- PROJECT 1: Basic Assessment for the proposed development of the Megora Solar PV Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province
- PROJECT 2: Basic Assessment for the proposed development of the Megora Solar PV Facility 1B and associated infrastructure (i.e., Megora PV 1B), near Murraysburg in the Western Cape Province
- PROJECT 3: Basic Assessment for the proposed development of the Megora Solar PV Facility 1C and associated infrastructure (i.e., Megora PV 1C), near Murraysburg in the Western Cape Province
- PROJECT 4: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2), near Murraysburg in the Western Cape Province
- PROJECT 5: Basic Assessment for the proposed development of a 132kV overhead power line and associated infrastructure between the proposed Megora Solar PV Facility 1A to a suitable Main Transmission Station (as advised by Transmission Authorities) (i.e., Megora EGI 1) near Murraysburg in the Western Cape Province
- PROJECT 6: Basic Assessment for the proposed development of a 132kV overhead power line and associated infrastructure between the proposed Megora Solar PV Facility 2 and the proposed Megora Solar PV Facility 1A (i.e., Megora EGI 2) near Murraysburg in the Western Cape Province

It is anticipated that the proposed 132 kV overhead power line connecting the proposed Megora PV 2 facility to the proposed Megora PV 1A facility (i.e., Project 6) and the 132 kV overhead power line extending from the proposed Megora PV 1A facility to a nearby suitable Main Transmission Station (as advised by the National Transmission Company South Africa (NTCSA)) (i.e., Project 5); are planned to be handed over to Eskom (should Environmental Authorisation (EA) be granted). Therefore, in this regard separate BA Processes are being undertaken and separate EAs are being sought for these projects (i.e., Project 5 and 6). Note, however, that combined reporting has been approved by the DFFE for Megora PV 2 and EGI 2, as discussed in detail in Section A.2 of this report.

[3] The ‘Project Applicant’ and ‘Project Developer’ are used synonymously through the BA Report.

The proposed 132 kV overhead power lines connecting the proposed Megora PV 1B (Project 2) and Megora PV 1C (Project 3) to Megora PV 1A (Project 1) will be retained by the Project Applicant and as such these powerlines will be included in the respective solar PV facility assessments. Refer to Figure A.1 which provides a summary schematic depicting the projects comprising the Megora Solar PV Cluster.

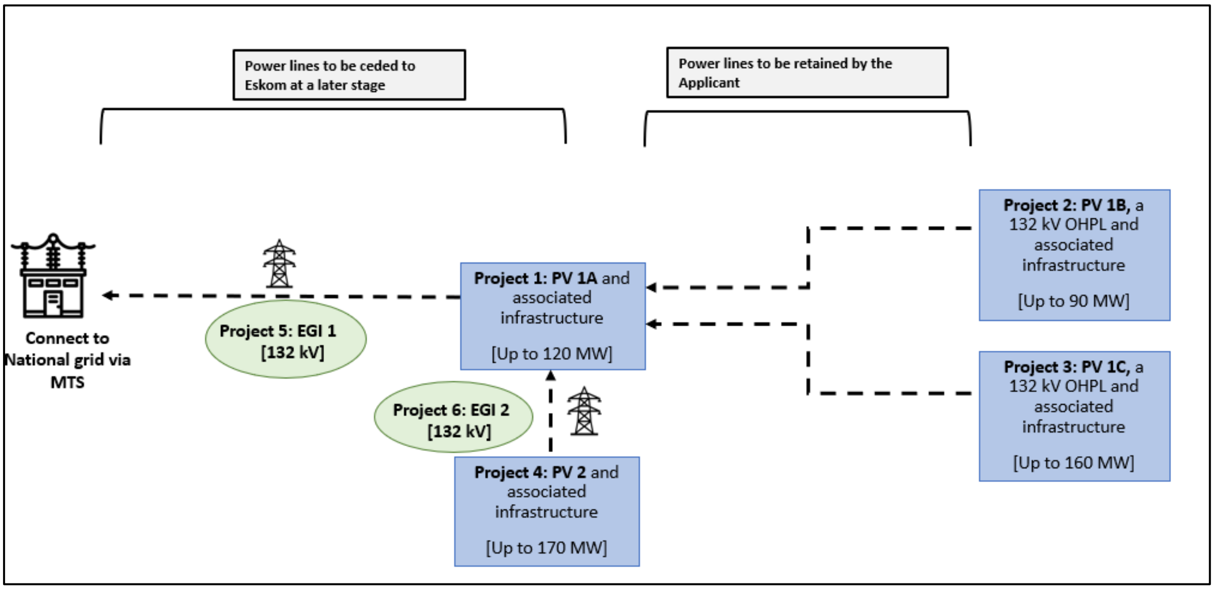

Figure A.1: Summary schematic of the project comprising the proposed Megora Solar PV Cluster

It is understood that the Project Applicant is currently engaging with the Eskom and the NTCSA to confirm a suitable connection point from which the power generated by the Megora Solar PV Cluster can be injected into the national grid. Once this guidance has been received, the Project Developer will finalise the proposed Megora EGI 1 route, after which the required Environmental Assessment process for this stage will be undertaken.

Therefore, at this stage only the BA Processes for the proposed Megora PV 1A-C, PV 2 and EGI 2 are being undertaken concurrently (i.e., Projects 1-4 and Project 6 listed above). The subject of this BA Report is Project 1 (i.e., Megora PV 1A).

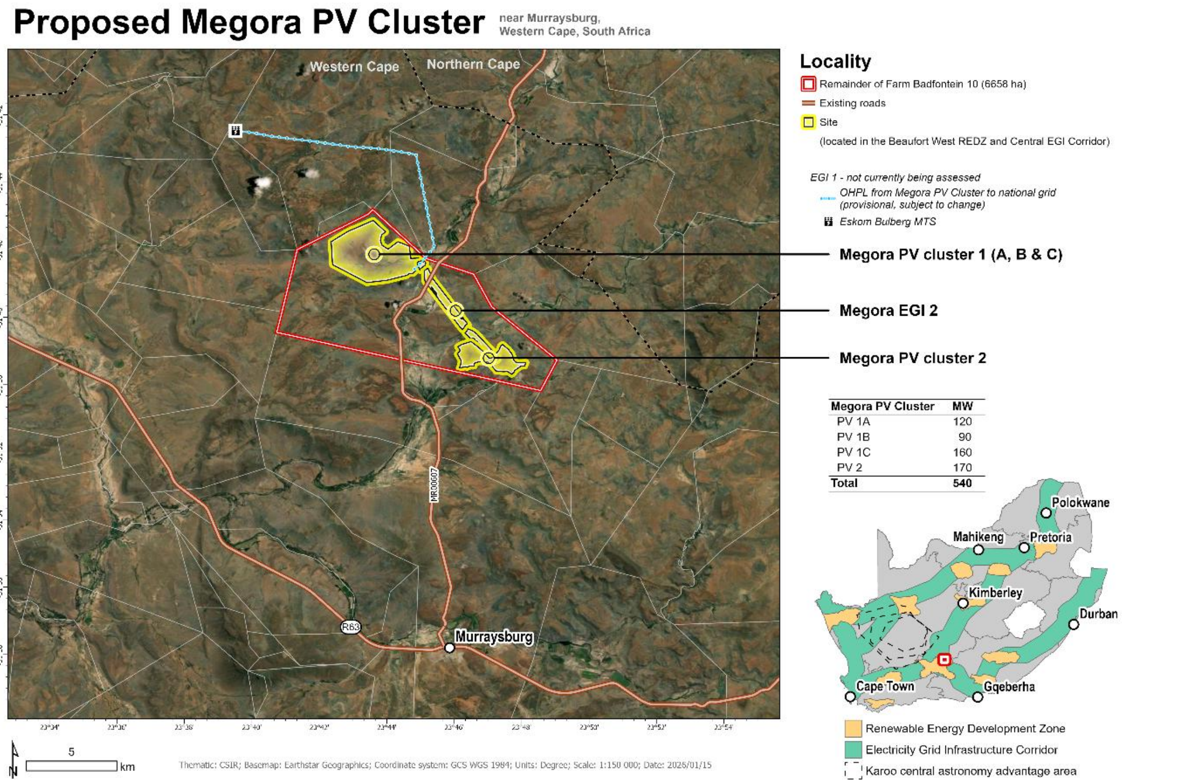

Figure A.2: Locality of the proposed Megora Solar PV Cluster

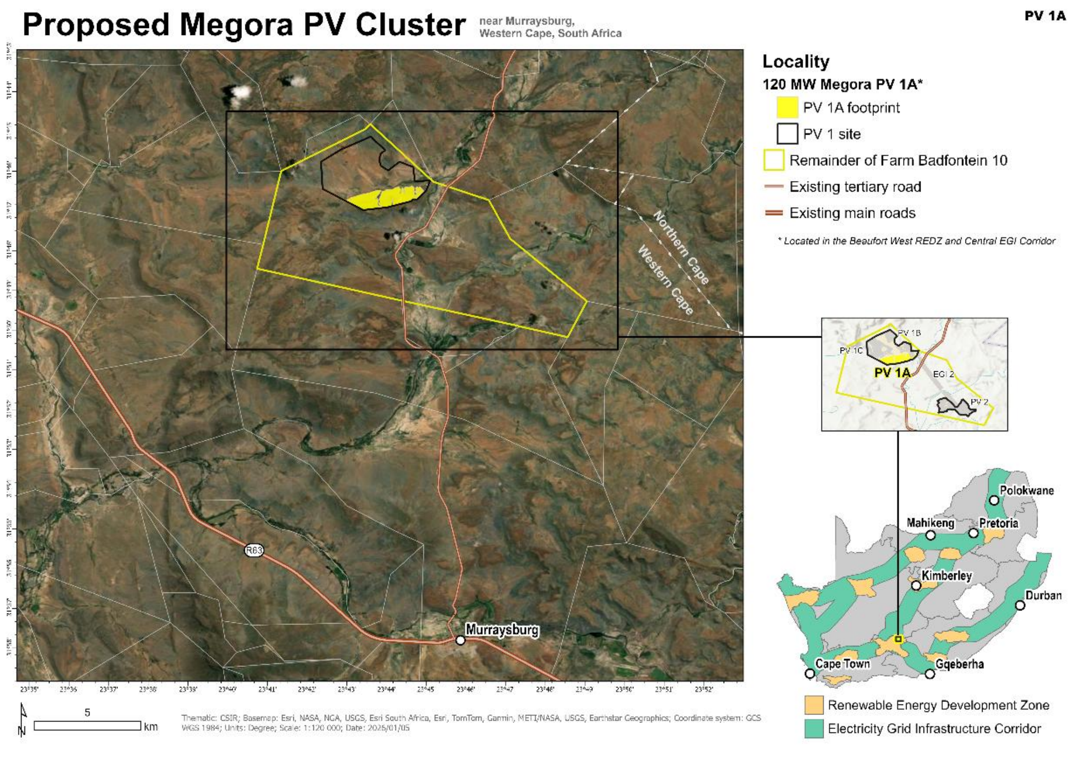

Figure A.3: Location of the proposed Megora PV 1A project.

The proposed Megora PV 1A will have a capacity of up to 120 MW. The associated infrastructure includes various structures and buildings and electrical grid infrastructure (EGI) such as, but not limited to, one on-site substation, and one Battery Energy Storage Systems (BESS). The Solar PV facility will make use of PV solar technology to generate electricity from energy derived from the sun; and will connect to the national grid via the proposed Megora EGI 1[4]. The locality of the proposed projects project is depicted in Figure A.3 above.

The proposed Megora PV 1A site covers approximately 180 ha and will be located on the Remainder of the Farm Badfontein No. 10 (Surveyor-General (SG) Code: C05200000000001000000).

The Draft BA Report was released to all I&APs, Organs of State and stakeholders for a 30-day review period. All comments submitted during the 30-day review period have been captured in a detailed Comments and Responses Report (CRR) with responses provided by the Project team and is included as Part C to this Final BA Report which is currently being submitted to the National DFFE for decision making.

A.2 Report Combination and Multiple EAs

A request to combine the BA reporting, for **Projects 4 and 6 (i.e. Megora PV2 and Megora EGI 2)**, in terms of Regulation 11 of the 2014 National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (as amended), and the issuing of multiple EAs in terms of Regulations 25 (1) and (2) was discussed with the Department of Forestry, Fisheries and the Environment (DFFE) at the Pre-Application Meetings on 17 January 2025 and 15 September 2025. A letter was submitted to the DFFE via email on 2 September 2025 to motivate for the combination and issuing of multiple EAs. The DFFE approved the combination and multiple EA request in a letter dated 3 October 2025, sent via email on 3 October 2025. Refer to Appendix E of this BA Report for a copy of the DFFE approval of the report combination and multiple EAs (should they be granted).

As discussed at the Pre-Application Meetings, the BA Reports for Projects 1, 2, 3, and 5 (Megora PV 1A, Megora PV 1B, Megora PV 1C, and EGI 1) are not included in the combined reporting because only one EA is required for these projects. Hence, standalone BA Reports have been compiled for these projects, as indicated in Figure A.4.

[4] The Project Applicant is currently engaging with Eskom and the National Transmission Company South Africa (NTCSA) to confirm the routing and connection point of the 132 kV line extending from the proposed collector station (planned adjacent to the Megora PV 1A on-site substation). The connection point to the national grid will be confirmed following receipt of feedback from Eskom and the NTCSA.

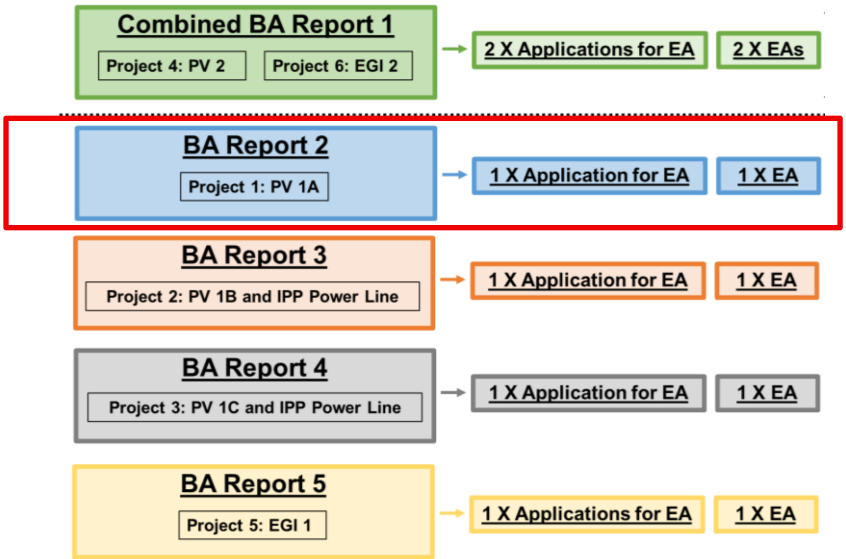

Figure A.4: Approved BA Reporting structure and combination approach. The project that is the subject of this BA report is outline by a red polygon.

The reporting structure indicated in Figure A.4 has been used to undertake a consolidated assessment process and to ensure that the potential environmental impacts of each activity, in relation to the location at which they will take place, are considered. The combined reporting process reduces the administrative aspects on the Case Officer and reduces the number of reports that need to be reviewed by Interested and/or Affected Parties (I&APs), while still maintaining high levels of environmental rigour and clear reporting.

Overall, at this stage, four BA Reports have been compiled for the proposed development, and it is proposed that 5 separate EAs will be issued (should they be granted). The BA Report for Megora EGI 1 will be compiled at a later stage once the grid connection is confirmed.

In terms of the Public Participation Process (PPP), an integrated approach was followed for Megora PV 1A-C, Megora PV 2 and Megora EGI 2. This forms an integral part of the BA Process and assists in identifying issues to be considered. Details on the PPP are included in Appendix G of this BA Report.

This BA Report only addresses Megora PV 1A (i.e. Project 1) (hereafter referred to as the "proposed project").

A.3 Project Motivation

The need for renewable energy is clear, in both a local and international context, with South Africa becoming an integral part of the global transition towards renewable sources of electricity generation. South Africa is one of the highest per capita producers of carbon emissions in the world. These emissions are largely a result of an energy-intensive economy and high dependence on coal-based electricity generation that in recent decades has met more than 90% of its energy needs. Consequently, the South African government is committed to supplementing the existing generation capacity of thermal and nuclear power plants with renewable energy power generation, thus creating the framework that will lead to an increase in the supply of clean energy for the nation. The development of renewable energy is important for South Africa to reduce its overall environmental footprint from power generation (including externality costs), and thereby to steer the country on a pathway towards sustainability.

Commitment toward decarbonisation of the economy is clearly illustrated in South Africa's National Development Plan (NDP) Vision 2030 published in 2012. Chapters 4 and 5 of the NDP advocates for increased investment in an energy sector that is both economically inclusive and environmentally sustainable – with renewable energy at the core of enabling this transition. The plan identifies, as a priority, the production of sufficient energy to support industry at competitive prices, ensuring access for poor households, while reducing the carbon intensity of the economy.

In addition, due to the current constrained energy landscape and loadshedding, the South African Government articulated a plan to address the energy crisis. The President of South Africa delivered a speech on 25 July 2022 to inform the public of the plan towards achieving a reliable, affordable and sustainable energy supply (The Presidency, 2022[5]). In addition, the Minister of Forestry, Fisheries and the Environment also held a stakeholder engagement session on 21 July 2022 during which the Minister highlighted proposed mechanisms for streamlining environmental approvals for solar energy development in low and medium sensitivity areas throughout the country; as well as power line and substation development within low and medium sensitivity areas within the gazetted EGI corridors (DFFE, 2022[6]). Some of these mechanisms have already been gazetted for implementation (i.e. the EGI Standard published in Government Gazette (GG) 47095; Government Notice (GN) 2313, dated 27 July 2022; Solar Exclusion Norm published in GG 50388; GN 4558, dated 27 March 2024; and Battery Storage Exclusion Norm published in GG 50387; GN 4557, dated 27 March 2024).

Furthermore, on 19 May 2023, the Minister of Forestry, Fisheries and the Environment delivered feedback on the DFFE's Budget Vote 2023/24 (Vote 32) at the Good Hope Chamber in Parliament (DFFE, 2023[7]). The Minister reported that the DFFE IEA Directorate had a review project pipeline of 9 789 MW for renewable energy EA Applications. The Minister also reported that the DFFE had reduced decision-making timeframes for renewable energy EA applications from 107 days to 57 days, as best as possible (DFFE, 2023). The latter was also reiterated during the 2024/25 (Vote 32) DFFE's Budget Vote Speech (DFFE, 2024[8]).

Further, the Integrated Resource Plan (IRP) for South Africa for the period 2010 to 2030 (referred to as "IRP2010") was released by government in 2010, and an updated report was published in 2013, which proposed to secure 17 800 MW of renewable energy capacity by 2030 (including solar, wind and other energy sources). In August 2011, the then Department of Energy (DoE) (previously operating as the Department of Mineral Resources and Energy (DMRE)[9]) launched the Renewable Energy Independent Power Producer Programme (REIPPPP) and invited potential Independent Power Producers (IPPs) to submit proposals for the financing, construction, operation and maintenance of the first 3 725 MW of onshore wind, solar thermal, PV, biomass, biogas, landfill gas or small hydropower projects. On 18 August 2015, an additional procurement target of 6 300 MW to be generated from renewable energy sources was added to the REIPPPP for the years 2021 - 2025, as published in GN 733, GG 39111. Of this, the additional target allocated for solar PV was 2 200 MW.

The IRP 2019[10] was gazetted by the Minister of Mineral Resources and Energy, Gwede Mantashe, in October 2019. The update revised the energy forecast for South Africa to the year 2030. Provision has been made for new additional capacity by 2030 including in particular 14 400 MW of wind and 6 000 MW of solar PV. Based on the Proposed Balanced Plan for new generation capacity in the 2025 IRP,

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[5] The Presidency (2022). *Address by President Cyril Ramaphosa on actions to address the electricity crisis, Union Buildings, Tshwane.* Accessed online: https://www.thepresidency.gov.za/speeches/address-president-cyril-ramaphosa-actions-address-electricity-crisis%2C-union-buildings%2C-tshwane [August 2022]

[6] DFFE (2022). *Minister Creecy announces improved environmental assessment processes for solar energy.* Accessed online: https://www.dffe.gov.za/creecy_environmentalassessmentprocesses_solarenergy [August 2022]

[7] DFFE (2023). Minister Barbara Creecy: Forestry, Fisheries and the Environment Dept Budget Vote 2023/24. Accessed online: https://www.gov.za/speeches/minister-barbara-creecy-forestry-fisheries-and-environment-dept-budget-vote-202324-19-may [November 2023]

[8] DFFE (2024). Minister D George (Dr): 2024/25 Budget Vote Speech (Vote 32) for Forestry, Fisheries and the Environment. Accessed online: https://www.dffe.gov.za/speech/george_dffe2024.25budgetvote32 [July 2024]

[9] Following the announcement of the National Executive of the 7th Administration, it is understood that the Ministries of Electricity and Energy have been merged; and that there is a separate Ministry of Mineral and Petroleum Resources. For purposes of this BA Report, the term DMRE has been retained for simplicity.

[10] The IRP was updated in 2023 (2023 Draft IRP) and released for public comment in January 2024. It was gazetted for implementation in October 2025.

solar PV energy has a current base of 3 646 MW at the end of 2025; and approximately 10 313 MW of new capacity is estimated for the period of 2026 to 2030; and approximately 18 400 MW of new capacity is estimated for the period of 2031 to 2042. In terms of the REIPPPP, submitted proposals are then evaluated according to a Request for Proposal (RFP). The bidders whose responses rank the highest (according to stipulated criteria) generally have the greatest potential to be appointed as "Preferred Bidders" by the DMRE.

Bidding Window 5 was conducted during 2021 with an allocation of 2 600 MW for new wind and solar energy. The successful bidders were announced on 28 October 2021. Bidding Window 6 was announced in April 2022 with an allocation of 4200 MW of renewable energy of which solar comprises 1000 MW. Six preferred bidders have been selected for Bidding Window 6 for solar PV projects. Bidding Window 7 was announced in December 2023 and closed in August 2024. It aims to procure 5 000 MW (i.e. 3 200 MW from wind and 1 800 MW from Solar PV). Eight preferred bidders have been selected for Bidding Window 7 for solar PV projects. In July 2025, an additional six solar PV projects, totalling 1 290 MW, were allocated as preferred bidders in Bid Window 7. This involved a re-allocation of the MW from onshore wind to solar PV in this Bid Window (Department of Electricity and Energy, 2025[11]).

Should these proposed Megora Solar PV projects be acceptable and authorised, it is considered viable that long-term benefits for the community and society in the Murraysburg area would be realised. The proposed projects are intended to address the current energy shortages in South Africa and assist in meeting the need for additional renewable energy generation capacity, as required by the IRP. The total generation capacity of the entire project (i.e. should all four solar facilities be authorised) would be in the order of up to 540 MW.

The proposed projects would also have international significance as they contribute to South Africa being able to meet some of its international obligations by aligning domestic policy with internationally agreed strategies and standards as set by the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement on Climate Change, Kyoto Protocol, and United Nations Convention on Biological Diversity (UNCBD), all of which South Africa is a signatory to. Renewable energy is critical to South Africa as this source of energy is recognised as a major contributor to climate protection, has a much lower environmental impact significance, as well as advancing economic and social development. South Africa is making steady progress towards reducing carbon emissions from energy generation, with coal dropping to 79% of the electricity generation mix in 2025 and solar PV increasing to 9.3% of the electricity generation mix.

The development of utility-scale solar PV is the least cost option for South Africa for new electricity generation. The shortage of electricity generation and load-shedding is a major constraint on economic recovery for South Africa. Consequently, the development of new solar PV such as proposed in the Megora Solar PV Cluster is urgently needed and will bring significant socio-economic benefits by contributing to national energy security.

A.4 Legal Requirements for a BA Process

Section 24(1) of the NEMA, states that "*In order to give effect to the general objectives of integrated environmental management laid down in this Chapter, the potential impact on the environment of listed activities must be considered, investigated, assessed and reported to the competent authority charged by this Act with granting the relevant EA*". The reference to "listed activities" relates to the regulations promulgated in GN R982, R983, R984 and R985 in GG 38282, dated 4 December 2014, which came into effect on 8 December 2014 (as amended). These were amended on 7 April 2017, specifically promulgated in GN R326, R327, R325 and R324 in GG 40772; and further amended on 11 June 2021 in GN 517; and on 3 March 2022 in GN 1816. GN R327 and GN R324 includes listed activities that trigger the need for a BA) Process, whereas GN R325 includes listed activities that trigger the need for

[11] Department of Electricity and Energy (2025). REIPPPP Bid Window 7 List of Successful Bidders [Online]. Available at: https://www.ipp-projects.co.za/ [Accessed: September 2025].

a full Scoping and EIA Process. Additional detail is provided in Section E and Section F of this BA Report.

The entire proposed Megora PV 1A site and falls within the Renewable Energy Development Zone (REDZ) 11 (i.e., Beaufort West REDZ), one of the eleven REDZs formally gazetted in South Africa for the purpose of developing solar PV and wind energy generation facilities (GG 41445, GN 114; 16 February 2018 and GN 144; 26 February 2021). Refer to Figure A.1 for the locality of the proposed project in relation to the REDZs. The REDZs represent areas where wind and solar PV development is being incentivised from resource, socio-economic and environmental perspectives. To date, the DFFE has gazetted 11 REDZs as well as procedures for submitting applications for EA and reduced decision-making timeframes within these REDZs, which have reduced the review timeframes by half and significantly simplified the authorisation process. The REDZs were identified in two phases, with the first 8 being identified through a Strategic Environmental Assessment (SEA) process which concluded in March 2015 and gazetted in February 2018 and the 3 additional REDZs concluded in March 2019 and gazetted in February 2021.

In addition, the entire Megora PV 1A site is located within the Central Strategic Transmission Corridor, one of the five EGI Power Corridors formally gazetted for implementation on 16 February 2018 in GG 41445, GN 113. An additional two expanded corridors were gazetted in GN 1637 on 24 December 2021.

In line with the gazetted process for projects located within a REDZ, the proposed project is subject to a BA Process instead of a full Scoping and EIA process and a reduced decision making period of 57 days, in terms of the NEMA and the 2014 NEMA EIA Regulations (as amended). A BA Process in terms of Appendix 1 of the 2014 NEMA EIA Regulations (as amended) is therefore being undertaken for the proposed project.

Section F of this BA Report contains the detailed list of activities contained in R327, R325, and R324, as amended, which may be triggered by the various project components and thus form part of the BA Process.

A.5 Competent Authority

The 2014 NEMA EIA Regulations, as amended in GN 517 on 11 June 2021 states that the Competent Authority (CA) in respect of the listed activities "*is the CA in the province in which the activity is to be undertaken, unless: (a) it is an application for an activity contemplated in Section 24C(2) of the Act, in which case the CA is the Minister or an organ of state with delegated powers in terms of Section 42(1) of the Act; or (b) the application is a mining application in which case the CA is the Minister responsible for mineral resources*".

With relevance to the proposed projects, Section 24C (2) (a) (i) of NEMA states "*(2) the Minister must be identified as the competent authority in terms of subsection (1), unless otherwise agreed to in terms of section 24C (3), if the activity (a) has implications for international environmental commitments or relations, and where (i) it is identified by the Minister by notice in the Gazette*".

Related to the above, GN 779 states that, in terms of Sections 24C(1), 24C(2)(a)(i) and 24D of the NEMA, the Minister of Environmental Affairs (now Forestry, Fisheries and the Environment) is the CA for activities which are identified as activities in terms of Section 24(2)(a) of NEMA, which may not commence without an EA, and which relates to the IRP 2010 – 2030 and any updates thereto. The proposed project triggers various listed activities and thus requires EA. The proposed project will be bid into REIPPPP or similar bidding programmes. Therefore, based on the above, the National DFFE serves as the CA for the proposed Megora PV 1A project.

A.6 Details and Expertise of the CSIR BA Project Management Team

In accordance with Regulation 12 (1) of the 2014 NEMA EIA Regulations (as amended), the Project Developer has appointed the Council for Scientific and Industrial Research (CSIR) to undertake the BA Processes to determine the biophysical, social and economic impacts associated with undertaking the proposed development. The Competent Authority for the proposed projects is the National DFFE.

Paul Lochner (*Registered EAP*; Technical Advisor, Project Leader and Quality Assurance):
Paul Lochner is an EAP at the CSIR in Stellenbosch, with over 30 years of experience in a wide range of environmental assessment and management studies. Paul commenced work at CSIR in 1992, after completing a B.Sc. degree in Civil Engineering and a Masters in Environmental Science, both at the University of Cape Town. His initial work at focused on wetlands and estuarine management; environmental engineering in the coastal zone; and coastal zone management plans. Since 2008, Paul has been the leader and manager of the Environmental Management Services (EMS) group within CSIR that has been at the forefront of advancing environmental assessment in South Africa. This group currently consists of 12 environmental scientists, planners and engineers, with offices in Stellenbosch, Cape Town and Durban. Paul's particular experience is in environmental planning and assessment for renewable energy, EGI, desalination, oil and gas, wetlands and coastal zone management, and industrial and port development. He has been closely involvement in the research and application of SEA in South Africa, and also has wide experience in Environmental and Social Impact Assessment, Environmental Management Programmes (EMPrs) and Environmental Screening Studies. He has been the project leader for over 40 SEAs and EIAs. He also served as project leader for a suite of SEAs commissioned by the DFFE from 2014 to 2020. Paul is a Registered EAP (2019/745) with the Environmental Assessment Practitioners Association of South Africa (EAPASA).

Rohaida Abed (Pr. Sci. Nat. and Registered EAP, Project Team Member):
Rohaida Abed is an EAP in the EMS group of the CSIR. She has 14 years of experience in the Environmental Management field and has been involved in various transport infrastructure related projects as an Environmental Control Officer. She has also been involved in BAs and EIAs relating to renewable energy, port infrastructure and bulk liquid storage facilities in the capacity of Project Manager. She also worked on the SEA for Gas Pipeline and EGI Expansion from 2017 to 2019, which was commissioned by the National Departments of Environmental Affairs, Energy and Public Enterprises. She is a registered Professional Natural Scientist (400247/14) with the South African Council for Natural Scientific Professions (SACNASP), and a Registered EAP (2021/4067) with the EAPASA.

Dhiveshni Moodley (Pr. Sci. Nat., Project Manager):
Dhiveshni Moodley is a Junior Environmental Scientist in the EMS group of the CSIR. Dhiveshni holds a BSc, a BSc Honours (cum laude) and MSc (cum laude) degrees in Environmental Science from the University of KwaZulu-Natal. Her academic and professional experience includes flood risk assessments, hydropedological and wetland functional studies, conducting BAs and EIAs in the renewable energy sector, GIS-based environmental screening as well as provincial green hydrogen planning. Dhiveshni is registered as a Professional Natural Scientist with the SACNASP (120091). She is a member of the International Association for Impact Assessment South Africa (IAIAsa) and previously served on the organisation's National Executive Committee.

Suvasha Ramcharan (*Cert. Sci. Nat.* and *Cand. EAP*, Project Officer)
Suvasha Ramcharan is a Junior Environmental Scientist at the CSIR in Durban. Suvasha holds a Bachelor of Science, Bachelor of Science Honours, and Master of Science (cum laude) degrees in Environmental Science from the University of KwaZulu-Natal. She has assisted with compiling numerous EA Applications, Scoping and EIA Reports, BA Reports and EMPrs for various renewable energy and associated electricity grid infrastructure projects in the Eastern Cape, Western Cape,

Northern Cape, Free State and Mpumalanga. Suvasha is a registered Certificated Natural Scientist (Registration Number: 159219) with the SACNASP and is a registered Candidate EAP with EAPASA (Registration Number: 2023/6896). She is also a member of IAIAsa.

Helen Antonopoulos (*Cand. Sci. Nat*, Project Officer):
Helen Antonopoulos is a Environmental Scientist in the EMS group of the CSIR and holds BSc, BSc Honours, and MSc degrees in Environmental and Geographical Science from the University of Cape Town. She has compiled numerous EA applications, and BA, Scoping and EIA Reports for Wind and Solar Energy Facilities in the Western Cape, Northern Cape, and Free State. She currently serves as member of the National Executive Committee (NEC) of the IAIAsa. Helen is a registered Candidate Natural Scientist (169440) with the SACNASP.

Sonto Mkize (*Cand. Planner*, Project Officer)
Sonto Mkize holds a BSc and BSc Honours in Urban and Regional Planning from the University of the Witwatersrand, and a MSc in Sustainable Urban Planning and Design from KTH Royal Institute of Technology. She has assisted in compiling Basic Assessment and Scoping and Environmental Impact Assessment reports for wind and solar energy facilities in various provinces. Her key interests lie in maximising the opportunities presented by advancements in technological innovations to build inclusive smart cities and to enable a just energy transition using renewable resources. Sonto is a registered Candidate Planner (C/10241/2025) with the South African Council for Planners (SACPLAN).

Kimara Moodley (*Cand. EAP*, Project Officer):
Kimara Moodley is a Junior Environmental Consultant in the EMS group at the CSIR in Durban. She holds a Bachelor of Social Science in Geography and Environmental Management, a BSc Honors in Geography, and an MSc in Environmental Science from the University of KwaZulu-Natal. Her postgraduate research culminated in a peer-reviewed publication, demonstrating her contribution to environmental knowledge. She has supported the compilation of BA Reports, EA Applications, EMPrs, and specialist coordination for renewable energy and associated PV projects across South Africa. Kimara is passionate about advancing sustainable development in South Africa through responsible environmental planning. Kimara is a Candidate Environmental Assessment Practitioner (Registration Number: 2024/9394) with the EAPASA. She is also a member of the IAIAsa.

Various specialists and additional members from the CSIR have contributed to the Megora BA Processes. The team which is involved in this BA Process is listed in Table A.1 below.

Table A.1: Details of the BA Team

Name	Organisation	Role/ Specialist Study
CSIR Project Team		
Paul Lochner (*Registered EAP (2019/745)*)	CSIR	EAP and Project Leader
Rohaida Abed (*Registered EAP (2021/4067)*)	CSIR	Project Team Member
Dhiveshni Moodley (*Pr.Sci.Nat.*)	CSIR	Project Manager
Luanita Snyman-van der Walt (*Pr.Sci.Nat.*)	CSIR	Project Mapping
Suvasha Ramcharan (*Cert.Sci.Nat* and *Cand. EAP*)	CSIR	Project Officer
Helen Antonopoulos *(Cand.Sci.Nat.*)	CSIR	Project Officer
Sonto Mkize (*Cand. Planner*)	CSIR	Project Officer
Kimara Moodley (*Cand.EAP*)	CSIR	Project Officer

Name	Organisation	Role/ Specialist Study
Specialists		
Johann Lanz and David Lakey	SoilZA	Agricultural Compliance Statement
Kamogelo Rakale	SLR Consulting	Visual Impact Assessment
John Gribble	TerraMare Consulting	Heritage Impact Assessment (Archaeology, Cultural Landscape)
Elize Butler	Banzai Environmental	Palaeontology Impact Assessment
Tarryn Martin and Amber Jackson	Biodiversity Africa	Terrestrial Biodiversity, Terrestrial Plant Species, and Terrestrial Animal Species
Russell Tate	Tate Environmental Specialist Services	Aquatic Biodiversity and Species Impact Assessment
Anja Albertyn	Holland & Associates Environmental Consultants	Avifauna Impact Assessment
Hugo van Zyl and Holly Johnson	Independent Economic Researchers	Socio-Economic Impact Assessment
Debbie Mitchell	Ishecon	BESS Risk Assessment
Iris Wink	iWink Consulting	Traffic Impact Assessment
Hardy Luttig, Dale Barrow and Shane Teek	GEOSS South Africa (Pty) Ltd	Geohydrology Assessment
Hardy Luttig and Shane Teek		Desktop Geotechnical Assessment
Helen Antonopoulos and Luanita Snyman-van der Walt	CSIR	Civil Aviation Site Sensitivity Verification
Helen Antonopoulos and Luanita Snyman-van der Walt	CSIR	Defence Site Sensitivity Verification

SECTION B: PROJECT DESCRIPTION

As noted in Section A.1 of this BA Report, the Project Applicant is proposing the development of four solar PV facilities (i.e., Megora PV 1A-C and PV 2) and four associated 132 kV overhead power lines, on behalf of the Project Applicant. The proposed powerlines will support the connection of the proposed Megora PV facilities to the national grid via a suitable Main Transmission Station (MTS) as advised by Eskom/NTCSA[12].

Note that this BA Report specifically addresses the proposed Megora PV 1A facility and its associated infrastructure (Figure A.3 above).

A description of the key components of each of the proposed projects are described below in Table B.1.

The proposed Megora PV 1A facility will be developed with a possible maximum installed capacity of 120 MW. An area of approximately 1 100 ha was surveyed and sensitive environmental features identified. Thie area is defined as the study area. Following consideration of the sensitive features, a permanent development footprint of up to approximately 180 ha and a temporary development footprint approximately 5 ha was proposed for the proposed project. The permanent footprint will include the development of the solar field, BESS buildings, Operations and Maintenance (O&M) complex, and associated infrastructure, as detailed below. The exact number of solar panel arrays, confirmation of the foundation type and detailed design will follow as the development progresses.

The proposed project will consist of the key components displayed in Figure B.1 below.

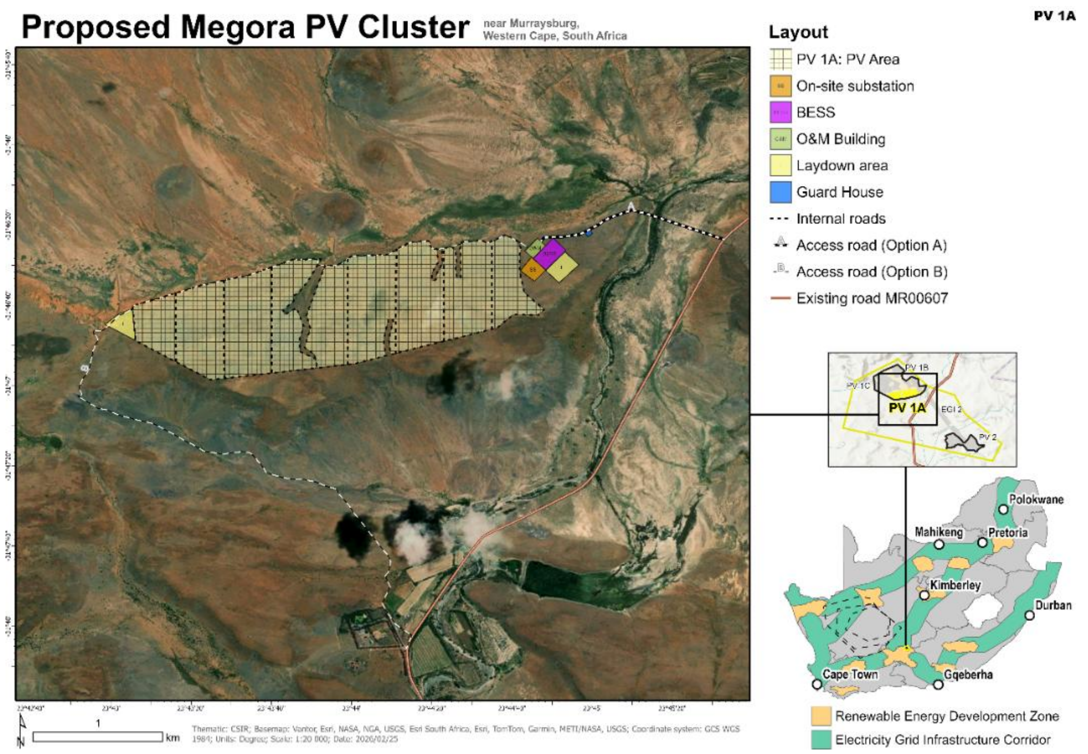

Figure B.1. Project layout of the proposed Megora PV 1A and associated infrastructure

[12] The Project Applicant is currently engaging with Eskom and the National Transmission Company South Africa (NTCSA) to confirm the routing and connection point of the 132 kV line extending from the proposed collector station (being assessed as part of the proposed Megora EGI 1 project, to be assessed at a later stage) to a suitable Main Transmission Station. The connection point to the national grid will be confirmed following receipt of feedback from Eskom and the NTCSA.

A summary of the key components of the proposed Megora PV 1A and associated infrastructure and technical information is described and listed in Table B.1 below and the subsequent subsections.

Table B.1: Description of the Project Components for the proposed Megora PV 1A project

Infrastructure	Component	Dimensions / Specifications
Solar PV facility	Type of technology	Solar Photovoltaic (PV) Technology
	Height of PV panels	Maximum of ± 4.5 m
	Capacity of the PV facility	Up to 120 MW
	Area of PV Array (i.e., proposed area occupied by PV Modules)	175 ha Note: The permanent fence line will run as close as possible to the solar array demarcation and substation area. Therefore, the PV array area and the total fenced area (i.e., the area that includes all associated infrastructure within the fenced off area of the PV facility) are anticipated to be similar.
	Technology mounting structure	The following technologies are being considered: • Single Axis Tracking Structures (aligned north-south); • Dual Axis Tracking (aligned east-west and north-south); • Fixed Tilt Mounting Structures; • Mono-facial Solar Modules; or • Bifacial Solar Modules.
	Inverter-transformer stations	Up to 5 MW inverters will be located across the proposed project. The exact number of inverters is still to be confirmed however all inverter-transformers will be within the PV array.
	Area occupied by inverter-transformer stations and height	Inverter-transformer stations: 0.003 ha each The inverter stations will have a height of ± 3 m each. Note: The height mentioned above excludes the height of lightning rods. The rods installed on the stations (each with a height of ± 3 m) are expected to extend to 10 m high. Each inverter station will have 4 lightning rods.
Associated infrastructure		
Temporary construction and laydown area	Construction camp area (ha)	The proposed PV 1A facility will have two temporary construction and laydown areas, each covering 2.5 ha. - Total area: 5 ha Note: These areas will be rehabilitated after construction and will not be retained for the operational phase.
Main access roads Note: The existing road network will be used as far as practically possible and upgraded as needed.	Current width of access roads (m)	4 m
	Length of access roads (km)	- Option A (from the Southwest): 7.1 km - Option B (from the East): 1.32 km Note that the Project Applicant is proposing that both abovementioned site access roads (i.e., Option A and B) are included in the Environmental Authorisation (if granted).

Infrastructure	**Component**	**Dimensions / Specifications**
	Upgraded width (m)	Up to 8 m for main access roads to the site entrances (6 m wide road surface with 1 m drain either side)
Internal roads Note: The existing road network will be used as far as practically possible and upgraded as needed. Where required for turning circle/bypass areas, however, access or internal roads may be up to 10 m to allow for larger component transport.	Width of access roads (m)	4 m
	Length of roads (km)	Approximately 20 km The internal road network will be used to conduct security patrols and to access all the equipment (module cleaning and equipment maintenance).
	Upgraded width (m)	Up to 6 m
Internal medium voltage cables	All on-site medium voltage cabling (22 or 33 kV) may be buried to a maximum depth of 1.5 m or if above ground, then the cables will be mounted on an enclosed cable tray, between ground surface level and 0.5 m.	
Site offices including a warehouse/workshop and an operational and maintenance (O&M) control centre. The details provided in this section are for one site office.	Number of buildings	Site offices and O&M control centre will be located in one building. The workshop and storage area may be attached to the O&M control centre. All buildings will be located within the O&M complex/footprint.
	Maximum height (m)	Up to 10 m
	Footprint (ha)	1 ha
Guard house	Maximum height (m)	Up to 3 m
	Footprint (m²)	± 7 m x 5 m ± 35 m² with an ablution facility and outside shaded area.
Ablution facilities Note: There will be ablution facilities located within the guardhouse footprints. The details provided in this section are for one ablution facility. Additional ablution facilities may be within the O&M Building complex.	Maximum height (m)	Up to 10 m
	Footprint (m²)	± 242 m²
Battery energy storage system (BESS)	Battery technology type	Lithium-ion, Sodium-ion and Solid State alternatives are being considered. Note that Lithium-ion, Sodium-ion, Solid State and Redox flow technology types were considered and assessed by the project and specialist team in the BA Process. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has accordingly been submitted to the DFFE with the Final BA Report.
	Approximate footprint (ha)	2.5 ha
	Maximum height (m)	Up to 10 m
	Capacity	720 MWh
On-site substation complex		

Infrastructure	Component	Dimensions / Specifications
	A 132 kV facility substation complex will be located within the site, and will cover an area of approximately 1.5 ha and will have a height of up to 18 m.	
Water use requirements	Estimated quantity of water required for the construction phase	30 000 m³ per annum
	Estimated quantity of water required for the operational phase	8 000 m³ per annum
	Estimated quantity of water required for the decommissioning phase	The exact amount of water required during this phase is unknown at this stage but expected to be similar to or less than that of the construction phase.
Construction period		< 24 months

B.1 Solar array components

The smallest unit of a PV installation is a cell. A number of cells form a module, and several modules cumulatively form the arrays (Figure B.2). An example of a solar PV facility is provided in Figure B.3.

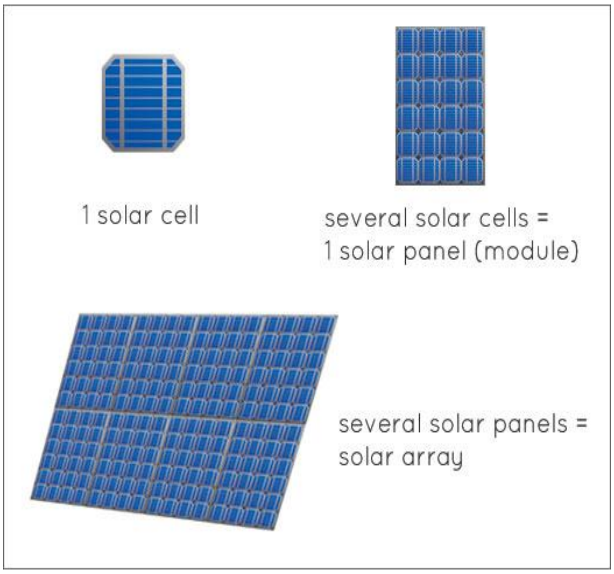

Figure B.2: Components of the Proposed PV Installation

Modules are arranged into strings that form the solar field and are installed on racks which are made of aluminium or galvanised steel. Foundations will likely be drilled and concreted into the ground. The entire structure is not expected to exceed 4.5 m in height (measured from the ground level), which is considered the worst-case. This system may be fixed, or may track the movement of the sun, either by adopting Single Axis Tracking (aligned north-south), Dual Axis Tracking (aligned east-west and north-south), Fixed Tilt Mounting Structures, Mono-facial Solar Modules, or Bifacial Solar Modules as explained above. Bifacial panels can be up to 20 - 40 % more effective since it also utilises solar radiation reflected from the surfaces onto the rear side of the panels. The tracker design will be confirmed during the detailed engineering phase.

Figure B.3: Example of PV Technology (DFFE, 2019[13])

B.2 Associated Infrastructure

B.2.1 Operations and Maintenance (O&M) Area

The onsite O&M area is required to support the functioning of the proposed project and provide services to personnel who will be responsible for the construction as well as operation and routine maintenance of the facility during its lifespan. The proposed O&M area will be fenced with access control and will be located within the proposed development footprint of the PV facility and will typically comprise of the following:

- O&M building (including a control centre, site offices, warehouses, workshop, visitors centre, etc);
- Worker amenities (e.g., canteen, ablution facilities, changing room, etc.);
- Storage structures for equipment, materials, fuel, oil, machinery etc. (e.g., containers, skips etc.);
- Security office and boom gate;
- Parking area;
- A concrete batching plant of up to 0.25 ha (approx. 50 m x 50 m);
- Water storage (likely in 10 000 L above ground conventional (plastic) storage tanks); and
- Central waste collection and storage area.

It is anticipated that the O&M building complex, will be located adjacent to the on-site substation. The maximum height of onsite buildings and other related infrastructure is not likely to exceed 10 m.

B.2.2 Construction Compound and Laydown Areas

During the construction phase, the proposed development will require the establishment of two construction compounds and laydown areas with a total approximate temporary footprint of up to 5 ha (not exceeding 2.5 ha each). It is anticipated that these areas will be fenced with access control.

[13] Department of Environment Forestry and Fisheries, 2019. Phase 2 Strategic Environmental Assessment for wind and solar PV energy in South Africa. CSIR Report Number: CSIR/SPLA/SECO/ER/2019/0085 Stellenbosch, Western Cape.

The Project Applicant may establish a concrete batching plant on site (within the laydown area) for purposes of the construction phase. Only a limited amount of water (within the overall water usage estimates described in this chapter) will be utilised during construction for the batching of concrete. Details of the concrete batching plant will be confirmed during detailed design as the development progresses.

B.2.3 On-site Substation

The proposed project will include an on-site substation that will be maintained by the IPP. This includes all the high voltage infrastructure leading up to the Point of Connection (i.e. the Project Applicant's section of the proposed on-site substation, which is also referred to as the PV Facility IPP Substation). The on-site substation will have a maximum development footprint of up to 1.5 ha to facilitate the connection between the solar facility and the national electricity grid network. The height of the substation hub will generally not exceed 18 m. It is likely to also include lightning masts up to 10 m in height.

The construction of the on-site substation would require the following activities:

- A survey of the study area on which the proposed on-site substation will be constructed;
- Site clearing and levelling;
- Construction of access roads to the proposed substation site (where required);
- Construction of substation terraces and foundations;
- Assembly and installation of equipment (including transformers);
- Connection of conductors to equipment;
- Testing of equipment; and
- Rehabilitation of any disturbed areas and protection of erosion sensitive areas.

As noted in Section A of this BA Report, electricity generated by the proposed Megora PV 1A facility will be evacuated to the national grid via the proposed Megora EGI 1 development, which will connect to a suitable MTS as advised by Eskom/NTCSA. The Megora EGI 1 development will link to the Megora PV cluster through a Collector station located adjacent to the Megora PV 1A on-site substation. This Collector station will form part of the Megora EGI 1 project.

The Project Applicant is currently engaging with Eskom and NTCSA to confirm the preferred routing and the specific connection point to the national grid. Once this guidance is provided, a separate Environmental Assessment process will be undertaken for the proposed Megora EGI 1 development and its associated infrastructure, including the collector substation located on the Megora PV 1A site.

It is anticipated that the proposed Megora EGI 1 and all associated high-voltage infrastructure extending from the Point of Connection (i.e., Eskom's portion of the proposed on-site substation, also referred to as the collector station) will be transferred from the IPP to Eskom at a later stage.

B.2.4 Converters/Inverters, Low Voltage Cables, and Medium Voltage Cables

As mentioned above, the solar arrays are typically connected to each other in strings, which are in turn connected to converters/inverters that convert Direct Current (DC) to Alternating Current (AC). Each converter/inverter station is expected have a height of ~3m (apart from lightning conductors) and have a footprint of 0.003 ha.

The strings will be connected to the converter/inverter stations by low voltage underground (internal) DC cables or enclosed with above-ground cable trays. Power from the converter/inverter stations will be collected in medium voltage transformers through underground (internal) AC cables, cable trays or AC cables which will be below ground or pole-mounted depending on voltage level and site conditions.

The converter/inverter stations will in turn be connected to the proposed on-site substation, via medium voltage (22 or 33 kV) internal underground cables (buried to a maximum depth of 1.5 m) or above ground cables, mounted on an enclosed cable tray, located between ground surface level and 0.5 m.

B.2.5 Battery Energy Storage System (BESS)

BESS offers a wide range of advantages to South Africa including electricity supply reliability and quality improvement. The main purpose of the BESS is to mitigate intermittency of wind- and solar PV -energy generation by storing and dispatching of electricity when needed i.e., to contribute to the grid 24 hours/day, during peak demand at night or during power outages. In essence, BESS technology allows renewable energy to enter the completely independent power generation market.

The proposed project will also include one electrochemical BESS. The BESS will have a maximum height of 10 m (as recommended) and comprise an area of up to 2.5 ha.

Considering the nature of the project, the Project Applicant assessed all available BESS technologies that could be implemented. The electrochemical BESS technologies for the proposed project that have been assessed include:

- Lithium-Ion Containerised Batteries

Lithium-ion containerised batteries are sealed, pre-assembled systems that are manufactured off-site and delivered ready for installation. Each BESS unit contains multiple individual battery cells combined into modules, with several modules forming the complete system. Every cell includes a positive electrode, a negative electrode, and an electrolyte. The negative electrode is typically carbon (graphite), while the positive electrode may be lithium iron phosphate or a lithium metal oxide. Depending on the technology, the electrolyte may be a liquid lithium salt dissolved in an organic solvent, a gel-based polymer, or a solid electrolyte.

In general, rechargeable lithium-ion batteries used in BESS installations store lithium within the cathode structure or within the electrolyte rather than as lithium metal. They operate optimally between 0–50 °C, and the exact chemistries vary across suppliers. Solid-state and polymer-based electrolytes have the advantage of being less flammable and non-leaking compared to liquid solvent systems.

- Solid State Sodium-Ion Batteries

Sodium-Ion batteries are solid state, sealed systems and pre-assembled off site, housed in containers / sealed units similar to Lithium-Ion BESS as described above. Sodium-Ion BESS are considered to show better performance, safety and efficiency (Green Building Africa, 2019[14]). Compared to Lithium-Ion BESS, Sodium-Ion BESS have “more abundant raw materials, lower fire safety risk, wider temperature operating conditions and higher depth of discharge capabilities” (Energy Storage News,

[14] Green Building Africa (2019). World’s largest sodium-ion battery storage project starts commissioning in China. https://www.greenbuildingafrica.co.za/worlds-largest-sodium-ion-battery-storage-project-starts-commissioning-in-china/ [online]. Accessed May 2025.

2025[15]). Research indicates that Sodium-Ion BESS have a significant potential to become "the most effective and sustainable energy storage solution in the future" (Bai and Song, 2023; Page 13[16]).

According to Wanison et al. (2024[17]), Sodium-Ion BESS are similar to Lithium-Ion BESS in terms of their physical appearance and internally. The main distinguishing factor between the two is that the anode and cathode current collectors of Lithium-Ion BESS usually have copper and aluminium foils; whereas Sodium-Ion BESS use aluminum foils for both electrodes (Wanison et al., 2024). As a result, Sodium-Ion BESS have lower weights and material costs (Wanison et al., 2024).

- Redox Flow Batteries (RFB): Vanadium-Vanadium Redox Flow Battery (VRFB), Zinc-Iron Flow Battery (Zn-Fe), Zinc-Bromine Flow Battery (Zn-Br)

Flow batteries generally comprise of three major components: a cell stack, auxiliary parts, and electrolyte storage. The active chemical species in a flow battery are stored mostly externally in above-ground storage tanks. The energy is stored in two chemical components, which are dissolved in a liquid to form electrolytes during operation. The energy density of a RFB is thus dependent on the size of the storage tanks (Parsons, 2017). There are two types of RFB's i.e., a 'true' RFB and a hybrid RFB. In a 'true' RFB the electro-active materials used to store energy remain dissolved in solution. Therefore, the energy is determined by the volumes of electrolyte available. Examples of a 'true' RFB is the VRFB and iron-chromium systems. Hybrid RFBs deposit at least one chemical species as a solid during the charge cycle, therefore preventing the complete separation of power and energy characteristics (Parsons, 2017). Examples of a hybrid RFB is the Zn-Br RFB and the Zn-Fe RFB. Examples of electrolytes for RFBs include Hydrochloric Acid and Sulphuric Acid, which are considered as dangerous goods in terms of the 2014 NEMA EIA Regulations (as amended), noting that the related activities are only triggered during the maintenance thereof when electrolyte is replaced (which typically occurs very infrequently).

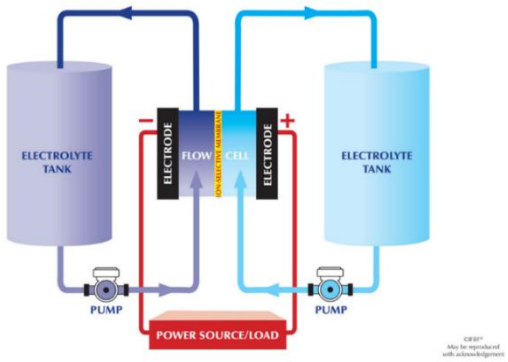

Figure B.4: Schematic diagram of a typical Redox Flow Battery (Source: International Flow Battery Forum)

Following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has accordingly been submitted to the DFFE with the Final BA Report. The specific technology, or combination of technologies, to be implemented from these authorised alternatives (should authorisation be granted) will only be determined during the Engineering, Procurement and

[15] Energy Storage News (2025). Large-scale hybrid lithium-sodium-ion BESS comes online in China. https://www.energy-storage.news/large-scale-hybrid-lithium-sodium-ion-bess-comes-online-in-china/ [online]. Accessed May 2025.

[16] Bai, H. and Song, Z. (2023). Lithium-ion battery, sodium-ion battery, or redox-flow battery: A comprehensive comparison in renewable energy systems. Journal of Power Sources, 580 (2023) 233426. https://doi.org/10.1016/j.jpowsour.2023.233426.

[17] Wanison, R., Syahputra, W. N. H., Kammuang-lue, N., Sakulchangsatjatai, P., Chaichana, C., Uma Shankar, V., Suttakul, P., Mona, Y. (2024). Engineering aspects of sodium-ion battery: An alternative energy device for Lithium-ion batteries. Journal of Energy Storage, 100 (2024) 113497. https://doi.org/10.1016/j.est.2024.113497.

Construction (EPC) procurement phase. It is likely that new technologies will emerge in the time period it takes to complete the detailed design phase. Many factors will be taken into account including: environmental impact, availability, safety, performance and local content, when the technology choices are made.

The BESS will likely be pre-assembled and delivered to site for placement as per specifications of the supplier. It is proposed that the BESS would be housed in containers, with an associated operational, safety and control infrastructure. The BESS will be a sealed unit and will remain sealed during operations. The BESS will be located adjacent to the on-site substation.

The supplier of the BESS will be confirmed during the detailed design; however the associated impacts and management measures have been captured in Section J of this BA Report. A high-level Safety, Health and Environmental (SHE) Risk Assessment for the development of BESS at the proposed project site is included in Appendix F.10 of this BA Report. The potential risks associated with the BESS technologies being considered for this project as well as the associated mitigation measures have been included in the EMPr (i.e., Appendix H of this BA Report).

B.2.6 Stormwater Channels and Water Pipelines

The following design principles are proposed to manage stormwater overland flow and mitigate erosion:

- The area where the solar panels will be installed will not be fully cleared of vegetation. The vegetation will only be trimmed using manual mechanisms (not chemical treatment), and the panels will be installed on steel supporting structures above the height of the vegetation;
- The internal roads within the PV facility are proposed to be constructed level with the natural ground level to prevent channelization of the surface water. This will also prevent concentrated surface runoff erosion;
- For scattered small ridges that have localized steeper gradients it is proposed that localized storm water cut-off channels be implemented above the areas only when evidence of erosion is observed at the natural state (prior to construction);
- Run-off needs to be managed and controlled to the natural riverbed with suitable lining and gabion structures; and
- At loading areas and building structures, allowance will be made to minimize any erosion that might occur. This can be achieved by placing vegetated grass blocks on the verges of these hardened areas to limit flow velocity and to assist with the recharge of the water table.

Therefore, the existing rainfall and storm water runoff characteristics will not be changed with the construction should the proposed design principles be implemented. The solar panels will not replace the vegetated area, and thus storm water runoff, is not increased due to the proposed PV development. Water from channels created by storm water infrastructure is unlikely to contain any chemicals or hazardous substances and will be released into the surrounding environment based on the natural drainage contours.

Details of storm water management are to be confirmed once the EPC contractor has been selected and the design is finalised. Where necessary, a detailed Storm Water Management Plan (SWMP) would need to be developed during the detailed design phase (post EA, should such authorisation be granted) and to be implemented during all phases of the project. Recommendations for the management of stormwater have been included in the EMPrs for the proposed projects, as relevant (included in and Appendix H of this BA Report).

B.2.7 Panel Maintenance and Cleaning Area

During the O&M phase, the accumulation of dust on solar panels generally negatively influences the productivity of solar facilities. As such the panels require regular cleaning. It is proposed that panel cleaning will take place quarterly; however, this may be revised should the site conditions warrant more frequent cleaning. A dedicated panel maintenance and cleaning area will be required on site during the O&M phase.

B.3 Project Co-ordinates

The proposed Megora PV 1A project will take place on the farm portion indicated in Section A.1 above. The co-ordinates of the boundary points of the project PV site are detailed in in Table B.2. The start, middle and end points of the access roads and the boundary/route points for the associated infrastructure are detailed in Table B.3 and Table B.4 respectively:

Table B.2: Co-ordinate points along the boundary of PV facility and associated infrastructure

Project component	Point	Decimal degrees		Degrees, minutes, seconds	
		Latitude (South)	Longitude (East)	Latitude (South)	Longitude (East)
PV Area	1	-31,77341307	23,73735666	31° 46' 24.29" S	023° 44' 14.48" E
	2	-31,77335723	23,74117092	31° 46' 24.09" S	023° 44' 28.22" E
	3	-31,77287541	23,74398625	31° 46' 22.35" S	023° 44' 38.35" E
	4	-31,77328872	23,74478366	31° 46' 23.84" S	023° 44' 41.22" E
	5	-31,77544057	23,74497317	31° 46' 31.59" S	023° 44' 41.9" E
	6	-31,77688221	23,74528649	31° 46' 36.78" S	023° 44' 43.03" E
	7	-31,77807651	23,74666662	31° 46' 41.08" S	023° 44' 48.0" E
	8	-31,77844752	23,74628059	31° 46' 42.41" S	023° 44' 46.61" E
	9	-31,77842288	23,74451919	31° 46' 42.32" S	023° 44' 40.27" E
	10	-31,77937948	23,74336435	31° 46' 45.77" S	023° 44' 36.11" E
	11	-31,78181425	23,73356136	31° 46' 54.53" S	023° 44' 0.82" E
	12	-31,78293735	23,7235678	31° 46' 58.57" S	023° 43' 24.84" E
	13	-31,78024293	23,71838622	31° 46' 48.87" S	023° 43' 6.19" E
	14	-31,77780586	23,7181485	31° 46' 40.1" S	023° 43' 5.33" E
	15	-31,7746184	23,72924269	31° 46' 28.63" S	023° 43' 45.27" E

Table B.3: Coordinates of the start, middle and end points of the proposed site access roads associated with the proposed PV project

Site access roads	Point	Decimal degrees		Degrees, minutes, seconds	
		Latitude (South)	Longitude (East)	Latitude (South)	Longitude (East)
Access road (Option A)	Start	-31,77299858	23,75931666	31° 46' 22.79" S	023° 45' 33.54" E
	Mid	-31,77117943	23,75275787	31° 46' 16.25" S	023° 45' 9.93" E
	End	-31,77332031	23,7464292	31° 46' 23.95" S	023° 44' 47.15" E
Access road (Option B)	Start	-31,80179342	23,73700602	31° 48' 6.46" S	023° 44' 13.22" E
	Mid	-31,78220906	23,71513838	31° 46' 55.95" S	023° 42' 54.5" E
	End	-31,7737802	23,74558173	31° 46' 25.61" S	023° 44' 44.09" E

Table B.4: Coordinates of the boundary/route points of the associated infrastructure

Project component	Point	Decimal degrees		Degrees, minutes, seconds	
		Latitude (South)	Longitude (East)	Latitude (South)	Longitude (East)
Substation	1	-31,77537374	23,74502509	31° 46' 31.35" S	023° 44' 42.09" E
	2	-31,77443932	23,7457945	31° 46' 27.98" S	023° 44' 44.86" E
	3	-31,77533046	23,74678173	31° 46' 31.19" S	023° 44' 48.41" E
	4	-31,77610986	23,74599772	31° 46' 34.0" S	023° 44' 45.59" E
BESS	1	-31,77397219	23,74819065	31° 46' 26.3" S	023° 44' 53.49" E
	2	-31,77533346	23,74678848	31° 46' 31.2" S	023° 44' 48.44" E
	3	-31,77453461	23,74591378	31° 46' 28.32" S	023° 44' 45.29" E
	4	-31,77310973	23,74730126	31° 46' 23.2" S	023° 44' 50.28" E
O&M Building	1	-31,77311878	23,74620527	31° 46' 23.23" S	023° 44' 46.34" E
	2	-31,77364782	23,74676516	31° 46' 25.13" S	023° 44' 48.35" E
	3	-31,77452584	23,74590651	31° 46' 28.29" S	023° 44' 45.26" E
	4	-31,77400994	23,74533726	31° 46' 26.44" S	023° 44' 43.21" E
Guard House	1	-31,77251797	23,7498076	31° 46' 21.06" S	023° 44' 59.31" E
	2	-31,7728034	23,75003253	31° 46' 22.09" S	023° 45' 0.12" E
	3	-31,77302035	23,74969118	31° 46' 22.87" S	023° 44' 58.89" E
	4	-31,7727237	23,74947031	31° 46' 21.81" S	023° 44' 58.09" E
Laydown area (east)	1	-31,77406736	23,74811839	31° 46' 26.64" S	023° 44' 53.23" E
	2	-31,77496517	23,74908386	31° 46' 29.87" S	023° 44' 56.7" E
	3	-31,77622015	23,74771148	31° 46' 34.39" S	023° 44' 51.76" E
	4	-31,77537274	23,74677643	31° 46' 31.34" S	023° 44' 48.4" E
Laydown area (west)	1	-31,77801343	23,71815267	31° 46' 40.85" S	023° 43' 5.35" E
	2	-31,78020668	23,71835358	31° 46' 48.74" S	023° 43' 6.07" E
	3	-31,77910803	23,71624392	31° 46' 44.79" S	023° 42' 58.48" E

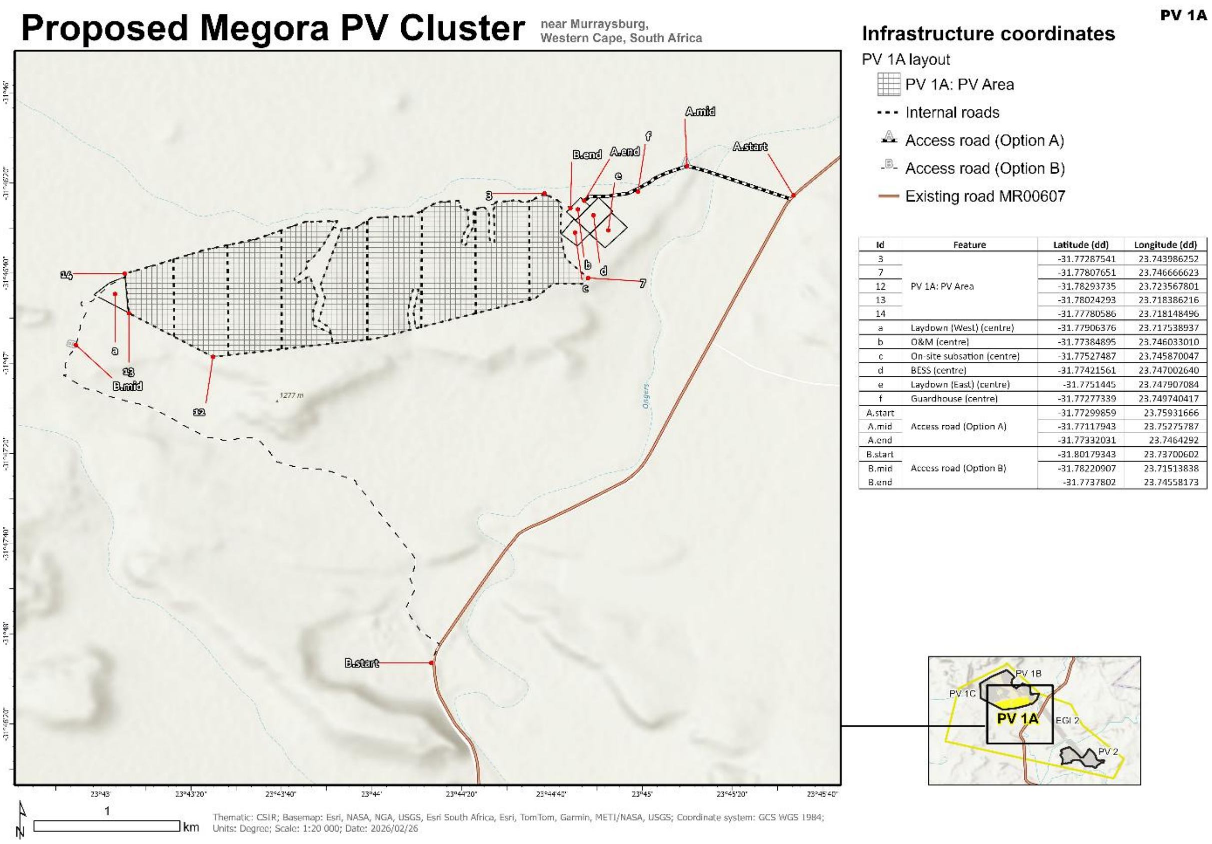

Figure B.5: Map showing the coordinate points of the proposed Megora PV 1A coordinate points.

B.4 Site Access and Transportation of Project Components

B.4.1 <u>Ports of entry</u>

Various renewable energy components and equipment are available within South Africa, particularly at the country's major economic centres of Johannesburg, Durban, Gqeberha and Cape Town. However, due to the scale, logistics and technological requirements of industrial renewable energy developments, it is common to import many renewable energy components.

The closest port of entry is the Port of Ngqura in the Nelson Mandela Bay Metropolis which is located ± 380 km south of the proposed facility if travelling via the R75 and R63. The Port of Ngqura is one of only two ports in South Africa that are not encompassed by a city (the other being the Port of Saldanha), making initial mobility more efficient. The Port of Ngqura is also known as Coega Harbour and located in the Eastern Cape and is deepest container port in South Africa.

Alternative ports of entry are the Port of Saldanha Bay (± 691 km west of the proposed facility), Port of Richards Bay (± 1 264 km north-east of the proposed facility) or Port of Durban (± 1 100 km north-east of the proposed facility), which are further away. The Port of Cape Town has not been included as there are height limitations for abnormal loads at several bridges when leaving the port, however a feasible route from the Cape Town area is provided in the detailed Traffic Impact Assessment to accommodate the option of sourcing materials and components locally (Appendix F.9 of the BA Report).

B.4.2 Internal Service Roads

Internal roads will also be constructed within the footprint of the PV facility. The internal roads are expected to be composed of gravel and extend approximately 6 m wide. The total internal road length is estimated at approximately 20 km but may vary slightly, depending on the final design.

B.4.3 External Site Access roads

The Traffic Impact Assessment (TIA; Appendix F.9 of the BA Report) conveys that the existing road network surrounding the proposed development is well established and provides an acceptable degree of mobility and access but require minor upgrades to achieve the required functionality. The mobility roads join the major centres and towns with each other, while access roads provide access roads from smaller nodes and individual properties than mobility roads.

The proposed facilities can be accessed using public roads R63 and MR00607. The MR00607 will lead construction vehicles from the R63 to the site.

Two site access roads options have been proposed for the Megora PV 1A site, both of which are being put forward for EA:

- Option A: 7.1 km from the MR00607 from south of the site:
    - This access road connects with the MR00607 at an existing farm road and will largely follow existing farm roads to the site. It is anticipated that the entire length of the access road will need upgrading and/or newly constructed road sections that can accommodate safely the largest construction/haulage vehicle.
- Option B: 1.3 km from the MR00607 entering from the north of the site:
    - This access road is also located on the MR00607 and would follow an existing farm jeep track. This road needs to be newly constructed. The TIA highlighted that this road would need to cross a river bed with a short steep incline. The detail design of this road will need to show that the new road will be constructed taking into account that the gradient should not be more than 8%.

Construction vehicles would turn from the MR00607 into the proposed authorised access road (either Option A or Option B described above). For both options, turn-offs would need to be constructed in line with the Geometric guidelines of the Municipality's Road Authority.

Figure B.6: Start of the MR00607 road in Murraysburg, showing the typical condition of the road (Source: CSIR, 2026)

All intersections in the proposed access road network are non-signalised. As the MR00607 is a public road, the TIA has advised to erect temporary road signage in accordance with the South African Road Traffic Signs Manual (SARTSM) along the section of the MR00607 passing the site access(es) to alert other drivers of heavy vehicles entering the road from site roads. Furthermore, as construction vehicles will need to turn from the R63 onto the MR00607 at Murraysburg, it is important to provide temporary signage in the vicinity of the intersection as well.

Road R63 is an asphalt trunk road spanning three provinces (Eastern Cape, Western Cape and Northern Cape) which is maintained by SANRAL. It carries the Road Classification and Access Management (RCAM) classification R2 rural major arterials and is lightly trafficked in the vicinity of the proposed project. The road is in good condition and is suitable for the requirements of the proposed development. Road R63 provides access to MR00607.

Road MR00607 is a gravel main road which runs between Murraysburg in the Western Cape and Richmond in the Northern Cape. It is overseen by the respective provincial road authorities and carries the RCAM classification of R4 rural collector road. The road features two narrow river bridges with a clear width of approximately 3.8 m. The TIA recommends that the existing bridge on the MR00607 (indicated in Figure B.5) be inspected by the appointed haulage company. If it is assumed, as a worst case that the haulage company finds the existing bridge unsuitable, then the bridge will need to be strengthened/upgraded.

Figure B.7: Aerial View of Bridge located on MR00607 (Source: iWink, 2025)

Exact specifications of the widening and upgrading of the unnamed farm gravel road will be confirmed during the detailed design phase. The widening and upgrading also depends on the expected vehicular volumes and type of vehicles that would use the road. This will determine the specific road geometry regarding width, road foundational structure (layer thicknesses), etc. Typically for PV projects, the roads classified to accommodate larger vehicular traffic and loads would be upgraded or upsized as follows:

- Wider gravel wearing coarse road widths (ranging up to 8 m) and a thicker dimension (up to 200 mm thick);
- Dependent on the *in-situ* soil properties, the edge constraints on either side of the gravel wearing coarse might be required in the form of either kerbing or a compacted shoulder to protect the road surface;
- The lower road foundational layers would follow the widened wearing coarse dimensions;
- Additional foundational layers would usually be required in the form and thickness of 150 mm selected quality subgrade materials that would have to attain specific engineering qualities; and
- There might also be specific surface water infrastructure required to manage surface water runoff in the form of side channelling, conduits crossing the road structure or additional earthwork shaping.

Such upgrading and widening have been accommodated as best as possible, for in the relevant listed activities applicable to the proposed project. Refer to Section E of this BA Report. A separate Environmental Assessment Process will be required if any additional road upgrades trigger listed activities in terms of the 2014 NEMA EIA Regulations (as amended).

B.4.4 Traffic Generation

As noted above, in terms of traffic generation, a TIA, as technical input for this BA, has been commissioned and included in Appendix F.9 of this BA Report.

The types of materials and equipment that will need to be transported to site during the construction phase include the following:

- Building materials will be transported by single-unit trucks within the road freight limitations of South Africa.
- Transformers and switch gears will be transported with the following abnormal load dimensions; width: 4.5 m, length: 27 m and height: 4.5 m on double-axle trucks within the road freight limitations of South Africa.
- Workers from the surrounding area will be transported by taxi/bus/shuttle or private car.
- Transformers will be transported by abnormal load trucks with the following dimensions: width: 13 m, length: 4.0 m and height: 4.5 m for which a permit will need to be applied for in terms of Section 81 of the National Road Traffic Act and authorisation needs to be obtained from the relevant road authorities to modify the road reserve to accommodate turning movements at intersections.

It is anticipated that the following vehicles will access the site during construction:

- Conventional trucks within the freight limitations to transport building material to the site;
- Container trucks (40ft) transporting solar modules, frames, and the inverter, which are within freight limitations;
- Flatbed trucks transporting solar modules and frames, which are within the freight limitations;
- Light Differential Vehicle (LDV) type vehicles transporting workers from surrounding areas to site;
- Drilling machines and other required construction machinery being transported by conventional trucks or via self-drive to site; and the
- Transformers and mobile cranes will be transported as abnormal loads.

For the calculation of trips during the construction phase, the TIA calculated approximately 20 daily trips for the transport of panels to the site. The maximum **daily staff trips and construction vehicle trips** of transportation of materials were calculated to be **20 and 220**, respectively, during the peak of construction. During the operation period the TIA calculated approximately 12 peak daily trips. The decommissioning phase will generate similar trips as the construction phase.

Refer to the TIA included Appendix F.9 of this BA Report for a complete description of the assumptions used in the trip calculations noted above.

B.5 Service Provision

B.5.1 <u>Water Usage</u>

During the construction phase of the proposed project, up to 30 000 m^3 of water will be required per annum. Water will be required for human consumption and construction activities. This is also classified as potable water and should be of a reputable source and conform to SANS quality standards. The decommissioning phase is also expected to result in the same water usage requirements.

During the operational phase of the proposed project, it is estimated that the panel washing process, and human consumption as well as other operational phase activities will require up to 8 000 m^3 of water per year. The water for panel washing does not need to meet the same quality standards as that required for potable water, however the water should be tested to ensure that it does not negatively impact on the mechanical equipment. Potable water is not available from an existing municipal infrastructure system and therefore needs to be sourced and imported and safely stored on site. The low operational annual figure is based on recovery of 50% or more of the panel washing water. The developer recognises the need for water saving measures and recycling of panel washing water is planned. This method uses a mobile filtration de-ioniser, particulate filter and no soaps.

Water required for the construction, operational and decommissioning phases for the proposed project will preferably be sourced from boreholes on site, which will be subject to complete geohydrological testing and the necessary water use authorisation obtained (as applicable). The location of existing boreholes on the farm portions which are affected by the proposed Megora Solar PV Cluster (i.e., Megora PV 1A-C and PV 2) and surrounding areas are indicated in the Geohydrology Assessment (Appendix F.11 of the BA Report).

The Geohydrology Assessment assessed the distribution of boreholes across the proposed Megora PV 1A-C area in relation to the farm portions with special reference to the allowable General Authorisation (GA) volumes for each of the constituent farm portion. The hydrocensus conducted as part of this assessment confirmed there are several boreholes on site that represent potentially viable sources of groundwater for the development of Megora PV 1A. While the peak water demand could technically be met by the affected farm portion alone, the assessment recommends using multiple boreholes across both the affected and neighbouring farm portions. This approach would reduce the risk of supply constraints, particularly given the area's history of drought and its reliance on groundwater for livestock and domestic use.

Temporary High-Density Polyethylene water pipelines may need to be constructed to transfer groundwater from existing boreholes or they may be transported by trucks from the boreholes to the site. In the case of pipelines, these will most likely be buried should the same water sources be used during the operational phase. This will be undertaken as a separate process, once more detailed information becomes available, outside of the current Application for EA for the proposed project and associated infrastructure

As a second option and should the groundwater option not be realised to the extent required, water will be sourced from the Beaufort West Local Municipality. The Project Applicant will consult with the Local Municipality and specific arrangements for water to either be trucked in or otherwise made available for collection at their Water Treatment Plant via a metered standpipe. These arrangements will be agreed on in a Service Level Agreement (SLA) after the municipality has ensured that they have adequate resources/ water supply.

Should the sources discussed above not be viable, the Project Applicant will investigate into a third-party water supplier or other private services. Storage tanks will also be allowed for at the onsite substation control room, as well as the O&M Building but this is localised small tanks for household use.

B.5.2 Sewage or Liquid Effluent

The proposed projects will require sewage services during the construction, operational and decommissioning phase. Low volumes of sewage or liquid effluent are estimated. More specifically, it is estimated that approximately 55 m^3 per month will be generated during the construction phase. During the operational phase, it is estimated that 3 m^3 per month will be generated.

Liquid effluent will be limited to the ablution facilities during the construction and operational phases. Portable sanitation facilities (i.e., chemical toilets) will be used during the construction phase, which will be regularly serviced and emptied by a suitable (private) contractor on a regular basis. Permanent ablution facilities may be installed during the operational phase. The effluent will be stored on site in watertight concrete structures (conservancy tanks) and thereafter transported to and disposed of at the Local Municipal sewerage treatment works.

B.5.3 Solid Waste Generation

The quantity of waste generated will depend on the construction phase, which is estimated to up to 24 months. However, it is estimated that approximately 12 m^3 of waste will be generated every month during the construction phase. During the construction phase, the following waste materials are expected:

- Packaging material, such as the cardboard, plastic and wooden packaging and off-cuts;
- Hazardous waste from empty tins, oils, soil containing oil and diesel (in the event of spills), and chemicals;
- Building rubble, discarded bricks, wood and concrete;
- Domestic waste generated by personnel; and
- Vegetation waste generated from the clearing of vegetation.

Solid waste will be managed via the EMPr during the construction and operational phases (Appendix H of the BA Report), which incorporates waste management principles. During the construction phase, general solid waste will be collected and temporarily stockpiled in skips in a designated area on site and thereafter removed, emptied into trucks, and disposed at a registered waste disposal facility on a monthly basis by an approved waste disposal Contractor (i.e., a suitable Contractor) or the municipality. In addition, a skip will be placed on site and any damaged or broken PV panels (i.e., those not returned to the supplier) will be stored in this skip. A specialist waste management company will be commissioned to manage and dispose of this waste.

Any hazardous waste (such as contaminated soil as a result of spillages) will be temporarily stockpiled (for less than 90 days) in a designated area on site (i.e., placed in leak-proof storage skips), and thereafter removed off site by a suitable service provider for safe disposal at a registered hazardous waste disposal facility.

Waste disposal slips and waybills will be obtained for the collection and disposal of the general and hazardous waste. These disposal slips (i.e., safe disposal certificates) will be kept on file for auditing purposes as proof of disposal. The waste disposal facility selected will be suitable and able to receive the specified waste stream (i.e., hazardous waste will only be disposed of at a registered/licenced waste disposal facility). The details of the disposal facility will be finalised during the contracting process, prior to the commencement of construction. Where possible, recycling and re-use of material will be encouraged. Waste management is further discussed in the EMPr (Appendix H of this BA Report).

During the operational phase after construction, the facility will produce minor amounts of general waste (as a result of the offices). It is estimated that approximately 2.5 m^3 of waste will be generated every month during the operational phase. Waste management is discussed in the EMPr (Appendix H of this BA Report).

B.5.4 Electricity Requirements

In terms of electricity supply for the construction, operational and decommissioning phases of the proposed development, the developer will make use of municipal and Eskom services and generators on site. The operational electrical requirements would be nominal.

B.6 Socio-Economic

B.6.1 Employment During Construction

During the construction phase, both skilled and unskilled temporary employment opportunities will be created. It is difficult to specify the actual number of employment opportunities that will be created at this stage; however, employment opportunities range between 180 - 224. The skills breakdown of employment opportunities is estimated as 170 - 205 low-skilled, 6 - 12 medium skilled and 4 - 7 high skilled personnel. It should be noted that the employment opportunities provided in this report are estimates and is dependent on the final engineering design and the REIPPPP RFP provisions at that point in time or another suitable tender process.

B.6.2 Employment during Operations

With regards to direct employment during the operation phase, it is anticipated that the proposed development will create in the region of 27 - 39 full time employment opportunities during the 20 to 25 year operational phase. The skills breakdown of employment opportunities is estimated as 22 - 30 low-skilled, 2 - 4 medium skilled and 3 - 5 high skilled personnel. These unskilled jobs will be linked to services such as panel cleaning, maintenance, and security.

B.6.3 Socio-Economic Investment and Development

The Project Applicant will ultimately own the project, if successful, and will compile an Economic Development Plan which will be compliant with REIPPPP requirements or another suitable tender process and will *inter alia* set out to achieve the following:

- Create a local community trust or similar (as required by REIPPPP) which has an equity share in the project life to benefit historically disadvantaged communities;
- Initiate a skills development and training strategy to facilitate future employment from the local community;
- Give preference to local suppliers for the construction of the facility; and
- Support local community upliftment projects and entrepreneurship through socio-economic and enterprise development initiatives.

B.7 Overview of the Project Development Cycle

The following section is applicable to the proposed Megora PV 1A project. The project can be divided into the following main phases:

- Detailed Planning and Design Phase;
- Construction Phase;
- Operational Phase; and
- Decommissioning Phase.

Each activity undertaken as part of the above phases may have environmental impacts and, where applicable, has therefore been assessed by the specialist studies (summarised in Section J and full studies included Appendix F of this BA Report).

B.7.1 Planning and Design Phase

The project layout, including the siting of building infrastructure and the proposed internal road network was refined through an iterative process during the pre-application phase. This process included high-level environmental screening, specialist site visits (where needed), and informed the subsequent fine-scale, detailed assessment undertaken during the BA phase. Section C of this BA Report provides a detailed description of the iterative process followed to identify the preferred site, development footprint, and project layout. The project layout was informed by the findings of the specialist assessments. The specialists have commented on the project layout, and confirmed that the layout is acceptable, there are no fatal flaws and that all no-go areas have been avoided by the main infrastructure, and that linear infrastructure such as access roads are permitted to traverse very high and high sensitivity areas as adequate mitigation measures have been recommended. The layout maps are included in Section J and Appendix C of this BA Report, as well as the EMPrs.

B.7.2 <u>Construction Phase</u>

The construction phase will take place subsequent to the issuing of EA from the DFFE and a successful bid in terms of the REIPPPP (i.e., the issuing of a Power Purchase Agreement (PPA) from the relevant department). This will be followed by planning and design for the construction phase. The construction phase for the proposed project is expected to extend up to 24 months.

The main activities that will form part of the construction phase of the PV facility project are:

- Removal of vegetation for the proposed infrastructure, where necessary Note that the vegetation is planned to be trimmed manually (not with the use of chemicals) within the PV array area (and not removed completely. Note that the vegetation is planned to be trimmed manually (not with the use of chemicals) within the PV array area (and not removed completely);
- Excavations for infrastructure and associated infrastructure;
- Establishment of a temporary laydown area for storage of construction equipment and machinery;
- Establishment of parking areas, offices, workshop, waste area, hazardous materials store, access roads etc.;
- Erection of a perimeter security fence;
- Stockpiling of topsoil and cleared vegetation, where necessary;
- Creation of employment opportunities;
- Transportation of material and equipment to site, and personnel to and from site; and
- Construction of the solar field, and additional infrastructure.

All efforts will be made to ensure that construction work will be undertaken in compliance with local, provincial and national legislation, local and international best practice, as well as the EMPr that has been compiled and included in Appendix H of the BA Report. An independent Environmental Control Officer (ECO) will be appointed during the construction phase and will monitor compliance with the recommendations and conditions of the EMPr and EA, respectively.

B.7.3 <u>Operational Phase</u>

The following activities will occur during the operational phase of the PV facility project:

- The generation of electricity from the proposed solar facility;
- Storage of energy generated by the proposed solar facility in electrochemical batteries; and
- Maintenance of the solar field and associated infrastructure.

During the life span of the proposed project (approximately 20 years), on-going maintenance will be required on a scheduled basis to ensure the continued optimal functioning of the infrastructure. In general, maintenance on the structures will involve visual inspection, and only equipment that fails will be replaced in manner similar that of construction activities. The EMPrs (Appendix H of this BA Report) includes the requirement for method statements to be compiled prior to the operational phase to describe the manner in which maintenance will be undertaken to ensure enviro impacts are minimised

B.7.4 <u>Decommissioning Phase</u>

At the end of the operational phase, the solar facility may be decommissioned, or may be repowered i.e., redesigned and refitted so as to operate for a longer period. The main aim of decommissioning is to return the land to its original, pre-construction condition. Should the unlikely need for decommissioning arise i.e., if the facility becomes outdated or the land needs to be used for other purposes, the decommissioning procedures will be undertaken in line with the approved EMPr and the site will be rehabilitated and returned to its pre-construction state insofar as possible.

Various components of the proposed project, which are to be decommissioned will be reused, recycled, or disposed of in accordance with the relevant regulatory requirements. The decommissioning phase of the project is also expected to create temporary skilled and unskilled employment opportunities.

SECTION C: ALTERNATIVES

C.1 Description of Alternatives

This section discusses the alternatives that have been considered as part of the BA Process. Sections 24(4) (b) (i) and 24(4A) of the NEMA require an Environmental Assessment to include investigation and assessment of impacts associated with alternatives to the proposed project. In addition, Section 24O (1)(b)(iv) also requires that the Competent Authority, when considering an application for EA, takes into account "where appropriate, any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment".

Therefore, the assessment of alternatives should, as a minimum, include the following:

- The consideration of the no-go alternative as a baseline scenario;
- A comparison of the reasonable and feasible alternatives; and
- Provide a methodology for the elimination of an alternative.

The 2014 NEMA EIA Regulations (as amended) defines alternatives, in relation to a proposed activity, as "different means of meeting the general purpose and requirements of the activity, which may include alternatives to the:

- property on which or location where the activity is proposed to be undertaken;
- type of activity to be undertaken;
- design or layout of the activity;
- technology to be used in the activity;
- operational aspects of the activity; or
- the option of not implementing the activity".

Regulation 2 (b) of Appendix 1 states that BA process must identify the alternatives considered, including the activity, location, and technology alternatives.

Regulation 2 (e) of Appendix 1 of the 2014 NEMA EIA Regulations (as amended) states that one of the objectives of the BA Process is to, through a consultative process, and through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to (i) identify and motivate a preferred site, activity and technology alternative; (ii) identify suitable measures to avoid, manage or mitigate identified impacts; and (iii) identify residual risks that need to be managed and monitored.

This BA report has provided a full description of the process followed to reach the proposed preferred activity and technology alternative, site and location of the development footprint within the site, including details of the alternatives considered and the outcome of the site selection matrix.

C.1.1 No-go Alternative

The no-go alternative assumes that the proposed project will not go ahead i.e., it is the option of not constructing the proposed solar PV facility and associated infrastructure. This alternative would result in no environmental impacts on the site or surrounding local area as a result of the proposed project. It provides the baseline against which other alternatives are compared.

The following implications will occur if the "no-go" alternative is implemented (i.e., the proposed project does not proceed):

- No benefits will be derived from the implementation of an additional land-use;
- No additional power will be generated or supplied through means of renewable energy resources by this project at this location;
- The "no go" alternative will not contribute to and assist the government in achieving its renewable energy target of 26 630 MW total installed capacity by 2030 (for Wind, Solar PV and Concentrated Solar Power) (IRP, 2019);
- Electricity generation will remain constant (i.e., no renewable energy generation will occur on the site for the proposed project) and as a result, the local economy in terms of surrounding communities and towns within the local municipality will not be diversified, while existing electricity generation sources nationally will age and degrade over time, with maintenance requirements potentially leading to outages;
- There will be lost opportunity for skills transfer and education/training of local communities;
- The positive socio-economic impacts likely to result from the project such as increased local spending and the creation of local employment opportunities will not be realised;
- There will be no opportunity for additional employment in an area, where job creation is identified as a key priority;
- The local economic benefits associated with the REIPPPP will not be realised, and socio-economic contribution payments into the local community trust will not be realised;
- The development of solar PV facilities instead of coal fired power stations can directly contribute to South Africa's response to climate mitigation; and
- Wind and solar energy are the cheapest source of electricity in South Africa. The development of the proposed project can contribute to the competitive nature of the REIPPPP to drive prices down even further to ensure that South Africans have access to affordable yet clean electricity.

Converse to the above, the following benefits could occur if the "no-go" alternative is implemented:

- Only the agricultural land use will remain;
- No vegetation or protected species (flora) will be removed or disturbed during the development of the proposed project;
- No aquatic resources will be impacted upon during the construction and operation of the proposed project;
- No destruction of habitat will occur;
- No change to the current landscape will occur (i.e. the visual character of the area will remain unchanged);
- No avifaunal impacts will occur due to the establishment of the project;
- No additional traffic will be generated;
- There will be no changes to the sense of place; and
- No additional water use will be required.

Table C.1: Summary "No-go" Alternative Considerations from Specialist Assessments

Specialist Study	"No-go" Alternative Assessment
Agricultural Compliance Statement	If the "no-go" alternative is implemented; no agricultural impacts would occur. Even though the impacted land has insufficient agricultural production potential for cropping, and the impact of the development is low, its negative agricultural impact is marginally more significant than that of the "no-go" alternative, and so if assessed purely from an agricultural impact perspective,

Specialist Study	"No-go" Alternative Assessment
	the "no-go"' alternative is the preferred alternative. However, the "no-go"' alternative would prevent the proposed development from contributing to the environmental, social, and economic benefits associated with the development of renewable energy in South Africa.
Visual Impact Assessment	If the "no-go" alternative is implemented, the area would thus retain its visual character and sense of place, and no additional visual impacts would be experienced by any locally occurring receptors.
Heritage Impact Assessment	If the proposed project is not constructed, there will continue to be a generally neutral impact on heritage resources arising from the historical use of the land for farming. Although the heritage impacts likely to arise from the PV project will be greater than the existing, negligible, agriculture-related impacts, the loss of socio-economic benefits is more significant and suggests that the "'no-go'' option is less desirable.
Palaeontology	If the project is not implemented, the study area will remain undisturbed, resulting in a neutral impact on palaeontological heritage; however, the "no-go'' alternative would also dismiss any associated socio-economic benefits.
Terrestrial Biodiversity and Species Impact Assessment	If the project is not implemented, the existing environmental conditions, such as vegetation communities, faunal habitat, and ecosystem processes, would remain largely unchanged, apart from those influenced by natural dynamics or ongoing land use practices in the area (e.g., grazing, cultivation, or existing infrastructure). While the "'no-go'' alternative would prevent any direct loss or disturbance of biodiversity features associated with the proposed development, it would also mean that the potential socio-economic benefits linked to the project, such as renewable energy generation, job creation, and local investment, would not be realised.
Aquatic Biodiversity and Species Impact Assessment	The baseline assessment indicates that existing agricultural activities are having a negative impact on the watercourse condition of the study area. The assessment determined that the watercourse condition is in an existing largely modified state. It was noted that agricultural activities have cumulatively impacted on the status of the watercourses. Should the proposed project not be developed a continuous decline in the status and diversity of freshwater ecology associated with the study area are anticipated to occur.
Avifauna Impact Assessment	The ''no-go'' alternative is preferred from an avifaunal perspective, if the status quo of the property is maintained. The proposed development can be mitigated to result in acceptable impacts and is supported with the implementation of all recommended avoidance, minimisation and mitigation measures.
Socio-Economic Impact Assessment	The ''no-go'' alternative would result in:

Specialist Study	"No-go" Alternative Assessment
	• Neutral impacts on employment and incomes linked to project expenditure as this expenditure and resultant benefits would not occur. • Neutral impacts linked to funding of socio-economic development as this funding and resultant benefits would not occur. • Neutral social impacts associated primarily with the influx of people as there would be no influx. • Neutral impacts on surrounding landowners and communities as the risk factors associated with the project would be absent. • Neutral impacts on tourism as the risk factors associated with the project would be absent and resultant benefits would not occur. It is considered most likely that the positive impacts of the project would result in an overall net benefit with mitigation compared to the no-go alternative (status quo).
Geohydrology Assessment	If proposed project is not developed, these current land-use activities (i.e., grazing of livestock and minor crop fields) are expected to continue, serving as the baseline for comparison with other potential impacts. The farm portion where project is proposed do not currently utilize significant volumes of groundwater, with small-scale abstraction primarily for domestic and agricultural purposes. Therefore, the "no-go" alternative does not pose a risk to groundwater or aquifer depletion.
Geotechnical Assessment	If the proposed development does not go ahead, there will be no need for displacement and/or loss of topsoil in the area. However, to date, apart from the construction of farmhouses and the erection of boundary and subcamp fences for farming purposes; little disturbance of the subsoils and rocks in the area proposed for development has taken place. For this reason, the "no-go" alternative will not result in any significant change from the current displacement and/or loss of topsoil in the area based on activities currently taking place.
Traffic Assessment	The "no-go" alternative would result in there being no traffic impact on the surrounding network during the construction and decommissioning phases. However, this would also mean that there would be no socio-economic benefits to the surrounding communities, and it will not assist government in meeting its targets for renewable energy. Hence, the "no-go" alternative is not a preferred alternative.

As outlined in Section J of this report, the majority of the negative impacts identified as part of this assessment can be reduced to moderate or low significance with the implementation of mitigation measures. None of specialists found that the proposed project should not go ahead i.e., no fatal flaws were identified.

The “no-go” alternative means no addition of renewable energy, which means further reliance on fossil fuels that will continue to have a negative environmental impact. While the “no-go” alternative i.e. not developing the proposed project will not result in any negative environmental impacts in the area, it will also not have any positive community development or socio-economic benefits. In addition, it will not assist government in addressing climate change, reaching its set targets for renewable energy, nor will it assist in supplying the increasing electricity demand within the country. **Hence, the “no-go” alternative is not the preferred alternative, nor is it a reasonable and feasible alternative to be considered in this BA Process.**

C.1.2 Land-use Alternatives

At present the proposed site is zoned for agricultural land-use. The land-use on the site and immediate surrounds is mostly low intensity grazing but some crop production still occurs in the surrounding area. The land has a long-term grazing capacity of 22 hectares per large stock unit (DAFF, 2018).

The cropping potential of the site is limited by the combination of climate (arid climate with low moisture availability) and soil constraints (shallow, rocky soils) so that it is totally unsuitable for rain-fed crop production. Therefore, the site is not considered particularly preservation worthy as agricultural production land. There are small, isolated patches of irrigated cropland within the proximity of the site. However, these are all in low-lying areas, generally in flood plains adjacent to water courses and close to homesteads (i.e., areas that will not be impacted by the proposed development).

Land capability on the site ranges from Class 4 (Low–Very Low) to Class 7 (Low–Moderate), confirming that the only viable agricultural use is low carrying capacity grazing. The loss of land of this nature, of which there is no scarcity nationally, represents a negligible reduction in agricultural production potential, both for national food security and for the affected farm. As no viable cropland will be lost, the agricultural impact is assessed as Low and acceptable.

To achieve South Africa’s renewable energy generation targets, the use of agriculturally zoned land for renewable energy infrastructure is unavoidable. It is preferable for such development to occur in regions with inherently low agricultural potential, such as the proposed site, rather than in areas with higher and scarcer agricultural capability. Nationally, the most significant agricultural losses occur when high-yielding cropland is converted, while losses on low carrying capacity grazing land, such as the farm portion on which the development is being proposed, are of the least concern.

The importance of cropping potential is highlighted because the national threshold for prioritising agricultural land conservation is determined by the scarcity of arable land (only ~13% of South Africa’s surface area). Land capable of viable, sustainable crop production is considered above this threshold and should be conserved; land that cannot support viable cropping falls below the threshold and is a lower conservation priority. This threshold is legally formalised for solar developments in the Agricultural Protocol under the NEMA Specialist Protocols (GN R 320 of 2020).

In this case, the entire development footprint falls below this threshold due to its unsuitability for viable cropping. Therefore, the proposed development will result in minimal loss of future agricultural production potential and does not compromise national food security.

It is important to re-iterate that the economic benefits to the landowner associated with the proposed project are likely to be more significant than that of the current farming activities on site. The proposed development offers a land use with much higher income generating capacity than any viable agricultural land-use on the site. **Based on the above, the agricultural land-use is not a preferred alternative.**

Refer to Sections D and J of this BA Report for a summary of the PV Agriculture Compliance Statement, as well as Appendix F.1 for the complete report.

C.1.3 Type of Activity Alternatives

In terms of the type of activity, this relates to the generation of electricity from a renewable energy source, and in this particular case, from **solar resources**. The Project Developer focuses on solar and wind technologies and work with landowners, technology providers, regulators and investors to source and develop renewable energy projects. Therefore, the **generation of electricity from a renewable energy source** was the only activity considered by the Applicant and thus considered in this BA Process. **No other activity types were considered or deemed appropriate based on the expertise of the Applicant.**

C.1.4 Renewable Energy Alternatives

Where the “activity” is the generation of electricity from a renewable energy source, possible alternatives that could be considered on the project site include renewable energy technologies such as Hydro Energy, Biomass, and Wind Energy. **However, based on the preliminary investigations undertaken by the Project Applicant, no other renewable energy technologies are deemed to be appropriate for the site**. The unsuitability of other renewable energy developments for the site, as well as the potential risks and impacts of each, are discussed below.

C.1.4.1 Hydro Energy

The study area does not contain any large inland water bodies, which excludes the possibility of renewable energy from small- or large-scale hydro energy generation. In addition, the site location is identified as ‘Not suitable’ in terms of hydropower suitability (Figure C.4). Therefore, the implementation of a Hydro Energy Facility at the proposed site is not considered to be a reasonable and feasible alternative to be assessed as part of this BA Process.

C.1.4.2 Biomass Energy

The study area does not contain any abundant or sustainable supply of biomass. In addition, the site is located in an area with less than 5 000 t/a in terms of annual forestry biomass (Figure C.4). Therefore, the implementation of a Biomass Energy Facility at the proposed site is not considered to be a reasonable and feasible alternative to be assessed as part of this BA Process.

C.1.4.3 Solar Energy and Wind Energy

C.1.4.3.1 National Planning: IRP

The 2019 IRP was published in GG 42784, GN 1360 on 18 October 2019 for the period 2019 to 2030. Furthermore, the IRP was updated in 2023 (2023 Draft IRP) and released for public comment in January 2024. The 2025 IRP was gazetted for implementation in October 2025 in GG 53596, GN 6767.

As indicated in Figure C.1 for the projection to 2030 according to the 2019 IRP, coal made up approximately 43 % of the total installed capacity, whereas Wind and Solar PV respectively made up 23 % and 10 % (Table 5, Page 42 of the IRP 2019 published in GG 42784).

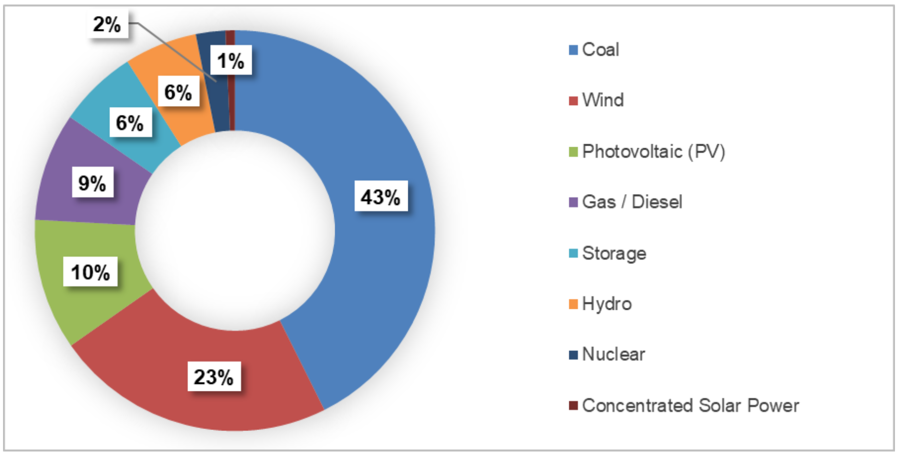

Figure C.1: Total Installed Capacity for 2030 (% of MW) in the IRP of 2019.

The 2019 IRP proposed to secure 26 630 MW of renewable energy capacity by 2030 (for Wind, Solar PV and CSP). This amount excludes Hydropower and Storage. Of this total, 1 474 MW of Solar PV, 1 980 MW of Wind and 300 MW of CSP is already installed capacity. In addition, of the 26 630 MW, approximately 814 MW of Solar PV, 1 362 of Wind and 300 MW of CSP is committed or already contracted capacity. Furthermore, of the 26 630 MW total, 6 000 MW is allocated to Solar PV, and 14 400 MW is allocated to wind as new additional capacity. Refer to Figure C.2 for additional information.

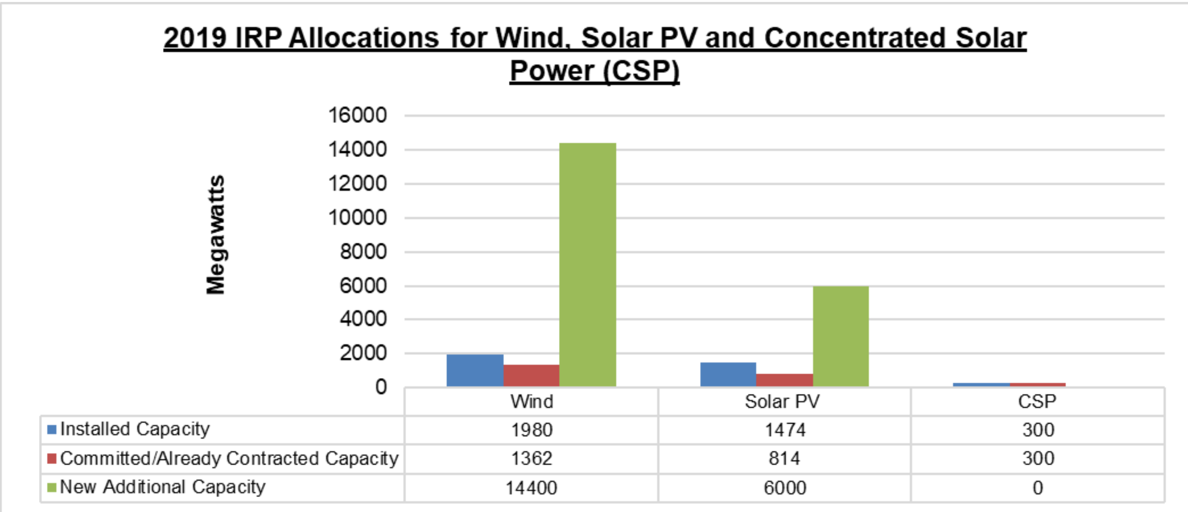

Figure C.2: 2019 IRP Allocations for Wind, Solar and Concentrated Solar Power in MW.

Based on the Proposed Balanced Plan for new generation capacity in the 2025 IRP, solar PV and wind energy have a respective current base of 3 646 MW and 5 344 MW at the end of 2025.The 2025 IRP proposes to secure 10 313 MW of Solar PV and 7 341 MW of Wind for the period 2026 to 2030; and 18 400 MW of Solar PV and 35 700 of Wind for the period 2031 to 2042. Refer to Figure C.3 for additional information.

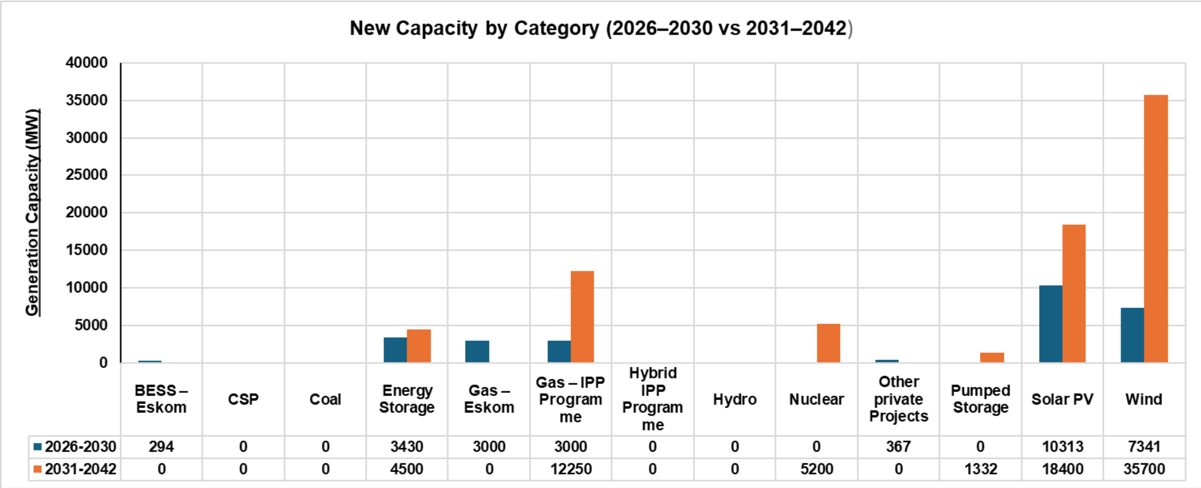

Figure C.3: 2025 IRP New Capacity Allocations for 2026-2030 and 2031 - 2042.

As part of the rollout of renewable energy in the country, the Department of Mineral Resources and Energy (DMRE) developed a bidding process for the procurement of a set amount (MW) of renewable energy in accordance with the IRP from IPPs. The REIPPPP was launched in 2011 to implement the vision of the IRP and it included several bidding rounds (called “Bidding Windows”). To date, Bidding Windows 1, 2, 3, 3.5, 4, 5, 6, and 7 have been announced.

On 18 August 2015, an additional procurement target of 6 300 MW to be generated from renewable energy sources was added to the REIPPPP for the years 2021 - 2025, as published in GN 733, GG 39111. Of this, the additional target allocated for solar PV was 2 200 MW.

On 28 October 2021, the Minister of Mineral Resources and Energy (DMRE, 2021a[18]) announced the Preferred Bidders of Bid Window 5 of the REIPPPP, which was released in April 2021. The aim was to procure a total of 2 600 MW (consisting of 1 600 MW from onshore wind and 1 000 MW from Solar PV). Approximately 102 Bids were submitted in August 2021. Twenty-five (25) Preferred Bidder Projects, totalling 2 583 MW, were selected (DMRE, 2021a). Of the 2 583 MW, approximately 1 608 MW and 975 MW will be respectively procured from 12 wind projects and 13 Solar PV projects (DMRE, 2022a[19]). In Bid Window 5, the Preferred Bidders provided an average tariff of 50 c/kWh for wind and of 43 c/kWh for solar PV. In Bid Window 6, the 5 Preferred Bidders, totalling 860 MW of solar PV, provided an average tariff of 49 c/kWh for solar PV (DMRE, 2022b[20]). This is a considerable reduction in tariff from Bid Window 4 in November 2015 where the tariff provided for wind and solar PV were both 78 c/kWh. This confirms the crucial role that renewable energy is playing in being the lowest cost energy alternative in South Africa, while supporting the decarbonisation of the power system and ensuring that electricity is cost-effective and sustainable.

[18] DMRE (2021a). Announcement by the Minister of Mineral Resources and Energy, the Honourable Gwede Mantashe 28 October 2021 Renewable Energy IPP Procurement Programme (REIPPPP) Bid Window 5 Announcement of Preferred Bidders. https://ipp-projects.co.za/PressCentre [online]. Accessed November 2021.

[19] DMRE (2022a). Media Statement by the DMRE: Signing of an additional three project agreements under the 5th Bid Window of the Renewable Energy Independent Power Producer Programme (REIPPPP BID WINDOW 5), dated 10 November 2022. https://ipp-projects.co.za/PressCentre [online]. Accessed November 2022.

20 DMRE (2022b). Media Statement by the DMRE: Signing of Preferred Bidder projects under the 5 the Bid Window, and announcement of Preferred Bidders under the 6th Bid Window of the REIPPPP, dated 8 December 2022. https://www.energy.gov.za/files/media/pr/2022/MediaStatement-REIPPPP-BW5-signing-08122022.pdf [online]. Accessed February 2023.

According to the IPP Office, in a presentation made at the Bid Window 6 Bidders' Conference on 7 July 2022 (IPP Office, 2022b[21]), as of March 2022 (excluding Bid Window 5 statistics), the DMRE had selected 92 Preferred Bidders, with a total combined electricity capacity of 6 323 MW procured, of which 5 826 MW is already operational from 87 IPPs. Based on a media statement dated 30 April 2024, at the time, the REIPPPP had 95 IPP projects supplying 7 336 MW to the national grid (including from renewable and diesel generators) (DMRE, 2024a[22]).

Bid Window 6 was announced in April 2022 and closed on 3 October 2022 and aims to procure 4 200 MW (i.e. 3 200 MW from wind and 1 000 MW from Solar PV). Six preferred bidders for Solar PV projects have been announced for Bid Window 6. It is understood that two of the six preferred bidders reached Commercial Close on 30 April 2024 (DMRE, 2024a).

Bid Window 7 was announced in December 2023 and closed on 15 August 2024. It aims to procure 5 000 MW (i.e. 3 200 MW from wind and 1 800 MW from Solar PV). Eight preferred bidders for Solar PV projects have been announced for Bid Window 7. The 8 Preferred Bidders, totalling 1 760 MW of solar PV, provided an average tariff of 46 c/kWh for solar PV (South African Government, 2024[23]). In July 2025, an additional six solar PV projects, totalling 1 290 MW, were allocated as preferred bidders in Bid Window 7. This involved a re-allocation of the MW from onshore wind to solar PV in this Bid Window (Department of Electricity and Energy, 2025[24]).

On 7 July 2020, in GG 43509, GN R753, the Minister of Mineral Resources and Energy, in consultation with the National Energy Regulator of South Africa (NERSA), determined that new generation capacity needs to be procured to contribute towards energy security. Specifically, the gazette noted that 2000 MW needs to be procured from a range of energy source technologies in accordance with the short-term risk mitigation capacity allocated for the years 2019 to 2022 (under "other" in the allocation table contained in the 2019 IRP). In line with this, the Risk Mitigation IPP Procurement Programme (RMIPPPP) was designed and launched in August 2020 by the DMRE in order to fulfil the GN R753 Ministerial Determination. Bids were submitted by various IPPs on 22 December 2020, and on 18 March 2021, the Minister of Mineral Resources and Energy, announced eight Preferred Bidders selected under the RMIPPPP, totalling 1 845 MW (DMRE, 2021b[25]). Three additional Preferred Bidder projects were also announced on 1 June 2021 under the RMIPPPP with a combined capacity of 150 MW, resulting in a total of approximately 1 995 MW to be procured under the RMIPPPP (DMRE, 2021c[26]).

It is intended for the proposed project to be bid under the future rounds of the REIPPPP or similar bidding processes, following the issuing of EAs, should such authorisations be granted.

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[21] IPP Office (2022b). Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) Bid Window 6 Bidders' Conference dated 7 July 2022. https://ipp-projects.co.za/PressCentre [online]. Accessed August 2022.

[22] DMRE (2024a). Media Statement: First two projects reach Commercial Close under the 6th Bid Window of the REIPPPP (30 April 2024). https://www.ipp-renewables.co.za/ [online]. Accessed July 2024.

[23] South African Government (2024). Minister Kgosientsho Ramokgopa on 8 Preferred Bidders under Renewable Energy Independent Power Producer Procurement Programme and 8 Preferred Bidders under Battery Energy Storage Independent Power Producer Procurement P. [Online]. Available at: https://www.gov.za/news/media-statements/minister-kgosientsho-ramokgopa-8-preferred-bidders-under-renewable-energy [Accessed: September 2025].

[24] Department of Electricity and Energy (2025). REIPPPP Bid Window 7 List of Successful Bidders [Online]. Available at: https://www.ipp-projects.co.za/ [Accessed: September 2025].

[25] DMRE (2021b). Media Statement: To Announce Preferred Bidders for the Risk Mitigation IPP Procurement Programme (RMIPPPP). https://www.dmr.gov.za/news-room/post/1894/media-statement-to-announce-preferred-bidders-for-the-risk-mitigation-ipp-procurement-programme-rmipppp [online]. Accessed November 2021.

[26] DMRE (2021c). Media Statement: Department of Mineral Resources and Energy Announces Three Additional Preferred Bidders Appointed under the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP). https://www.ipp-rm.co.za/ [online]. Accessed November 2021.

C.1.4.3.2 Wind energy

In order to ensure that a wind energy facility is successful, a reliable wind resource is required. Wind resource is defined in terms of average wind speed and includes Weibull distribution (used to describe wind speed distributions); turbulence, wind direction, and pattern of wind direction (as depicted by a wind rose). These factors are all key considerations used in determining whether a site is suitable for the development of a wind energy facility. A mean wind power density map has been created (CSIR, 2018), which is not related to any specific turbine type and demonstrates the wind resource of the country. The mean wind power density map shows that the study area falls within an area of approximately <100 W/m^2 and 101 – 300 W/m^2 (Figure C.4). Overall, wind energy development can occur within this area but other localities in South Africa may be more favourable for such development. Site specific requirements for **wind energy facilities** however make this study area a **less feasible alternative** when compared to solar PV.

Furthermore, one of the aims is to try and receive EA (should it be granted) as promptly as possible in order to ensure the project is bid in the next bidding windows of the REIPPPP or similar tender processes; and development of wind energy facilities would need at least 12 months of pre-construction monitoring for birds and bats. In addition, for wind energy developments, collecting on-site wind data is necessary to confirm both the presence of the wind resource on site and the bankable viability of the proposed project. The provision of at least 12 months on-site wind monitoring data is also a requirement of the REIPPPP. The timelines for these monitoring programmes are not favourable to the overall current project schedule.

Therefore, the implementation of a wind energy facility within the study area is not considered to be a feasible alternative for assessment as part of this current Application for EA. However, it is possible for the Applicant to pursue this technology in the future and undertake detailed environmental screening to determine if it is feasible.

C.1.4.3.3 Solar Energy

In terms of the suitability of solar energy development at this location, the proposed project area has a high Global Horizontal Irradiation[27] (GHI), relevant to PV installations (Figure C.4). The study area has a GHI of 2 000 kWh/m^2 to 2 200 kWh/m^2 in terms of the long-term yearly total (Figure C.4).

Therefore, this area is deemed as one of the most suitable for the construction and operation of solar energy facilities as opposed to other areas and provinces within South Africa. For example, coastal regions within the Eastern Cape and KwaZulu-Natal mainly have a lower GHI (shown in the lighter orange shades in Figure C.4), which is not completely feasible for the proposed project.

Therefore, the implementation of a solar energy facility within the study area is more favourable and feasible than wind energy, biomass and hydropower development, especially from a project economic and energy generation viability and location compatibility perspective. Therefore, solar PV is the most feasible and preferred renewable energy alternative.

[27] Global Horizontal Irradiance is the total amount of shortwave radiation received from above by a surface horizontal to the ground.

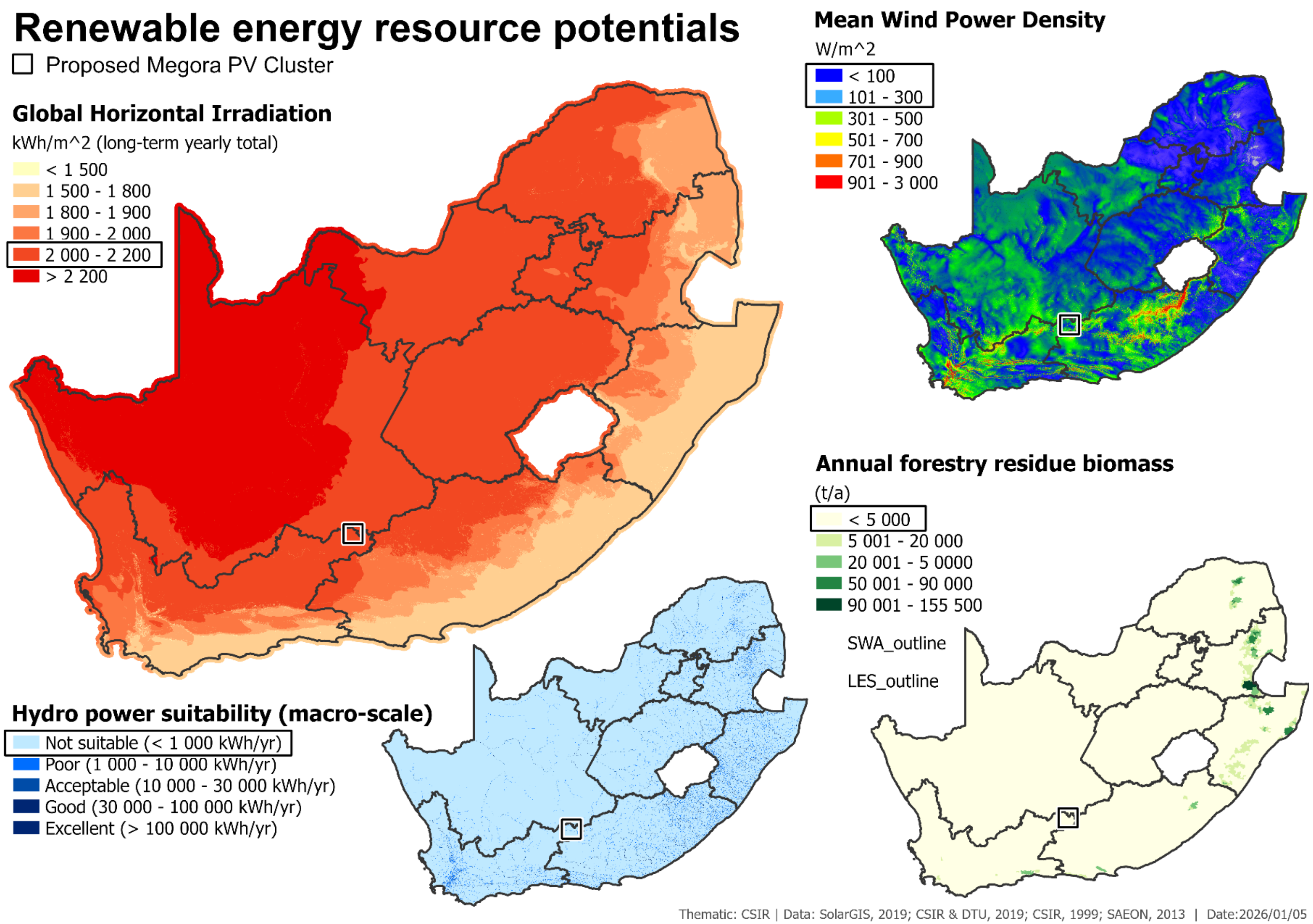

Figure C.4: Solar Resource Availability / Global Horizontal Irradiation (kWh/m^2); Annual Mean Wind Power Density (W/m^2); Hydropower Potential (kWh/year); and Biomass Potential in terms of Annual Forestry Residue (t/a) for South Africa. The proposed project location is indicated by the black square.

Since the alternative renewable energy generation activities considered were deemed to be unreasonable and unfeasible for the study area, no other renewable energy alternatives were further assessed as part of the current BA Process.

Table C.2: Summary of Evaluation of Potential Risks and Impacts for Renewable Energy Alternatives

Type of Renewable Energy Alternative	Are Suitable Resources Available at the Proposed Project Site?	Main Potential Impacts and Risks?	Is this the Preferred Alternative?
Biomass Energy	No – not suitable i.e. less than 5 000 t/a annual forestry residue.	▪ Significant Waste Generation with the potential need for a Waste Management Licence; and • Air Emissions with the potential need for an Atmospheric Emissions Licence.	No
Hydro Energy	No – "Not Suitable" (i.e. less than 1 000 kWh/year)	▪ Significant impacts on aquatic biodiversity and hydrology of the affected river system; ▪ Water Use Licence would be required for the establishment of an in-stream hydropower development; and ▪ Long lead times would be required for the various permits needed for such development.	No
Wind Energy	Yes, but other sites might have better wind resources - 301 – 500 W/m^2	▪ Visual impacts as a result of construction activities and turbines during operation; ▪ Noise generation as a result of construction activities and turbines during operation; ▪ Bird and bat collisions during the operational phase; ▪ More restrictive avifauna buffers; ▪ Impacts on aquatic ecology and terrestrial ecology; ▪ Impact on archaeology and palaeontology; and • Impact on civil aviation.	No
Solar Energy	Yes – 2 000 - 2 200 kWh/m^2	▪ Visual impacts as a result of construction activities and the PV panels during operation; ▪ Noise generation as a result of construction activities; ▪ Loss of agricultural land (i.e. grazing); ▪ Impacts of heritage resources (i.e. archaeology and palaeontology); ▪ Impacts on the water balance as a result of water required for panel cleaning; and • Impacts on avifauna, aquatic ecology and terrestrial ecology.	Yes

C.1.5 Technology Alternatives

C.1.5.1 Solar Panel Types

Only the PV solar panel type was considered in the BA. Due to the scarcity of water in the proposed project area and the large volume of water required for Concentrated Solar Power (CSP), this technology is not deemed feasible or sustainable and will not be considered in the BA. This is the main difference between PV and CSP technology that led to the selection of PV as the preferred solar panel technology.

Furthermore, CSP technology requires a larger development footprint to obtain the same energy output as PV technology, and it requires active solar tracking to be effective. As described above, in terms of the 2019 IRP, 300 MW capacity is already installed for CSP; and an additional 300 MW has been allocated for 2019, whilst there is no new additional capacity allocated for this technology. The 2025 IRP also shows no new capacity for CSP from 2026 to 2042. Solar PV is allocated an additional new capacity of 10 313 MW in terms of the 2025 IRP from 2026 to 2030. This means that the need and desirability of CSP is not as evident and justified compared to PV.

C.1.5.2 Mounting System

Solar panels can be mounted in various ways to ensure maximum exposure of the PV panels to sunlight. The main mounting systems that will be considered as part of the design are Single Axis Tracking structures (aligned north-south); Dual Axis Tracking (aligned east-west and north-south); Fixed Tilt Mounting Structures, Mono-facial Solar Modules or Bifacial Solar Modules.

Note that the mounting options are not weighed against each other to identify the most preferred alternative. Instead, the specialists have considered all of the above mounting systems as they are all deemed acceptable, and thus all are put forward for approval in the EA (should it be granted). Regardless of the mounting system, the maximum height of the PV panel structure has been assessed by the specialists.

C.1.5.3 BESS

The proposed solar facility will have a BESS of 720 MWh located adjacent the onsite substation. Batteries that have been considered in this BA Process include Solid State and Flow BESS, specifically Lithium-ion such as Lithium Iron Phosphate or Lithium Nickel Manganese Cobalt oxides; Sodium-ion systems, and Redox flow (Vanadium-Vanadium Redox Flow Battery (VRFB), Zinc-Iron Flow Battery (Zn-Fe), Zinc-Bromine Flow Battery (Zn-Br))).

A summary of some of the advantages and disadvantages are described below in Table C.3.

Table C.3: Advantages and disadvantages associated with Solid State and Redox Flow BESS technologies (Sources: Parsons, 2017[28]; Zhang *et al.*, 2016[29])

BESS Technologies Being Considered	Advantages	Disadvantages
Solid State BESS: Lithium-Ion containerized BESS or Sodium-Ion BESS	▪ Sealed/containerized systems i.e. pre-assembled off site and delivered to site for placement (i.e. carries less potential risk to the environment in terms of spillages). Hence, they are easier to install and will not likely need many permanent staff. ▪ Reduced risk of spillage as storage of large quantities of electrolyte is not required.	▪ Explosions and fires can occur as well as the possibility of generating noxious smoke under these circumstances. This can occur as result of electrolytes mixing when a breach occurs due to: - improper maintenance near operating temperature, - thermal expansion, or - freeze thaw cycles. ▪ Over the long term, these BESS may be more difficult to repurpose / dispose of and may present cumulative long term environmental impacts.
Redox Flow Batteries (RFBs)	▪ RFBs are self-discharging systems therefore generally require little maintenance. However, RFBs are more difficult to install, i.e. formal brick and mortar structures, and will potentially require many permanent staff. ▪ High economic efficiency, for example, Vanadium has a high economic value and can be recycled.	▪ Risk of spillage tends to be higher for RFB as opposed to sealed solid-state BESS as the storage tanks of RFB, may be subjected to leaks or spills during the replacement or blending of the electrolyte, or during transport of the battery to and from site. ▪ Electrolyte used is generally considered as a dangerous good in terms of the EIA Regulations, which would most likely trigger listed activities and require the need for an EA.

The High-Level SHE Risk Assessment (Appendix F.10) found that with suitable preventative and mitigative measures in place, none of the identified potential risks are excessively high, i.e., from a SHE perspective **no fatal flaws were found with either type of technology for the BESS installation at the proposed project site**. No fatal flaws were identified by any specialists for any of the BESS alternatives.

However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has accordingly been submitted to the DFFE with the Final BA Report. The specific technology, or combination of technologies, to be implemented from these authorised alternatives (should authorisation be granted) will only be determined during the Engineering, Procurement and Construction (EPC) procurement phase.

The BESS complements solar generation and is immediately dispatchable. The “no-go” alternative will result in reliance on other power sources at night. Some of them not immediately dispatchable and leading to low grid capacity and load shedding. The current reliance on dispatchable power from diesel generators is a very costly and environmentally hazardous power source.

[28] Parsons, 2017. US Trade and Development Agency. South Africa Energy Storage Technology and Market Assessment. Order Number: TDA-IE201511210. USTDA Activity Number: 2015-11032A. Parsons Job Number: 640368.
[29] Zhang, X., Tang, Y., Zhang, F., and Lee, C. S., (2016). A novel aluminum–graphite dual-ion battery. Advanced energy materials, 6(11), p.1502588.

C.1.6 Site Alternatives

The 2014 NEMA EIA Regulations (as amended), requires a site selection matrix to be provided to show how the preferred site was determined through a site selection process. Within this context, the "site" is the farms or land portions earmarked for the development of the proposed project. The total study area for the proposed project is approximately 1 100 ha. The preferred site within the Western Cape was selected based on national level considerations (high solar radiation levels) and the fact that the entire proposed PV site falls within the REDZ 11 (as discussed above).

The preferred site within the study area was strategically selected by the Project Developer based on various factors and detailed research, as noted below:

- As an initial step, the Project Developer undertook internal research, exploration work, and a desktop feasibility analysis (based on the grid connection options, solar resource and land availability) in order to identify the preferred site.
- The Project Developer consulted the National DFFE Web-based Screening Tool, as well as other available datasets, in order to identify desktop environmental sensitivities and to determine if there are any clear fatal flaws and concerns. The findings indicated that the study area is generally developable.
- The Project Developer then consulted with the owners of the farm portion forming the study area to obtain consent to develop the proposed Megora PV Cluster, and to also identify any areas where development must be excluded based on the requirements of the landowners.
- The CSIR and Specialists were then appointed to undertake environmental sensitivity screening, including site visits where needed. Three initial sites for the Solar PV covering an area of approximately 1 100 ha as well as two powerline assessment corridors (400 m wide) were identified and screened. Sensitive features were identified and delineated and a potential buildable area formulated (i.e., 1 016 ha). Following which only two of the three PV sites were taken forward to undergo detailed environmental assessment.
- Sensitive environmental features identified during the screening phase were then applied at a fine scale to design the layout of the PV sites and routing of the dedicated powerlines. This involved reducing the area considered for placement of the PV arrays thus refining the project development footprint for further detailed specialist assessment. The outcome of the site selection process was the identification of approximately 822.5 ha, which comprises the total permanent development footprint of the entire proposed Megora PV Cluster (i.e. PV 1A [~180 ha]; PV 1B [~145 ha]; PV 1C [~245.5 ha]; and PV 2 [255 ha]).

On a site specific (local) level, the sites on the proposed project were deemed suitable due to all the site selection factors (such as land availability, distance to the national grid, site accessibility, topography, current land use and landowner willingness) being favourable. The site selection criteria considered by the Applicant are discussed in detail below Table C.4.

Table C.4: Site selection factors and suitability of the site

Factor	Suitability of the Site
Land Availability	The proposed farm portion for the proposed PV facility is of a suitable size for the proposed project. The land available to develop at the preferred site is approximately 1 016 ha. Although this total area was assessed by the specialists during the site sensitivity verifications and assessments, the entire area will not be required for the permanent development footprint of the proposed projects and their associated infrastructure. Refer to Section B of this BA Report for project footprint specifications.
Irradiation Levels	The availability of the solar resource is the main driver of project viability. The site was identified by the Project Developer through a desktop analysis based on the estimation of the solar energy resource, and other factors. This viable solar resource ensures the best value for money is gained from the project, allowing for competitive pricing and maximum generation potential, with the resulting direct and indirect benefits for the South African economy. The study area has a GHI of 2 000 to 2 200 kWh/m^2 in terms of the long-term yearly total.
Distance to and availability of the grid	It is planned for the proposed project to connect to the national grid via a 132 kV overhead powerline (i.e., Megora EGI 1) connecting to a suitable MTS. The Project Applicant is currently engaging with Eskom and the National Transmission Company of South Africa (NTCSA) to determine the nearest suitable MTS that can accommodate power evacuated from the Megora Solar PV Cluster. Megora EGI 1 will include a powerline, collector substation and associated infrastructure, and it will be the subject of a separate Environmental Assessment process.
Site Accessibility	The proposed site can be accessed via public roads R63 and MR00607 and existing farm gravel roads (Options A and B) which will be upgraded (or new sections may be required) as part of the proposed project. The Applicant is seeking authorisation of both road options listed above so that either one of them (or both) can be used at the time of construction, depending on feasibility analysis and detailed design. Note that all options have been considered by the specialists, and no fatal flaws have been identified. It can be accessed from likely points of supply through an existing road network comprising asphalt and gravel roads that are in good and suitable condition, including for the transportation of abnormal loads.
Topography	The broader study area for the proposed Megora PV 1A is characterised by a mix of flat to undulating terrain with distinctive flat-topped hills and low ridges spread across the landscape. The northern and eastern sectors of the study area are characterised by high-lying plateaus that rise to 1 520 metres above mean sea level (mamsl) while the southern and central sectors of the study area comprise of lower-lying (1 180 mamsl), relatively flat terrain with gentle valleys associated with the various non-perennial drainage features intersecting the landscape. Slopes across the study area are relatively gentle in the flat, open plains while the steep slopes mark the sharp distinction between the flat plains and the mix of mountains and ridges.
Current Land Use	Agriculture – low intensity grazing with evidence of degradation regarding: habitat to support biodiversity, pans, and presence of alien species.
Visual Impact	The sparse human habitation and the predominance of natural vegetation cover across much of the study area would give the viewer the general impression of a largely natural setting with some pastoral elements. Several adjacent renewable energy facilities have been planned in the area (i.e., EA Approved). These projects, in conjunction with the proposed Megora Solar PV Cluster will inevitably introduce an increasingly industrial character into a largely natural, pastoral landscape. However, the Visual specialist confirms that these cumulative impacts can be mitigated to acceptable levels with the implementation of the recommendations and mitigation measures stipulated for each of these developments.
Landowner Willingness	The landowners have signed consent for the use of the land for the proposed project. This is considered an important aspect of the proposed project in terms of its viability (i.e., this will limit potential appeals during the decision-making process, as the landowners are willing and supportive of the proposed projects being undertaken on their farms).

Furthermore, the proposed project forms part of a larger solar and EGI cluster that is being proposed, comprising the proposed development of 3 other solar PV facilities along with their associated power lines. The main determining points for the Project Applicant was to find suitable, developable land in one contiguous block to (i) optimize design, (ii) minimize construction and operational costs, (iii) minimize sprawling development and limit the impact footprints (particularly on undeveloped areas), and (iv) to minimise the impacts to the receiving environment.

From an impact and risk assessment perspective, the implementation of proposed project will most likely result in fewer risks in comparison to its implementation at alternate sites (i.e., regions with similar irradiation levels), based on the following points:

- here is no guarantee that the current land use of alternative sites will be flexible in terms of development potential, for example the agricultural potential for alternative sites might be higher and of greater significance.
- There is no guarantee of the willingness of other landowners to allow the implementation of a solar facility on their land and if the landowners strongly object, then the project will not be feasible.
- There is no guarantee that other sites within the Western Cape will be located close to existing or proposed electrical infrastructure to enable connection to the national grid. The further away a project is from the grid, the higher the potential for significant environmental and economic impacts.

Given the site selection requirements associated with solar energy facilities and the suitability of the land on the project site and no initial fatal flaws being present, no other site alternatives were considered as part of the BA Process. The proposed project site is therefore deemed feasible and selected as the preferred site.

C.1.7 Location and Layout Alternatives - Development Footprint within the Preferred Site

The strategic process followed to reach the preferred site and to consider various development footprints (or location alternatives) within the preferred site is discussed in this section and illustrated in Figure C.5. As described above, the Project Developer consulted the National Web-Based Environmental Screening Tool, as an initial step, to determine a baseline description of the prevalent environmental sensitivities within the proposed preferred project site. Subsequent consultation with the affected landowners was then also undertaken in order to identify possible areas within the proposed project site boundary that should be excluded from development. The approach that followed was to use environmental and social constraints to avoid sensitive features, thus applying mitigation hierarchy thinking. This approach replaces the need to rank alternative sites and locations, as it leads to the selection of the least sensitive development footprint.

Once the preferred site was identified, the preferred study area was plotted on the DFFE Screening Tool to identify high-level environmental sensitivities for the preferred site. Following this, the CSIR serving as the independent Environmental Assessment Practitioner (EAP) and Specialists were appointed to undertake high level environmental sensitivity screening for the preferred sites and the subsequent BA Processes.

The specialists considered the high-level sensitivities identified on the Screening Tool and undertook Site Sensitivity Verifications (SSVs) within the study area, where required, in order to confirm or dispute the sensitivities identified by the Screening Tool. The specialists assessed approximately 1 100 ha to determine the preferred sites. The specialists then formulated environmental feature and sensitivity maps for the study area. These maps (where relevant) are included in Section D and Section J of this BA Report, as well as in Appendix C (Maps) and Appendix F (Specialist Studies and Inputs) of the BA Report. These maps show the identified environmental features and sensitivities such as terrestrial biodiversity, aquatic features, avifauna, heritage, visual, and geohydrological features present within the study area.

Based on the specialist findings, the **Buildable Areas** were formulated taking into account such sensitivities, and other considerations, which avoid the “no-go” areas identified by the specialists. The Buildable Areas were estimated to be 1 016 ha in extent of which the permanent development footprint of the entire proposed Megora Solar PV Cluster covers 825.5 ha, with the proposed project comprising approximately 180 ha of that area.

The “no-go” or very highly sensitive environmental features found within the preferred site were able to be avoided by the location, layout and design of the proposed project. Following the exclusion of the required areas, sufficient developable area is still available on site which does not compromise the current ecological integrity of the site. The current layout is thus a culmination of extensive technical, economic and environmental planning. The layout has been further refined and/or detailed during the BA Process.

It must be re-iterated that a strategic site, location and development footprint identification process has been followed, where the selection is informed by the environmental constraints identified through screening. This is based on the mitigation hierarchy approach of firstly trying to avoid impacts through careful siting. Therefore, it must be noted that different site, location or development footprint alternatives are not ranked, but rather a strategic process was followed (as shown in Figure C.5) where sensitive features are screened out, such as in Table C.4, in order to reach the preferred location or development footprint within the preferred site.

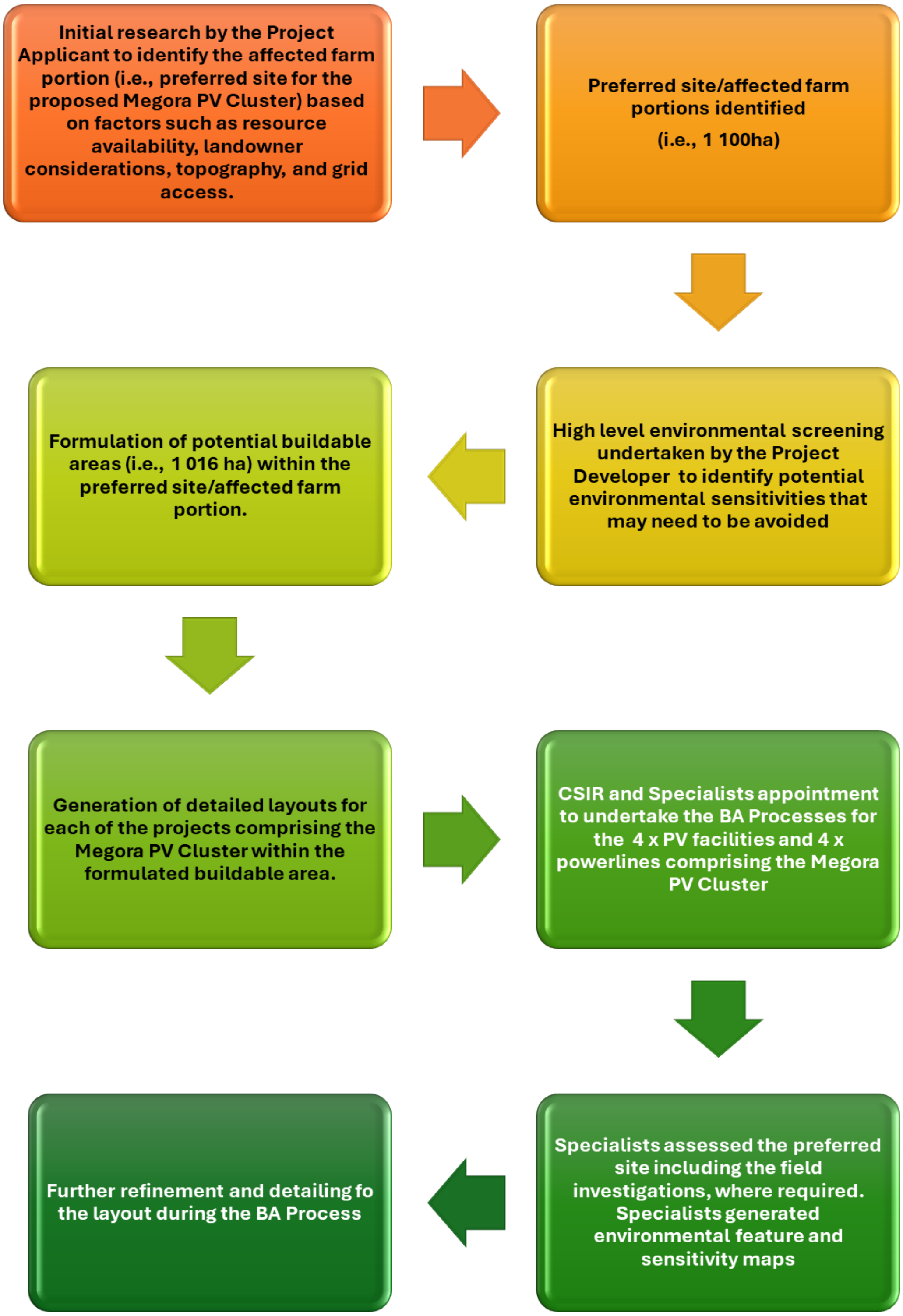

Figure C.5: Process flow for the identification of the Preferred Site and Development Footprint

C.1.8 Concluding Statement for Alternatives

As per Appendix 1, Section 3 (1) (h) (xi) of the 2014 NEMA EIA Regulations (as amended), and based on Section C.1 above, the following is a concluding statement on the alternatives considered in the BA Phase:

- **"No-go" Alternative:**

The "no-go'' alternative assumes that the proposed project will not go ahead i.e., it is the option of not constructing the proposed project. This alternative would result in no environmental impacts (positive and negative) on the site or surrounding local area, as a result of the proposed facilities. The "no-go" alternative has been investigated in this BA. **The "no-go" is not preferred**.

- **Land Use Alternative:**

The site has low agricultural potential because of, predominantly, aridity constraints, but also due to soil constraints. Agricultural land use is limited to low density grazing with isolated areas of cultivated agriculture outside of the proposed development footprint. The economic benefits to the landowner associated with the proposed Solar PV Facility is likely to be more significant than that of the current farming activities on site. **Based on the above, the agricultural land-use is not a preferred alternative.**

- **Type of Activity Alternative:**

The generation of electricity from a renewable energy source was the only activity considered by the Applicant and thus considered in this BA Report. No other activity types were considered or deemed appropriate based on the expertise of the Applicant.

- **Renewable Energy Alternatives:**

In terms of projects and location compatibility, the proposed solar energy and BESS facilities are considered to be the most favourable and feasible renewable energy activity alternative (i.e., in comparison to Biomass, Hydro Energy and Wind Energy). **Solar energy is the preferred and only renewable energy technology alternative to be developed on site as a result of**:

- The proposed solar PV facility falls within the REDZ 11 (Beaufort West). The proposed projects are therefore in line with the criteria of the SEA and located in an area of strategic importance for solar energy development;
- Overall, wind energy development can occur within this area but other localities in South Africa may be more favourable for wind energy development. Site specific requirements for wind energy facilities make it a less feasible alternative when compared to solar PV at this specific site; and
- The development of Solar PV is the preferred and only renewable energy technology to be developed on site because the site has very good solar resource availability (i.e. Global Horizontal Irradiation of 2 000 to 2 200 kWh/m^2 in terms of the long-term yearly total) and the local conditions are favourable.

- **Technology Alternatives:**

  - **Only the PV solar panel type was considered in the BA**, along with various mounting options that will be considered in the design. Various BESS technologies were considered for the proposed project. The High-Level SHE Risk Assessment (Appendix F.10) found that with suitable preventative and mitigative measures in place, none of the identified potential risks are excessively high, i.e., from a SHE perspective no fatal flaws were found with either type of technology for the BESS installation for the proposed project. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. Redox Flow BESS has accordingly been removed from the Application for EA and an amended Application for EA has accordingly been submitted to the DFFE with the Final BA Report. The specific technology, or combination of technologies, to be implemented from these authorised alternatives (should authorisation be granted) will only be determined during the Engineering, Procurement and Construction (EPC) procurement phase.

- **Preferred Site and Development Footprint within the site:**

  - The preferred site for all the proposed project is the Remainder of Farm Badfontein No. 10 [SG Code: C05200000000001000000]. An area of approximately 1 100 ha was assessed by specialists and a project development footprint of 180 ha determined for the proposed project.
  - At a specific (local) level, the above affected farm property was deemed suitable due to all the site selection factors (such as land availability, site accessibility, topography, current land use and landowner willingness) being favourable.
  - Furthermore, a screening and SSV exercise of the study area was undertaken by the specialist team during the pre-application phase. This led to the identification of the Buildable Areas within the preferred site. The Buildable Areas avoid the "no-go" sensitivities identified by the specialists. The development footprint and layout were identified based on this.
  - The project layout has been further refined during the BA. A detailed layout map is included in Section B of this BA Report, as well as Appendix C and the EMPrs.

Given the site selection requirements associated with solar PV facility and the suitability of the land available on the farm portions and no initial fatal flaws being present, **no other site alternatives were considered as part of the BA Process**.

C.1.9 Summary of Legislative Requirements for the Assessment of Alternatives

Appendix 1 of the 2014 NEMA EIA Regulations (as amended) has certain requirements in terms of the selection of the proposed preferred activity, site, and location of the development footprint within the site. Table C.5 below indicates the requirements of Appendix 1 of the 2014 NEMA EIA Regulations (as amended) in terms of the process leading to the preferred activity, site, and development footprint location alternatives. Table C.5 also includes a response from the EAP showing how the requirements have been addressed in this report.

Table C.5: The requirements for the consideration of Alternatives based on the 2014 NEMA EIA Regulations (as amended)

No.	Section of the EIA Regulations	Requirements for a BA Report in terms of Appendix 1 of the 2014 NEMA EIA Regulations	Response from EAP
1.	Appendix 1 – (2)	The objective of the BA Process is to, through a consultative process:	Refer to responses below.
2.	Appendix 1 – (2) (b)	• identify the alternatives considered, including the activity, location, and technology alternatives;	Section C of this BA Report identifies and describes in detail the alternatives considered for the proposed project, including activity, location and technology alternatives.
3	Appendix 1 – (2) (c)	• describe the need and desirability of the proposed alternatives	The applicability (i.e., need and desirability) of each of the proposed alternatives are discussed in Section C. The need and desirability of the preferred alternatives overall are described in Section H of this report.
4.	Appendix 1 – (2) (d)	• through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine— (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and (ii) the degree to which these impacts – (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated	The specialist assessments included in Section J and Appendix F of this BA Report include a description and assessment of the nature, significance, consequence, extent, duration, and probability of the identified impacts for the preferred alternatives. The specialist assessments also include the assessment of the reversibility and irreplaceability of the potential identified impacts, as well as the degree to which the identified impacts can be avoided, managed, or mitigated. A worst-case scenario was adopted by the specialists in terms of the area of assessment. The specialist assessments included in Section J of this BA Report therefore include an impact assessment process (inclusive of cumulative impacts) and by default, a ranking process of the identified development footprint focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment.
5.	Appendix 1 – (2) (e)	• through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to— (i) identify and motivate a preferred site, activity and technology alternative; (ii) identify suitable measures to avoid, manage or mitigate identified impacts; and (iii) identify residual risks that need to be managed and monitored.	The detailed specialist assessments presented in Appendix F of this BA Report describe, identify, and assess the impacts that the proposed PV facility and associated infrastructure may impose on the preferred project location. These assessments also identify any residual risks requiring ongoing management and monitoring. In addition, the specialist assessments, together with the EMPrs included in Appendix H, outline appropriate measures to avoid, manage, or mitigate the identified impacts.
6.	Appendix 1 – (3) (1) (h)	• a full description of the process followed to reach the proposed preferred alternative within the site, including. – (i) details of all the alternatives considered;	Refer to the response to Point 3 above describing the approach to considering alternatives and where this is described in this BA Report.
7.	Appendix 1 – (3) (1) (h)	(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Refer to the specialist assessment, development footprint and sensitivity mapping approach described in Points 4 and 5 above.
8.	Appendix 1 – (3) (1) (h)	(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	The Impact Assessment methodology applied for all relevant specialist themes is described in detail in Section J of this BA Report. Refer to the specialist

No.	Section of the EIA Regulations	Requirements for a BA Report in terms of Appendix 1 of the 2014 NEMA EIA Regulations	Response from EAP
		(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk;	assessment, development footprint and sensitivity mapping approach described in Points 4 and 5 above.
9.	Appendix 1 – (3) (1) (h)	(ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	As noted in the preceding sections of this BA Report, the preferred site for the proposed PV project is approximately 180 ha in extent. The combined environmental sensitivity map is included Section J and Appendix C of this BA Report. The significant environmental features identified by the relevant specialists have been mapped and overlain with the project study area and layout. The buffers and exclusion areas that need to be applied to the sensitive areas (as identified in the specialist assessments) have also been mapped and overlain by the study area. The remaining areas outside of the sensitive areas and buffers are then regarded as the areas available for development (i.e., the development footprint). Therefore, a suitable project layout within the development footprint has been determined ensuring that the areas that have a high or very high environmental sensitivity will be avoided by the proposed siting of the proposed projects. A single suitable location for the proposed site has been identified based on the sensitivity mapping and the development footprint. Section C of this BA Report describes the outcome of the site selection matrix, the alternatives considered, and concluding statements indicating preferred alternatives and preferred location of the activity.
10.	Appendix 1 – (3) (1) (l)	An environmental impact statement which contains (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.	Section C of this BA Report describes the outcome of the consideration site selection matrix, the alternatives considered, and concluding statements indicating preferred alternatives and preferred location of the activity.

SECTION D: DESCRIPTION OF THE AFFECTED ENVIRONMENT

This section of the BA Report provides a broad overview of the affected environment for the proposed Megora PV 1A project and the surrounding region. The receiving environment is understood to include biophysical, socio-economic and heritage aspects which could be affected by the proposed development or which in turn might impact on the proposed development.

This information is provided to identify the potential issues and impacts of the proposed project on the environment and vice versa. The information presented within this chapter has been sourced from:

- Specialist Studies and Inputs (where relevant) and Site Sensitivity Verifications (SSVs) from the specialists that form part of the project team (which are included in Appendix F of this BA Report);
- Feedback from the National DFFE National Web-based Environmental Screening Tool (hereafter referred to as the Screening Tool), where applicable;
- Review of *inter alia* information sources available on the South African National Biodiversity Institute (SANBI) Biodiversity Geographical Information System (BGIS), Agricultural Geo-Referenced Information System (AGIS), Endangered Wildlife Trust (EWT) Threatened Species No-Go Map;
- The Beaufort West Local Municipality and Central Karoo District Municipality Integrated Development Plans (IDPs).

It is important to note that this chapter intends to provide a broad overview of the affected environment. Detailed descriptions of the preferred project site focused on significant environmental aspects of these projects are provided in the relevant specialist studies (Appendix F of this BA Report).

D.1 Background

As described in Section A of the BA Report, the proposed Megora PV 1A will be located on the Remainder of the Farm Badfontein No. 10 (SG code: C05200000000001000000). The preferred PV development footprint covers approximately 180 ha on the aforementioned farm portion. As previously noted, the proposed PV project is located within the Beaufort West Local Municipality which falls within the Central Karoo District Municipality, approximately 20 km from Murraysburg in the Western Cape Province. Figure A.2 in Section A of this BA report provides a locality map of the proposed project area.

As part of the BA Process, the full extent of the study area was assessed by the specialists in order to identify environmental sensitivities and no-go areas. Following consideration of sensitive features, a preferred development footprint of up to approximately 180 ha was proposed for the proposed project and is referred to as the ‘site’. Refer to Section C of this BA Report for feedback on the process followed to assess the study area and identify the buildable areas, as well as the layout and development footprints for the proposed projects.

D.2 Biophysical Environment

D.2.1 Climate Conditions

The site has low rainfall with a mean annual precipitation of 178 mm. Generally, the study area experiences cold and dry winters coupled with hot and wetter summers. The majority of the annual rainfall occurs during the end of summer until middle autumn months, specifically between February and April (Figure D.1). Drought has been experienced to varying degrees in different parts of the study area, with many of the farms surrounding Loxton (approximately 150 km west of the study area) having received little to no rain over the past ten years. Notably, potential evaporation surpasses the rainfall throughout the year across the entire study area (i.e. the site experiences a negative water balance) (Figure D.2).

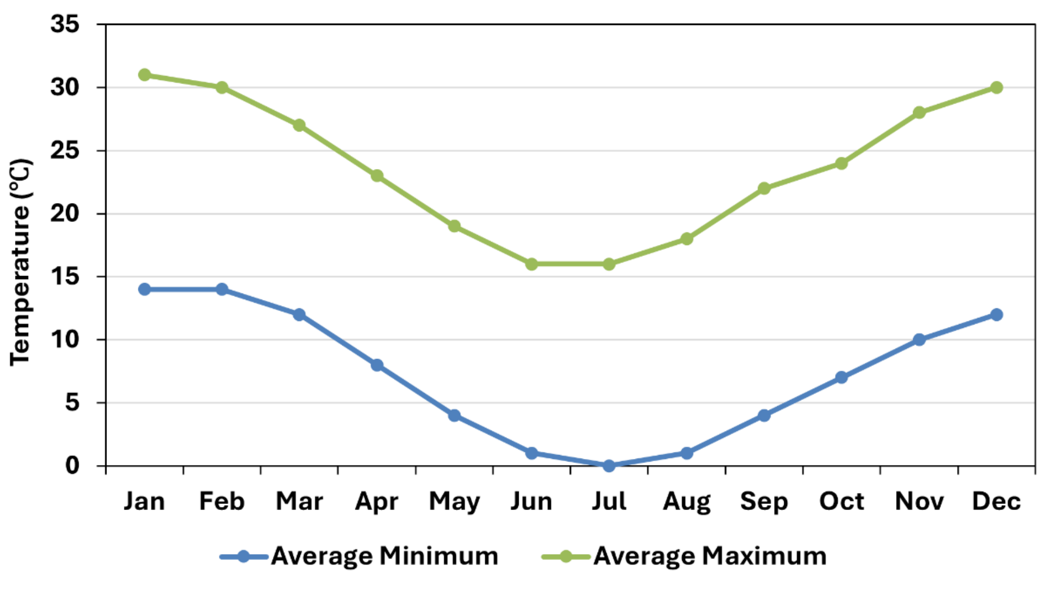

Figure D.1: Monthly average minimum and maximum air temperatures for the study area (Schulze, 2009).

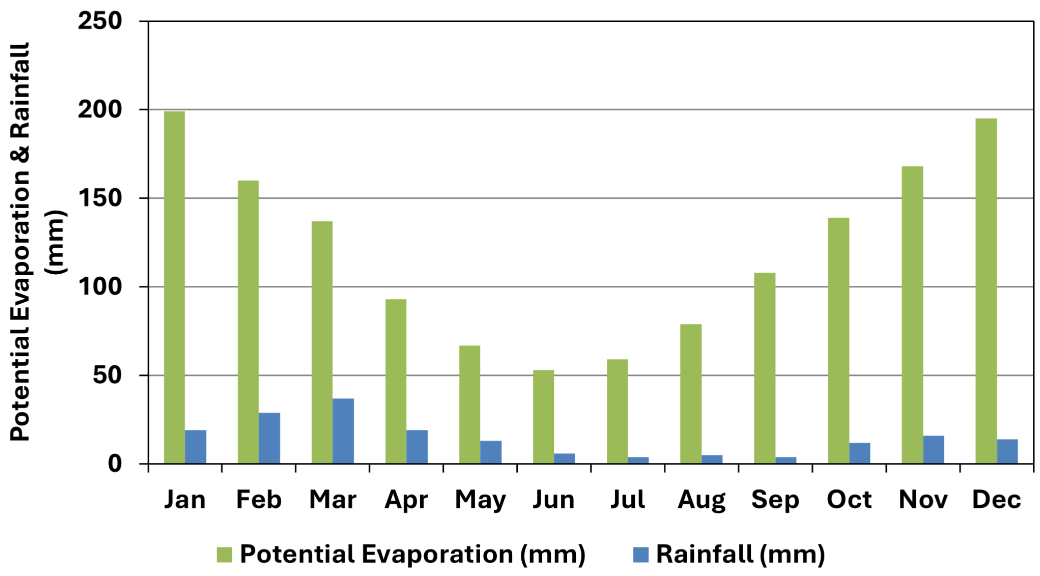

Figure D.2: Monthly average rainfall and evaporation distribution for the study area (Schulze, 2009).

The specialist studies included in Appendix F provide additional details regarding the climatic conditions on site.

D.2.1.1 Climate Change

Temperatures in the Central Karoo region are anticipated to rise with resulting lower annual rainfall in the medium to long term, although it is uncertain what impact increasing climate change will have on rainfall patterns in the region, as some research is suggesting that parts of the Western Cape Province may even receive greater annual precipitation.

Lower rainfall may result in higher levels of evaporation and average wind velocities are expected to increase as well. Consequently, these increasingly hot, arid conditions will cause the Karoo vegetation to become less resilient with an overall reduction in carrying capacity and a potential increase in veld fires. In addition, agricultural potential of the region is expected to be severely impacted with a further decline in productivity and yield, which is undoubtedly exacerbated by the ongoing drought prevailing in the area. This will ultimately require the adoption of more drought-tolerant farming practices or the implementation of alternative land uses such as renewable energy generation developments, in particular solar and wind to ensure economic growth[30].

Refer to the Green Book which provides detailed projections for future climate change in South Africa as well as risk profiles for municipalities, including the Beaufort West Local Municipality (Engelbrecht *et al*., 2019[31]). The projections used in the Green Book are for the following two climate change mitigation scenarios: Representative Concentration Pathways (RCP) 8.5 – where low mitigation is implemented; and RCP 4.5 – where high mitigation is implemented.

D.2.2 Regional Geology

The 1:250 000 Victoria West 3122 (1989) Geological map (Council of Geoscience, Pretoria) indicates that the study area is underlain by Middle to Late Permian continental fluvial and lacustrine sediments of the lower portion of the Hoedemaker Member (Pth, green) of the Teekloof Formation as well as small patches of the Balfour Formation (Pb, bright green), both belonging to the Adelaide Subgroup of the Beaufort Group, Karoo Supergroup.

[30] Central Karoo District Municipality Spatial Development Framework (Draft), Western Cape Department of Environmental Affairs, and Development Planning (DEA&DP), 2019.

[31] Engelbrecht, F., Le Roux, A., Arnold, K. and Malherbe, J. 2019. *Green Book. Detailed projections of future climate change over South Africa*. Pretoria: CSIR. Available at: https://pta-gis-2-web1.csir.co.za/portal/apps/GBCascade/index.html?appid=b161b2f892194ed5938374fe2192e537. Accessed December 2023.

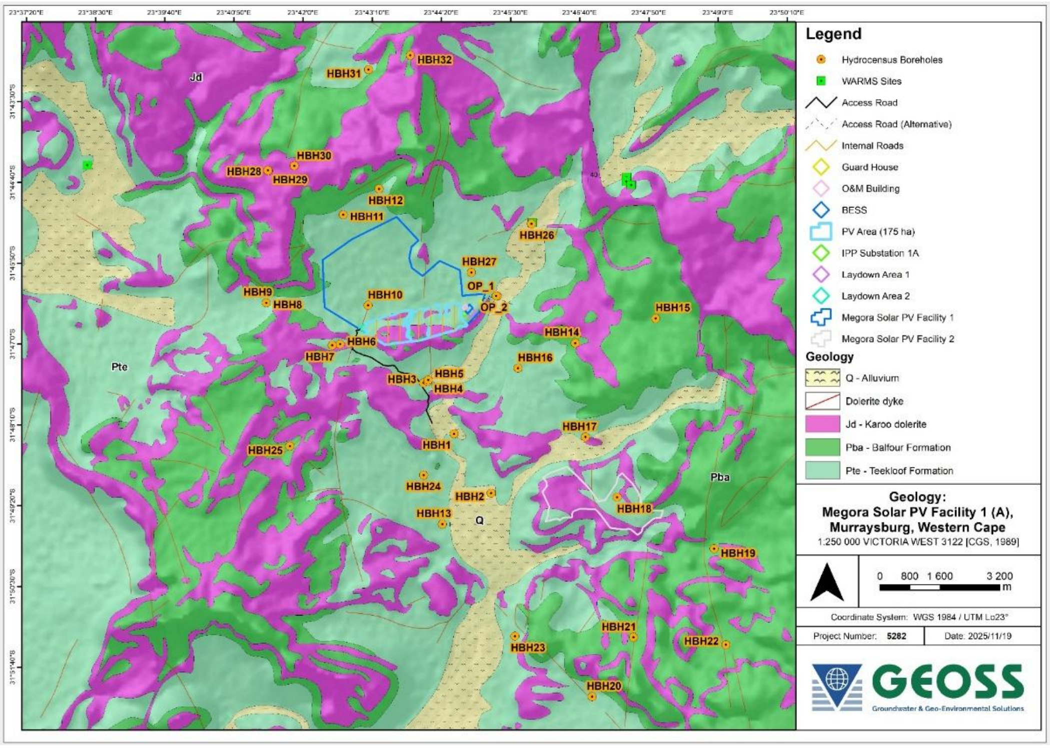

Figure D.3: Regional geological setting of the proposed Megora PV 1A (3122, Victoria West (CGS, 1984) in GEOSS, 2025).

The bedrock in the study area predominantly consists of interbedded brownish-red and greenish-grey mudstone, with subordinate siltstone and sandstone of the Teekloof Formation. The Adelaide Subgroup Formations represent deposition in low-energy alluvial floodplains and lacustrine settings associated with meandering river systems. The bedrock consists predominantly of grey mudstone, reddish in places, interlayered with sandstone and siltstone (Smith, 1989; Stuart-Williams, 1981), largely mantled by Quaternary superficial deposits (but not indicated on the 1: 250 000 geological map).The proposed Megora PV 1A site specifically is directly underlain by Teekloof Formation sediments and dolerite intrusions for its northern portion while the southern section is directly underlain with unfossiliferous Jurassic Dolerite which is igneous in origin (Figure D.3).

A detailed description of the geology of the study area is provided in the Palaeontological Impact Assessment (Appendix F.7) and the Geohydrology assessment (Appendix F.12) of this BA Report.

D.2.3 Topography and Landscape

The information described below is based on the detailed Visual Impact Assessment and Geohydrological Assessment, which are included in Appendix F. 5 and Appendix F.12, respectively, of this BA Report.

The broader area surrounding the proposed Megora Solar PV Cluster is largely characterised by a mix of flat to undulating and hilly terrain with distinctive koppies and hills in evidence while several pans dot the larger landscape. The northern and eastern sectors of the study area are characterised by high-lying plateaus that rise to 1 520 meters above mean sea level (mamsl) while the southern and central sectors of the study area comprise of lower-lying (1 180 mamsl), relatively flat terrain with gentle valleys associated with the various non-perennial drainage features intersecting the landscape (Figure D.4).

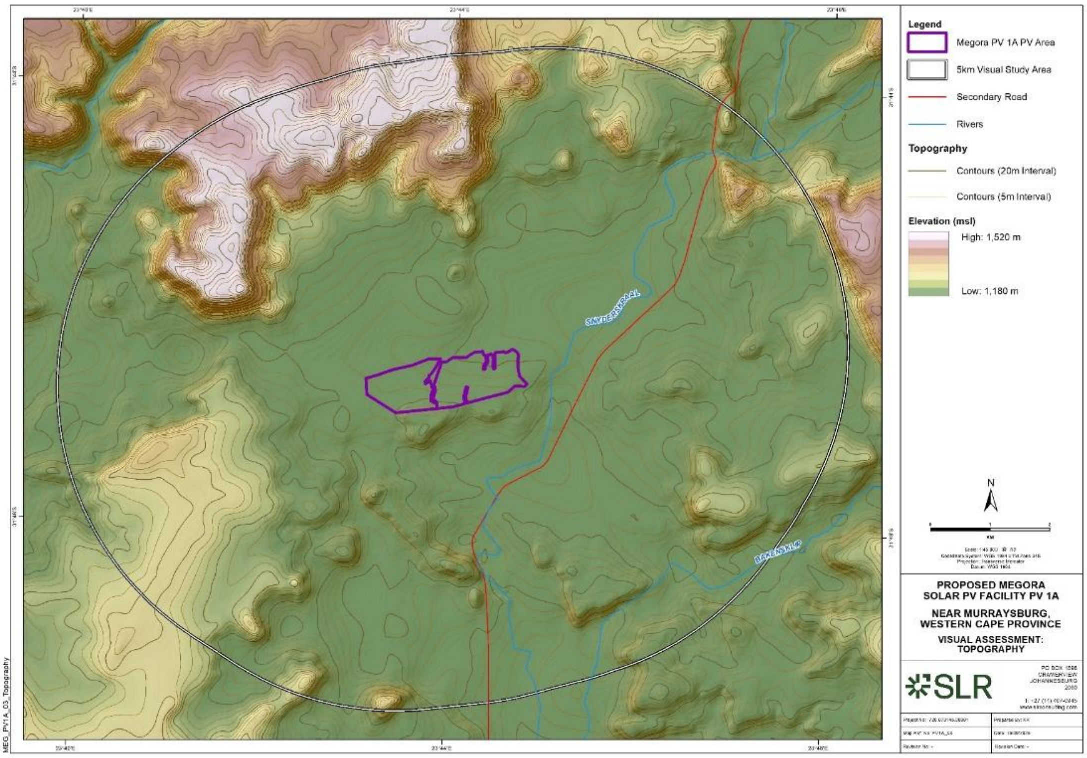

Figure D.4: Topography of the Megora PV 1A (Rakale, 2025).

Slopes across the study area are relatively gentle in the flat, open plains while the steep slopes mark the sharp distinction between the flat plains and the mix of mountains and ridges (Figure B.4). The Megora PV 1A and associated infrastructure is not located on high elevation slopes or on ridgelines, and as such there will be minimal impact on the skyline. Localised topographic variations, including the hills to the north, west and south, may limit views of the development from some parts of the study area, although the taller elements of the proposed facility may still be visible from many of the locally occurring receptor locations.

D.2.4 Agriculture and Soils

The information below is based on the Agriculture Compliance Statement included in Appendix F. 1 of this BA Report.

Climate is the primary factor influencing land capability and agriculture in the project area, regardless of soil or terrain characteristics, although soils are generally shallow and rocky (DAFF, 2002). Low and highly variable rainfall results in limited moisture availability, which constrains agricultural activities. Rain-fed crop production is not feasible, and land use is largely restricted to extensive grazing.

Small, isolated areas of irrigated cropland occur in the broader vicinity of the site. These areas are typically located in low-lying floodplain areas adjacent to watercourses and near existing farmsteads. Such areas are spatially separated from the proposed development footprint and are unlikely to be associated with the solar farm infrastructure.

The land has a long-term grazing capacity of approximately 22 ha per large stock unit (DAFF, 2018). Due to the dominant influence of arid climatic conditions, agricultural production in the area is limited, and grazing remains the primary agricultural land use.

D.2.5 Geohydrology

The information described below is based on the Geohydrology Assessment included in Appendix F.12 of this BA Report.

According to DWAF (2005), the proposed project site is underlain by a fractured aquifer (i.e., an aquifer in which groundwater flows in joints, fissures, cracks and fractures within the rock (Figure B.5). The aquifer is classified as having an average yield potential of 0.5 – 2.0 litres per second (L/s). The fractured aquifer underlying the proposed Megora PV 1A has an average borehole yield potential of 0.50 litres per second (L/s) to 2.00 L/s for the most part.

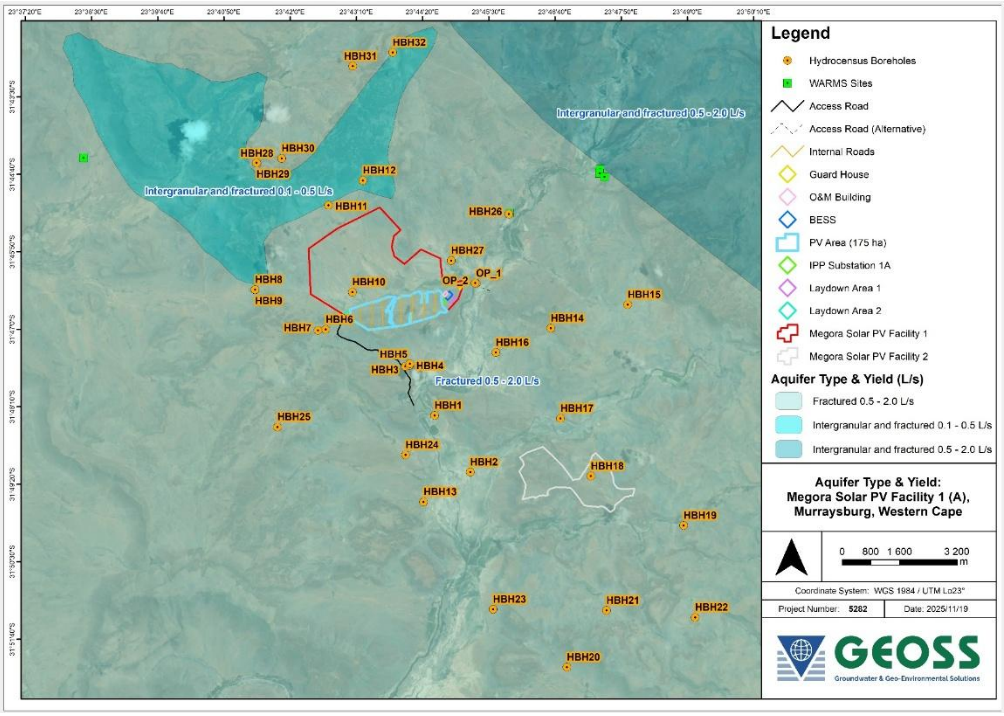

Figure D.5: Regional aquifer yield (DWAF, 2002) and borehole yields (L/s).

Based on the DWAF (2002) mapping of the regional groundwater quality, the electrical conductivity§ (EC) of the groundwater in the area ranges between 70 and 300 milli-Siemens per metre** (mS/m). This is considered "marginal" groundwater quality (Figure D.6), with respect to drinking water standards. Both these classifications are based on regional datasets, and therefore, only provide an indication of the possible/likely conditions. Groundwater in the area is generally considered as being of marginal quality and boreholes have a low yield.

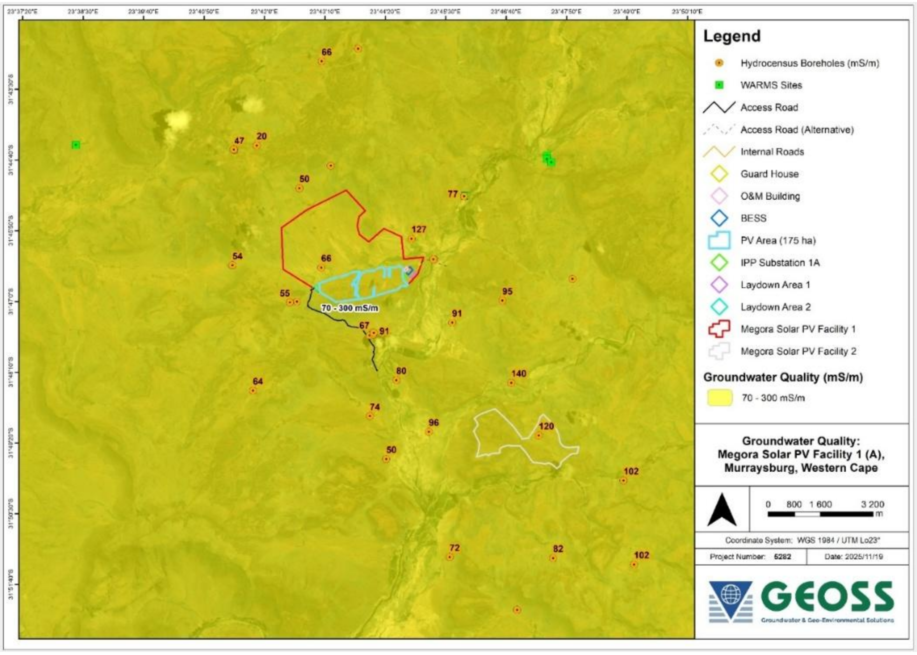

Figure D.6: Regional groundwater quality (mS/m) from DWAF (2005) and borehole groundwater quality (EC in mS/m).

The National Groundwater Archive (NGA) database, which includes data on borehole positions, groundwater chemistry, borehole depth, and blow yield (where available), indicates the presence of zero boreholes within the regional study area (12 km search radius) of the planned Megora Solar PV Cluster. However, the Water Use Authorisation and Registration Management System (WARMS) database revealed that there are six registered data points within 12 km of the study site (Figure D.7).

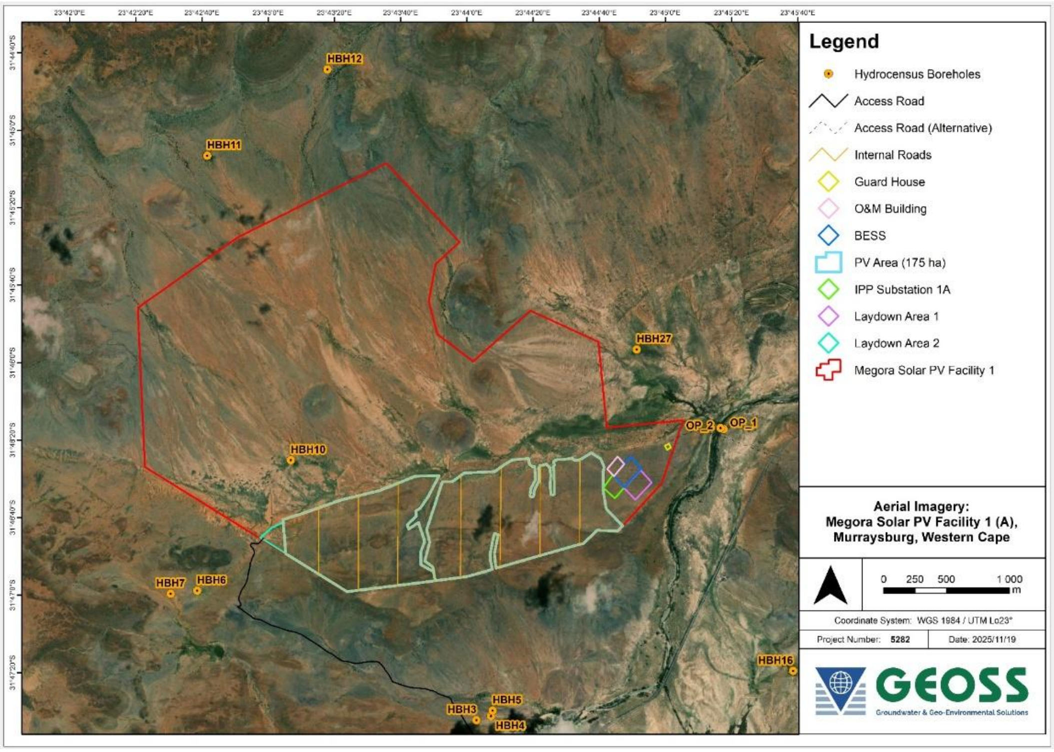

Figure D.7: Surveyed boreholes in the vicinity of the proposed project.

Two of the data points are identified as spring/eye while the other four are boreholes. The groundwater is mainly utilised for agriculture with one borehole registered for power generation according to the WARMS databases. The datapoints from the WARMS database all have an 'Active' registration status with registered annual volumes ranging between 1 095 – 30 000 m^3. Figure D.7 above shows the existing boreholes recorded during the fieldwork component as well as desktop boreholes obtained during the desktop study mainly used for livestock and drinking water on and around the study area.

D.2.6 Strategic Water Source Areas

Strategic Water Source Areas (SWSAs) are defined as "areas of land that either: (a) supply a disproportionate (i.e., relatively large) quantity of mean annual surface water runoff in relation to their size and so are considered nationally important; or (b) have high groundwater recharge and where the groundwater forms a nationally important resource; or (c) areas that meet both criteria (a) and (b)" (Le Maitre *et al.*, 2018:1 in Department of Environment, Forestry and Fisheries (DEFF) [now operating as the DFFE], 2019: Page 60[32]).

Thirty-seven groundwater SWSAs have been identified in South Africa and are considered to be strategically important at a national level for water and economic security (Le Maitre *et al*. 2018 in DEFF, 2019: Page 61). The total area for groundwater SWSAs extends approximately 104 000 km^2 and covers approximately 9% of the land surface of South Africa (Le Maitre *et al*. 2018, in DEFF 2019: Page 61).

There are no SWSAs within the proposed project site. The closest surface water SWSA is located over 100 km to the south-west, while the nearest groundwater SWSA is situated approximately 19 km to the east.

D.2.7 Aquatic Biodiversity

Various resources, such as, but not limited to, the SANBI BGIS and National Fresh Water Priority Areas (NFEPA), have been used to define the regional vegetation, water resources, fauna and anticipated ecological sensitivity of the study area. A literature review of existing reports, scientific studies, databases, reference works, guidelines and legislation relevant to the study area was conducted to establish the baseline ecological and vegetative condition of the site and associated environment. The information provided in this section is based on the detailed Aquatic Impact Assessment Report included in Appendix F. 3 of this BA Report.

D.2.7.1 General context

The National Wetland Inventory (van Deventer *et al*., 2018), National Freshwater Ecosystems Priority Atlas (Nel *et al*. 2011), which is included into the National Biodiversity Assessment (SANBI, 2018), have indicated that several important riverine systems could occur within the greater region, i.e., riverine reaches associated with the Synderkraal River catchment.

The hydrological setting of the project was within the L21C quaternary catchment of the Fish-Tsitsikamma Water Management Area. The nearest Sub Quaternary Reach (SQR) associated with the established Area of Interest (AoI) included the L21C-06652 of the Snyderskraal River. The watercourses form the headwaters of the Kariega River which flows into the Groot River before flowing into the Gamtoos River system and exiting into the Indian Ocean.

[32] Department of Environment, Forestry and Fisheries (DEFF), 2019. Strategic Environmental Assessment for the Development of a Phased Gas Pipeline Network in South Africa. CSIR Report Number: CSIR/SPLA/EMS/ER/2019/0077/B. ISBN Number: ISBN 978-0-7988-5649-2. Stellenbosch and Durban.

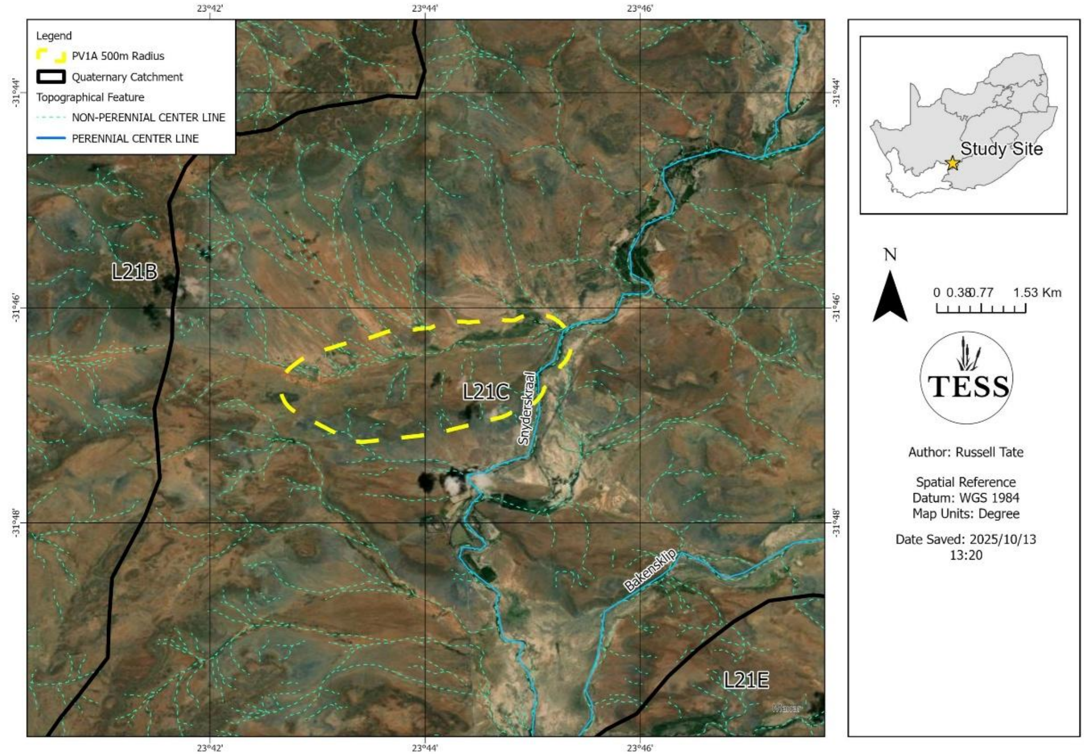

Figure D.8: Hydrological context of the proposed study area (Tate, 2025).

The watercourses within the broader study area are mainly affected by livestock-related agricultural activities, along with direct impacts from small-scale linear infrastructure, camp and impoundment construction, and water abstraction. Impacts on riparian vegetation include erosion, the establishment of non-native species such as *Prosopis* (Mesquite), *Salix babylonica* and *Eucalyptus*, as well as disturbances associated with livestock "kamps" or watering areas.

Historically, extensive overgrazing across the Karoo landscapes has led to reduced vegetative cover, the replacement of resilient, established vegetation with pioneer species, and increased soil compaction (Snyman, 1999; Le Maitre *et al*., 2007). These shifts in vegetation structure and soil condition have, in turn, negatively influenced the geomorphology of watercourses in the study area. Key processes contributing to these changes include reduced precipitation infiltration and interception, increased runoff velocity resulting in alterations to riverbed substrates and banks, and heightened erosion and sedimentation.

D.2.7.2 <u>Screening Tool Descriptions and Site Verifications</u>

The Screening Tool Report Aquatic Biodiversity Sensitivity Map was of High sensitivity for the study area and footprints of the proposed project, linked to an Aquatic CBA 1 and ESA 1. It is important to note that the Screening Tool Report does not align with the CBA and ESA classifications delineated in the 2023 WCBSP (Figures D.9 and D.10).

The High sensitivity rating for these features was confirmed by the Aquatic specialists site observations. The habitat associated with these areas, or habitat functions (important catchments and/or water courses) mapped to a fine scale level by the specialist and indicated as No-go (Very High) for the site (Figure D.11)

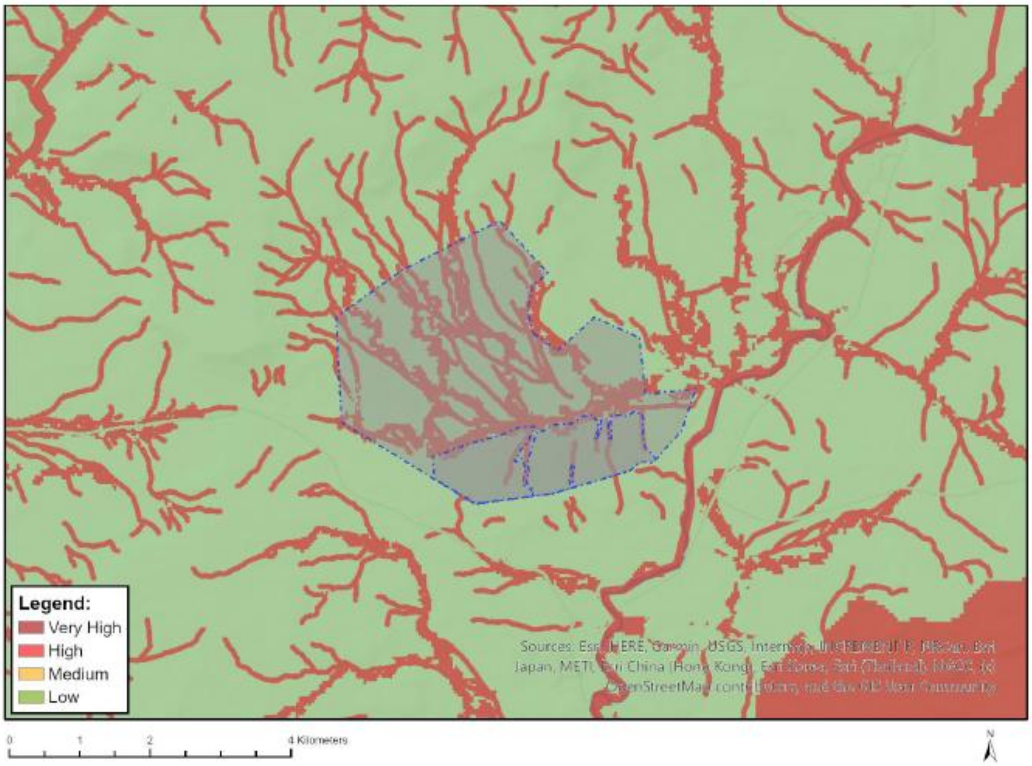

Figure D.9: Aquatic Biodiversity Sensitivity of the study area and footprint for the proposed PV facility based on the Screening Tool.

Figure D.10: Aquatic Biodiversity Sensitivity of the on-site substation based on the Screening Tool.

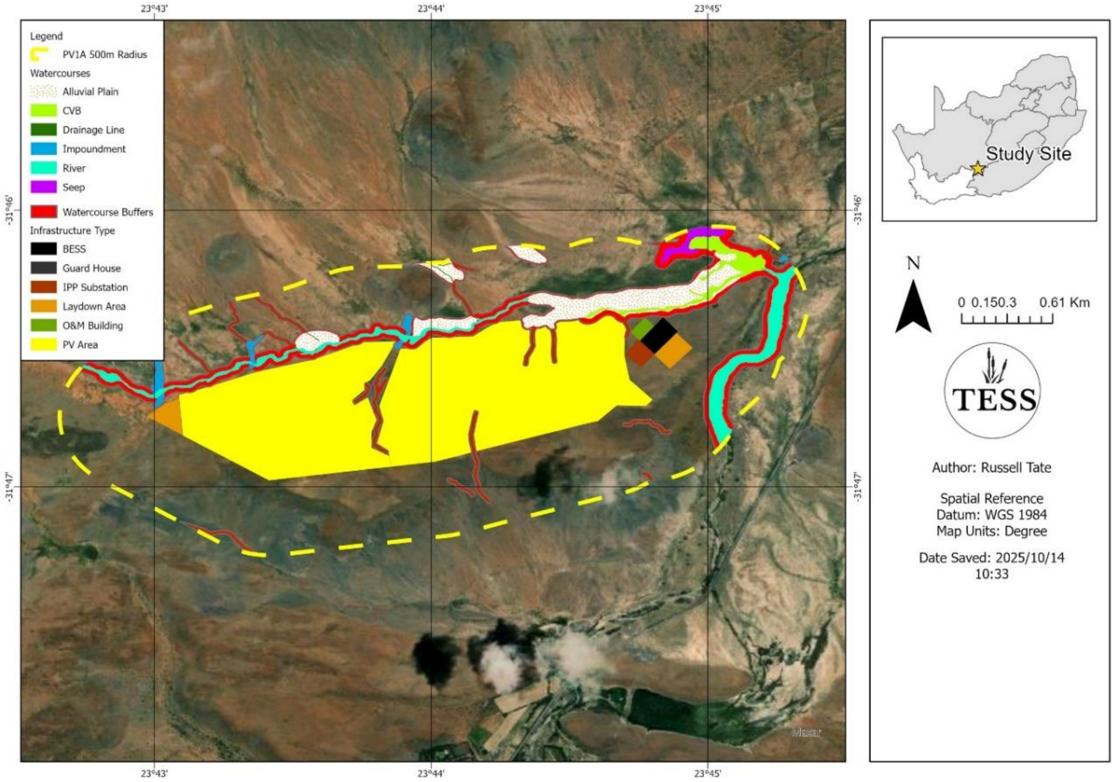

Figure D.11: Layout and aquatic sensitivity map for features within a 500 m radius of the study area (Tate, 2025).

D.2.8 Terrestrial Biodiversity

Various resources, such as, but not limited to, the SANBI BGIS and aerial imagery, have been used to define the regional vegetation, water resources, fauna and anticipated ecological sensitivity of the study area. A literature review of existing reports, scientific studies, databases, reference works, guidelines and legislation relevant to the study area was conducted to establish the baseline ecological and vegetative condition of the site and associated environment. The information below is based on the detailed Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report).

D.2.8.1 General Context

The project area is situated within the Nama Karoo Biome, which occupies the central plateau of the western half of South Africa and extends into southeastern Namibia. Unlike the neighbouring Succulent Karoo, the Nama Karoo is characterised by relatively low plant diversity and low levels of endemism (Mucina et al., 2011). However, it remains one of the least-studied regions in the country, and emerging research suggests that its true plant diversity is likely underestimated (Peterson *et al*., 2020). The biome is shaped by highly variable and unpredictable rainfall patterns that give rise to alternating periods of drought and flooding. These fluctuations strongly influence the composition, cover and diversity of plant communities (Peterson *et al*., 2020). Because arid ecosystems have inherently low productivity, vegetation recovers slowly from disturbance, and changes in species composition or local mortality can persist for long periods (Milton & Dean, 2021).

Geologically, the Nama Karoo is underlain by a sequence of sedimentary rocks, beginning with the Cape Supergroup, followed by Dwyka tillites and the fossil-rich deposits of the Karoo Supergroup (Mucina et al., 2011). Past volcanic activity introduced dolerite intrusions in the form of sills and dykes, which are more resistant to weathering than surrounding sedimentary rocks. These resistant intrusions have given rise to the mesas, buttes and plateaus that characterise the region. The interaction between geology and landform is a major driver of biodiversity patterns in the biome. Vegetation typically consists of low dwarf shrubs (less than 1 m), along with grasses, succulents, geophytes and annual forbs, while small trees are largely confined to rocky outcrops and drainage lines (Mucina *et al.*, 2006).

Broad, flat or gently undulating plains tend to be relatively homogenous, whereas rocky hills, mesas and inselbergs — landforms that dominate the landscape surrounding the project area — support higher levels of species richness. This is due to the greater habitat heterogeneity and microclimatic variation provided by these features (Peterson *et al*., 2020). These rocky slopes and elevated landforms are also expected to serve as important climate-change refugia and adaptation corridors, offering sheltered microhabitats that may buffer species against increasingly frequent droughts and extreme rainfall events.

D.2.8.2 Terrestrial Animal Species (Excluding Avifauna)

The following four broad faunal habitat types were identified in the site:

- Grassland with scrub habitat (i.e., Eastern Upper Karoo),
- Rocky outcrops, crests and slopes (i.e., Upper Karoo Hardeveld),
- Wash, Southern Karoo Riviere and Riparian habitat, and
- Seasonal inundated depressions (Temporary wet areas), Reservoirs and farm dams.

Amphibian, reptile and mammal species will utilise these habitats either permanently or occasionally depending on the life stage and livelihood strategy.

The project area intersects with the distribution range of nine amphibian species all of which have been recorded within the broader project area and are classified as Least Concern.

In terms of reptiles, the project area intersects with the distribution of 53 reptile species of which 34 species have been recorded in the broad Project Area of Influence[33] (PAOI) (IUCN, 2025; iNaturalist, 2025; FitzPatrick, 2024). One reptile Species of Conservation Concern (SCC) has a distribution which includes the project area however the Tent Tortoise (*Psammobates tentorius tentorius*) is listed as Near Threatened. Although this species has a high likelihood of occurrence within the project area, project activities are unlikely to negatively influence the viability of this species given size of the project footprint within the Extent of Occupancy (EOO) is relatively small, the habitat within the EOO is relatively widespread, and the species itself is considered well protected (Tolley *et al.*, 2019).

The PAOI[34] is primarily used to farm livestock such as sheep and cattle. There was evidence of wild game including Hartebeest, Blesbok, Springbok, Warthog and Ground Squirrels. Evidence of Porcupine (burrows and quills), Baboons (scat), Aardvark (burrow), hares (scat) and rodents (burrows) were observed by the specialist. Seven SCC have a distribution range that intersects the project area, including one Critically Endangered (CR), one Endangered (EN), two Vulnerable (VU) and three Near Threatened (NT) species. Of these species, four have a high likelihood of occurrence, one has a moderate likelihood of occurrence and two have a low likelihood of occurrence (refer to the detailed species assessment included in Appendix F.2 for additional detail).

[33] The broader area around the project area that may be indirectly impacted by project activities.

Table D.1: Assessment of the likelihood of occurrence of Mammal Species of Conservation Concern and their likelihood of occurrence within the PAOI[35] (adapted from Martin and Jackson, 2025).

Name	Threat Status*			Known Occurrence	Likelihood of Occurrence In PAOI
	Global (IUCN)	National (SA Red List, 2016)	Threatened and Protected Plant Species (TOPS)		
Black-footed Cat *Felis nigripes*	VU	VU	Protected	Five records of this species ~70km from the project area	**High** Suitable habitat and available prey are present within the project area and there are multiple dens and burrows of various species that would provide suitable shelter for this species.
Grey Rhebok *Pelea capreolus*	NT	NT	None	The nearest record is ±50km north of the study area.	**High** There is suitable habitat present within the PAOI but not within the project area.
Cape Clawless Otter *Aonyx capensis*	NT	NT	None	There is a record of this species within the project area	**High** There is suitable habitat (rivers, dams and fringe vegetation) present within the PAOI but not within the footprint of the project area.
Southern Mountain Reedbuck *Redunca fulvorufula*	EN	EN	None	Recorded 50km to the south and 60km to the east of the proposed project area NOT recorded during the field survey.	**High** There is suitable habitat present within the PAOI.
Leopard *Panthera pardus*	VU	VU	**VU**	Nearest record of the species is ±160km southeast of the project area in a mountainous area.	**Moderate** Small patches of suitable habitat are present within a busy farming area with little refugia for this species. As such, the likelihood of occurrence within the project areas is moderate although it may be high in the broader area.
Brown Hyena *Parahyaena brunnea*	NT	NT	**Protected**	Nearest record of this species is ±140km west of the project and 170km east of the project area.	**Low** Although suitable habitat is present within the site (i.e., grasslands and karoo scrub), this species is unlikely to occur outside of a protected area in this region.
Riverine Rabbit *Bunolagus monticularis*	CR	CR	CR	No recent records on iNaturalist or MammalMap in the project area or within the broader area.	**Low** No suitable habitat was recorded within the PAOI.

D.2.8.2.1 Screening Tool Descriptions and Site Sensitivity Verification

The Screening Tool Report Animal Species Sensitivity Map is considered to be of high (for the PV facility and substation) and medium (for only the PV facility) sensitivity. The High sensitivity is linked to the High likelihood of the occurrence of Ludwig's Bustard (*Aves-Neotis ludwigii*). The Medium sensitivity is linked to the Medium likelihood of occurrence of the Riverine Rabbit (*Bunolagus monticularis*) and Ludwig's Bustard (Figure D.12 and D.13 below).

[35] The broader area around the project area that may be indirectly impacted by project activities

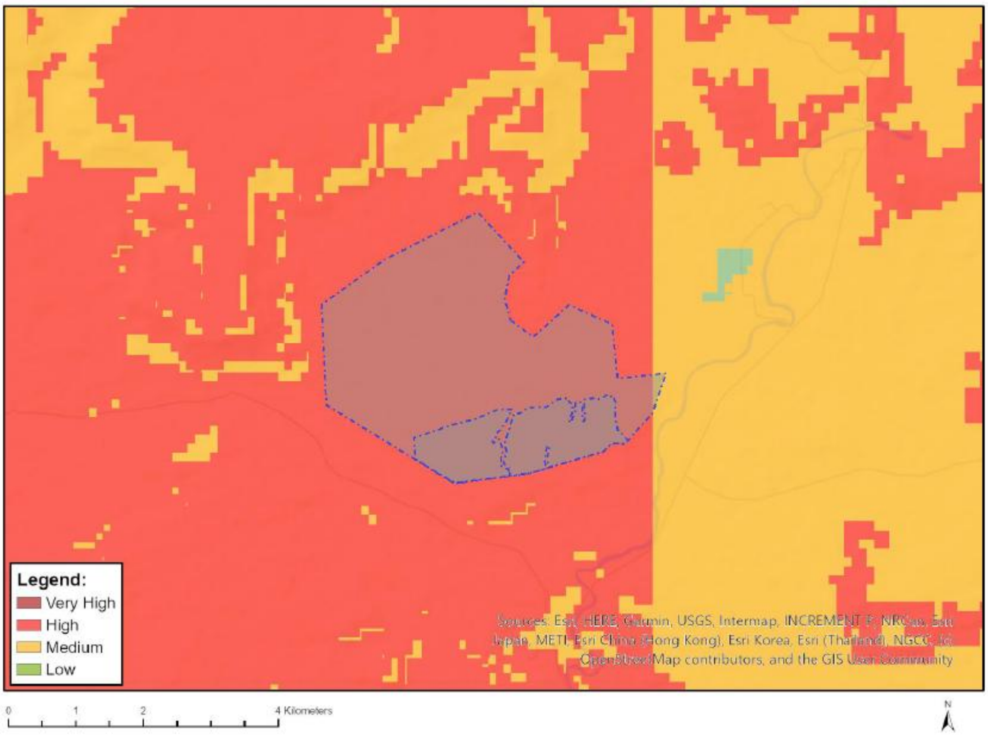

Figure D.12: Animal Species Sensitivity of the study area and footprint for the proposed PV facility based on the Screening Tool.

Figure D.13: Animal Species Sensitivity of the on-site substation footprint based on the Screening Tool.

The medium likelihood of occurrence of the bird species is addressed in Section D.2.11 below.

The Terrestrial Assessment notes that faunal SCC (i.e., Riverine Rabbit - *Bunolagus monticularis*) flagged by the Screening Tool is listed as critically endangered (CR) and was flagged by the DFFE

Screening Tool as Medium sensitivity due to the location of the project area in relation to an existing population and presence of potential suitable habitat within the project area. This species has a small population (157-207 individuals), limited distribution (EOO: 54 227 km^2; AOO: 2 943 km^2) and primarily exists outside of formally protected areas (Collins, Bragg & Birss, 2019; Collins, *et al*., 2016). The existing threat of habitat loss, almost two-thirds of its original habitat, and corresponding decline of the Riverine Rabbit population is attributed to loss of seasonal river flood plains because of agricultural activities (IUCN, 2000). Within its EOO, there are three known populations with 12 subpopulations (nine in the northern range and three in the southern range). The proposed project is located within the boundary of the northern population (Figure D. 14) (Collins, Bragg & Birss, 2019; Collins, *et al*., 2016).

The Riverine Rabbit inhabits dense, discontinuous vegetation fringing seasonal rivers and constructs burrows in soft and deep alluvial soils along the river courses for breeding (Collins, *et al*., 2016). It is a browser strongly associated with selected plant species, none of which were not recorded within the wash vegetation in the project area and as such suitable habitat for this species is not present. The specialists have undertaken three camera trap surveys to the west (24 km) and southwest (35 km) of the project area and have not recorded evidence of this species. The terrestrial animal species recorded in the study area by the Terrestrial Biodiversity specialist during the site inspection along with an indication of their status is provided in Table 3.3 in the detailed Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report).

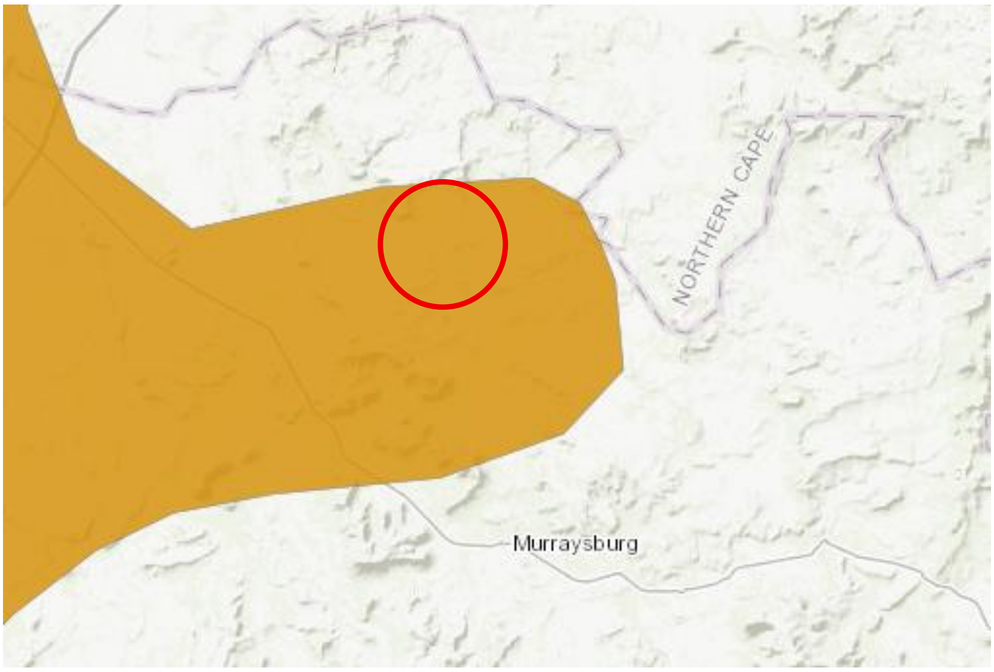

Figure D.14: Distribution range of the Riverine Rabbit (*Bunolagus monticularis*) northern population in relation to the project area (red circle) (Collins, Bragg & Birss, 2019 in Martin and Jackson, 2025).

Based on the above assessment, the specialist disputes the Medium sensitivity for the Animal Species Theme on the DFFE Screening Tool.

D.2.8.3 Terrestrial Plant Species

Sixty-five plant species from twenty-eight families were recorded within the PAOI[36]. The Asteraceae family had the highest number of species (11), followed by the Poaceaea and Aizoaceae families, each with eight and seven species respectively. The remaining families had three or less species.

D.2.8.3.1 Screening Tool Descriptions and Site Sensitivity Verification

The Screening Tool Report Plant Species Sensitivity Map is considered to be of Medium sensitivity (for the solar PV facility) and Low sensitivity (for the on-site substation) (Figure D.15 and D.16).
The Screening Tool lists three SCC as medium indicating that they could occur within the project area. These include:

- *Hereroa concava* (VU)
- *Tridentea virescens* (Rare)
- *Sensitive Species 945* (Rare)

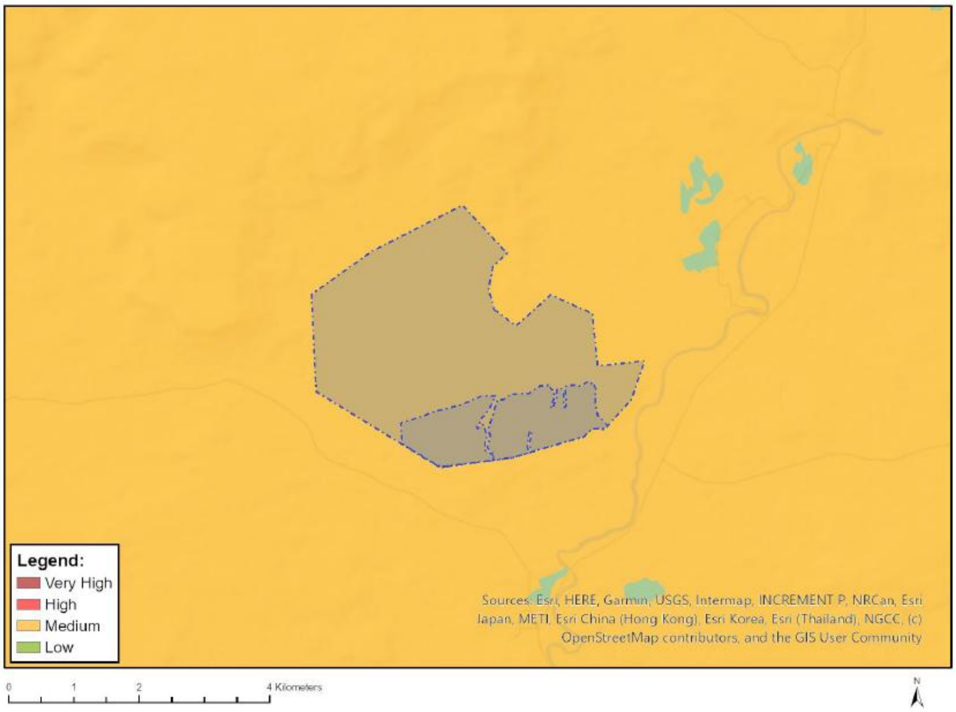

Figure D.15: Plant Species Sensitivity of the study area and footprint for the proposed PV facility based on the Screening Tool.

[36] The broader area around the project area that may be indirectly impacted by project activities.

Figure D.16: Plant Species Sensitivity of the on-site substation footprint based on the Screening Tool.

However, no plant SCC were recorded by the specialist team within the project area during the field survey. The likelihood of occurrence of each of the plant species are described in Table D. 2 below.

Table D.2: Assessment of the likelihood of occurrence of SCC identified in the literature as possibly occurring within the site (extracted from Martin and Jackson, 2025).

Family	Species	Status	Likelihood of Occurrence	Comment
Aizoaceae	*Hereroa concava*	VU	Low	*Hereroa concava* is a poorly known species thought to occur between Beaufort West, Richmond and De Aar although the extent of its distribution range is uncertain (Raimondo and von Staden, 2020). It has an EOO of 12 151 km^2 and is known from 3 to 5 locations. This species is typically found to occur on flats and plateaus with shale outcrops. This habitat was not present within each of the project areas and the likelihood of occurrence is therefore low. However, there is suitable habitat along portions of the powerline and in these areas the likelihood of occurrence is moderate.
Apocynaceae	*Tridentea virescens*	Rare	Washes: Medium Eastern Upper Karoo: Low	*Tridentea virescens* is widespread occurring from Warmbad in southern Namibia to Kakamas and Prieska in the Northern Cape and Prince Albert and Aberdeen in the Eastern Cape (Victor, 2009). This species is typically associated with stony ground and hard loam in floodplains. The washes present within the PAOI offer suitable habitat although they show evidence of grazing and degradation. The likelihood of

Family	Species	Status	Likelihood of Occurrence	Comment
				occurrence of this species is moderate within the washes and low within the Eastern Upper Karoo.
	Sensitive Species 945	Rare	PAOI: Medium Project Area: Low	This species is relatively widespread, occurring from the Sneeuberg and Agter-Sneeuberg Mountains to the Nuweveld Mountains. It is associated with the summits of rocky dolerite ridges. Although it could be present in the PAOI, it's likelihood of occurrence within the project area is low.

Seven protected plant species were recorded within the PAOI (refer to Appendix F. 2 of this BA Report for a list of protected plant species). These species are listed as Schedule 4 species by the Western Cape Nature Conservation Laws Amendment Act (2000) and will require permits for their removal prior to construction commencing.

Based on the SSV, desktop and field work, the Screening Tool low sensitivity rating for terrestrial plant species is agreed with. There are no areas that need to be avoided by the proposed development from a terrestrial plant species perspective.

D.2.8.4 Terrestrial Biodiversity

D.2.8.4.1 Screening Tool Descriptions and Site Sensitivity Verification

The Screening Tool Terrestrial Biodiversity Sensitivity Map indicates Very High sensitivity for the entire study area and footprints of the proposed projects and Low sensitivity (for the IPP substation) (Figures D.17 and D.18). The very high sensitivity for the study area is linked to the potential occurrence of a CBA 2 (Terrestrial), ESA 2 (Restore from other land use).

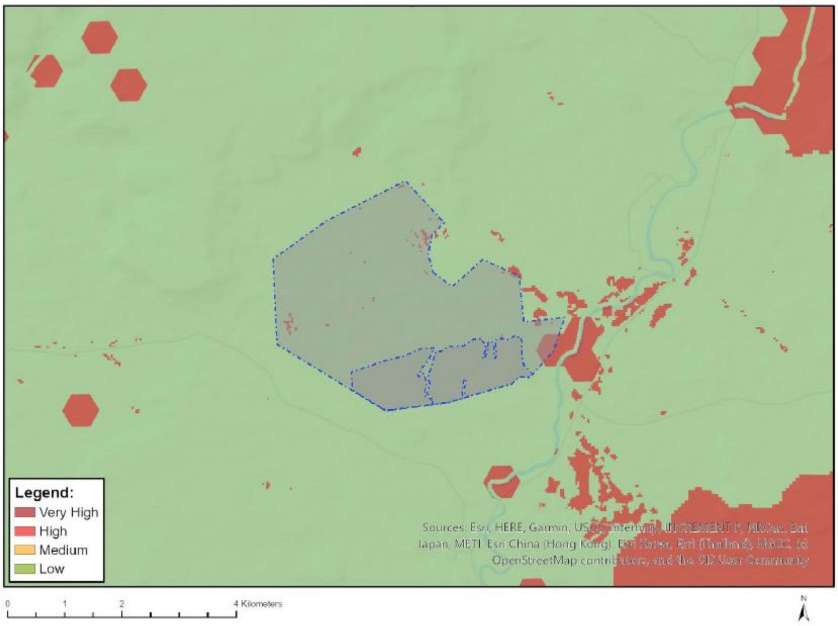

Figure D.17: Terrestrial Biodiversity Sensitivity of the study area and footprint for the proposed PV facility based on the Screening Tool.

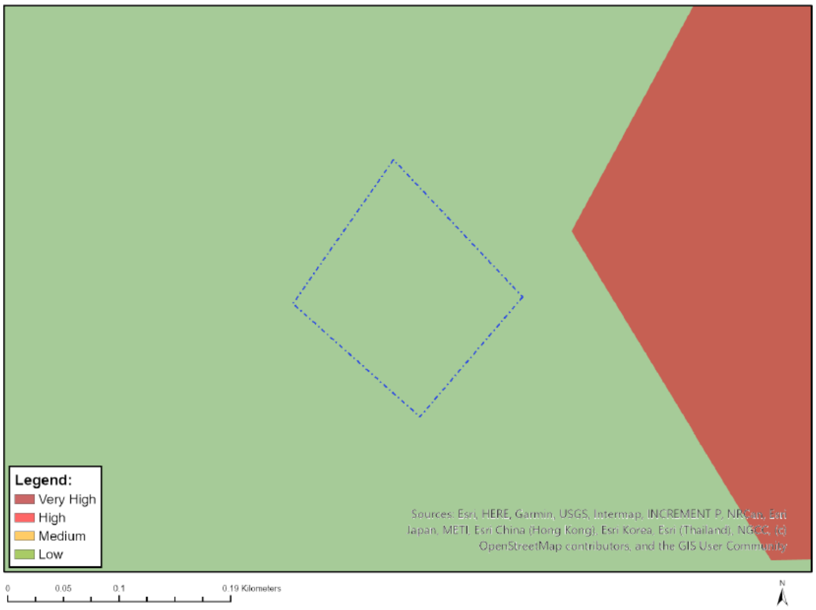

Figure D.18: Terrestrial Biodiversity Sensitivity of the on-site substation footprint based on the Screening Tool.

Please note that the DFFE Screening Tool has used the old Western Cape Biodiversity Spatial Plan (WCBSP). The detailed Terrestrial Impact Assessment (Appendix F. 2 of this BA Report) references the latest WCBSP (2023) of which features are discussed below.

The National Vegetation Map is mapped at a broad scale and indicates that Megora 1A occurs in Eastern Upper Karoo and Southern Karoo Riviera. However, the detailed field work identified one additional vegetation type (Upper Karoo Hardeveld within the PV footprint (Figure D.19).

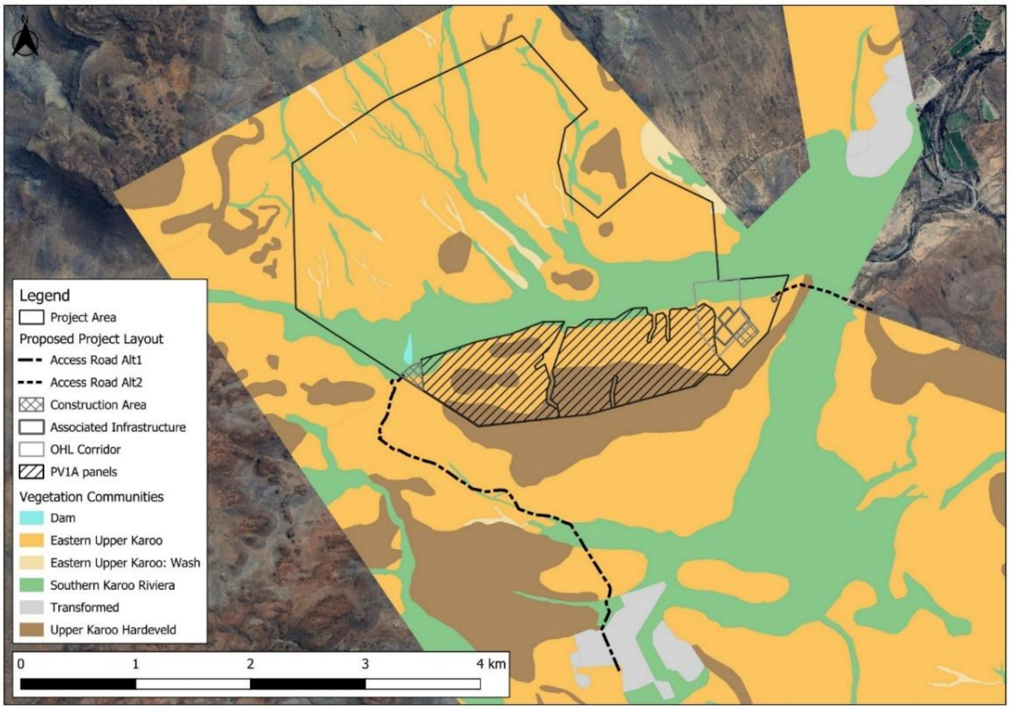

Figure D.19: Refined Vegetation Map for the Project Area based on the results of the field survey (Martin and Jackson, 2025).

Four SCC have a high likelihood of occurrence within the project area, each of which has been assessed in Table D.2. Habitat associated with the Tent Tortoise and Cape Clawless Otter both have a low Site Ecological Importance (SEI) while habitat associated with the Black-footed Cat, Grey Rhebok and Southern Mountain Reedbuck were found to have a medium SEI.

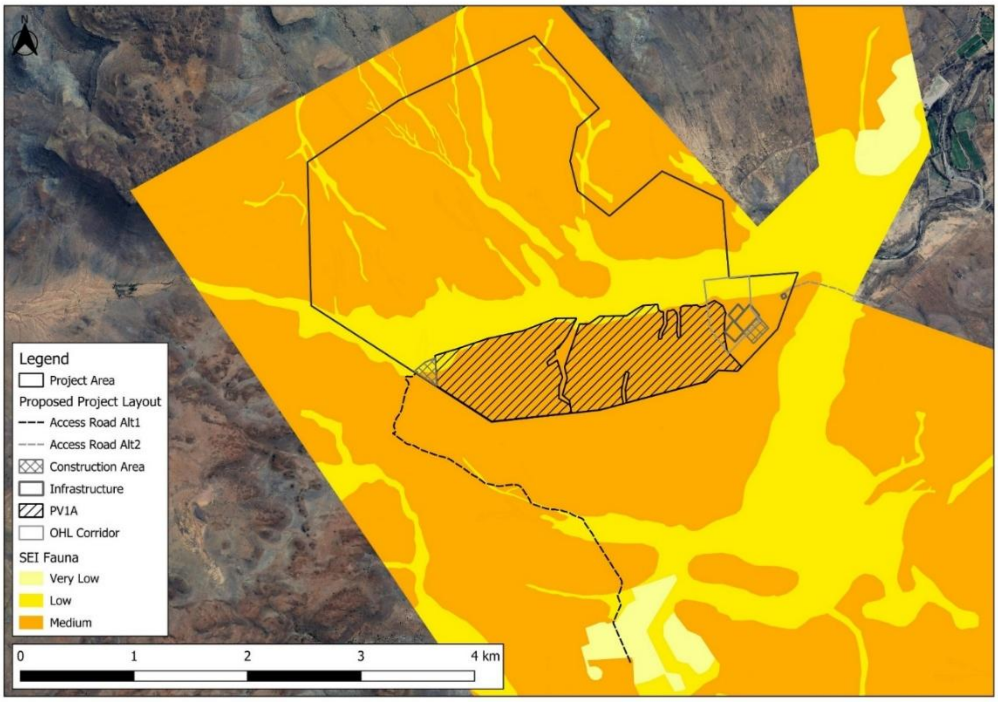

Figure D.20: Fauna sensitivity and layout map for the study area and footprint for the proposed PV facility (Martin and Jackson, 2025).

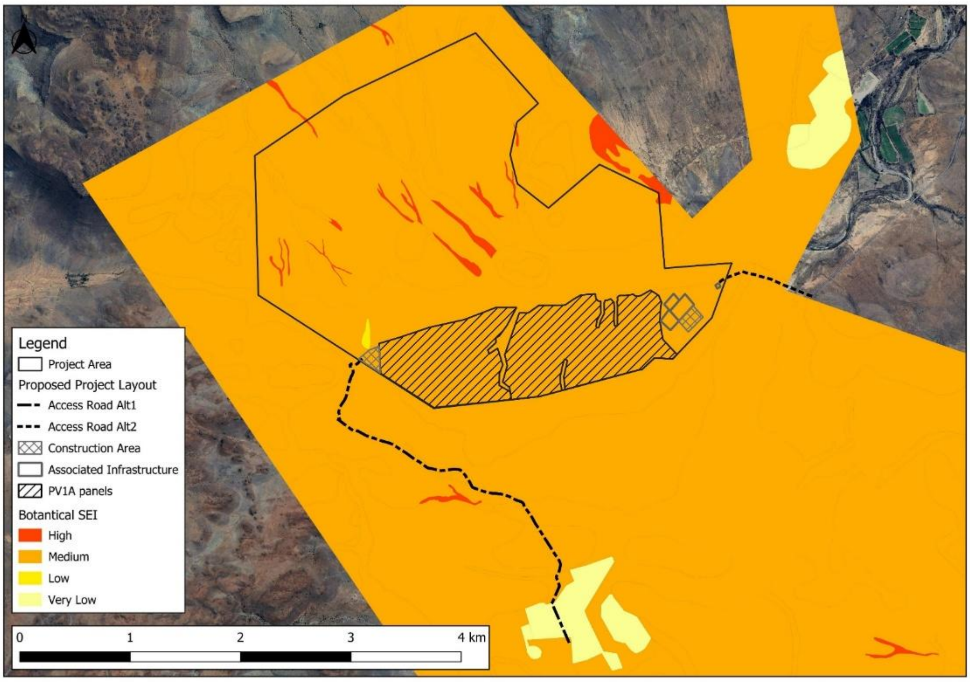

Figure D.21: Botanical sensitivity map for the SEF project area based on data gathered from the field survey and the desktop assessment (Martin and Jackson, 2025).

The overall SEI for three vegetation types recoded within the study area was found to be medium and for Eastern Upper Karoo: Wash it was found to be High as the receptor resilience for this vegetation is lower than for the other vegetation types. Agricultural land is transformed and therefore, ecologically, has a very low SEI. Transformed land has low ecological significance and is thus very low.
Based on the desktop and field assessments as well as consultation of the latest WCBSP (2023), the Screening Tool ratings are disputed and should be assigned as medium. The features driving the CBA and ESA status have been identified discussed in detail in Section D.2.9 below. Further comment from the specialists on the implications of project development on the functioning of these features are included in Section D.2.9.

D.2.9 Biodiversity Conservation Planning

Critical Biodiversity Areas and Ecological Support Areas

Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) are indicated in terms of the WCBSP (2023). This preliminary data provided by the WCBSP is the product of a systematic biodiversity planning assessment which identifies portions of land that require safeguarding to ensure the continued existence and functioning of species and ecosystems, including the delivery of ecosystem services, across terrestrial and aquatic realms. These spatial priorities are used to inform sustainable development in the Western Cape Province.

In addition to the above, CBAs and ESAs are separated further into CBAs 1 and 2 as well as ESAs 1 and 2, respectively. It is important to note that CBA 1 show areas in a natural condition and those that are potentially degraded or represent secondary vegetation are considered to be CBA 2. Similarly, a distinction is made between ESAs that are likely to be functional (i.e., in a natural, near-natural or moderately degraded condition – ESA 1), and ESAs that are likely severely degraded or have no natural cover remaining and therefore require restoration where feasible i.e., ESA 2. The ESAs are not considered essential from a conservation perspective for meeting biodiversity targets; however, they may offer some ecological services.

Other Natural Areas (ONAs) have not been identified as a priority but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Land use guidelines for Terrestrial ONAs are not required to meet biodiversity targets. ONAs represent the largest area in the region and form a matrix within which the CBAs and ESAs occur.

According to the WCBSP (2023), the proposed project site is traversed by a number of aquatic ESAs and a Terrestrial CBA is located to the east of the site (outside of the development footprint). The field survey conducted by the Aquatic specialist found that the CBA and ESA classifications, as delineated in the WCSBP 2023, within the study area, are inaccurate. In addition, the Terrestrial specialist confirmed that although one laydown area is situated in a CBA 1 terrestrial the specialist is of the opinion that the impact on this feature will be negligible.

The Aquatic specialist confirmed that the CBA classification utilised the dense stands of terrestrial vegetation as the wetland indicator, while the ESA classifications are based off desktop level assessments completed by the surveyor general. In addition, the portion of CBA that will be affected by the laydown area does not occur within a watercourse. As such, development within this area is unlikely to impact the functioning of the river corridors provided the recommended mitigation measures are implemented. Other features driving the CBA/ ESA status include the Southern Karoo Riviere vegetation type. The Terrestrial specialist confirmed that this vegetation type is listed as Least Concern, and its distribution exceeds its conservation target. Additionally, within the site, it was determined that this vegetation type has an SEI of medium significance. Since this vegetation type is relatively widespread and not threatened, and because project infrastructure is likely to avoid this vegetation type, it is unlikely that the project infrastructure will negatively affect its threat status of Least Concern and its persistence within the landscape. In addition, the assessment confirmed that disturbed areas are small and localised in nature therefore natural recolonisation and recovery from adjacent intact vegetation is considered feasible and is expected to further support the rehabilitation process.

Based on the field work conducted by the aforementioned specialists, it has been confirmed that the habitat associated with these areas, or habitat functions have been mapped to a fine scale level and assigned the appropriate sensitivity status. In cases where these features have been assigned a Very High No-go rating, the recommended buffers have been adhered to and the layout designed to avoid such areas.

Freshwater Ecosystem Priority Areas

Freshwater Ecosystem Priority Areas (FEPAs) are priority areas for conserving freshwater ecosystems and supporting sustainable use of water resources and upstream management areas. According to the National Freshwater Ecosystem Priority Area (NFEPA) wetland information Channelled Valley Bottom (CVB) wetlands as well as an Unchanneled Valley Bottom wetland are located in close proximity to the projects, but outside of the development footprint, these were investigated and found to be impoundments (Nel *et al*., 2011). As noted above, sensitive catchments and water courses were mapped to a fine scale level and are avoided by the site layout.

Critically Endangered and Threatened Ecosystems

The study area is not located within an International Bird Area (IBA) or a Strategic Water Resource Area and did not contain any Wetland Clusters or listed Threatened Ecosystems.

D.2.10 <u>Protected Areas</u>

The information below is based on the detailed Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report).

The South African Protected Areas Database (SAPAD) and the South African Conservation Areas Database (SACAD) collectively provide the most comprehensive and up-to-date spatial record of all formal Protected Areas (PAs) and Conservation Areas (CAs) in the country, including those under private ownership. Updated quarterly, these datasets form the national baseline for identifying areas under conservation management. According to the latest editions (SAPAD 2025 Q2 and SACAD 2025 Q2), the project area does not fall within any protected or conservation area (Figure D.22).

South Africa’s approach to expanding its conservation network is guided by the National Protected Areas Expansion Strategy (NPAES), which aims to ensure that protected areas are extended strategically, cost-effectively, and in ways that promote ecological sustainability and climate resilience. The NPAES highlights ecosystems that are poorly represented in the national network and prioritises them for expansion. Although the focus areas identified in the strategy have not undergone detailed stakeholder engagement or fine-scale feasibility testing, they nonetheless signal zones where development requires heightened consideration. In parallel with protected area planning, Key Biodiversity Areas (KBAs) provide a globally recognised framework for identifying sites critical to the conservation of species and ecosystems. These areas help South Africa track progress toward meeting conservation targets and safeguarding irreplaceable biodiversity.

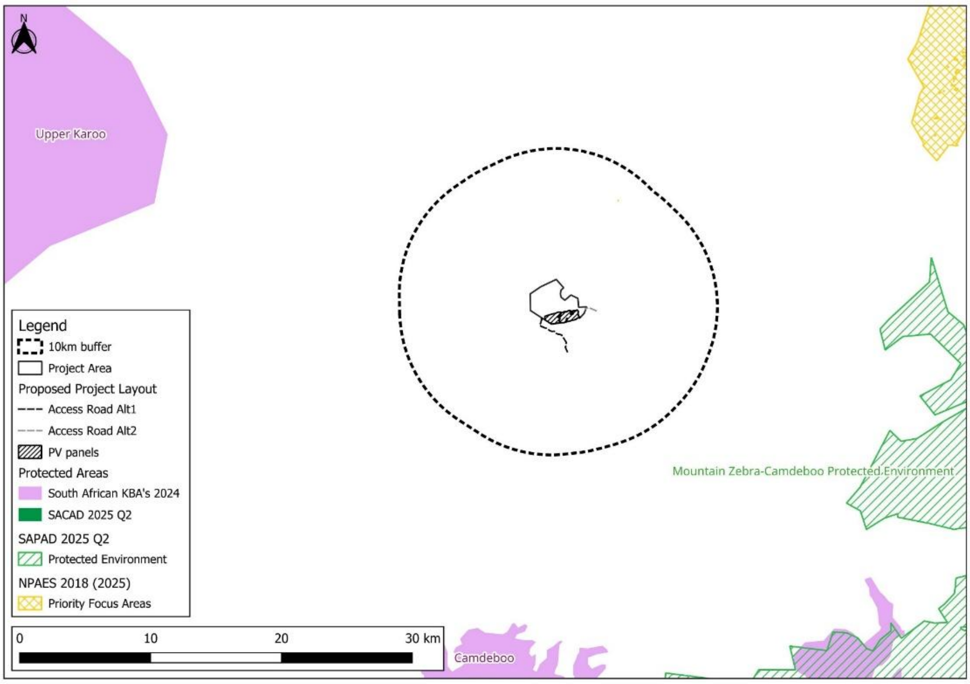

Figure D.22: Map indicating the project area in relation to protected areas, conservation areas, NPAES Focus Areas and Key Biodiversity Areas (Martin and Jackson, 2025).

The project area does not intersect with any NPAES Focus Area, although one lies approximately 10 km to the northeast. The nearest formally protected landscape is the Mountain Zebra–Camdeboo Protected Environment, situated roughly 20 km to the east. In addition, based on the 2024 KBA spatial dataset, the project area is neither located within nor near any designated KBA.

D.2.11 Avifauna

A detailed description of the avifauna species encountered within the study area during the site monitoring, and the potential impact of the proposed project development on these bird species is provided in the Avifauna Impact Assessments (Appendix F.4 of this BA Report).

The PAOI is not located within any Protected or Important Bird Areas (IBA). The closest Important Bird Area (IBA) to the projects is the Platberg-Karoo Conservancy located approximately 60 km north-east of the PAOI.

Two seasonal pre-construction monitoring surveys were conducted in line with Sampling Regime 2 of the Best Practice Guidelines (Jenkins, *et al.*, 2017) on the proposed PV sites over 7 days in summer from 8 – 15 December 2023 and over 7 days in winter from 8 – 14 July 2024.

A total of 206 species were identified as potentially occurring in the study area with 162 species confirmed present during avifaunal pre-construction monitoring in the project area. Of those confirmed, 17 are endemic or near-endemic, and twelve are currently red listed: Black Stork, Ludwig's Bustard, Martial Eagle and Secretarybird are listed as Endangered; Blue Crane and Verreaux's Eagle are listed as Vulnerable and Black-winged Kite, Hamerkop, Karoo Korhaan, Kittlitz' Plover, Red-billed Teal and Yellow-billed Duck are listed as Near Threatened (Lee, *et al.,* 2025). The avifaunal specialist confirmed that Cape Vulture (Vulnerable) has not been recorded by SABAP2 in the region, or during pre-construction monitoring at the Megora Solar PV Cluster, or surveys on neighbouring projects completed by the specialist or in data available in the public domain.

The specialist noted that it is known from comments obtained from Vulpro for a neighbouring site, that they do occasionally traverse the area. Vulpro has confirmed in this regard that while Cape Vulture has been recorded within 50 km of the neighbouring site, no distinct colonies or roosts are known within the area and there are no known flyways of the species that the project should avoid. Cape Vulture has therefore been added to the list of potential SCC for the project.

A Jackal Buzzard nest and two Verreaux's Eagle nest was identified south of the site, the Jackal Buzzard nest being in close proximity to the Option A site access road and appropriate buffers assigned (Figure D.23). Both nests were active during pre-application monitoring, and the alignment should avoid the buffers if technically possible. The Jackal Buzzard nest is located approximately 115 m from the proposed alignment on a ridge and the Verreaux's Eagle nest is located approximately 580 m from the alignment on a ridge. The Option B site access road crosses a NFEPA river and it's 200 m buffer, as well as the but this is acceptable from an avifaunal perspective. Site access road Option A crosses a 200 m Jackal Buzzard nest No-Go buffer and a 1 km Verreaux's Eagle nest No-Go buffer. However, the avifaunal assessment confrimed that the current road alignment would be acceptable provided the reccomended mitigation measures are implemented, such as no construction activities taking place during the winter breeding season, if the nests are active. Both nests are near existing roads, and the birds appear to be habituated to some degree to human activity.

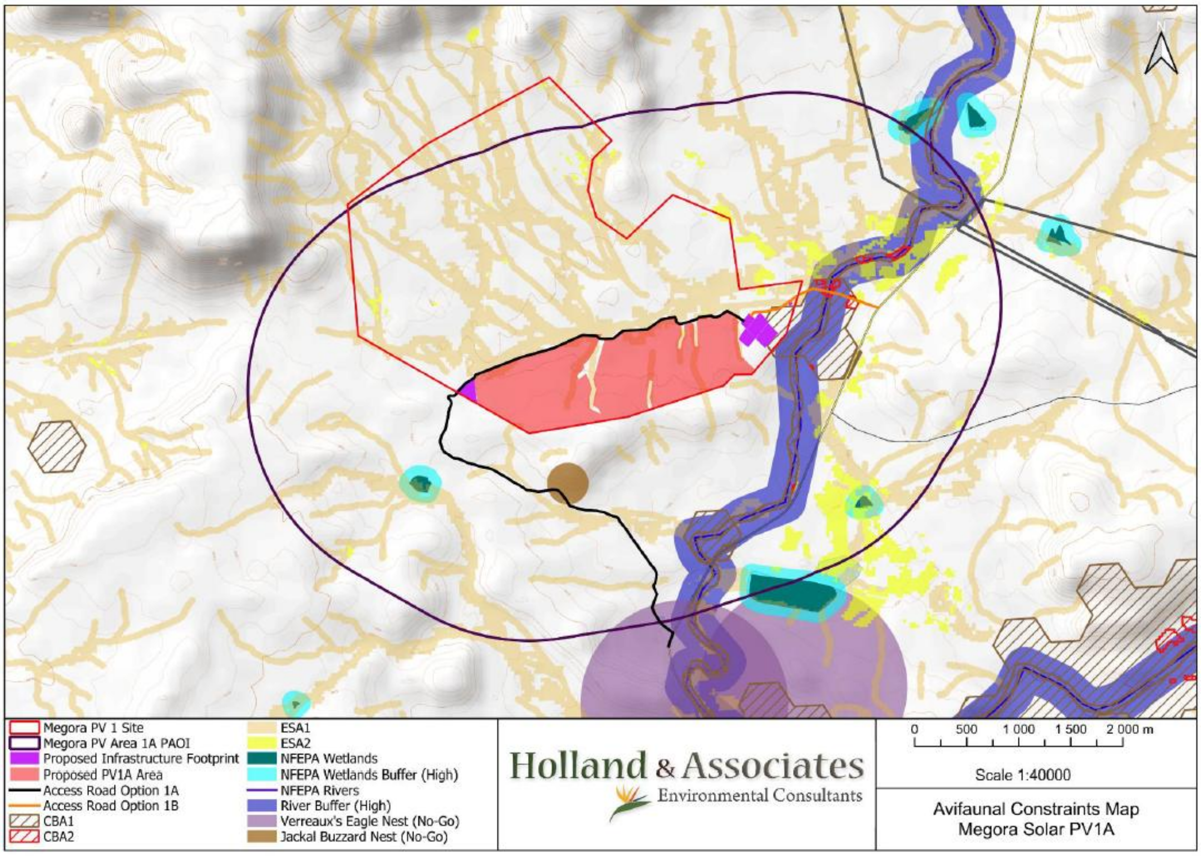

Figure D.23: Avifaunal sensitivities within the combined PAOI and surrounds.

The Avifaunal Assessments note that two avifaunal habitat types were identified for the PV site: Karoo scrub and drainage lines.

The Conservation Importance (CI) for karoo scrub, and drainage lines was determined as medium due to more than 50% of the receptor containing natural habitat with potential to support SCC. The

Functional Integrity of karoo scrub and drainage lines has been rated as high as the vegetation is semi-intact and has been utilized for sheep grazing for decades, but there is high habitat connectivity, limited road networks, and no signs of major past disturbance such as ploughing apparent. The Receptor Resilience of the karoo scrub and drainage lines has been rated as medium as a recovery to restore >75% of functionality is assumed to be slow, but possible with rehabilitation, over more than 10 years.

The resulting SEI rating was determined as medium for karoo scrub and drainage lines, which means with minimisation and restoration mitigation development activities with medium impact are acceptable if followed by appropriate restoration activities.

The Avifaunal specialist concluded that proposed PV development site avoids all areas identified as being of High sensitivity during pre-application monitoring and is considered the preferred alternative site from an avifaunal perspective. The impact assessment has identified potential impacts to avian species, most of which can be mitigated to a very low or low negative level. No residual impacts of high significance were identified for the proposed development. Due to the footprint of the proposed development, approximately 175 ha of potential SCC habitat would be lost, and even with mitigation this impact is expected to be of medium negative significance for the SCCs that occur here (confirmed or high probability of occurrence), including Blue Crane, Karoo Korhaan, Ludwig's Bustard, Lanner Falcon, Martial Eagle, and Verreaux's Eagle. However, due to these species having much surrounding equivalent habitat available, this loss of habitat is not deemed to have unacceptably high impacts on these species, if the recommended mitigation measures are implemented.

D.2.11.1 Screening Tool Descriptions and Site Verification

The Screening Tool identified the PV site PAOI as of Low sensitivity under the avian theme. It must however be noted that the National Web-based Screening Tool contains little information for the avian theme in areas outside of the REDZs and this is thus not a reliable indication of the potential sensitivity of the site from an avifaunal perspective.

The Screening Tool identified the PV site PAOI as of high sensitivity for avian SCC *Neotis ludwigii* (Ludwig's Bustard) (Figure D.12). The results of the site inspection and two seasons of pre-application monitoring confirmed the results of the Screening Tool. The presence of 12 SCC has been confirmed with four species currently listed as Endangered (Black Stork, Ludwig's Bustard, Martial Eagle and Secretary bird) and two species listed as Vulnerable (Blue Crane and Verreaux's Eagle).

D.2.12 Visual Aspects and Sensitive Receptors

The information below is based on the Visual Impact Assessment included as Appendix F.5 of this BA Report.

The desktop and field visual assessment confirmed that agriculture is the dominant activity in the study area, with the main focus being crop cultivation and livestock farming. Agricultural activity in the area is restricted by the semi-arid nature of the local climate characteristic of the Karoo, and thus areas of cultivation are largely concentrated along the main waterbodies in the study area. Livestock (sheep) farming is common and overall, there is limited human activity, very low density of rural settlement, with relatively few isolated farmsteads in evidence in the study area and as such, the natural vegetation has been retained across much of the study area. Built form in much of the study area is limited to isolated farmsteads including farm worker's dwellings and ancillary farm buildings.

Other anthropogenic infrastructure present in the study area includes the unnamed gravel access road which traverses the eastern portion of the study area, existing electrical infrastructure which includes 22kV overhead powerlines, farm boundary fence lines, telephone lines and windmills. The closest built-up area is the town of Murraysburg which is situated approximately 20 km south of the proposed Megora PV 1A site. The town is outside the study area for this project and is thus not expected to have an impact on the visual character of the study area.

D.2.12.1 Screening Tool Descriptions and Site Verification

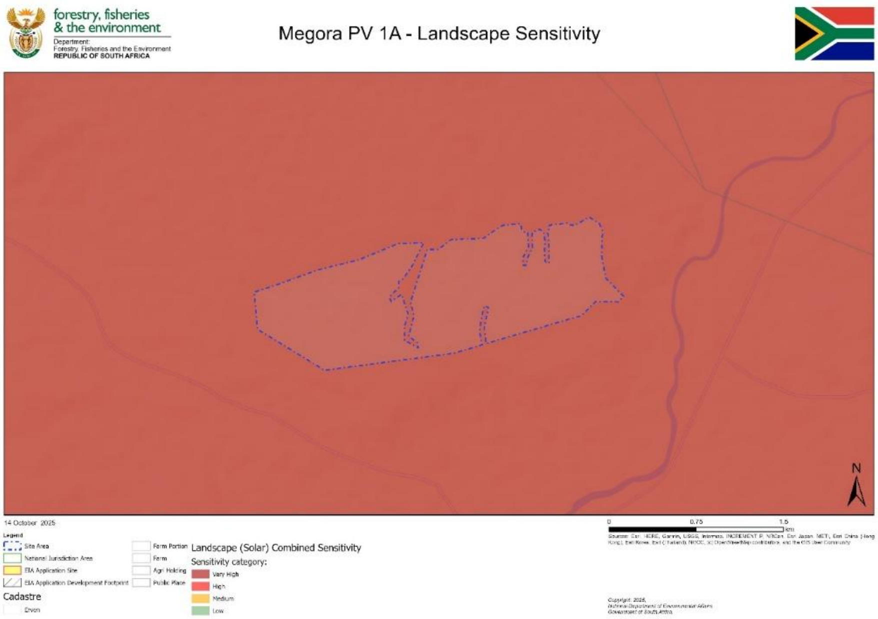

Figure D.24: Landscape (Solar) Combined Sensitivity for the proposed PV facility as depicted on the Screening Tool.

The Landscape Theme of the Screening Tool identifies areas of very high sensitivity in respect of solar PV development (Figure D.24). In particular the following sensitivities were flagged:

- Very High sensitivity: South African Large Telescope;
- Very High sensitivity: Within 250 m of a river;
- High sensitivity: Slope between 1:4 and 1:10;
- High sensitivity: Within 500 m of a river; and
- Medium sensitivity: Within 1000 m of a wetland.

According to the Screening Tool, aside from some areas identified as mountain tops, high ridges and steep slopes, much of the site is within 20 km of a South African Large Telescope and this factor has resulted in areas of “Very High” landscape sensitivity across the site, including the area identified for the PV Panel arrays. The site sensitivity verification exercise supported by the field investigation, only confirms that a small portion of the easternmost part of the Megora PV 1A site is located within 250 m of the Snyderskraal river. The specialists’ attempt to confirm the presence of a large telescope within 20 km of the project has been unsuccessful and as such this sensitivity feature has been excluded from further analysis. The EAP and project Team have been engaging with the relevant authorities to confirm the presence of such a telescope. Proof of engagement has been included in Appendix G of this BA Report.

The viewshed analysis[37] conducted as part of the detailed Visual Impact Assessment (VIA) found that the proposed infrastructure would be visible for much of the 5 km study area. Areas experiencing the highest levels of visibility will be concentrated within the development area and the areas to the north while areas to the south will experience the least levels of visibility. The localised topographic variations resulting from the hills and ridges spread across the landscape would provide some screening and would limit views of the project components to much of the southern parts sectors of the study area.

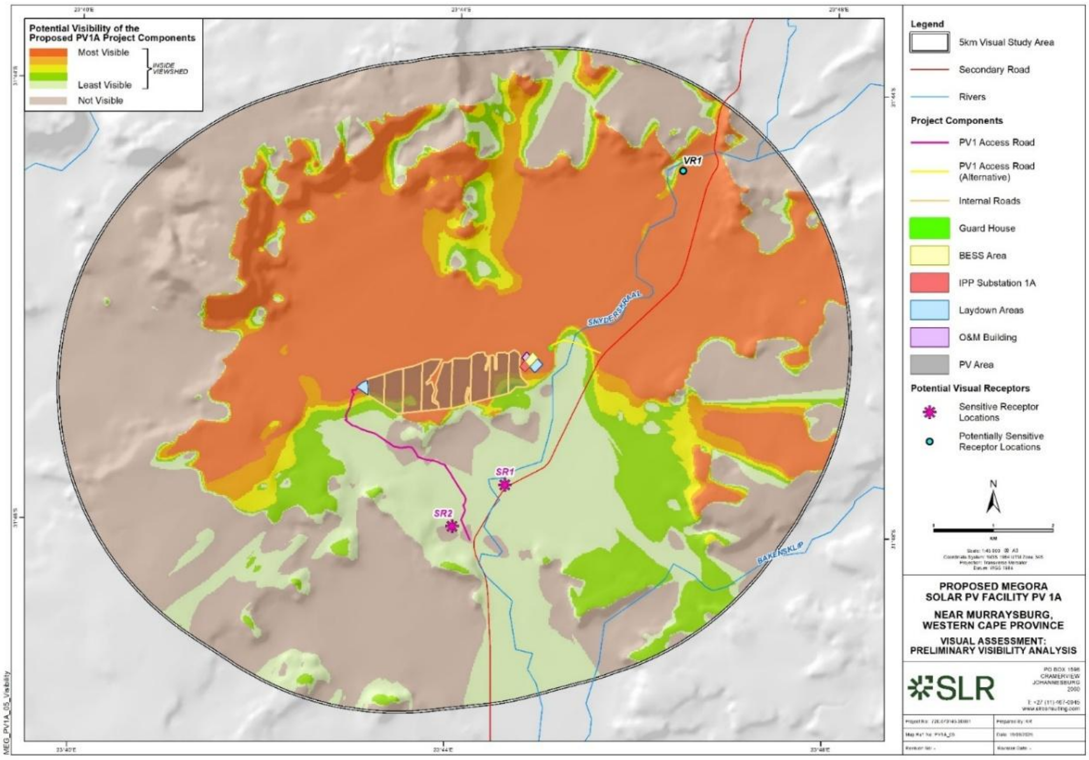

Figure D.25: Potential visibility of the proposed Megora PV 1A project components (Rakale, 2025).

The detailed visual assessment also generated zones of potential visual sensitivity (Figure D.25) as well as photomontages to provide an indication of how the proposed project would appear from selected viewpoints within the study area. The desktop assessment identified a total of three visual receptor locations within the study area, one of which could be regarded as a potentially sensitive visual receptor as it is located within a mostly rural / pastoral setting that will likely be altered by the proposed project.

Two locations were identified as sensitive visual receptors as they were found to be nature/leisure-based tourism facilities mostly associated with the pristine and picturesque qualities of the Karoo cultural landscape. These locations are as follows:

- SR1 - Badsfontein Old Farmhouse
- SR2 - Het Buiten Huisjie

Out of the one sensitive and one potentially sensitive receptor that fall within the proposed development's viewshed, none would experience high levels of visual impact as a result of the proposed development. SR1 could potentially experience moderate levels of visual impact, while VR1 could potentially experience only low levels of visual impact. SR2 was found to be outside the viewshed for the Megora PV 1A SEF and as such, has been removed from any further assessment.

[37] The viewshed analysis is based entirely on topography and does not consider any existing vegetation cover or built infrastructure which may screen views of the proposed development.

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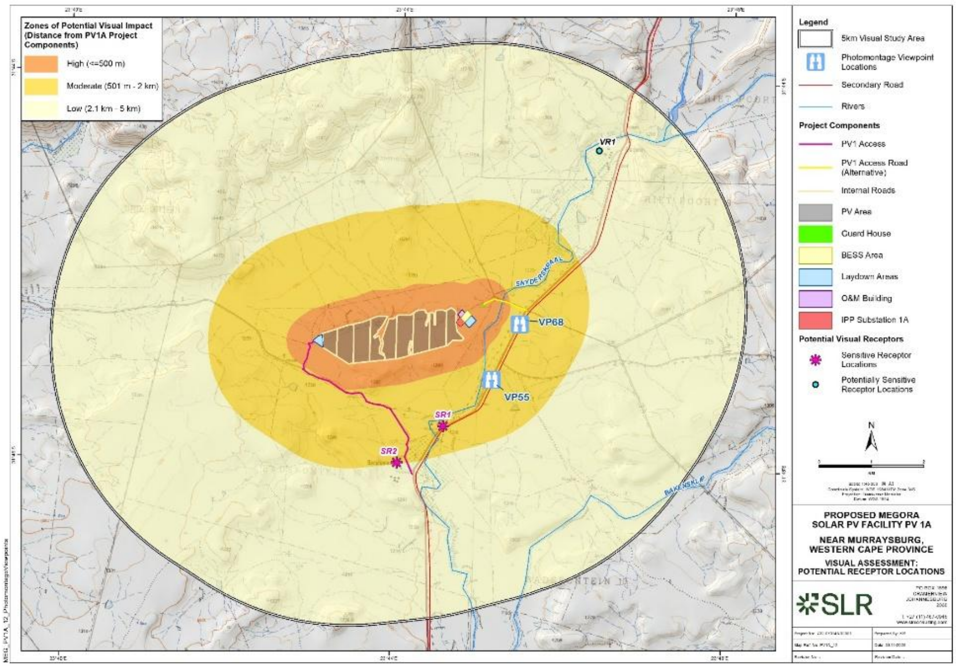


Figure D.26: Photomontage Viewpoint Locations and zones of potential visual sensitivity (Rakale, 2025).

The degree of visibility of an object informs the level and intensity of the visual impact, but other factors also influence the nature of the visual impact. The landscape and aesthetic context of the environment in which the object is placed, as well as the perception of the viewer are also important factors. The nature of the topography and the position of the viewer within the landscape are strong factors influencing the types of vistas typically present. Wider vistas will typically be experienced from higher-lying areas or hilltops and as such the view will be directly dependent on whether the viewer is within a valley bottom or in an area of higher elevation. Importantly in the context of this study, the same is true of objects placed at different elevations and within different landscape settings. Objects placed on high-elevation slopes or ridge tops would be highly visible, while those placed in valleys or enclosed plateaus would be far less visible.

Figure D.27: Photomontage of view southeast from VP55 showing the visibility of the PV 1A site layout from the secondary road (Rakale, 2025).

Figure D.28: Photomontage of view east from VP68 showing the visibility of the PV 1A site layout from the secondary road (Rakale, 2025).

The Megora PV 1A and associated infrastructure is not located on high elevation slopes or on ridgelines, and as such there will be minimal impact on the skyline. Localised topographic variations, including the hills to the north, west and south may limit views of the development from some parts of the study area, although the taller elements of the proposed facility may still be visible from many of the locally occurring receptor locations. Specifically:

- **Viewpoint VP55**

This viewpoint is located southeast of Megora PV 1A on the secondary road, approximately 930 m from the eastern edge of PV 1A arrays. The viewpoint is therefore in a zone of moderate visual impact.

The ridge bounding the PV 1A project restricts views of the PV array from the road at this location, however IPP substation 1A would be visible. The vegetation cover at this location along road would assist in screening views of the more prominent associated infrastructure.

- **Viewpoint VP68**

This viewpoint is located directly east of the Megora PV 1A on the secondary road, approximately 830 m from the eastern laydown area. The viewpoint is therefore in a zone of moderate visual impact. The ridge bounding the PV 1A project restricts views of the PV array from the road to a large extent, with only the tops of some of the PV modules being visible in some instances. The sparse vegetation cover and the proximity of the PV 1A infrastructure to the road would result in most of the associated on-site infrastructure, such as IPP substation 1A, being largely visible from the road from this location.

Sparse human habitation and the predominance of natural vegetation cover across much of the study area would give the viewer the general impression of a largely natural setting with some pastoral elements. The limited occurrence of cultivated land, agricultural land uses and infrastructure in the area has resulted in low levels of human transformation and visual degradation. As such, the proposed project and associated infrastructure would alter the visual character and contrast with much of the typical land uses associated with the area.

The specialist concluded that although the Screening Tool identifies significant areas of Very High landscape sensitivity for the proposed project, the site sensitivity verification exercise conducted in respect of this VIA did not indicate the presence of mountaintops, high ridges or any significantly steep slopes. This assessment, confirmed by the field investigation, showed the presence of undulating and hilly terrain with some koppies and hills in evidence The sensitivity analysis above has recognised these ridges and identified the higher ridges as zones where development would be least preferred. In addition, efforts to obtain confirmation of the presence of a large telescope within 20 km of the site have not been successful and as such this factor has not been included in the sensitivity analysis.

D.2.13 Heritage: Archaeology and Cultural Landscape

A detailed description of the archaeological features and cultural landscape within the study area is included in the Heritage Impact Assessment, which are included in Appendix F.6 of this BA Report. The information presented in this section is based on the Heritage Impact Assessment.

Two physical heritage surveys have been conducted in the Megora PV Cluster project area. The first was undertaken by Dr. Jayson Orton of ASHA Consulting (Pty) Ltd, assisted by Anja Huisamen between 30 November and 3 December 2023. The second visit by a TerraMare Archaeology team consisting of Gail Euston-Brown and Madelon Tusenius visited the Megora Solar PV Cluster project area on 11 and 12 October 2025. Portions of the Megora Solar PV Cluster project area were also surveyed by ACO Associates in September 2013 as part of heritage assessment work conducted for the authorized Ishwati Emoyeni Wind Energy Facility (WEF), immediately adjacent to the north and east (Halkett, 2014).

The detailed Heritage Impact Assessment explains that the Karoo region has a long history going back to the Early Stone Age (ESA) as testified to by occasional diagnostic artefacts from this period (generally handaxes). Middle Stone Age (MSA) artefacts are generally the most commonly encountered stone age materials in the Karoo and are generally well patinated, indicating their great age. Later Stone Age (LSA) finds are less common but generally of higher significance because of their better contexts (Orton *et al.* 2016). The vast majority of material tends to be what is referred to as background scatter. This can be defined as “widespread isolated artefacts whose distribution results from either primary or secondary causes” (Orton 2016:121).

The survey of the proposed footprint of the project found very little archaeology within the project footprint and surrounding area. Three archaeological occurrences were recorded – an ephemeral LSA scatter of hornfels artefacts (1679), an isolated 7 m long stone alignment of indeterminate function (1680), and a possible circular stone feature made of dolerite boulders (1689). All these occurrences were assessed to be ungradable and thus of very low heritage significance.

Immediately north and east of the PV 1A project footprint an ephemeral but general background scatter of weathered artefacts (1668, 1673, 1674) was recorded. The specialist confirmed that this background scatter is largely MSA in date, although rare unweathered hornfels artefacts show an LSA component to the scatter. It was observed that this material is likely in secondary context, having been moved by water and deflated by sediment erosion down into a mixed, lag deposit and is generally regarded as background scatter of very low cultural significance.

No extant historical built structures were observed within the Megora PV 1A project footprint. Two 350 m long earthen-walled dams with central concrete spillways (1678, 1681) were recorded just outside the north-western end of the project area during the site visit. These structures are identifiable in the 1959 aerial photography of the area and are therefore estimated to be more than 60 years old. Both occurrences were assessed to be ungradable and thus of very low heritage significance. Near to 1681, at point 1682, a wind pump, reservoir and large poplar tree, were observed in 1959 aerial photographs. This was also assessed to be ungradable and thus of very low significance.

A detailed list of finds from the heritage surveys conducted for the PV site is included in the detailed Heritage Impact Assessments (Appendix F.6 of the BA Report).

Overall, the assessments for the PV sites confirmed that there are no significant archaeological concerns for this project since no archaeological sites are under threat and no other heritage resources will be significantly impacted (Figure D.29).

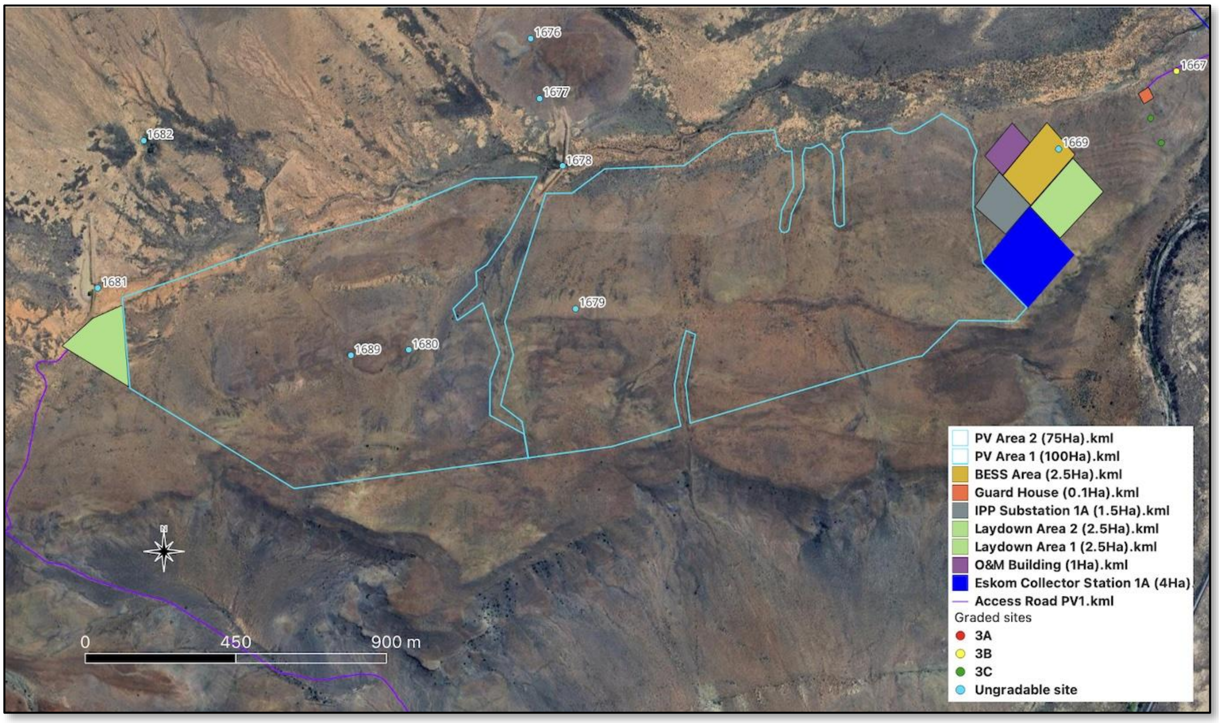


Figure D.29: Site distribution map showing graded heritage features in relation to proposed project infrastructure (Gribble, 2025).

Section 38(3)(b) of the NHRA requires an assessment of the significance of all heritage resources. In terms of Section 2(vi),‘‘cultural significance’’ means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. The reasons that a place may have cultural significance are outlined in Section 3(3) of the NHRA.

In respect of the landscape within which the Megora PV 1A facility will be constructed, the climate and geology of the area have resulted in rugged landforms with low-growing, Karoo shrub and grasses extending over an expansive, largely flat landscape broken by occasional rocky intrusions. The paucity of natural landscape features within the project area that could have served as foci for pre-colonial human activities and the small number of archaeological sites recorded on the project site suggest that the landscape of the Megora PV 1A project site was lightly used and occupied by pre-colonial people.

The cultural landscape reflecting more recent historical land use is similarly weakly expressed. The site has primarily been used for extensive stock farming, with cultural features largely limited to farm infrastructure such as fences, water troughs and wind pumps. Two farmsteads in the surrounding area were identified by the Visual Impact Assessment (VIA) as sensitive visual receptors; however, beyond these, the VIA characterised much of the study area as predominantly natural with some pastoral elements and assigned an overall moderate visual sensitivity (Rakale, 2025).

Pre-colonial and historical land use within the Megora PV 1A project site has not substantially modified the inherent natural character of the landscape. The area is best described as a lightly used, organically evolved and largely relict landscape.

While the construction of the Megora PV 1A facility will result in a notable change to the existing landscape character and will contrast with the limited pre-colonial and historical human elements present, the development is proposed within a cultural landscape that can be defined as a continuing landscape with moderate visual sensitivity. The broader landscape context is one of ongoing transition towards increased industrial land use, driven by the site’s location within the Beaufort West REDZ and the proliferation of renewable energy projects in the surrounding area.

D.2.13.1 Screening Tool Descriptions and Site Verification

Figure D.30 and Figure D.31 indicate the archaeological and heritage sensitivity for the PV site and IPP substation as captured on the Screening Tool.

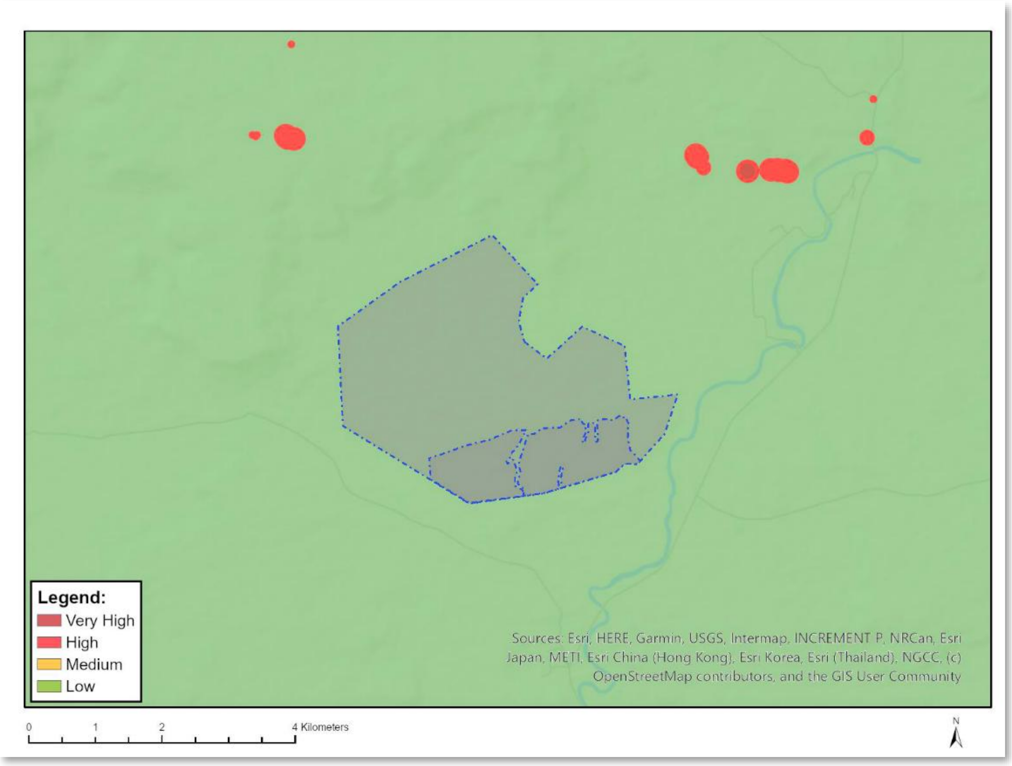


Figure D.30: Archaeological and cultural heritage sensitivity mapping for the proposed PV facility as depicted on the Screening Tool.

Figure D.31: Archaeological and cultural heritage sensitivity mapping for the proposed IPP substation as depicted on the Screening Tool.

Based on the findings from the Screening Tool the proposed site is assigned a Low sensitivity rating. The specialist assessment confirmed that the PV facility area is of low sensitivity with areas of higher sensitivity occurring north of the proposed site. The heritage specialist confirms these findings.

D.2.14 Palaeontology

A detailed description of the palaeontological features within the proposed PV site and recommended mitigation measures is provided in the Palaeontology Impact Assessments (Appendix F.6 of this BA Report), which also forms part of the respective integrated Heritage Impact Assessments.

As described in Section D.2.2, the study area is underlain by Middle to Late Permian continental fluvial and lacustrine sediments of the lower portion of the Hoedemaker Member of the Teekloof Formation as well as small patches of the Balfour Formation, both belonging to the Adelaide Subgroup of the Beaufort Group, Karoo Supergroup. The southern portion of the Megora PV 1A footprint (where most of the PV layout will be concentrated) is underlain with unfossiliferous Jurassic Dolerite which is igneous in origin. The Adelaide Subgroup Formations represent deposition in low-energy alluvial floodplains and lacustrine settings associated with meandering river systems. The bedrock consists predominantly of grey mudstone, reddish in places, interlayered with sandstone and siltstone (Smith, 1989; Stuart-Williams, 1981), largely mantled by Quaternary superficial deposits (but not indicated on the 1: 250 000 geological map).

The PalaeoMap of the South African Heritage Resources Information System (SAHRIS) indicates that the Palaeontological Sensitivity of the Jurassic Dolerite is Zero as it is igneous in origin and thus fossiliferous while that of the Adelaide Subgroup is Very High (Almond and Pether, 2009; Almond et al., 2013).

The PalaeoMap of the SAHRIS (Figure D.32) indicates that the Teekloof Formation is assigned a Very High Palaeontological Sensitivity which aligns with the Palaeontolgical sensitivity rating assigned by the National DFFE Screening Tool. According to SAHRA (April 2025), the sensitivities identified on the Palaeontology theme layer of the DFFE Screening Tool represent a limited number of known palaeontology resources. SAHRA further explains in a guidance note that palaeontology resources are widely dispersed and can occur on any development site in South Africa. Therefore, SAHRA recommends that PIAs must be undertaken as per the PalaeoSensitivity Map provided on SAHRIS, irrespective of the sensitivity shown on the palaeontology theme layer.

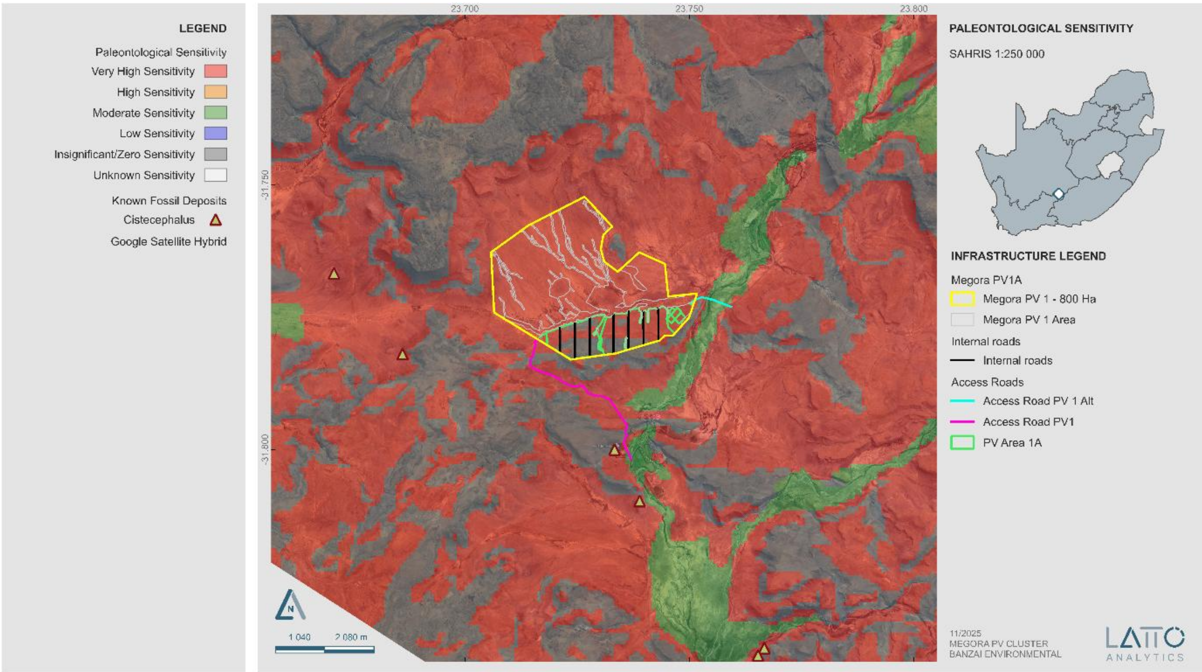


Figure D.32: Extract from the SAHRIS PalaeoMap (Council for Geoscience) showing the Palaeontological Sensitivity of the Megora PV 1A development area. White triangles with red margins indicate known fossil localities recorded in the National GIS Palaeontological Database (Butler, 2025).

D.2.14.1 Screening Tool Descriptions and Site Verification

The National Environmental Web-based Screening Tool indicates that the Palaeontological Sensitivity of the development is Very High (dark red) while no sensitivity has been allocated to the white areas on the map (Figure D.31).

A three day site visit was conducted on two occasions, from 23 January 2023 and between 15 and 17 January 2024. Several fossiliferous outcrops containing well-preserved to weathered tetrapod fossils were identified within the Cluster development area. These outcrops were confined to the koppies situated within the Cluster development footprint and the specialist has confirmed that the proposed project layout has excluded the fossiliferous koppies. The site comprises a relatively flat central area with isolated koppies, surrounded by low mountain ridges. No fossils were detected on the flat central portions of the development footprint. Therefore, the Screening Tool sensitivity rating is confirmed however it is important to note that no fossiliferous outcrops were identified in the Megora PV 1A study area (Figure D.34).

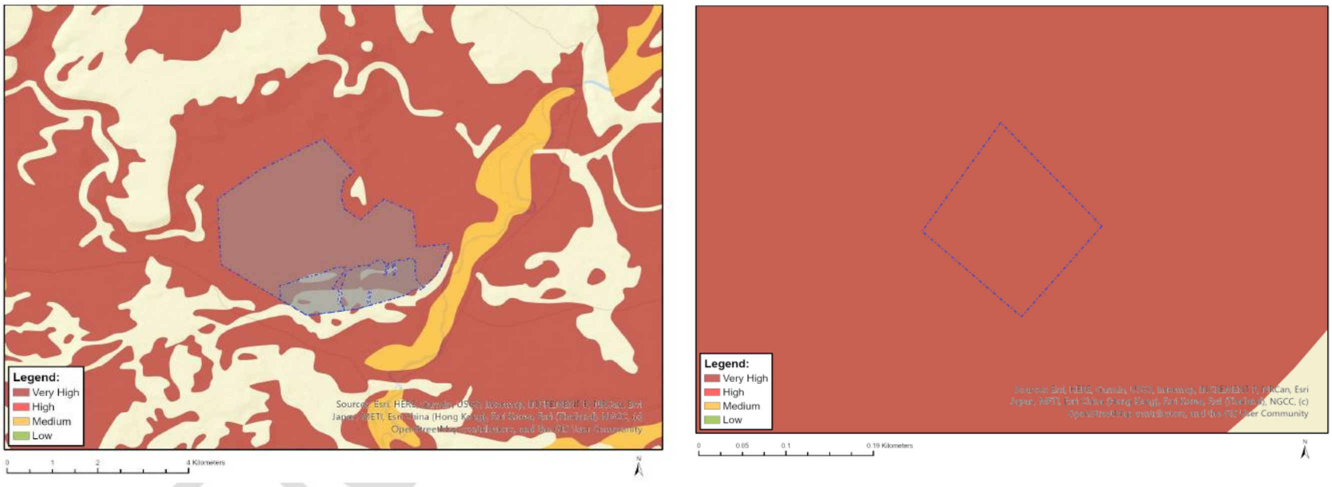


Figure D.33: The Screening Tool map for Palaeontology Combined Sensitivity for the Megora PV 1A study area (left) and Megora PV 1A on-site substation (right).

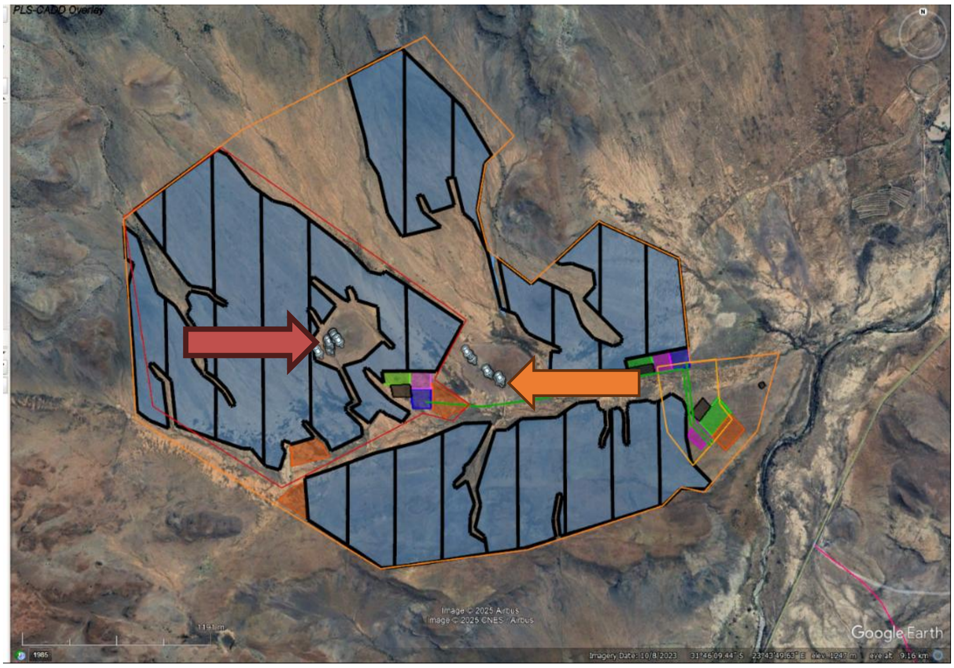


Figure D.34: Fossiliferous outcrops identified in the Megora PV Cluster is indicated by orange arrows (Butler, 2025).

D.3 Socio-Economic and Infrastructural Environment

D.3.1 <u>Socio-Economic Character</u>

The information provided below has been extracted from the Socio-Economic Assessment, which is included in Appendix F.8 of this BA Report.

This Socio-Economic Assessment covers the individual land parcels on which the proposed project will be developed if approved, and the nearest towns, as the anticipated socio-economic impacts will be spread to varying degrees across these localities.

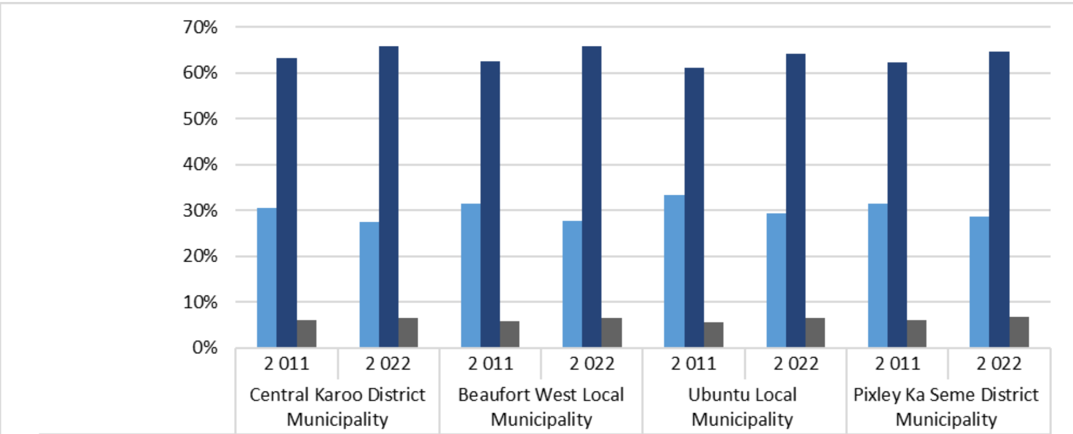
The significance of impacts is often highly dependent on the socio-economic environment or context within which they occur. For example, job creation or losses in a small local community with a stagnating economy and high unemployment will be more significant than it would be in a larger community with a healthy economy. This section describes the socio-economic environment to provide such baseline information to the impact assessment.

The main information sources used were municipal socio-economic profiles generated by the provincial government, the latest Municipal Economic Review and Outlook, as well as Census 2011 and Census 2022 data.

Beaufort West Local Municipality (BWLM) had a population of 72 972 in 2022, up from 49,586 in 2011, which translates to a population growth rate of around 3.8% per annum over the period. This is higher than the annual growth rate for the Central Karoo District Municipality (CKDM), which was 3.5% over the same period. BWLM had an average household size of 3.8 in 2022 and 52% of the population is female.

Recent population estimates are not available at the settlement level, however the 2011 census gives some indication of the towns nearby the study site, as outlined in
. Murraysburg had a population of 5,070, while Richmond had a population of 3 794, Nelspoort 1 699 and Victoria West 8 254.

Between 2011 and 2022, BWLM's dependency ratio[38] decreased from 60 in 2011 to 52 in 2022. This indicates a decreasing trend over time as an ever-larger proportion of the population was falling into the working age group relative to other population groups (**Error! Reference source not found.**). Between 2011 and 2022, the population of the ULM appeared to be following a similar trajectory to that of the BWLM. As in BWLM, the dependency ratio in the ULM fell from 64 in 2011 to 56 in 2022, with an increasingly large portion of the younger population falling into the working age category.



	Central Karoo District Municipality		Beaufort West Local Municipality		Ubuntu Local Municipality		Pixley Ka Seme District Municipality	
	2 011	2 022	2 011	2 022	2 011	2 022	2 011	2 022
Population under 15	31%	28%	32%	28%	33%	29%	32%	29%
Population 15 to 64	63%	66%	63%	66%	61%	64%	62%	65%
Population over 65	6%	7%	6%	7%	6%	7%	6%	7%

Figure D.35: Age cohorts over time in Age cohorts over time in Central Karoo District Municipality, Beaufort West Local Municipality, Ubuntu Local Municipality and Pixley Ka Seme District Municipality (van Zyl and Johnson, 2025).

[38] The dependency ratio expresses the ratio of those typically not in the labour force (being lower than the age of 15 and higher than the age of 64) to those typically in the labour force (people of ages 15 to 64).

In terms of employment, BWLM's unemployment rate was 30% in 2023 which is the highest unemployment rate in the CKDM. The local municipality's trend has for the most part been consistent with that of the district municipality (Figure D.36). High unemployment rates over this period can be attributed to job losses as a result of drought, loadshedding and economic recession. While unemployment rates have been decreasing since 2021, unemployment remains high at 30% in BWLM and above the CKDM average of 24% (WCPG, 2023). In 2023, PkSDM had an unemployment rate of 24.57% (PkSDM, 2025).

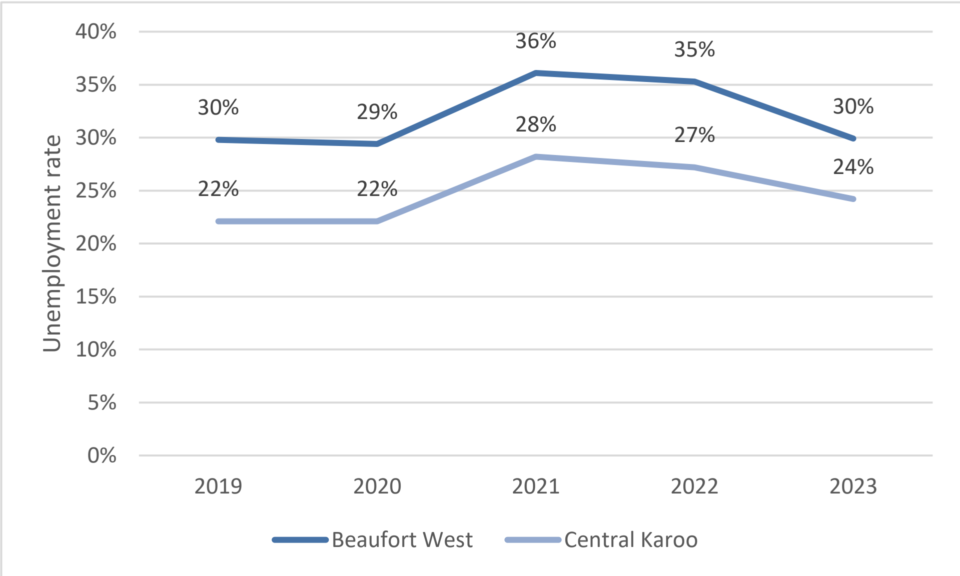


Figure D.36: The unemployment rate in Central Karoo District Municipality and Beaufort West Local Municipality over time (van Zyl and Johnson, 2025).

In 2024, most formal jobs in BWLM fell into the semi-skilled (40.7%) and low-skilled (34.6%) categories with skilled jobs making up only 24.7% of jobs in the area (WCPG, 2020; WCPG, 2024). In comparison to 2019, the skilled sector has grown by approximately 4% whereas the semi-skilled workers have decreased in proportion by less than 3%. The proportion of low-skilled workers has remained stable. Primary and tertiary sectors, such as agriculture and public administration, are the largest employers within BWLM. The tertiary sector has seen job gains over the past year, however the agricultural sector, which employs a large portion of the workforce, has seen job losses (WCPG, 2024).

Statistics published by the Western Cape Government indicate that learner enrolment in BWLM has been decreasing gradually in recent years (WCPG, 2024). The number of schools within BWLM has also decreased with the number of public schools falling from 20 in 2017 to 18 in 2024. The learner-teacher ratio has, however, improved slightly from 32.4 learners per teacher in 2022 to 31.4 learners per teacher in 2023.

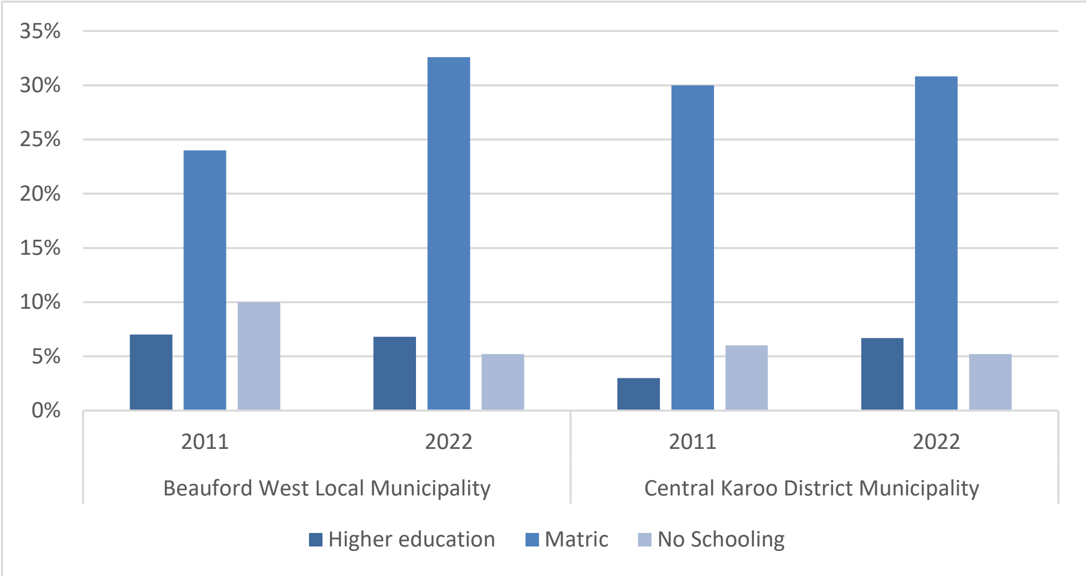


Figure D.37: Education levels in those over 20 years old in Central Karoo District Municipality and Beaufort West Local Municipality, 2011 and 2022 (van Zyl and Johnson, 2025).

The proportion of people over the age of 20 years who have obtained a matric certificate increased between 2011 to 2022 period within BWLM. This increase was far greater than that experienced by CKDM. In addition, the number of people without any schooling has also decreased on both the local and district municipality level. This indicates that basic education levels have improved in the study area during this time, particularly in the local municipality. The proportion of people who have obtained some form of higher education has remained constant within BWLM. This is a deviation from CKDM trends where the proportion of those with higher education has approximately doubled over this period.

Access to basic services has improved over time both at the local and district municipality levels, with the exception of weekly refuse removal in BWLM. In addition, In the BWLM, 99.6% of households live in formal dwellings, which is a slightly higher proportion of households than the CKDM with 99% (WCPG, 2024).

Over half of the district municipality's healthcare facilities are located within BWLM. A major concern in the study area is HIV/AIDS and Tuberculosis (TB) treatment and care. Within the local municipality, the number of patients receiving treatment for HIV/AIDS and Tuberculosis has been increasing in recent years (WCPG, 2024). BWLM's latest IDP notes the importance of providing preventative care to vulnerable communities. This preventative care is provided by government and consists primarily of condom distributions and campaigns to encourage the practice of safe sex (Beaufort West Municipality, 2022).

In term of wider positive impacts, the specialist found that the proposed project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. In addition, the project would contribute to local socio-economic and enterprise development. These positive impacts would be especially important at a local level where unemployment remains extremely high amid low economic growth and a lack of new opportunities to assist with much needed rejuvenation. Overall, the specialist found that it is considered most likely that the positive impacts of the project would exceed its negative impacts resulting in an overall net benefit with mitigation compared to the *status quo*.

D.3.2 Civil Aviation and Defence

As required by GN 320, Civil Aviation and Defence Site Sensitivity Verifications were compiled. These are included in Appendices F.13 and F.14 of this BA Report. Overall, the proposed project areas fall within a Low sensitivity area from a Civil Aviation and Defence perspective.

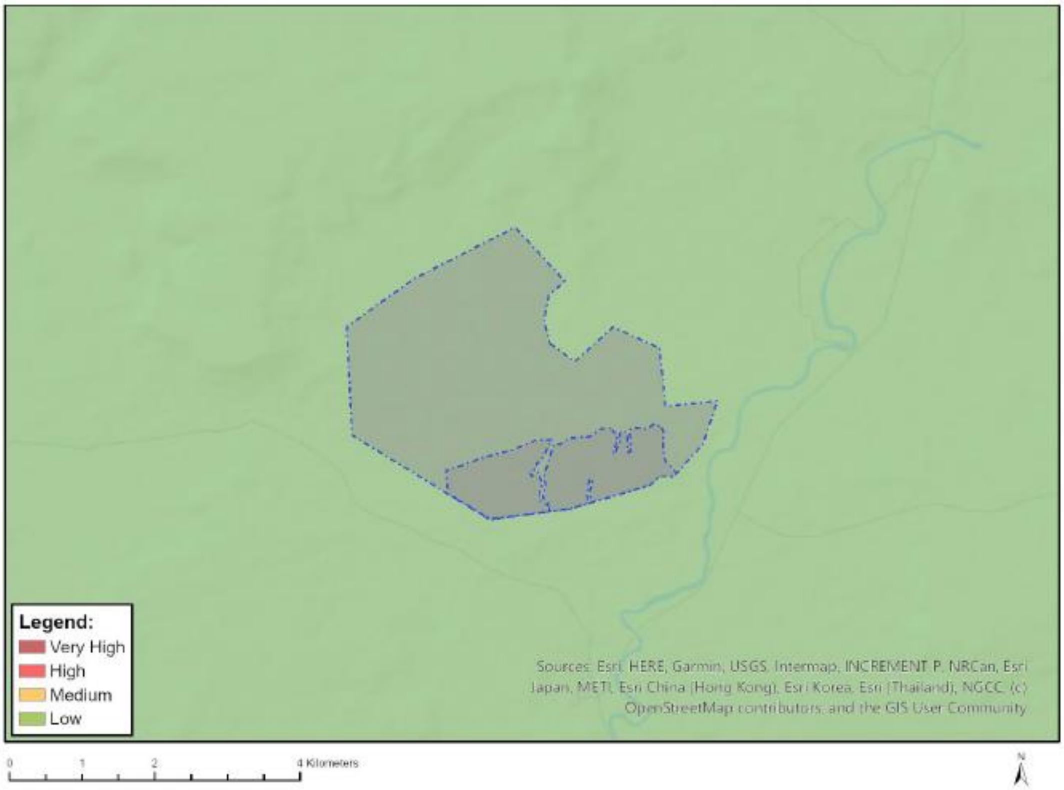


Figure D.38: Civil Aviation (solar PV) sensitivity of the study area based on the Screening Tool.

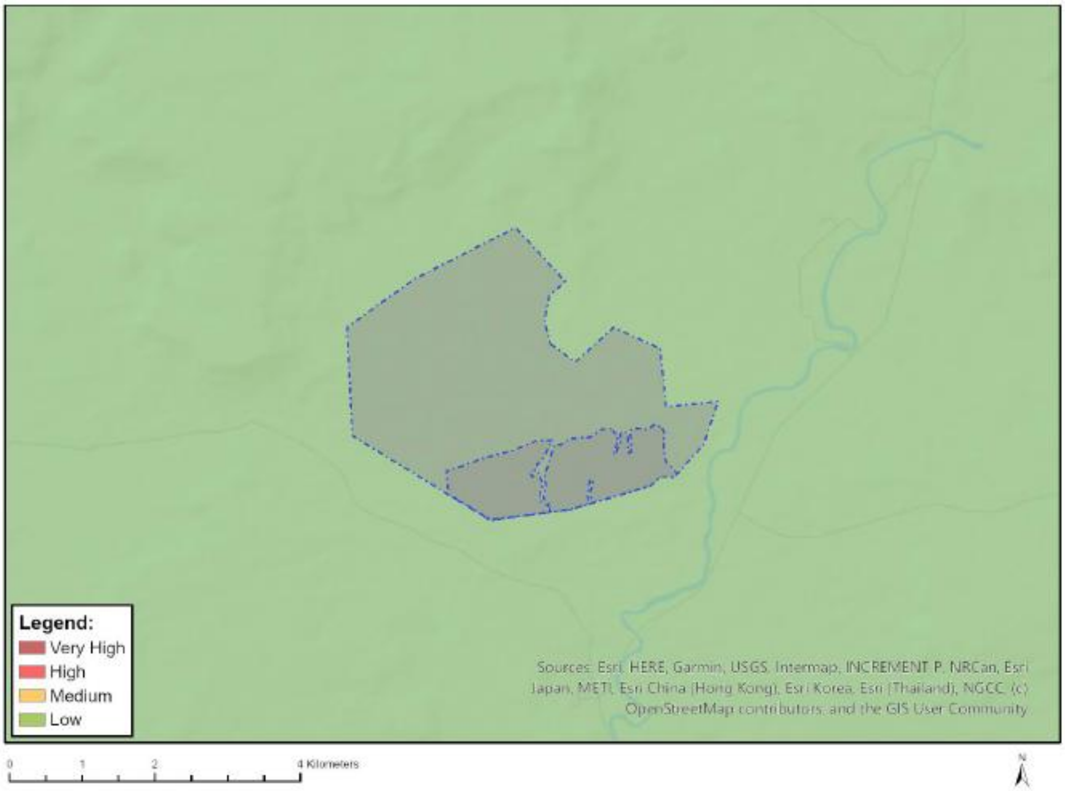


Figure D.39: Defence (solar PV) sensitivity of the study area based on the Screening Tool.

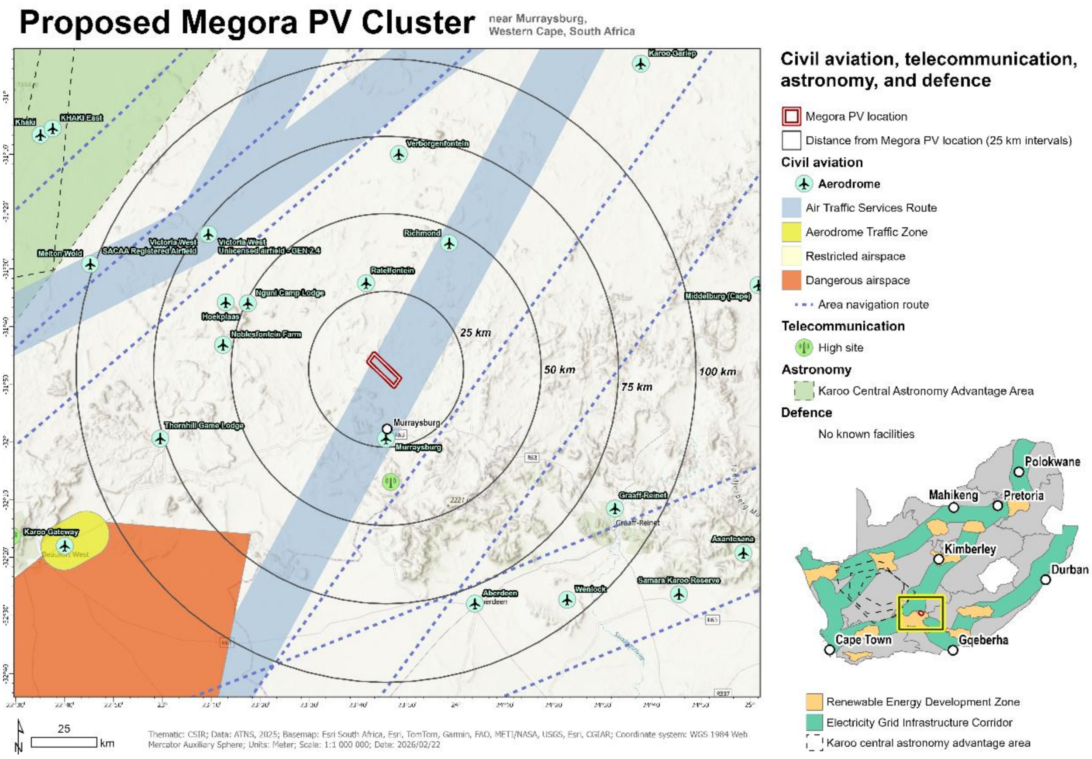


Figure D.40: Civil Aviation and Defence features relative to the proposed project study area based on the site visit and existing databases.

Figure D.40 indicates the location of the civil aviation and defence features, which informed the SSV. According to Google Earth imagery, the Murraysburg Aerodrome is located approximately 27 km south of the study area. A detailed site visit indicated that the aerodrome appears to be non-functional and not in active use, with no clearly demarcated runway or aviation signage observed at the time of the visit. Based on its distance from the study area and the relatively low height of the proposed project infrastructure, no impacts on the aerodrome are anticipated. In addition, there are no known Defence features within 50 km of the proposed PV Cluster. The low sensitivity allocated on the Screening Tool is therefore confirmed from a Civil Aviation and Defence perspective. Furthermore, the project footprint does not fall within 3 km of an aerodrome, hence a glint and glare study is not needed.

SECTION E: APPLICABLE LEGISLATION

E.1 Applicable Legislation

The scope and content of this BA Report have been informed by the legislation, guidelines and information series documents listed below. It is important to note that the specialist studies included in Appendix F of this BA Report also include a description of the relevant applicable legislation.

E.1.1 National Legislation

E.1.1.1 The Constitution of the Republic of South Africa (Act 108 of 1996)

The Constitution, which is the supreme law of the Republic of South Africa, provides the legal framework for legislation regulating environmental management in general, against the backdrop of the fundamental human rights. Section 24 of the Constitution states that:

- "Everyone has the right:
  - to an environment that is not harmful to their health or well-being; and
  - to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that –
    - prevent pollution and ecological degradation;
    - promote conservation; and
    - secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

Section 24 of the Bill of Rights therefore guarantees the people of South Africa the right to an environment that is not detrimental to human health or well-being, and specifically imposes a duty on the State to promulgate legislation and take other steps that ensure that the right is upheld and that, among other things, ecological degradation and pollution are prevented.

In support of the above rights, the environmental management objectives of the proposed project are to protect ecologically sensitive areas and support sustainable development and the use of natural resources, whilst promoting justifiable socio-economic development in the towns nearest to the project site.

E.1.1.2 NEMA and EIA Regulations published on 8 December 2014 (as amended)

Chapter 1, Section 2 of the NEMA sets out several principles to give guidance to developers, private landowners, members of the public and authorities. The proclamation of the NEMA gives expression to an overarching environmental law. Various mechanisms, such as cooperative environmental governance, compliance and non-compliance, enforcement, and regulating government and business impacts on the environment, underpin NEMA. NEMA, as the primary environmental legislation, is complemented by many sectoral laws governing marine living resources, mining, forestry, biodiversity, protected areas, pollution, air quality, waste and integrated coastal management. Principle number 3 determines that a development must be socially, environmentally and economically sustainable. Principle Number 4(a) states that all relevant factors must be considered, inter alia i) that the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied; ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied; vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised; and viii) that negative impacts on the environment and on peoples' environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

Section 24 (1) of the NEMA, as amended states that "*In order to give effect to the general objectives of integrated environmental management laid down in this Chapter, the potential impact on the environment of listed activities must be considered, investigated, assessed and reported to the Competent Authority charged by this Act with granting the relevant Environmental Authorisation*". The reference to "listed activities" in Section 24 (1) of NEMA relates to the regulations promulgated in GN R982, R983, R984 and R985 in Government Gazette (GG) 38282, dated 4 December 2014, which came into effect on 8 December 2014. These were amended in GN R326, R327, R325 and R324 in GG 40772, dated 7 April 2017. GN R326 contains the regulations for the Environmental Assessment Process. GN R327 and GN R324 includes listed activities that trigger the need for a BA Process, whereas GN R325 includes listed activities that trigger the need for a full Scoping and EIA Process.

The 2014 NEMA EIA Regulations (as amended) were further amended as follows:

- GG 41766, GN 706 on 13 July 2018;
- GG 43358, GN 599 on 29 May 2020;
- GG 44701, GN 517 on 11 June 2021; and
- GG 45999, GN 1816 on 3 March 2022.

Based on the transitional arrangements, these amendments (where they have been commenced with) apply to the proposed project as the Application for EA was not submitted before the above amendments took effect (where relevant). The relevant amendments have been taken into consideration in this BA Process.

In terms of the NEMA and the 2014 NEMA EIA Regulations (as amended), a BA is required for the proposed project. Refer to Section F of this BA Report for the complete list of listed activities that are triggered for the proposed project, and additional information on the 2014 NEMA EIA Regulations (as amended).

E.1.1.3 Government Notice (GN) 960 (published 5 July 2019)

GN 960 was published on 5 July 2019 and came into effect for compulsory use of the National Web-based Environmental Screening Tool (hereafter referred to as the Screening Tool) from 4 October 2019. The notice outlines the requirement to submit a report generated by the Screening Tool, in terms of Section 24(5)(h) of the NEMA and Regulation 16(1)(b)(v) of the 2014 NEMA EIA Regulations (as amended), when submitting an Application for EA in terms of Regulations 19 and 21 of the 2014 NEMA EIA Regulations (as amended). As such, the proposed project was run through the Screening Tool, and the associated reports generated and attached to the Application for EA, which is being submitted to the DFFE with the Draft BA Report. The Screening Tool Reports are also included in Appendix I of this BA Report. In addition, the findings of the Screening Tool Reports are discussed in the relevant Specialist Reports included in Appendix F of this BA Report, as well as Section D and J of this BA Report.

E.1.1.4 Government Notice (GN) 320 (20 March 2020)

GN 320 prescribes the general requirements for undertaking Site Sensitivity Verifications (SSVs) and protocols for the assessment and minimum report content requirements for identified environmental impacts for environmental themes in terms of Sections 24(5)(a) and (h) and 44 of NEMA, when applying for EA. The protocols were enforced within 50 days of publication of the notice i.e., on 9 May 2020.

The Specialist Assessments undertaken as part of this BA Process have complied with Part B of GN 320, where applicable, including Agriculture, Aquatic Biodiversity and Terrestrial Biodiversity. Some of the remaining specialist assessments have complied with Appendix 6 of the 2014 NEMA EIA Regulations (as amended), and where relevant, Part A of GN R320 which contains SSV requirements where a Specialist Assessment is required but no specific assessment protocol has been prescribed. This specifically applies to the Visual; Heritage (Archaeology and Cultural Heritage); Palaeontology; Socio-Economic; Traffic; Geotechnical; and Geohydrology Assessments. However, in some instances there are no themes on the Screening Tool that relate to some of these studies and as such sensitivities cannot be verified against the Screening Tool. More information in this regard is included in the Specialist Studies in Appendix F of this BA Report, which also address the aspect of SSVs, where relevant and applicable.

Some of the specialist assessments also comply with the Assessment Protocols published in GN 1150 on 30 October 2020, specifically Terrestrial Biodiversity and Species, Aquatic Biodiversity and Species, and Avifauna (as described below).

The BESS High Level SHE Risk Assessment (included in Appendix F.10 of this BA Report) serves as a technical report, and the aforementioned legislation is thus not be applicable.

The SSVs required for Civil Aviation and Defence have also complied with GN R320. Additional detail on Civil Aviation and Defence is respectively included in Appendix F.13 and Appendix F.14 of this BA Report.

In summary, the following specialist reports comply with Part B of GN 320, where a protocol has been prescribed:

- Agriculture;
- Terrestrial Biodiversity; and
- Aquatic Biodiversity.

The following specialist reports comply with Part A of GN 320, where no protocol has been prescribed:

- Visual;
- Palaeontology;
- Socio-Economic;
- Traffic;
- Heritage (Archaeology and Cultural Landscape);
- Geotechnical; and
- Geohydrology.

In the latter case, the SSV was undertaken as per the requirements of Part A of GN 320, and the allocated sensitivity on the Screening Tool was verified i.e., either confirmed or a new updated sensitivity was allocated by the specialist. This is specifically applicable to the Visual, Heritage (Archaeology and Cultural Landscape), and Palaeontology specialist studies. Sensitivity allocations are not generally relevant for traffic studies, and there are no traffic related themes on the Screening Tool to verify. Hence, no traffic related features and sensitivities were allocated in the Traffic Impact Assessment. The Screening Tool further does not include any themes for socio-economic, geotechnical or geohydrological studies; hence no related features and sensitivities were allocated by these specialists. Desktop assessments were undertaken for the traffic and geotechnical assessments, which are acceptable.

E.1.1.5 Government Notice (GN) 1150 (30 October 2020)

GN 1150 prescribes procedures and protocols in respect of specific environmental themes for the assessment of, as well as the minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the NEMA, when applying for EA. GN 1150 includes a protocol for the specialist assessment and minimum report content requirements for environmental impacts on a) Terrestrial Animal Species and b) Terrestrial Plant Species. The requirements of these protocols apply from the date of publication (i.e., from 30 October 2020), except where the Project Applicant provides proof to the Competent Authority that the specialist assessment affected by these protocols had been commissioned prior to the date of publication of these protocols in the Government Gazette, in which case Appendix 6 of the 2014 NEMA EIA Regulations (as amended) will apply to such applications. This exception does not apply to the proposed project, as the relevant specialist assessments were commissioned after the date of publication of GN 1150 dated 30 October 2020.

The Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), Aquatic Biodiversity and Species Assessment (Appendix F.3 of this BA Report), and Avifauna Assessment (Appendix F.4 of this BA Report) that have been undertaken as part of the BA Process were commissioned following the publication date of the Species Protocols. Therefore, the Terrestrial and Aquatic Animal and Plant Species components, and Avifauna study have been undertaken in compliance with GN 1150. One combined report has been compiled for Terrestrial Biodiversity, Terrestrial Animal Species and Terrestrial Plant Species. The same applies to Aquatic Biodiversity. Additional detail is provided in the relevant specialist reports.

GN 3717 was promulgated on 28 July 2023 which amends the terrestrial plant and animal species protocol that was published in GN 1150 in October 2020. The amendment entails the removal of the term “terrestrial” from the protocol to ensure that it applies to all plant and animal species, including both aquatic and terrestrial species; and to capture other amendments regarding Compliance Statements. The Terrestrial Biodiversity and Species Assessment, and Aquatic Biodiversity and Species Assessment were commissioned after GN 3717 was gazetted in July 2023. Therefore, GN 3717 applies to these specific studies (i.e. Terrestrial Plant and Animal Species; and Aquatic Plant and Animal Species).

It is important to note that the Avifauna Impact Assessment (Appendix F.4 of this BA Report) was also undertaken in compliance with the latest BirdLife South Africa Birds and Solar Energy Best Practice Guidelines (i.e. Jenkins *et al*., 2017).

E.1.1.6 Solar Exclusion Norm

The DFFE published the Solar Exclusion Norm for the exclusion of the development and expansion of Solar PV Facilities from the requirement to obtain an EA in GG 50388, GN 4558 on 27 March 2024. Paragraph 4.10 of the Solar PV Norm states that if a SCC is found or has been confirmed to be likely present on the footprint, the Solar PV Norm does not apply. The Avifauna Assessment (Appendix F.4) found that several SCCs occur within the study area (confirmed or high probability of occurrence), these include Blue Crane, Karoo Korhaan, Ludwig’s Bustard, Lanner Falcon, Martial Eagle, and Verreaux’s Eagle. In addition, the Terrestrial Biodiversity and Species Assessment (Appendix F.2) found that seven mammal SCC have a distribution range that intersects the project area, four of which (i.e., Black-footed Cat, Southern Mountain Reedbuck, Grey Rhebok and Cape Clawless Otter) have a High likelihood of occurrence. As such SSCs have been confirmed as likely present on the development footprint (which occurs within the study area or PAOI). Additional information regarding the site sensitivity verifications and specialist sensitivity determinations is provided in Section D and Section J of this BA Report.

E.1.1.7 National Environmental Management: Biodiversity Act (Act 10 of 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004, as amended) (NEMBA) provides for "the management and conservation of South Africa's biodiversity within the framework of the NEMA, the protection of species and ecosystems that warrant national protection, and the use of indigenous biological resources in a sustainable manner, amongst other provisions". The Act states that the state is the custodian of South Africa's biological diversity and is committed to respect, protect, promote and fulfil the constitutional rights of its citizens.

Overall, the NEMBA focuses on the protection of national biodiversity through the regulation of activities that may affect biodiversity including habitat disturbance, culture of and trade in organisms, both exotic and indigenous. Lists of threatened ecosystems (Sections 52 (1) (a)), threatened and protected species (Sections 56 (1)), and alien invasive organisms (Section 97 (1)) have been published and maintained in terms of NEMBA.

Chapter 1 sets out the objectives of the Act, and they are aligned with the objectives of the Convention on Biological Diversity, which are the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits of the use of genetic resources. The Act also gives effect to CITES, the Ramsar Convention, and the Bonn Convention on Migratory Species of Wild Animals. The State is endowed with the trusteeship of biodiversity and has the responsibility to manage, conserve and sustain the biodiversity of South Africa.

This Act therefore serves to control the disturbance and land utilisation within certain habitats, as well as the planting and control of certain exotic species. Effective disturbance and removal of threatened or protected species encountered on or around the sites, will require specific permission from the applicable authorities.

Furthermore, NEMBA states that the loss of biodiversity through habitat loss, degradation or fragmentation must be avoided, minimised or remedied. The loss of biodiversity includes inter alia the loss of endangered, threatened or protected plant and animal species.

- ***Alien and Invasive Species***

Chapter 5 of NEMBA (Sections 73 to 75) regulates activities involving invasive species, and lists duty of care as follows:

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

The Alien and Invasive Species Regulations, published in 2014 and amended in 2020, in terms of the NEMBA provides for the protection of biodiversity through the control and eradication of listed alien and invasive species categorised as follows:

- Category 1a Listed Invasive Species – must be combatted or eradicated;

- Category 1b Listed Invasive Species – must be controlled or 'contained' in accordance with the requirements of an Invasive Species Management Programme;
- Category 2 Listed Invasive Species – require a permit to carry out a restricted activity e.g. cultivation within an area;
- Category 3 Listed Invasive Species – species that are less-transforming invasive species, but introduction, trade or transportation should be limited. Category 3 plant species are automatically Category 1b species where located within riparian and wetland areas;
- Exempted Alien Species – species that are not regulated; and
- Prohibited Alien Species – species for which a permit for restricted activities (e.g., inter alia hunting, gathering, breeding, cultivating, trading, transporting) may not be issued.

The Alien and Invasive Species List was published in terms of sections 66(1), 67(1), 70(1)(a), 71(3) and 71A of the NEMBA in GG 40166, GN 864 on 29 July 2016.
According to the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), three exotic plant species were recorded within the study area and were typically found within disturbed sites, such as along road verges and in secondary vegetation. These include Papaveraceae (*Argemone ochroleuca*), Cactaceae (*Cylindropuntia imbricata*), and Cactaceae (*Opuntia ficus-indica*). All three species are listed alien invasive plant species (Category 1b) on the NEMBA and two are listed as a Category 1 species on the Conservation of Agricultural Resources Act (Act 43 of 1983). Under the NEMBA, Category 1b species must be eradicated and under the Conservation of Agricultural Resources Act (Act 43 of 1983), Category 1 plant species must be removed and destroyed immediately. No trade in these plants is permitted.

- ***Threatened Ecosystems***

GG 34809, GN 1002, published on 9 December 2011 in terms of Section 52 (1) (a) of the NEMBA, provides a list of threatened terrestrial ecosystems categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) and Protected.

However, a revised national list of ecosystems that are threatened and in need of protection was published in GG 47526, GN 2747 on 18 November 2022 in terms of Section 52 (1) (a) of NEMBA. The revised list includes threatened terrestrial ecosystem types that are classed as CR, EN and VU.

The list of threatened ecosystems includes threatened ecosystems based on vegetation types present within these ecosystems. Should a project fall within a listed vegetation type or ecosystem that is listed, actions in terms of NEMBA are triggered. In addition, Listing Notice 3 (GN R324) of the 2014 NEMA EIA Regulations (as amended) includes Listed Activity 12, for the clearance of an area of 300 m^2 or more of indigenous vegetation in the Western Cape, specifically within any CR or EN ecosystem listed in terms of Section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as CR in the National Spatial Biodiversity Assessment 2004.

Based on the findings of the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), the project area does not occur within a threatened ecosystem; and based on the National Vegetation Map (2024) and data gathered during the field survey undertaken by the Terrestrial Biodiversity specialists, the Megora PV1A site occurs in Eastern Upper Karoo and Southern Karoo Riviere. The specialist study further notes that the Eastern Upper Karoo and Southern Karoo Riviere vegetation types are listed as Least Concern under the Revised List of Threatened Terrestrial Ecosystems (GG 47526, GN 2747, November 2022) (DFFE, 2022) with a respective conservation target of 21% and 24%. Therefore, the above GN and Activity 12 (i) (i) of Listing Notice 3 do not apply to the proposed project.

- ***Threatened and Protected Species***

The 2007 Threatened or Protected Species Regulations of the NEMBA declares species of high conservation value, national importance or that are considered threatened and in need of protection. Furthermore, the regulations provide for the prohibition of specific restricted activities involving specific listed threatened or protected species.

The list of CR, EN, VU or Protected species was published in GG 29657, GN R151 on 23 February 2007 in terms of Section 56 (1) of the NEMBA. The list was further amended in GG 30568, GN R1187 on 14 December 2007, as well as in GG 43386, GN R627 of 3 June 2020. Should a project include threatened and protected species that are listed, actions in terms of NEMBA are triggered.

The Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report) explains that no species protected in terms of the NEMBA: Publication of Lists of CR, EN, VU and Protected Species were recorded in the project area.

The faunal species identified in the broader area (i.e. PAOI) based on the study undertaken by the Terrestrial Biodiversity and Species Specialist are noted in Appendix F.2 of this BA Report. The study notes that seven mammal SCC have a distribution range that intersects the project area, including one CR (i.e. Riverine Rabbit), one EN (i.e. Southern Mountain Reedbuck), two VU (i.e. Black-footed Cat and Leopard), and three NT (i.e. Grey Rhebok, Cape Clawless Otter, and Brown Hyena). Of these species, four have a high likelihood of occurrence (i.e. Black-footed Cat, Grey Rhebok, Cape Clawless Otter, and Southern Mountain Reedbuck); one has a moderate likelihood of occurrence (i.e. Leopard), and two have a low likelihood of occurrence (i.e. Riverine Rabbit and Brown Hyena). Refer to Appendix F.2 of this BA Report for additional information.

E.1.1.8 The National Heritage Resources Act (Act 25 of 1999)

The National Heritage Resources Act (Act 25 of 1999) (NHRA) introduces an integrated and interactive system for the management of national heritage, archaeological and palaeontological resources (which include landscapes and natural features of cultural significance).

Parts of sections 35(4), 36(3) (a) and 38(1) of the NHRA apply to the proposed project:

Archaeology, palaeontology and meteorites
Section 35 (4) – No person may, without a permit issued by the responsible heritage resources authority:

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

Burial grounds and graves
Section 36 (3) (a) No person may, without a permit issued by South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority (e.g. Heritage Western Cape (HWC)):

- destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

- bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

Heritage resources management

38 (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as:

a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
b) the construction of a bridge or similar structure exceeding 50 m in length;
c) any development or other activity which will change the character of the site –
    (i) exceeding 5 000 m^2 in extent, or
    (ii) involving three or more erven or subdivisions thereof; or
    (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
    (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;
d) the re-zoning of a site exceeding 10 000 m^2 in extent; or
e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list “historical settlements and townscapes” and “landscapes and natural features of cultural significance” as part of the National Estate. Furthermore, Section 3(3) describes the reasons a place or object may have cultural heritage value. Section 38 (2a) of the NHRA states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted.

A Heritage Impact Assessment (HIA) (including Archaeology and Cultural Heritage) was completed for the proposed project in accordance with GN 320 (Part A) and Appendix 6 of the 2014 NEMA EIA Regulations (as amended), as well as the relevant heritage guidelines and NHRA. This specialist study and SSV are included in Appendix F.6 of this BA Report. Refer to Section D of this BA Report for additional information regarding heritage.

In terms of Palaeontology, a Palaeontology Impact Assessment was completed in accordance with GN 320 (Part A) and Appendix 6 of the 2014 NEMA EIA Regulations (as amended). This specialist study and SSV are included in Appendix F.7 of this BA Report. Refer to Section D of this BA Report for additional information regarding palaeontology.

The HWC is required to provide comment on the proposed project. In line with HWC requirements, a Notification of Intent to Develop (NID) was submitted to the HWC for the proposed project in October 2025 by John Gribble (MA) of TerraMare Archaeology (Pty) Ltd. HWC responded in a letter dated 29 October 2025 confirming that the NID application was discussed at the Heritage Officers Meeting held on 27 October 2025. The proposed Megora PV 1A, 1B, 1C and 2 projects were all discussed this meeting and assigned the Case Number of HWC26432SB1017. The response from HWC on the combined NID has determined the requirements for the assessment phase from a heritage perspective. The HWC NID response is included as an appendix to the HIA in Appendix F.6 of this BA Report. HWC stated that a full HIA, which makes reference to the Palaeontological Impact Assessment (PIA) and Archaeological Impact Assessment (AIA) must be undertaken in terms of Section 38(3) of the NHRA.

As per the requirements of the HWC, an integrated HIA including archaeology, cultural landscape and palaeontology was undertaken and compiled.

The HIA, AIA and PIA were released for a 30-day comment period, with the Draft BA Report and submitted to the HWC via the SAHRIS platform. Following the release of the reports a request was received from HWC on 26 March 2026, for the submission of a combined integrated HIA addressing the proposed Megora PV 1A-C, PV 2 and EGI 2 projects. The combined integrated HIA was prepared and submitted to the HWC, via upload on the SAHRIS platform on 15 April 2026 (please refer to Appendix G.4 for the email trail). The combined integrated HIAs were tabled at the IACom held on 20 April 2026 whereby the CRRs were requested by HWC. Due to the CRRs being under preparation, the projects will be tabled at the Heritage Officers Meeting (HOMS) following the submission of the Final BA Reports upon which the final CRRs will be supplied to the HWC. Please refer to Appendix G.16 for a copy of the interim comment from the HWC as well as the correspondence trail of the above communications. The final comment provided by the HWC will be shared directly with the DFFE Case Officers once made available by the HWC.

The proposed project may require a permit in terms of the NHRA prior to any fossils or artefacts being removed by professional palaeontologists and archaeologists. If archaeological mitigation is needed, then the appointed archaeologist will need to contact HWC in order to confirm requirements and to submit a Work Plan to the HWC to conduct the work. This and the permit application must be carried out well in advance of construction to ensure that there is enough time for HWC to approve the mitigation work before construction commences.

Should professional palaeontological mitigation be necessary during the construction phase, the palaeontologist concerned will need to apply for a Fossil Collection Permit from the HWC. Palaeontological collection should comply with international best practice. All fossil material collected must be deposited, together with key collection data, in an approved depository (museum / university). Palaeontological mitigation work including the ensuing Fossil Collection reports should comply with the minimum standards specified by Heritage Western Cape (2016) and SAHRA (2013).

E.1.1.9 <u>National Forests Act (Act 84 of 1998)</u>

The National Forests Act (Act 84 of 1998, as amended) (NFA) allows for the protection of certain tree species. The Minister has the power to declare a particular tree to be a protected tree. The most recent list of protected tree species was published in March 2024 in GN 4496. In terms of Section 15(1) of the NFA, no person may cut, disturb, damage or destroy any protected tree; or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. The DFFE is authorised to issue licences for any removal, cutting, disturbance, damage to or destruction of any protected trees. Therefore, the removal of any protected tree species listed within the NFA will require a tree removal permit, which can be obtained from the DFFE.

In addition, protection of natural forests through gazetted lists of Natural Forests in terms of Sections 7 (2) of the NFA must also be highlighted. In terms of section 7(1) of the NFA, no person may cut, disturb, damage or destroy any indigenous tree in, or remove or receive any such tree from a natural forest except in terms of (a) a license issued under subsection (4) or section 23 of the NFA; or (b) an exemption from the provisions of subsection (4) of the NFA published by the Minister in the Gazette

Where the proposed project impacts on any of the protected species, a permit for the removal will be required during the pre-construction phase, should EA be granted.

As noted in the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), no plant Species of Conservation Concern (SCC) were recorded within the project area during the field survey. However, the DFFE Screening Tool Report listed the following three SCC as medium sensitivity indicating that they could occur within the project area:

- *Hereroa concava* (VU)
- *Tridentea virescens* (Rare)
- *Sensitive Species 945* (Rare)

The likelihood of occurrence of the abovementioned three species within the PAOI and project area was assessed in the Terrestrial Biodiversity and Species Assessment:

- *Hereroa concava* was found to have a low likelihood of occurrence within PV area.
- *Tridentea virescens* was determined to have a medium likelihood of occurrence within the washes present in the PV area and within the PAOI and a low likelihood of occurrence within the remaining areas.
- *Sensitive Species 945* was determined to have a low likelihood of occurrence within the PV area, and a medium likelihood of occurrence within the PAOI.

The Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report) also notes that no Protected Tree Species listed under the NFA were recorded in the project area.
Refer to the Terrestrial Biodiversity and Species Assessment included in Appendix F.2 of this BA Report for additional information.

E.1.1.10 Conservation of Agricultural Resources Act (Act 43 of 1983)

The objectives of the Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) are to provide for the conservation of the natural agricultural resources of South Africa by the:

- maintenance of the production potential of land;
- combating and prevention of erosion and weakening or destruction of the water sources; and
- protection of the vegetation and the combating of weeds and invader plants.

The CARA states that no land user shall utilise the vegetation of wetlands (a watercourse or pans) in a manner that will cause its deterioration or damage. This includes cultivation, overgrazing, diverting water run-off and other developments that damage the water resource. The CARA includes regulations on alien invasive plants. According to the amended regulations (GN R280 of March 2001), declared weeds and invader plants are divided into three categories:

- Category 1 may not be grown and must be eradicated and controlled,
- Category 2 may only be grown in an area demarcated for commercial cultivation purposes and for which a permit has been issued, and must be controlled, and
- Category 3 plants may no longer be planted and existing plants may remain as long as their spread is prevented, except within the flood line of watercourses and wetlands. It is the legal duty of the land user or landowner to control invasive alien plants occurring on the land under their control.

Invasive alien species likely to occur on site are discussed in the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report). Alien plant species occurring within the development footprint, will be managed in line with the EMPr (included as Appendix H of this BA Report).

As noted in the Agriculture Compliance Statement (Appendix F.1 of this BA Report), rehabilitation after disturbance to agricultural land is managed by the CARA. A consent in terms of CARA is required for the cultivation of virgin land. Cultivation is defined in CARA as "any act by means of which the topsoil is disturbed mechanically". The purpose of this consent for the cultivation of virgin land is to ensure that only land that is suitable as arable land is cultivated. Therefore, despite the above definition of cultivation, disturbance to the topsoil that results from the construction of infrastructure does not constitute cultivation as it is understood in CARA. This has been corroborated by the National Department of Agriculture, Land Reform and Rural Development (DALRRD[39]). The construction and operation of the proposed project will therefore not require consent from the DALRRD in terms of this provision of CARA. Refer to the Agriculture Compliance Statement included in Appendix F.1 of this BA Report for additional information in this regard.

E.1.1.11 __National Water Act (Act 36 of 1998)__

One of the important objectives of the National Water Act (Act 36 of 1998) (NWA) is to ensure the protection of the aquatic ecosystems of South Africa's water resources. Section 21 of this Act identifies certain land uses, infrastructural developments, water supply/demand and waste disposal as 'water uses' that require authorisation (licensing) by the Department of Water and Sanitation (DWS). Chapter 4 (Part 1) of the NWA sets out general principles for the regulation of water use. Water use is defined broadly in the NWA, and includes taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), altering the bed, banks, course or characteristics of a watercourse, removing water found underground for certain purposes, and recreation. In general, a water use must be licensed unless it is listed in Schedule I, is an existing lawful use, is permissible under a General Authorisation (GA), or if a responsible authority waives the need for a licence. The Minister may limit the amount of water which a responsible authority may allocate. In making regulations the Minister may differentiate between different water resources, classes of water resources and geographical areas.

All water users who are using water for agriculture: aquaculture, agriculture: irrigation, agriculture: watering livestock, industrial, mining, power generation, recreation, urban and water supply service must register their water use. This covers the use of surface- and groundwater.

Section 21 of the NWA lists the following water uses that need to be licensed:

a) taking water from a water resource;
b) storing water;
c) impeding or diverting the flow of water in a watercourse;
d) engaging in a stream flow reduction activity contemplated in section 36;
e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
g) disposing of waste in a manner which may detrimentally impact on a water resource;
h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
i) altering the bed, banks, course or characteristics of a watercourse;
j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
k) using water for recreational purposes.

Any activities that take place within the outer edge of the 1 in 100 year flood line and / or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake or dam; within a watercourse; within 100 m of the edge of a

[39] Following the announcement of the National Executive of the 7th Administration, the Ministry of Agriculture has been separated from the Ministry of Land Reform and Rural Development. For purposes of this BA Report, the term DALRRD has been retained for simplicity.

watercourse; or within 500 m of a delineated wetland boundary, will require a water use authorisation in terms of Section 21 (c) and Section 21 (i) of the NWA. An application for water use authorisation for the proposed project may be required should any of the planned structures or infrastructure associated with the proposed project trigger water uses in terms of Section 21 (c) and Section 21 (i) of the NWA. As noted in the Aquatic Biodiversity and Species Assessment (Appendix F.3 of this BA Report), it is noted that the proposed project site is situated within the 500 m zone of regulation from the delineated wetland areas.

The GA for Section 21 (c) and (i) water uses as defined under the NWA were revised in 2016 (GN R509) and further revised in December 2023 (GN R4167). Determining if a Water Use Authorisation is required for these water uses is associated with the risk of degrading the ecological status of a watercourse. A low risk of impact could be authorised in terms of a GA.

According to the Aquatic Biodiversity Assessment (Appendix F.3 of this BA Report), the Risk Assessment determined that should mitigation actions such as the implementation of sustainable stormwater controls and the implementation of alien invasive plant management actions, **low residual risks** to the downslope freshwater environment can be expected. With the findings of the Risk Assessment, the water use activities associated with the proposed project could be authorised through a GA for Section 21(c) and (i) water uses.

The NWA also provides for measures to prevent, control and remedy the pollution of surface and groundwater sources. The proposed project site is located within one quaternary catchment i.e. L21C. It should be noted that the regional hydrocensus conducted during the fieldwork component of the Geohydrology Assessment (Appendix F.12 of this BA Report) includes datapoints from three different quaternary catchments i.e., L21B, L21C and L21E. All of the quaternary catchments form part of the Fish to Tsitsikamma Water Management Area. The groundwater GA for these catchments is 45 m^3/ha/a (published on 2 September 2016, in Government Gazette 40243, GN 538 (i.e., Revision of General authorisation for the taking and storing of water)). This means that in this catchment, 45 m^3 of water can be abstracted per year for every hectare, under the GA (i.e. without the need to apply for a Water Use Licence (up to a maximum of 40 000 m^3 per annum on any single cadastral unit / farm portion)). The total allowable groundwater abstraction volume for proposed project under the GA is 40 000 m^3/a (1.27 L/s), which exceeds the peak construction phase requirement. The peak construction water supply for proposed project can be sourced from a single farm portion (i.e., Remainder of the Farm Badfontein No. 10) without obtaining a Water Use License, as the GA of 40 000 m^3 per annum (1.27 L/s) will suffice for the proposed project.

However, the study area has experienced previous droughts and is highly dependent on groundwater resources for livestock and domestic use. Therefore, although the above demand falls within the average potential borehole yield of the fractured aquifer underlying proposed project, it is recommended that abstraction be distributed across multiple boreholes situated on the affected farm portions to ensure sustainable supply during the construction phase. The Geohydrology Specialist has recommended that three boreholes on the Remainder of Farm Badfontein No. 10 be investigated to meet the water requirements of proposed project during both the construction and operational phases.

As indicated in the Geohydrology Assessment (Appendix F.12 of this BA Report), the water requirement for proposed project can potentially be met through a combination of the three recommended boreholes. If groundwater use is planned appropriately, all required water can be sourced from these boreholes under GA. In such a case, the intended water use would only need to be registered with the DWS in accordance with Section 39 of the NWA (i.e. a GA), depending on additional restrictions/considerations by DWS. If more than this is required for the proposed project, or to source all the water from a single property, then an integrated Water Use Licence Application would be required to meet the demands of the construction, operational and decommissioning periods. This will be undertaken post EA.

Should groundwater be used as a water source for the proposed project, then it is planned to be transported from the boreholes to the site via trucks or water pipelines. A separate Environmental Assessment Process will be undertaken should the water supply method trigger listed activities in terms of the 2014 NEMA EIA Regulations (as amended). In addition, groundwater may also need to be stored on site in suitable containers or reservoir tanks during the construction, operational and decommissioning phases. Such storage may trigger the need for a Water Use Authorisation. According to the Revision of GA for the taking of and storing of water published in terms of the NWA, a total of 2000 m^3/a can be stored on each property in an open container under the regional GA as long as it is not in a water course. If this is exceeded, then a Water Use Licence would be needed. Therefore, for the proposed project, it is proposed that a total of 2000 m^3/a will be stored at the facility on the affected property in an open container.

In addition, the disposal of sewage from the developed site is likely to be stored in conservancy tanks for removal and treatment at the nearby wastewater treatment works of the local authority. This low volume would be within the GA for Section 21 (g) water use activities.

In terms of GAs or Water Use Licences needed for the proposed projects, these will be undertaken post EA (should such authorisation be granted), as there are various factors to consider, such as confirmation of the selected water source in terms of the various options available; and that the proposed projects still need to be subjected to the competitive REIPPPP or similar process. Note that precedent has been set in the sense that EAs for renewable energy, BESS and EGI projects have been granted positively and are not contingent on the application for Water Use Licence or GA. Nevertheless, the relevant applications will be made by the Applicant, post EA once relevant investigations have been completed.

E.1.1.12 Water Services Act (Act 108 of 1997)

Water will be required during the construction, operational and decommissioning phases of the proposed project, for consumption purposes, earthworks and grassing etc. Water will also be required for panel cleaning during the operational phase. Water will either be sourced from existing boreholes on site or in the surrounding area (preferred option) or from the local municipality (as a second option, should groundwater supply not be realised at the extent required). Compliance with the Water Services Act (Act 108 of 1997) will be undertaken during the relevant phase of the project, in consultation with the local and district municipalities, if relevant (i.e., if water is sourced from the local municipality).

As indicated in the Geohydrology Assessment (Appendix F.12 of the BA Report), with sufficient treatment, the groundwater is likely to be deemed acceptable for use in (1) domestic applications such as dishwashing and toilet flushing, (2) washing of solar panels, (3) general construction and concrete batching, and (3) as potable water. The study further explains that for potable water, a microbial analysis is recommended to ensure that no harmful microorganisms are present. Additional restrictions or conditions may apply to potable water usage by DWS.

Therefore, should the groundwater be selected for water use, the boreholes will be subjected to complete geohydrological testing, as well as a Water Use Licence Application or GA process.

E.1.1.13 Hazardous Substances Act (Act 15 of 1973)

During the construction phase of the proposed project, fuel, oils and relevant chemicals would be utilised to power and/or operate vehicles, generators and construction equipment. In addition, potential spills of hazardous materials could occur during the relevant phases. Such management actions are recommended in the EMPr, which has been included as Appendix H to this BA Report.

E.1.1.14 Subdivision of Agricultural Land Act (Act 70 of 1970)

As noted in the Agriculture Compliance Statement (Appendix F.1 of this BA Report), in terms of agricultural zoning, two approvals from the DALRRD are required if a proposed development is located on agriculturally zoned land.

The first approval is a No Objection Letter for the change in land use. This letter is one of the requirements for receiving municipal rezoning. This application requires a motivation backed by good evidence that the proposed development is acceptable in terms of its impact on the agricultural production potential of the development site, and the Agricultural Compliance Statement will serve that purpose in this regard. Such an application will be submitted by the Project Developer for the proposed project, outside of this BA Process.

The second required approval is a consent for long-term lease in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA). If the DALRRD approval for the proposed project has already been obtained in the form of the No Objection Letter, then SALA approval is likely to be readily forthcoming. Note that SALA approval is not required if the lease is over the entire farm portion. SALA approval can only be applied for once the Municipal Rezoning Certificate and EA have been obtained. The SALA approval is therefore separate from the Application for EA and needs to be applied for and obtained separately. An application for the change of land use (re-zoning) for the development on agricultural land will be lodged by the Project Developer for approval in terms of the SALA, as required.

Refer to the Agriculture Compliance Statement included in Appendix F.1 of this BA Report for additional information in this regard.

E.1.1.15 National Environmental Management: Waste Act (Act 59 of 2008) (NEMWA)

The National Environmental Management: Waste Act (Act 59 of 2008, as amended) (NEM:WA) was published with one of the main objectives to reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. Section 19 of the NEM:WA allows the Minister to publish a List of Waste Management Activities that have, or are likely to have, a detrimental effect on the environment published. Such a list specifies the waste management activities that will require a Waste Management Licence.

The List of Waste Management Activities was originally published in GN 921 on 29 November 2013, and thereafter amended in GN 332 on 2 May 2014; GN 633 on 24 July 2015; GN 1094 on 11 October 2017; and GN 1757 on 11 February 2022. The List of Waste Management Activities include Categories A, B and C. If any waste management activities listed in Category A are triggered by a development, a BA process must be undertaken in terms of the 2014 NEMA EIA Regulations (as amended), as part of the Waste Management Licence application. Waste management activities in Category B will, however, require a full Scoping and EIA Process in terms of the 2014 NEMA EIA Regulations (as amended), as part of the Waste Management Licence application. If any of the waste management activities in Category C are triggered, then the relevant Norms and Standards must be followed.

Based on a review of the project description, the proposed project will not trigger the need for a Waste Management Licence. However, general and hazardous waste will be generated during the construction, operational and decommissioning phases, which will require proper management. Such management actions are recommended in the EMPr, which has been included as Appendix H to this BA Report.

E.1.1.16 National Environmental Management: Air Quality Act (Act 39 of 2004)

The National Environmental Management: Air Quality Act (Act 39 of 2004, as amended) (NEM: AQA) was published in 2004 and came into full effect on 31 March 2010, when the Atmospheric Pollution Prevention Act (Act 45 of 1965) (APPA) was repealed. The NEM: AQA was published with the overall objective to:

- "*reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development;*
- *provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto*".

The list of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage was published under GN 248, GG 33064 dated 31 March 2010 and thereafter amended in GN 893, GG 37054 dated 22 November 2013. The list of activities was further amended in GN 551, GG 38863 dated 12 June 2015; GN 1207, GG 42013 dated 31 October 2018; GN 687, GG 42472 dated 22 May 2019; and GN 421, GG 43174 dated 27 March 2020.

Section 22 of the NEM: AQA deals with the consequences of listing, and it states that "no person may without a provisional atmospheric emission licence or an atmospheric emission licence conduct an activity (a) listed on the national list anywhere in the Republic; or (b) listed on the list applicable in a province anywhere in that province". Therefore, a Provisional Atmospheric Emissions Licence (AEL) and/or AEL is required for any plant or proposed development that triggers a listed activity.

Based on a review of the project description, the proposed project will **not** trigger the need for an AEL. However, the proposed vegetation clearance and stockpiling activities, including earthworks and the use of construction machinery and vehicle traffic, may result in the unsettling of, and temporary exposure to, dust. Appropriate dust control methods will need to be applied. Such management actions are recommended in the EMPr, which has been included as Appendix H to this BA Report.

E.1.1.17 National Environmental Management: Protected Areas Act (NEM: PAA) (Act 57 of 2003) and National Protected Area Expansion Strategy (NPAES) Focus Areas

According to the South African Protected Areas Database (SAPAD), the project area is not located within any formally Protected Areas, as declared under the National Environmental Management: Protected Areas Act (Act 57 of 2003) (NEM: PAA). The Mountain Zebra-Camdeboo Protected Environment lies towards the east, more than 20 km away from the proposed project.

The National Protected Area Expansion Strategy (NPAES) focus areas for land-based expansion are comprised of large, intact and unfragmented areas of importance for biodiversity representation and ecological persistence. As such, these areas are suitable for the creation or expansion of extensive Protected Areas. As noted in the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of the BA Report), the project area is not located within any NPAES focus areas.

Figure E.1 below illustrates the proposed Megora PV cluster project in relation to the NPAES focus areas and the Mountain Zebra-Camdeboo Protected Environment.

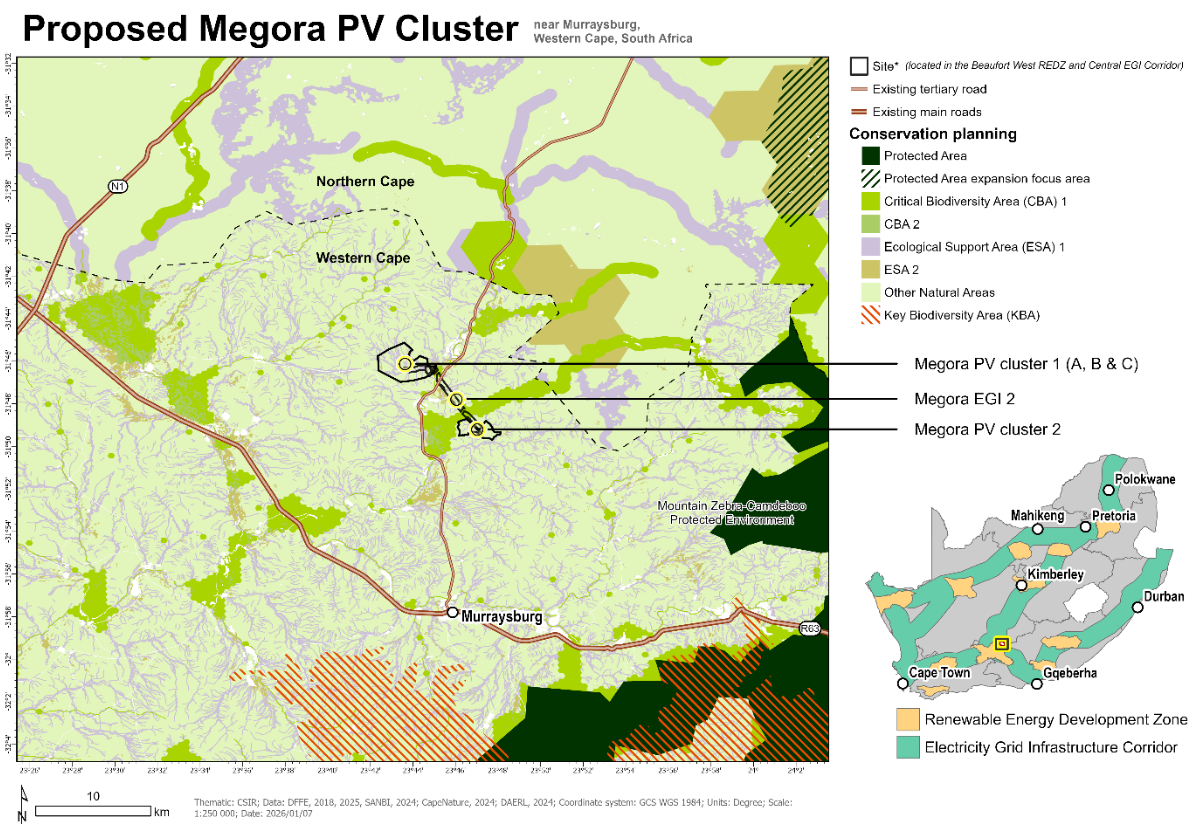


Figure E.1: The Proposed Megora PV Cluster in relation to the Mountain Zebra-Camdeboo Protected Environment and the NPAES Focus Areas.

E.1.1.18 Astronomy Geographic Advantage (Act 21 of 2007)

The Astronomy Geographic Advantage (AGA) Act (Act 21 of 2007) aims to provide for the preservation and protection of areas within the Republic that are uniquely suited for optical and radio astronomy; to provide for intergovernmental co-operation and public consultation on matters concerning nationally significant astronomy advantage areas; and to provide for matters connected therewith. The purpose of the AGA Act is to preserve the geographic advantage areas that attract investment in astronomy. The AGA Act also notes that declared astronomy advantage areas are to be protected and properly maintained in terms of Radio Frequency Interference (RFI). The AGA Act is administered by the Department of Higher Education, Science and Technology (previously the Department of Science and Technology).

According to the CSIR Wind and Solar Phase 2 Strategic Environmental Assessment (SEA) (Department of Environment, Forestry and Fisheries (DEFF), 2019[40]: Part 3, Page 26), the majority of the mid-frequency dish array of the Square Kilometre Array (SKA) will be constructed in the core which is in located in the Northern Cape; with dish antennas being located in the spiral arms. The South African component of the SKA will consist of approximately 3 000 receptors comprising dish antennas, each with a diameter of 15 m, and radio receptors known as dense aperture-arrays. The outer stations in the spiral arms will extend beyond the borders of South Africa and at least 3 000 km from the core

[40] Department of Environment, Forestry and Fisheries (DEFF), 2019. Phase 2 Strategic Environmental Assessment for wind and solar PV energy in South Africa. CSIR Report Number: CSIR/SPLA/SECO/ER/2019/0085 Stellenbosch, Western Cape.

area. About 80% of the receptors, including a dense core and up to 5 spiral arms, will be located in the Karoo Central Astronomy Advantage Area (KCAAA) (DEFF, 2019: Part 3, Page 2).
The KCAAA, which is located between Brandvlei, Van Wyksvlei, Carnarvon and Williston in the Northern Cape Province, was officially declared in 2014 by the Minister of Science and Technology in terms of the AGA Act for the purposes of protection RFI and Electromagnetic Interference (EMI). The declaration of the KCAAA ensures the long-term viability of the area to be used for astronomical installations (DEFF, 2019: Part 3, Page 2).

PV installations are known to have unintentional radiated emissions from electrical and electronic equipment that have the potential to interfere with the SKA Radio Telescope project in the Northern Cape. This can result in interference to celestial observations and/or data loss. Such interference is typically referred to as RFI (DEFF, 2019: Part 3, Page 2).

The proposed project study area is not located within the KCAAA, as also confirmed in the Screening Tool Report, and therefore not expected to have any significant impacts on the SKA. Refer to the locality map provided in Section A of this BA Report for additional information in this regard.

The Screening Tool Report (Appendix I of this BA Report) notes that the study area is high sensitivity due to it being located between 8 km and 14 km of a SKA receptor. However, upon inspection of aerial imagery, there is no SKA feature between 8 and 14 km of the study area, or it seems to be an isolated feature.

The South African Radio Astronomy Observatory (SARAO) / SKA Office have been pre-identified as a key stakeholder and therefore included on the project database of I&APs since inception of this BA Process (as shown in Appendix D of this BA Report). The CSIR has also communicated with the SARAO in order to request a letter confirming the risk of interference to the nearest SKA radio telescope by the proposed projects, and to determine if the SARAO has any objection to the proposed projects. The proposed projects are located outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas. A letter of no objection has also been requested from SARAO confirming that the SKA receptor flagged by the Screening Tool is no longer active and that the relevant regulations promulgated in terms of the AGA Act would not apply and the proposed projects are low risk to the SKA telescope. A letter from SARAO was received on 16 April 2026 and confirmed that the proposed projects lie outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas and that therefore, the relevant regulations promulgated in terms of the Astronomy Geographic Advantage Act would not apply and the facility is considered to be low risk to the SKA telescope. Please refer to Appendix G of this BA Report for the above-mentioned letter.

Therefore, RFI and EMI specialist studies are not required and have not been commissioned as SARAO's assessment and findings are considered conclusive in respect of the RFI sensitivity theme. Refer to Figure D. 40 in Section D. 2.15 of this BA Report for a map showing the location of the proposed Megora PV Cluster in relation to the SKA and KCAAA.

E.1.1.19 Development Facilitation Act (Act 67 of 1995)

The Development Facilitation Act (Act 67 of 1995) (DFA) sets out a number of key planning principles which have a bearing on assessing proposed developments in light of the national planning requirements. The planning principles most applicable to the study area include:

- *Promoting the integration of the social, economic, institutional and physical aspects of land development;*
- *Promoting integrated land development in rural and urban areas in support of each other;*

- *Promoting the availability of residential and employment opportunities in close proximity to or integrated with each other;*
- *Optimising the use of existing resources including such resources relating to agriculture, land, minerals, bulk infrastructure, roads, transportation and social facilities;*
- *Contributing to the correction of the historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs;*
- *Promoting the establishment of viable communities; and*
- *Promoting sustained protection of the environment.*

It is understood that the Development Facilitation Act (Act 67 of 1995) has been repealed and replaced by the Spatial Planning and Land Use Management Act (Act 16 of 2013) [SPLUMA]. SPLUMA is discussed below.

E.1.1.20 Spatial Planning and Land Use Management Act (Act 16 of 2013)

The SPLUMA came into effect on 1 July 2015. The Act provides a framework for spatial planning and land use management within South Africa. One of the objectives of the Act is to ensure that spatial planning and land use management enhances social and economic inclusion. SPLUMA seeks to promote consistency and uniformity in procedures and decision-making in this field. The other objectives of the act include addressing historical spatial imbalances and the integration of the principles of sustainable development into land use planning, regulatory tools and legislative instruments. This legislation will be taken into consideration by the Applicant during the planning and design phase.

E.1.1.21 Other Applicable Legislation

Other applicable national legislation that may apply to the proposed project include:

- *Advertising on Roads and Ribbons Act (Act 21 of 1940);*
- *Electricity Act (Act 41 of 1987), as amended;*
- *Electricity Regulations Amendments (August 2009);*
- *Promotion of Administrative Justice Act (Act 2 of 2000);*
- *Civil Aviation Act (Act 13 of 2009) and Civil Aviation Regulations (CAR) of 1997;*
- *Civil Aviation Authority Act (Act 40 of 1998);*
- *White Paper on Renewable Energy (2003);*
- *Integrated Resource Plan for South Africa (2025);*
- *Occupational Health and Safety Act (Act 85 of 1993), as amended by Occupational Health and Safety Amendment (Act 181 of 1993)[41];*
- *Road Safety Act (Act 93 of 1996);*
- *Fencing Act (Act 31 of 1963);*
- *National Biodiversity Offset Guideline (GN 3569 of 23 June 2023); and*
- *National Road Traffic Act (Act 93 of 1996).*

E.1.2 Provincial Legislation

E.1.2.1 Western Cape Nature Conservation Ordinance (Act 19 of 1974) and the Western Cape Nature Conservation Laws Amendment Act (Act 3 of 2000)

This Act should be given consideration following issuing of EA, should such EA be granted, with particular respect to its Chapters IV (The protection of wild animals other than fish) and Chapter VI (The

[41] The proposed Battery Energy Storage Systems (BESS) must be designed, operated, maintained and decommissioned according to the requirements of Occupational Health and Safety Act (Act 85 of 1993).

protection of flora). The requirement for permits when removing and relocating specific flora that may be encountered or alternatively addressing fauna that may be encountered around the sites would require due consideration. With regards to protected plants, the ordinance includes a list of endangered flora (Schedule 3) and protected flora (Schedule 4). Permits will be required from CapeNature under the Ordinance, should the final development footprint of the proposed project necessitate the removal or relocation of protected or endangered plant species.

The Western Cape Nature Conservation Laws Amendment Act (2000) provides for the amendment of various laws on nature conservation in order to transfer the administration of the provisions of those laws to the Western Cape Nature Conservation Board, which includes various regulations pertaining to wild plants and animals including avifauna.

According to the Aquatic Biodiversity and Species Assessment (Appendix G.3 of this BA Report), no SCC are known to occur in the study area from an aquatic perspective.

As noted in the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), the Applicant is also required to obtain permits from the relevant Competent Authority for the removal and/or translocation of any protected plant and animal species. The study notes that plant species protected in terms of the Western Cape Nature Conservation Laws Amendment Act (Act 3 of 2000) require permits for removal/translocation from the CapeNature. Seven Schedule 4 species requiring permits were recorded within the project area.

The Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report) also notes that although it is likely that faunal species will move away from the project area during vegetation clearance and construction, should the removal and/or translocation of any protected faunal species be required during any phase of the proposed development, then permits for the removal will need to be obtained from the relevant Competent Authority.

Refer to the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report) and Section B of this BA Report for additional information regarding the terrestrial and aquatic animal and plant species found in the study area.

E.1.2.2 Western Cape Biodiversity Act (Act 6 of 2021)

It is understood that the Draft Western Cape Biodiversity Bill of May 2019 was superseded by the Western Cape Biodiversity Act (Act 6 of 2021). The Western Cape Biodiversity Act (Act 6 of 2021) was signed into law in 2021, and it aims to provide the framework and institutions for nature conservation and the protection, management and sustainable use of biodiversity and ecosystems in the Western Cape.

As indicated in the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), no plant SCC were recorded within the project area during the field survey; however, the DFFE Screening Tool Report listed three SCC as medium sensitivity. The specialist study has recommended that an ecological walk-through of the development footprint be undertaken prior to construction to identify SCC and protected species that need to be translocated; and to identify species requiring permits for their destruction and/or removal.

E.1.2.3 Western Cape Land Use Planning Act (Act 3 of 2014)

The purpose of the Western Cape Land Use Planning Act (Act 3 of 2014) is to consolidate legislation in the Province pertaining to provincial planning, regional planning and development, urban and rural development, regulation, support and monitoring of municipal planning and regulation of public places and municipal roads arising from subdivisions; to make provision for Provincial Spatial Development Frameworks (PSDFs); to provide for minimum standards for, and the efficient coordination of, SDFs; to provide for minimum norms and standards for effective municipal development management; to regulate provincial development management; to regulate the effect of land development on agriculture; to provide for land use planning principles; to repeal certain old-order laws; and to provide for matters incidental thereto. Several aspects of this Act may apply to the affected sites, in particular the regulation of the effect of land development on agriculture. This legislation will be taken into consideration by the Applicant during the planning and design phase.

E.1.2.4 Western Cape Provincial Spatial Development Framework (2014)

Promoting renewable energy is one of the key factors in the 2014 Western Cape Provincial SDF (Department of Environmental Affairs and Development Planning (DEA&DP), 2014[42]). Some of the provincial policies in the Western Cape Provincial SDF are supporting emergent IPPs and sustainable energy producers in suitable rural locations; and encouraging and supporting renewable energy generation at scale (DEA&DP, 2014; Page 52). Decreasing unemployment and increasing employment opportunities are additional key factors noted in the Provincial SDF. The proposed project will promote renewable energy through the development of a Solar PV Facility, which will also result in construction and operational phase employment opportunities.

E.1.3 Local Planning Legislation

E.1.3.1 Environmental Management Framework

Research indicates that there is no Environmental Management Framework (EMF) for the Beaufort West Local Municipality and Central Karoo District Municipality (CKDM). The Screening Tool also notes that no intersections with gazetted EMF areas have been found for the project area. In addition, the CSIR confirmed with the Western Cape DEA&DP in August 2025 that there are no adopted EMFs for the Beaufort West Local Municipality or the CKDM.

E.1.3.2 Beaufort West Local Municipality Integrated Development Plan (IDP) (Beaufort West Local Municipality 2022-2027)

The Beaufort West Local Municipality Integrated Development Plan (BWLM IDP) (2022-2027) states that the vision for the municipality is to be the economic gateway to the Western Cape, where people are developed and live in harmony together (BWLM, 2025, Page 11[43]).

Further unpacking of the vision indicates the provision of directives regarding the growth of the economy and ensuring financial sustainability among other areas in which development is required.

The five priority areas of the IDP are:

1. Service to the people – seeking to improve and maintain basic service delivery through infrastructure development;
2. Sustainable economic growth by leveraging competitive advantages of the region;
3. A well-run administration that is efficient, effective and has the right skills mix;

[42] Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) (2014). Western Cape Provincial Spatial Development Framework. Available: https://cer.org.za/wp-content/uploads/2015/07/Western-Cape-Provincial-SDF-2014.pdf. Accessed: August 2025.

[43] Beaufort West Local Municipality (2025). Final 2025/2026 IDP Review: 5th Generation Integrated Development Plan [2022/2027 IDP]. Available: https://www.beaufortwestmun.co.za/resource-category/integrated-development-plan?category=451. Accessed August 2025.

4. Ensure financial sustainability; and
5. Be a transparent organisation.

The IDP identified renewable energy as a key strategic economic sector (BWLM, 2025).
The Central Karoo region is attractive for renewable energy projects due to the significant solar and wind energy resources. Various renewable energy projects have been approved in the CKDM area, but most have yet to be implemented. The CKDM Strategic Development Framework has identified considerable opportunities for expanding renewable energy projects specifically related to solar and wind power generation in the CKDM, which encourages IPPs to locate in the region and to create downstream business and employment opportunities (CKDM, 2019[44]).

According to the Western Cape Provincial SDF (DEA&DP, 2014[45]), renewable energy generation is also deemed one of the most promising economic sectors in the Central Karoo region that will add significant value to the regional Gross Domestic Product (GDPR), while having the potential to change the composition and character of towns throughout the municipal district (CKDM, 2017[46]).

Overall, the proposed project will create job opportunities and economic spin offs during the construction and operational phases (if EA is granted by the DFFE). Furthermore, the proposed project is aligned with the general objectives of the local municipality IDP, and provincial and district municipality SDF in that it will encourage sustainable economic growth through increased investment and employment opportunities.

E.1.4 <u>Guidelines, Frameworks and Protocols</u>

The following guidelines, frameworks and protocols are applicable to the proposed project:

- Guidelines published in terms of the NEMA EIA Regulations, in particular:
  - Guideline on Alternatives (DEA, 2014);
  - Guideline on Transitional Arrangements (Western Cape DEA&DP, 2013);
  - Guideline on Alternatives (Western Cape DEA&DP, 2013);
  - Guideline on Public Participation (DEA, 2012; DEA&DP, 2013; DEA, 2017);
  - National Noise Control Regulations (GN R154 of 1992) and SANS 10103:2008;
  - Guideline on Need and Desirability (Western Cape DEA&DP, 2013; DEA, 2017);
- Information Document on Generic Terms of Reference for Environmental Assessment Practitioners (EAPs) and Project Schedules (March 2013);
- Integrated Environmental Management Information Series (Booklets 0 to 23) (Department of Environmental Affairs and Tourism (DEAT), 2002 – 2005);
- Guidelines for Involving Specialists in the EIA Processes Series (DEA&DP; CSIR and Tony Barbour, 2005 – 2007);
- BirdLife South Africa (BLSA) (2017). Best Practice Guidelines. Guidelines for assessing and monitoring the impact of solar power generating facilities on birds in southern Africa;
- Species Environmental Assessment 2020 Guideline: Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for EIAs in South Africa. South African National Biodiversity Institute (SANBI);
- United Nations Framework Convention on Climate Change (1997); and

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[44] Central Karoo District Municipality. (2019). Central Karoo District Municipality Spatial Development Framework.
[45] Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) (2014). The Western Cape Provincial Spatial Development Framework. Accessed: https://cer.org.za/wp-content/uploads/2015/07/Western-Cape-Provincial-SDF-2014.pdf. August 2025.
[46] Central Karoo District Municipality. (2017). Central Karoo District Municipality Integrated Development Plan 2017-2022.

- Kyoto Protocol (which South Africa acceded to in 2002).

E.1.5 International Finance Corporation Performance Standards

In order to promote responsible environmental stewardship and socially responsible development, the proposed project will as far as practicable incorporate the environmental and social policies of the International Finance Corporation (IFC). These policies provide a frame of reference for lending institutions to review environmental and social risks of projects, particularly those undertaken in developing countries.

Through the Equator Principles, the IFC's standards are now recognised as international best practice in project finance. The IFC screening process categorises projects into A, B or C in order to indicate relative degrees of environmental and social risk. The categories are:

- Category A - Projects expected to have significant adverse social and/or environmental impacts that are diverse, irreversible, or unprecedented;
- Category B - Projects expected to have limited adverse social and/or environmental impacts that can be readily addressed through mitigation measures; and
- Category C - Projects expected to have minimal or no adverse impacts, including certain financial intermediary projects.

Accordingly, projects such as this proposed Solar PV Facility are categorised as Category B projects. The EIA Process for Category B projects examines the project's potential negative and positive environmental impacts. As required for Category B projects, a BA Process was commissioned and completed.

SECTION F: LISTED ACTIVITIES ASSOCIATED WITH THE PROPOSED PROJECT

As indicated in Section E of this BA Report, the proposed project triggers listed activities in the Listing Notices of the 2014 NEMA EIA Regulations (as amended). To reiterate, the proposed project is located within the Beaufort West REDZs gazetted in GN 144 on 26 February 2021. Therefore, a BA Process was undertaken for the proposed project in terms of the NEMA and the 2014 NEMA EIA Regulations (as amended).

Table F.1 below provides a list of the applicable listed activities for the proposed project, and associated infrastructure in terms of Listing Notice 1 (GN R 327), Listing Notice 2 (GN R325) and Listing Notice 3 (GN R324) in terms of the 2014 NEMA EIA Regulations (as amended). The amended Application for EA for this BA Process is being submitted to the DFFE together with this Final BA Report, which makes reference to all relevant listed activities forming part of the proposed project.

The Western Cape DEA&DP were consulted with previously regarding the general approach to Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) stipulated in Listing Notice 3. The Western Cape DEA&DP confirmed that no Bioregional Plans are adopted for the affected municipalities. This has been factored into the relevant listed activities.

Table F.1: Listed Activities in GN R327, GN R325, and GN R324 that will be potentially triggered by the proposed project and associated infrastructure

Activity No(s)	Relevant Basic Assessment Activities as set out in Listing Notice 1 of the EIA Regulations, 2014 as Amended	Description of the Portion of the Proposed Project to which the Applicable Listed Activity Relates
Activity 11 (i)	The development of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is — (a) temporarily required to allow for maintenance of existing infrastructure; (b) 2 kilometres or shorter in length; (c) within an existing transmission line servitude; and (d) will be removed within 18 months of the commencement of development.	The proposed project will entail the construction of an on-site substation complex that will be constructed at the solar facility. The on-site substation complex will include a 132 kV facility Independent Power Producer (IPP) substation, which will extend approximately 1.5 ha in area. The on-site substation complex will have a capacity stepping up from 22 kV or 33 kV to 132 kV. The on-site substation complex constitutes facilities for the distribution and transmission of electricity. The proposed project will be located on one farm portion, north of Murraysburg, in the Beaufort West Local Municipality (which falls within the Central Karoo District Municipality) in the Western Cape Province. Therefore, the proposed project will take place outside of an urban area.
Activity 12 (ii) [(a) and (c)]	The development of: (ii) infrastructure or structures with a physical footprint of 100 square metres or more;	The proposed solar PV facility will have an estimated permanent footprint of 180 ha (excluding access roads) and a temporary laydown area of approximately 5 ha. The proposed project will also entail the

	where such development occurs- a) within a watercourse; or c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding- (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	construction of various infrastructure and structures such as the: - solar field (175 ha), - inverter-transformer stations, - BESS (2.5 ha), - on-site substation complex (1.5 ha), - on-site medium voltage cables, - laydown area (5 ha), - main external access roads, internal roads, and - ancillary infrastructure such as O&M building / control centre, site office, workshop, bathrooms / ablutions, warehouse, guard house etc.(house (~1.027 ha). These developments will constitute infrastructure with a physical footprint of more than 100 m^2. Where internal roads and the main access roads cross drainage features, crossing structures will be required. These infrastructure and structures will exceed a footprint of 100 m^2, and some occur within and within 32 m of rivers and drainage lines, which have been delineated by the aquatic specialist. The proposed project will be located on one farm portion, north of Murraysburg, in the Beaufort West Local Municipality (which falls within the Central Karoo District Municipality) in the Western Cape province.
Activity 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.	The proposed project will require storage and handling of dangerous goods such as cement, chemicals, fuels, oils, lubricants and solvents. The total volume of dangerous good may exceed 80 m^3 but not exceeding 500 m^3. Therefore, infrastructure for the storage and handling of dangerous goods of 80 m^3 or more but not exceeding 500 m^3 is proposed. Dangerous goods will be stored on site within designated areas such as laydown areas
Activity 19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving-	The proposed project will entail the excavation, removal and moving of more than 10 m^3 of soil, sand, pebbles or rock from nearby watercourses (i.e. rivers and drainage lines) on site. The proposed project may also entail the infilling of more than 10 m^3 of material into the nearby aquatic features. The aquatic features have been delineated by the aquatic specialist.

	a) will occur behind a development setback; b) is for maintenance purposes undertaken in accordance with a maintenance management plan; c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	Specifically, the associated infrastructure traversing watercourses (such as the main access roads and internal roads) will result in the accumulated infilling or depositing of more than 10 m^3 of material into; and the excavation, removal and moving of more than 10 m^3 of soil, sand, pebbles or rock from the delineated aquatic features.
Activity 24 (ii)	The development of a road – (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road– a) which is identified and included in activity 27 in Listing Notice 2 of 2014; or b) where the entire road falls within an urban area; or c) which is 1 kilometre or shorter.	Existing roads will be used as far as practically achievable, for main access roads to the PV facility and internal roads within the PV facility. However, the access and internal road network will need to be upgraded (using all technically feasible existing farm roads where possible) to ensure that the delivery of project infrastructure components and associated infrastructure is possible and that maintenance teams are able to access the entire solar field throughout the lifespan of the project. The main access road network will be upgraded to approximately 8 m wide (6 m wide road surface with 1 m wide drain on either side). The internal roads will be upgraded to up to 6 m wide. Two site access roads options apply to the proposed for the Megora PV 1A site (i.e. Option A and Option B). Option A is approximately 7.1 km long and extends from the MR00607 from south of the site. This access road connects with the MR00607 at an existing farm road and largely follows existing farm roads to the site. It is anticipated that the entire length of the access road will need upgrading and/or newly constructed road sections that can accommodate safely the largest construction/haulage vehicle. Option B is approximately 1.32 km long and extends from the MR00607 entering from the north of the site. This access road is also connected to the MR00607 and follows an existing farm jeep track. This road will be newly constructed, and it will need to cross a riverbed with a short steep incline. Where required for turning circle/bypass areas, however, access or internal roads may be up to 10 m wide to allow for larger component transport.

		This activity is therefore applicable to the main access roads to the site and the roads between project components (i.e. internal roads), whereby some sections of the roads may be wider than 8 m but up to 10 m.
Activity 28 (ii)	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes, or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	The proposed solar facility will be developed outside of an urban area. It will be constructed on one farm portion north of Murraysburg in the Western Cape Province. The land earmarked for the development of the proposed facility is currently used for agricultural purposes. The proposed solar PV facility, which is considered a commercial/industrial development (and to be re-zoned to special zoning), will have a footprint in excess of 1 ha (minimum permanent footprint of approximately 180 ha for the PV facility and associated structures).
Activity 48 (i) (a) and (c)	The expansion of: (i) infrastructure or structures where the physical footprint is expanded by 100 square metre or more, where such expansion occurs: (a) within a watercourse; (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse. excluding— (aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such expansion occurs within an urban area; or (ee) where such expansion occurs within existing roads, road reserves or railway line reserves.	The proposed project will require the upgrading of existing roads, as well as watercourse crossing upgrades. The existing site access roads are approximately 4 m in width. It is proposed that the access roads be upgraded and widened to a maximum width of approximately 8 m for the main access routes to the site entrances, comprising a 6 m road surface with 1 m drainage channels on either side. Watercourse crossing upgrades, where required, will align with these indicative dimensions. As such the total footprint associated with the of the upgrades and expansion to be undertaken on the existing roads will exceed 100 m². The existing road expansion and upgrading, as well as upgrading of drainage crossings, will occur within drainage lines, watercourses, and wetlands, and within 32 m of these aquatic features, which have been delineated by the aquatic specialist.
Activity 56 (ii)	The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre – (ii) where no reserve exists, where the existing road is wider than 8 metres;	Existing roads will be used as far as practically achievable, for main access roads to the PV facility and internal roads within the PV facility. However, the access and internal road network will need to be upgraded (using all technically feasible existing farm roads where possible). The

	excluding where widening or lengthening occur inside urban areas.	main access road network will be upgraded to approximately 8 m wide (6 m wide road surface with 1 m wide drain on either side). The internal roads will be upgraded to up to 6 m wide. Two site access roads options apply to the proposed for the Megora PV 1A site (i.e. Option A and Option B). Option A is approximately 7.1 km long and extends from the MR00607 from south of the site. This access road connects with the MR00607 at an existing farm road and largely follows existing farm roads to the site. It is anticipated that the entire length of the access road will need upgrading and/or newly constructed road sections that can accommodate safely the largest construction/haulage vehicle. Option B is approximately 1.32 km long and extends from the MR00607 entering from the north of the site. This access road is also connected to the MR00607 and follows an existing farm jeep track. This road will be newly constructed, and it will need to cross a riverbed with a short steep incline. Where required for turning circle/bypass areas, however, access or internal roads may be up to 10 m to allow for larger component transport. It is expected that only certain sections of the roads will need to be upgraded, where required. This activity is therefore applicable to the various main access roads to the site and the roads between project components (i.e. internal roads), whereby some sections of the roads will be widened by more than 6 m. Where required, existing roads will be lengthened by more than 1 km.
Activity No(s):	**Relevant Scoping and EIA Activities as set out in Listing Notice 2 of the EIA Regulations of 2014, as amended**	**Description of the portion of the proposed project to which the applicable listed activity relates**
Activity 1	The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more, excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs a) within an urban area; or b) on existing infrastructure.	The proposed project is a solar PV facility (i.e., facility for the generation of electricity from a renewable resource) with a maximum installed capacity of up to 120 MW. The proposed project will be constructed on one farm portion, north of Murraysburg, within the Western Cape Province. Therefore, the proposed project is situated outside of an urban area.

		Note that GN 114 states that Applications for EA for large scale Wind and Solar PV energy facilities, when such facilities trigger Activity 1 of Listing Notice 2 of 2014 of the 2014 NEMA EIA Regulations (as amended) and any other listed and specified activities necessary for the realisation of such facilities, and where the entire proposed facility is to occur in such REDZs, must follow a BA Process, in order to obtain EA. As such, the proposed project was subject to a BA process instead of a full Scoping and EIA process.
Activity 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for: (i) the undertaking of a linear activity; or (i) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed solar PV facility will have an estimated permanent footprint of approximately 180 ha (excluding access roads), and a temporary laydown area of approximately 5 ha. The proposed project will also entail the construction of various infrastructure and structures. Based on the findings of the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), the site occurs in Eastern Upper Karoo, Southern Karoo Riviere, and Upper Karoo Hardeveld vegetation types. As a result, more than 20 ha of indigenous vegetation would be removed for the construction of the proposed project. Note that GN 114 states that Applications for EA for large scale Wind and Solar PV energy facilities, when such facilities trigger Activity 1 of Listing Notice 2 of 2014 of the 2014 NEMA EIA Regulations (as amended) and any other listed and specified activities necessary for the realisation of such facilities, and where the entire proposed facility is to occur in such REDZs, must follow a BA Process, in order to obtain EA.
Activity No(s):	**Relevant Basic Assessment Activities as set out in Listing Notice 3 of the EIA Regulations of 2014, as amended**	**Description of the portion of the proposed project to which the applicable listed activity relates**
Activity 4 [(i) (ii) and (aa)]	The development of a road wider than 4 metres with a reserve less than 13,5 metres. (i) Western Cape (ii) Areas outside urban areas: (aa) areas containing indigenous vegetation	Internal roads will be constructed at the proposed solar facility. The internal roads are estimated to have a width of approximately 6 m. Where required for turning circle/bypass areas, however, access or internal roads may be up to 10 m to allow for larger component transport. Two site access roads options apply to the proposed for the Megora PV 1A site (i.e. Option A and Option B). Option A is approximately 7.1 km long and extends from the MR00607 from south of the site. This access road connects with the MR00607 at an existing farm road and largely follows

		existing farm roads to the site. It is anticipated that the entire length of the access road will need upgrading and/or newly constructed road sections that can accommodate safely the largest construction/haulage vehicle. Option B is approximately 1.3 km long and extends from the MR00607 entering from the north of the site. This access road is also connected to the MR00607 and follows an existing farm jeep track. This road will be newly constructed, and it will need to cross a riverbed with a short steep incline. The access roads will be up to 8 m wide for main access roads to the site entrances (6 m wide road surface with 1 m wide drain on either side). The proposed project will be located on one farm portion, north of Murraysburg, in the Beaufort West Local Municipality (which falls within the Central Karoo District Municipality) in the Western Cape province. The proposed project will take place outside of an urban area in the Western Cape, on sites that contain indigenous vegetation. Based on the findings of the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), the site occurs in Eastern Upper Karoo, Southern Karoo Riviere, and Upper Karoo Hardeveld vegetation types.
Activity 14 (ii) (a) and (c); [(i) (i) (ff)]	The development of – (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs – (a) within a watercourse; (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. (i) Western Cape (i) Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic	The proposed project will be located on one farm portion, north of Murraysburg, in the Beaufort West Local Municipality (which falls within the Central Karoo District Municipality) in the Western Cape province. The proposed project will entail the construction of various infrastructure and structures such as the: - solar field (175 ha), - inverter-transformer stations, - BESS (2.5 ha), - on-site substation complex (1.5 ha), - on-site medium voltage cables, - laydown area (5 ha), - main external access roads, internal roads, and - ancillary infrastructure such as O&M building / control centre, site office, workshop, bathrooms / ablutions, warehouse, guard house etc.(house (~1.027 ha).

	biodiversity plans adopted by the competent authority or in bioregional plans.	These structures will have an estimated combined permanent footprint of approximately 180 ha (excluding access roads), and a temporary laydown area of approximately 5 ha. Where internal roads and the main access roads cross drainage features, crossing structures will be required. The infrastructure and structures will exceed a footprint of 10 m^2 and some may occur within the drainage lines, watercourses, and wetlands, and 32 m of these aquatic features, which have been delineated by the aquatic specialist. The proposed project will take place outside of an urban area in the Western Cape, on a site that contains ESAs and CBAs in terms of the 2023 Western Cape Biodiversity Spatial Plan (WC BSP) that was adopted on 13 December 2024 (in Gazette Extraordinary 9017). Based on the Aquatic Biodiversity and Species Assessment, a CBA is associated with the perennial riverine units, while ESA classified habitats are associated with the drainage lines, wetlands and non-perennial rivers of the area of influence. The proposed project intersects with ESA 1 (Aquatic). The Option B access road intersects with CBA (River) and CBA (Terrestrial). Based on the Terrestrial Biodiversity and Species Assessment, the larger area includes CBA 1 (River, Wetland, and Terrestrial), CBA 2 (Aquatic and Terrestrial), ESA 1 Aquatic, and ESA 2. One laydown area is situated in a CBA 1 terrestrial. The PV area and Option A Access Road also intersect with ESA 1 (Aquatic). In addition, the Option B Access Road intersects with CBA 1 (River), CBA 1 (Terrestrial), ESA 1 (Aquatic), CBA 2 (Terrestrial), CBA 2 (Aquatic), and ESA 1.
Activity 18 [(i) (ii) and (aa)]	The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. (i) Western Cape (ii) All areas outside urban areas: (aa) Areas containing indigenous vegetation	Existing roads will be used as far as practically achievable, for main access roads to the PV facility and internal roads within the PV facility. However, the access and internal road network will need to be upgraded (using all technically feasible existing farm roads where possible). The main access road network will be upgraded to approximately 8 m wide (6 m wide road surface with 1 m wide drain on either side). The internal roads will be upgraded to up to 6 m wide.

		Two site access roads options apply to the proposed for the Megora PV 1A site (i.e. Option A and Option B). Option A is approximately 7.1 km long and extends from the MR00607 from south of the site. This access road connects with the MR00607 at an existing farm road and largely follows existing farm roads to the site. It is anticipated that the entire length of the access road will need upgrading and/or newly constructed road sections that can accommodate safely the largest construction/haulage vehicle. Option B is approximately 1.3 km long and extends from the MR00607 entering from the north of the site. This access road is also connected to the MR00607 and follows an existing farm jeep track. This road will be newly constructed, and it will need to cross a riverbed with a short steep incline. Where required for turning circle/bypass areas, however, access or internal roads may be up to 10 m to allow for larger component transport. It is expected that only certain sections of the roads will need to be upgraded, where required. This activity is therefore applicable to the various main access roads to the site and the roads between project components (i.e. internal roads), whereby some sections of the roads will be widened by more than 4 m. Where required, existing roads will be lengthened by more than 1 km. The proposed project will be located on one farm portion, north of Murraysburg, in the Beaufort West Local Municipality (which falls within the Central Karoo District Municipality) in the Western Cape province. The proposed project will take place outside of an urban area in the Western Cape, on sites that contain indigenous vegetation. Based on the findings of the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of this BA Report), the site occurs in Eastern Upper Karoo, Southern Karoo Riviere, and Upper Karoo Hardeveld vegetation types.

Activity 23 (ii) (a) (c) ***[(i) (i) (ff)]***	The expansion of: (ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs: a) within a watercourse; (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse, excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. (i) Western Cape (i) Outside urban areas: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.	The proposed project will be located on one farm portion, north of Murraysburg, in the Beaufort West Local Municipality (which falls within the Central Karoo District Municipality) in the Western Cape province. The proposed project will require the upgrading of existing roads, as well as watercourse crossing upgrades. The existing road expansion and upgrading, as well as upgrading of drainage crossings, will occur within drainage lines, watercourses, and wetlands, and within 32 m of these aquatic features, which have been delineated by the aquatic specialist. The total footprint of the upgrades and expansion to be undertaken on the existing roads is in excess of 10 m^2. The proposed project will take place outside of an urban area in the Western Cape, on a site that contains ESAs and CBAs in terms of the 2023 WCBSP. Based on the Aquatic Biodiversity and Species Assessment, a CBA is associated with the perennial riverine units, while ESA classified habitats are associated with the drainage lines, wetlands and non-perennial rivers of the area of influence. The proposed project intersects with ESA 1 (Aquatic). The Option B access road intersects with CBA (River) and CBA (Terrestrial). Based on the Terrestrial Biodiversity and Species Assessment, the larger area includes CBA 1 (River, Wetland, and Terrestrial), CBA 2 (Aquatic and Terrestrial), ESA 1 Aquatic, and ESA 2. One laydown area is situated in a CBA 1 terrestrial. The PV area and Option A Access Road also intersect with ESA 1 (Aquatic). In addition, the Option B site access road intersects with CBA 1 (River), CBA 1 (Terrestrial), ESA 1 (Aquatic), CBA 2 (Terrestrial), CBA 2 (Aquatic), and ESA 1.

SECTION G: NATIONAL WEB-BASED SCREENING TOOL FINDINGS

The study area for the proposed project has been run through the Screening Tool, and associated report generated and attached to the Application for EA.

Based on the selected classification, the Screening Tool provides a list of specialist assessments that should be undertaken as part of the BA Process, as well as identifies the sensitivities on site that need to be verified by either the EAP or the specialists, where relevant, as noted in the Assessment Protocols of 20 March 2020 (GN 320) and 30 October 2020 (GN 1150, as amended in GN 3717). The following classifications were applied to the proposed project:

- *Utilities Infrastructure; Electricity; Generation; Renewable; Solar; PV; and*
- *Utilities Infrastructure; Electricity; Distribution and Transmission; Substation.*

The Screening Tool Report notes that it is the responsibility of the EAP to confirm this list and to motivate in the BA Report, the reason for not including any of the identified specialist assessments, where relevant.

As discussed at the Pre-Application Meeting held on 17 January 2025, the EAP has recommended that certain studies are not required. Refer to the discussion below.

G.1 Specialist Assessments Undertaken

Table G.1: List of Specialist Assessments identified by the Screening Tool[47]

Specialist Assessment Required by the Screening Tool		Applicable to PV and/or Substation Based on Screening Tool List?	Study Undertaken in BA Process?	Sensitivity Allocated on the Screening Tool [Study Area]	Verified Sensitivity by the Specialist/ EAP [Study Area][48]	Type of Assessment undertaken in BA Process or Motivation/Feedback for Not Undertaking the Recommended Study	Appendix of BA Report for Specialist Report (including SSV)
1	Agricultural Impact Assessment	PV and Substation	Yes	Medium and Low	Medium and Low	Protocol GN 320: Part B: Agriculture (Protocol for the Specialist Assessment and Minimum Report Content Requirements of Environmental Impacts on Agricultural Resources by Onshore Wind and/or **Solar PV** Energy Generation Facilities where the Electricity Output is 20 MW or more): **Compliance Statement**	Appendix F.1
2	Landscape/Visual Impact Assessment	PV only	Yes	Very High	Mainly Low with a small portion of the easternmost part of site being Medium and Very High	Protocol GN 320: Part A: Site Sensitivity Verification; and Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Impact Assessment**	Appendix F.5
3	Archaeological and Cultural Heritage Impact Assessment	PV and Substation	Yes	Low	Low	Protocol GN 320: Part A: Site Sensitivity Verification; and Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Impact Assessment**	Appendix F.6

[47] The Draft Basic Assessment Reports for the Megora projects were released for public comment from 6 March to 8 April 2026. The specialist studies and Specialist Study Verification (SSV) processes informing this Final BA Report were undertaken prior to and during this public participation period, in accordance with Version 3 of the Plant Species and Animal Species Themes on the DFFE National Web-based Environmental Screening Tool, which was applicable at the time of study commencement and execution. The updated Plant Species and Animal Species Themes (Version 4) became effective on 9 April 2026, after the close of the public participation period and following completion of the majority of specialist inputs. The assessments therefore reflect the requirements of Version 3, with due consideration of updated guidance where relevant.

[48] The sensitivity is described for the study area. However, the footprints avoid all no-go areas. Refer to Appendix F for additional information.

Specialist Assessment Required by the Screening Tool		Applicable to PV and/or Substation Based on Screening Tool List?	Study Undertaken in BA Process?	Sensitivity Allocated on the Screening Tool [Study Area]	Verified Sensitivity by the Specialist/ EAP [Study Area][48]	Type of Assessment undertaken in BA Process or Motivation/Feedback for Not Undertaking the Recommended Study	Appendix of BA Report for Specialist Report (including SSV)
4	Palaeontology Impact Assessment	PV and Substation	Yes	Very High	Very High	Protocol GN 320: Part A: Site Sensitivity Verification; and Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Impact Assessment**	Appendix F.7
5	Terrestrial Biodiversity Impact Assessment	PV and Substation	Yes	Very High	Medium	Protocol GN 320: Part B: Biodiversity (Protocol for the Specialist Assessment and Minimum Report Content Requirements of Environmental Impacts on Terrestrial Biodiversity): **Impact Assessment** Note that the reporting for Terrestrial Biodiversity, Terrestrial Plant Species and Terrestrial Animal Species is combined in one report.	Appendix F.2
6	Aquatic Biodiversity Impact Assessment	PV and Substation	Yes	Mainly Low with minor areas of Very High	Mainly Low with minor areas of Very High	Protocol GN 320: Part B: Biodiversity (Protocol for the Specialist Assessment and Minimum Report Content Requirements of Environmental Impacts on Aquatic Biodiversity): **Impact Assessment** Note that the reporting for Aquatic Biodiversity and Species is combined in one report.	Appendix F.3
7	Civil Aviation Assessment	PV only	Yes (Site Sensitivity Verification only)	Low	Low	Protocol GN 320: Part B: Civil Aviation (Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Civil Aviation Installations): **Site Sensitivity Verification**	Appendix F.13
8	Defence Assessment	PV only	Yes (Site Sensitivity Verification only)	Low	Low	Protocol GN 320: Part B: Defence (Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Defence Installations): **Site Sensitivity Verification**	Appendix F.14

Specialist Assessment Required by the Screening Tool		Applicable to PV and/or Substation Based on Screening Tool List?	Study Undertaken in BA Process?	Sensitivity Allocated on the Screening Tool [Study Area]	Verified Sensitivity by the Specialist/ EAP [Study Area][48]	Type of Assessment undertaken in BA Process or Motivation/Feedback for Not Undertaking the Recommended Study	Appendix of BA Report for Specialist Report (including SSV)
9	Radio Frequency Interference (RFI) Assessment	PV only	No	High	Low	The Screening Tool indicates that the proposed project area is of High sensitivity in terms of RFI with regards to Solar PV developments flagging the project as being within 8 and 14 km of an SKA receptor. This is disputed as the proposed projects are located outside of the KCAAA and thus not expected to impact significantly on the SKA. A letter of no objection has also been requested from SARAO confirming that the SKA receptor flagged by the Screening Tool is no longer active. A letter from SARAO was received on 16 April 2026 and confirmed that the proposed projects lie outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas and that therefore, the relevant regulations promulgated in terms of the Astronomy Geographic Advantage Act would not apply and the facility is considered to be low risk to the SKA telescope. Please refer to Appendix G of this BA Report for the above-mentioned letter. Therefore, it is proposed not to undertake an RFI Assessment. Refer to additional information in Section E. 4 below.	Not applicable
10	Geotechnical Assessment	PV and Substation	Yes	Not Applicable	Not Applicable	Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Desktop Impact Assessment** There are no themes on the Screening Tool that currently relate to Geotechnical features that could be verified on site. Hence Part A of GN 320 (Site Sensitivity Verification) is not applicable in this regard.	Appendix F.11
11	Socio-Economic Assessment	PV only	Yes	Not Applicable	Not Applicable	Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Impact Assessment**	Appendix F.8

Specialist Assessment Required by the Screening Tool		Applicable to PV and/or Substation Based on Screening Tool List?	Study Undertaken in BA Process?	Sensitivity Allocated on the Screening Tool [Study Area]	Verified Sensitivity by the Specialist/ EAP [Study Area][48]	Type of Assessment undertaken in BA Process or Motivation/Feedback for Not Undertaking the Recommended Study	Appendix of BA Report for Specialist Report (including SSV)
						There are no themes on the Screening Tool that currently relate to Socio-Economic features that could be verified on site. Hence Part A of GN 320 (Site Sensitivity Verification) is not applicable in this regard.	
12	Plant Species Assessment	PV and Substation	Yes	Medium for the PV facility and Low of the substation	Medium	Protocol GN 1150 (amended in GN 3717): Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Plant Species. This applies to Terrestrial species in this regard: **Impact Assessment** Note that the reporting for Terrestrial Biodiversity, Terrestrial Plant Species and Terrestrial Animal Species is combined in one report.	Appendix F.2
13	Animal Species Assessment	PV and Substation	Yes	High (Birds) and Medium (Mammals)	Medium for Mammals (Birds are assessed separately as discussed below)	Protocol GN 1150 (amended in GN 3717): Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Animal Species. This applies to Terrestrial species in this regard: **Impact Assessment** Note that the reporting for Terrestrial Biodiversity, Terrestrial Plant Species and Terrestrial Animal Species is combined in one report.	Appendix F.2

It must be noted that the Screening Tool did not identify the need for the following specialist assessments for the proposed project, however these studies have been commissioned as part of the BA Process to ensure that all potential impacts resulting from the proposed project are considered as best as possible. Refer to Table G.2 for additional information.

Table G.2: List of Additional Specialist Assessments undertaken

Study Undertaken in BA Process	Type of Assessment Undertaken in BA Process	Appendix of BA Report for the Specialist Assessment (Including SSV)
Avifauna Impact Assessment	Protocol GN 1150 (amended in GN 3717): Protocol for the Specialist Assessment and Minimum Report Content Requirements for Environmental Impacts on Animal Species. This applies to Terrestrial species in this regard: **Impact Assessment**	Appendix F.4
Traffic Impact Assessment	Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Impact Assessment** There are no themes on the Screening Tool that currently relate to traffic features that could be verified on site. Hence Part A of GN 320 (Site Sensitivity Verification) is not applicable in this regard.	Appendix F.9
BESS High Level Safety, Health and Environment Risk Assessment	This is a **technical report** and does not need to fulfil the requirements of the 2014 NEMA EIA Regulations (as amended).	Appendix F.10
Geohydrology Impact Assessment	Appendix 6 of the 2014 NEMA EIA Regulations (as amended): **Impact Assessment** There are no themes on the Screening Tool that currently relate to geohydrology features that could be verified on site. Hence Part A of GN 320 (Site Sensitivity Verification) is not applicable in this regard.	Appendix F.12

G.2 RFI Assessment

The Screening Tool identified the need for an RFI Assessment for the solar PV project and identified that the study area is of High sensitivity for the RFI theme (Solar PV) flagging the proposed project as being located between 8 km and 14 km of an SKA receptor. However, the proposed projects do not fall within the KCAAA and SKA regions, nor is it located within the Northern Cape, and thus it is not expected to have a significant impact on the SKA. A letter of no objection has also been requested from SARAO confirming that the SKA receptor flagged by the Screening Tool is no longer active. A letter from SARAO was received on 16 April 2026 and confirmed that the proposed projects lie outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas and that therefore, the relevant regulations promulgated in terms of the Astronomy Geographic Advantage Act would not apply and the facility is considered to be low risk to the SKA telescope. Please refer to Appendix G of this BA Report for the above-mentioned letter. Proof of correspondence sent to and received from SARAO is included in Appendix G and the CRR . Therefore, the sensitivity rating assigned by the Screening Tool is disputed and based on this, the EAP is of the opinion that an RFI Assessment is not warranted and is not being conducted as part of these BA Processes. Refer to the locality map provided in Section A of this BA Report for additional information, and feedback on the KCAAA in Section E of this BA Report.

SECTION H: NEED AND DESIRABILITY

H.1 Need and Desirability

It is an important requirement in the BA Process to review the need and desirability of the proposed project. Guidelines on Need and Desirability were published in the Government Gazette of 20 October 2014. These guidelines list specific questions to determine need and desirability of proposed developments. This checklist is a useful tool in addressing specific questions relating to the need and desirability of a project and assists in explaining that need and desirability at the provincial and local context. Need and desirability answer the question of whether the activity is being proposed at the right time and in the right place. Table H.1 includes a list of questions based on the DFFE's Guideline to determine the need and desirability of the proposed project. It should be noted this table was informed by the outcomes of the BA Process. The table below details includes a list of questions based on the DFFE's Guideline to determine the need and desirability of the proposed Megora PV 1A project.

Table H.1: The Guideline on the Need and Desirability's list of questions to determine the "Need and Desirability" of a proposed project.

NEED	
Question	**Response**
1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area)?	
1.1. How were the following ecological integrity considerations taken into account? 1.1.1. Threatened Ecosystems, 1.1.2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure, 1.1.3. Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"), 1.1.4. Conservation targets, 1.1.5. Ecological drivers of the ecosystem, 1.1.6. Environmental Management Framework, 1.1.7. Spatial Development Framework, and 1.1.8 Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.).	The environmental sensitivities present on site and ecological integrity considerations were addressed within the Avifauna, Aquatic Biodiversity, and Terrestrial Biodiversity and Plant and Animal Species Impact Assessments (Appendix F of the BA Report) undertaken as part of this BA Process. The Avifauna Assessment (Appendix F.4 of the BA Report) also addresses ecological integrity. The above specialist studies explain that the proposed PV 1A study is located predominantly within the Eastern Upper Karoo (NKu 4) and Southern Karoo Riviere vegetation units, associated with the mainstem systems of the Snyderskraal River which flows to the east of the site. These vegetation units are considered as Least Concern from a conservation status and is characterised by low lying areas separated by a higher lying plateau and/ or inselbergs (koppies). The Aquatic Biodiversity Specialist Report (Appendix F.3) indicates that the PV 1A site contains ESA 1 Aquatic in terms of the 2023 Western Cape Biodiversity Spatial Plan. In addition, Aquatic and Terrestrial CBA are located within the 500 m radius of the PV site along with Wetlands/Rivers associated with the Snyderskraal mainstem system. The proposed project areas also contain core aquatic areas within the PV 1A site which have been avoided by the proposed layout. It is therefore the Aquatic and Terrestrial Ecological specialist's opinion that the proposed development is considered compatible with the aims and objectives of CBAs and ESAs from an aquatic and terrestrial biodiversity point of view. Two principal factors are considered to be the master elements driving the localised ecology. These can be considered to be broadly meteorological factors, namely wind, rainfall and temperature, while edaphics, particularly giving rise to lithic or sandy environments may be considered a geophysical driver. The specialists identified all ecological sensitive areas on site that would need to be avoided by the proposed development (e.g., pans, wetland environments), as well as how to suitably develop around and within these areas so that the ecological integrity of the areas is maintained (refer to Section J and Appendix F of this BA Report). The sensitivities identified by the various specialists have been taken into consideration and avoided where possible into order to identify the Buildable Areas / development footprint.

NEED	
Question	**Response**
	The feature and sensitivity maps for the study area, and the combined layout and sensitivity maps are included in Section B and J of this BA Report, as in Appendix C. The Screening Tool also notes that no intersections with EMF areas have been found. These specialists concluded that the proposed project could proceed provided that the recommended mitigation measures and management actions provided are implemented. Therefore, the proposed development would not unacceptably compromise the ecological integrity of the context and associated conservation goals and would be developed in support of responding to climate change and the South African energy crisis through development of a renewable energy facility.
1.2. How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	The environmental sensitivities present on site and ecological integrity considerations were addressed within the Avifauna, Aquatic Biodiversity, and Terrestrial Biodiversity and Plant and Animal Species Impact Assessments (Appendix F.2 of the BA Report) undertaken as part of this BA Process. The Avifauna Assessment (Appendix F.4 of the BA Report) also addresses ecological integrity. The specialists identified all ecological sensitive areas on site that would need to be avoided by the proposed development (e.g., pan and wetland environments), as well as how to suitably develop around these areas so that the ecological integrity of the areas is maintained (refer to Section J and Appendix F of this BA Report). The buffer areas recommended by the specialists were used to design the solar array area and the power line routing. The buffers have therefore been avoided in the layout of the proposed PV Facility and power line routing. A sensitivity map produced based on the input obtained from the various specialist studies is included in Section J of this Report, as well as in Appendices C and F. Measures to avoid, remedy, mitigate and manage impacts are included within the Terrestrial and Aquatic Biodiversity and Species Assessment, as well as the Environmental Management Programme (EMPr), included as Appendix H of this BA Report.

NEED	
Question	**Response**
1.3. How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	This development has the potential to impact on the ecology of the area. The proposed development of the project is expected to result in an overall Low to Very Low ecological impact and limited impacts to aquatic biodiversity when suitable mitigation measures are employed. Refer to the Terrestrial Biodiversity and Species Assessment (Appendix F.2 of the BA Report) and the Aquatic Biodiversity and Species Assessment (Appendix F.3 of the BA Report), as well as Section J of the BA Report. Measures to avoid, remedy, mitigate and manage impacts are included within the Terrestrial and Aquatic Biodiversity and Species Assessment, and the EMPr, included as Appendix H of this BA Report.
1.4. What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether; what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	The description of the potential waste generation is included in Section B of this BA Report (this Section). It is not anticipated that a significant amount of waste will be generated. Waste generation during the construction phase will include liquid effluent and solid waste, and other general and hazardous waste (e.g., contaminated material as a result of spills). Waste generation during the operational phase will be very limited. Measures to avoid, remedy, mitigate and manage impacts are included within the relevant EMPrs, included as Appendix H of this BA Report.
1.5. How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	A Heritage Impact Assessment including a Cultural Landscape Assessment and Palaeontology Impact Assessment was undertaken as part of this project (included as Appendix F.6 of this BA Report). Potential impacts to heritage resources were identified as an impact during the construction and decommissioning phases. The overall findings of the Heritage Impact Assessment are that all significant sites have been avoided and no impacts are anticipated. The study further notes that impacts to the landscape are unavoidable but, in this case, are deemed within acceptable limits. From a palaeontology perspective, disturbance, damage or destruction of fossils within the development footprint due to excavations and surface clearance was identified as an impact, rated with an overall very low significance with the implementation of mitigation measures. In addition, the studied concluded that fossil heritage of scientific and conservational interest in the development footprint is rare. The applicable measures to avoid, remedy, mitigate and manage impacts are included in Section J and Appendix F (full specialist study).

NEED	
Question	**Response**
	Measures to avoid, remedy, mitigate and manage impacts are included within the Heritage Impact Assessment and Palaeontology, and the EMPr, included as Appendix H of this BA Report.
1.6. How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	Water required for the construction, operational and decommissioning phases will preferably be sourced from a borehole drilled on site, which will be subject to complete geohydrological testing and the necessary water use authorisation obtained (as applicable). The location of existing boreholes on the farm portions which are affected by the proposed Megora PV1A and surrounding areas are indicated in the Geohydrology Assessment (Appendix F.12 of the BA Report). The Geohydrology Assessment notes that anecdotal evidence suggests that many identified boreholes deliver limited water supply, in addition some of the boreholes on this property may require upgrading and/or deepening to deliver the requisite volumes of water required by the proposed solar facility. The assessment recommends that the legal status of groundwater use at each property should be confirmed as this This will inform the need for future water use authorisations. If groundwater is available and suitable, water pipelines may need to be constructed in order to transfer groundwater from the existing boreholes to the PV facility. The assessment further confirms that should ground water, if used, should be monitored (i.e., abstraction volumes, quality and water levels) and that this should ideally be implemented one year prior to the start of construction if the project timeframes permit. As a second option, water will be sourced from the Beaufort West Local Municipality. The Project Applicant will consult with the Local Municipality and specific arrangements for water to either be trucked in or otherwise made available for collection at their Water Treatment Plant via a metered standpipe. These arrangements will be agreed on in a Service Level Agreement (SLA). Should the sources discussed above not be viable, the Project Applicant will investigate into a third-party water supplier which may include a nearby mine or other private services. The necessary approvals will be sought from the Department of Water and Sanitation (DWS) should groundwater be sourced from the existing boreholes for the proposed project. Management actions to ensure the responsible and equitable use of water during the construction, operation and decommissioning phases are provided in the EMPr (Appendix H of this BA Report).
1.7. How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the	The proposed project aims to harness solar energy for the generation of electricity. This proposed project is seen as a source of 'clean energy' and reduces the dependence on non-renewable energy sources, such as coal fired power plants. The proposed developments are located in the Beaufort West

NEED	
Question	**Response**
integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts? 1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life) 1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources of the proposed development alternative?) 1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?	REDZ. The REDZs represent areas where wind and solar PV energy development is being incentivized from resource, socio-economic and environmental perspectives. For more information, refer to Section C of this BA Report, which deals with Alternatives, and thus outlines the suitability of this activity. The environmental sensitivities present on site and ecological integrity considerations were addressed within the Avifauna, Aquatic Biodiversity, and Terrestrial Biodiversity and Plant and Animal Species Impact Assessments (Appendix F of the BA Report) undertaken as part of this BA Process. The Avifauna Assessment (Appendix F.4 of the BA Report) also addresses ecological integrity.
1.8. How were a risk-averse and cautious approach applied in terms of ecological impacts?: 1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)? 1.8.2. What is the level of risk associated with the limits of current knowledge? 1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	The environmental sensitivities present on site and ecological integrity considerations were addressed within the Avifauna, Aquatic Biodiversity, and Terrestrial Biodiversity and Plant and Animal Species Impact Assessments (Appendix F of the BA Report) undertaken as part of this BA Process. The Avifauna Assessment (Appendix F.4 of the BA Report) also addresses ecological integrity. The precautionary approach has been adopted for this assessment, i.e., assuming the worst-case scenario will occur and then identifying ways to mitigate or manage these impacts. For example, the cumulative impact assessment considered that all approved renewable energy projects within the 30 km radius would be constructed. However, in reality it is unlikely that all will be constructed as most

<table>
<tr><th colspan="2">NEED</th></tr>
<tr><th>Question</th><th>Response</th></tr>
<tr><td></td><td>will be based on the outcomes of the bidding windows in terms of the REIPPPP. Therefore, this approach is considered to be precautionary in nature. Additionally, the location of the PV facility within the assessed area and the layout thereof was determined based on the specialist findings.

Refer to Appendix F of this BA Report for the complete specialist studies. These studies outline the assumptions and limitations that were applicable to the respective studies. The risk associated with the limits in knowledge is considered to be low.</td></tr>
<tr><td>1.9. How will the ecological impacts resulting from this development impact on people's environmental right in terms following:
1.9.1. Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?
1.9.2. Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?</td><td>Refer to Section J and Appendix F of this BA Report which respectively include the findings of the specialist assessments, as well as the complete studies undertaken.

The Socio-Economic Assessment (included in Appendix F.8 of this BA Report) notes that the proposed project is not free of commercial risk nor would it be realistic to expect this. However, the balance between financial benefits and costs are likely to be positive for the applicant and landowner partners barring unforeseen risks. In terms of wider positive impacts, the project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. It is considered most likely that the combined positive impacts of each project would exceed its negative impacts resulting in an overall net benefit with mitigation. Creation of employment and business opportunities, generate income for affected landowner/s, promotion of renewable energy projects, and the development and/or growth of locally owned industries were identified as some of the positive socio-economic impacts during the construction and operation phase of the proposed projects.

With regards to the Visual Impact Assessment (Appendix F.5 of this BA Report), the impacts (post mitigation) associated with the proposed project are of Low significance during the decommissioning phase of the project. During construction and operation however, visual impacts resulting from the visual intrusion and alteration of the Karoo landscape, sense of place and light pollution at night, would be of Moderate significance with relatively few mitigation measures available to reduce the visual impact. This is as a result of the sparse human habitation and the predominance of natural vegetation that covers much of the study area would give the viewer the general impression of a largely natural setting with some pastoral elements. As such, the project development would alter the visual character and contrast significantly with the typical land use and/or pattern and form of human elements present across the broader study area.</td></tr>
</table>

NEED	
Question	**Response**
	A broad-scale assessment of visual sensitivity, based on the physical characteristics of the study area, economic activities and land use that predominates, determined that the area would have a moderate visual sensitivity. An important factor contributing to the visual sensitivity of an area is the presence, or absence of visual receptors that may value the aesthetic quality of the landscape and depend on it to produce revenue and create jobs. No formal protected areas and relatively few sensitive or potentially sensitive receptor locations were identified in the study area, thus confirming the moderate level of visual sensitivity.
1.10. Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?	This is considered and addressed as part of the Socio-Economic Assessment undertaken for this project (included in Appendix F.8 of this BA Report and summarised in Section J). The Socio-Economic Assessment (included in Appendix F.8 of this BA Report) notes that the proposed project is not free of commercial risk nor would it be realistic to expect this. However, the balance between financial benefits and costs are likely to be positive for the applicant and landowner partners barring unforeseen risks. In terms of wider positive impacts, the project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. It is considered most likely that the combined positive impacts of each project would exceed its negative impacts resulting in an overall net benefit with mitigation. Creation of employment and business opportunities, generate income for affected landowner/s, promotion of renewable energy projects, and the development and/or growth of locally owned industries were identified as some of the positive socio-economic impacts during the construction and operation phase of the proposed projects. The project was therefore deemed acceptable in terms of socio-economic impacts and should be allowed to proceed.
1.11. Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives / targets / considerations of the area?	The impacts on ecological integrity objectives of the area were considered as part of the Aquatic and Terrestrial Biodiversity and Species Impact Assessments undertaken for this project and have been included in Appendix F.3 and F.2 of this BA Report. In addition, the vision of the Beaufort West Local Municipality Integrated Development Plan (BWLM IDP) 2022-2027 is to be the economic gateway in the Central Karoo, where people are developed and live in harmony together. Further unpacking of the vision indicates the provision of directives regarding the growth of the economy and ensuring financial sustainability among other areas in which development is required. The five priority areas of the BWLM IDP are:

NEED	
Question	**Response**
	1. Service to the people – seeking to improve and maintain basic service delivery through infrastructure development; 2. Sustainable economic growth by leveraging competitive advantages of the region (The IDP identifies low economic growth as one of the main reasons for the lack of new labour entrants into the economy); 3. A well-run administration that is efficient, effective and has the right skills mix; 4. Ensure financial sustainability; and 5. Be a transparent organisation. The inclusion of renewable energy not only plays to the natural strengths of the area (i.e., good solar irradiation levels) but also appears to be aimed at bringing parity between the existing employment sectors by providing much needed growth within the local construction and electricity employment sectors. The proposed activity therefore does not compromise any of the objectives set within IDP.
1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	Refer to Section C of this BA Report, which deals with Alternatives. This section outlines the suitability of the proposed activity.
1.13. Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?	Each specialist assessment has taken into consideration and has assessed the potential cumulative impacts of this proposed development. Please refer to Appendix F and Section J of this BA Report where the potential cumulative impacts are discussed for this project. Overall, the majority of the cumulative negative impacts identified for the proposed project were rated with a moderate to low post mitigation impact significance for the construction phase, operational phase, and decommissioning phase.
2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?	
2.1.1. The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area	The vision of the Beaufort West Local Municipality Integrated Development Plan (BWLM IDP) 2022-2027 is to be the economic gateway in the Central Karoo, where people are developed and live in harmony together. Further unpacking of the vision indicates the provision of directives regarding the growth of the economy and ensuring financial sustainability among other areas in which development is required. The five priority areas of the BWLM IDP are:

NEED	
Question	**Response**
	1. Service to the people – seeking to improve and maintain basic service delivery through infrastructure development; 2. Sustainable economic growth by leveraging competitive advantages of the region (The IDP identifies low economic growth as one of the main reasons for the lack of new labour entrants into the economy); 3. A well-run administration that is efficient, effective and has the right skills mix; 4. Ensure financial sustainability; and 5. Be a transparent organisation. This project contributes towards four of the five priority areas as well as contributes to the renewable energy sector, identified by the IDP as a key strategic economic sector. The inclusion of renewable energy not only plays to the natural strengths of the area (i.e., good solar irradiation levels) but also appears to be aimed at bringing parity between the existing employment sectors by providing much needed growth within the local construction and electricity employment sectors. The proposed activity therefore does not compromise any of the objectives set within IDP. The proposed projects will also be supportive of the IDP's objective of creating more job opportunities. The proposed projects will create job opportunities and economic spin offs during the construction and operational phases (if EA is granted by the DFFE). Therefore, the proposed solar PV facilities would help to address the need for increased electricity supply (on a national level) while also providing advanced skills transfer and training to the local communities and creating contractual and permanent employment in the area. The proposed projects are also located in REDZ 11 which is a geographical area that has been identified on a strategic planning level to have reduced negative environmental impacts but high commercial attractiveness (due to its proximity to, inter alia, the national grid) and socio-economic benefit to the country. The development of solar energy is therefore important for South Africa to reduce its overall environmental footprint from power generation (including externality costs), and thereby to steer the country on a pathway towards sustainability. Therefore, the proposed project is in line with strategic plans and national policy.
2.1.2. Spatial priorities and desired spatial patterns (e.g. need for integration of segregated communities, need to upgrade informal settlements, need for densification, etc.)	This is not applicable, as the proposed project is located within a rural area and the site is zoned for agricultural use.

NEED	
Question	**Response**
2.1.3. Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.)	As indicated above, the current land use on the proposed site is agriculture, low density livestock grazing. The impact of the proposed project on cultural or heritage areas (including archaeology and palaeontology) was assessed as part of the HIA in the BA Process. Please refer to Appendix F.6 Report of this BA Report for the full integrated HIA. It is not expected that this will significantly threaten the agricultural activities present on site. An Agricultural Compliance Statement (Appendix F.1 of this BA Report and summarised in Section J) was undertaken as part of this BA to reflect the impact of the proposed project in terms of agriculture. The conclusion of the Agricultural Compliance Statements is that the proposed developments will not have an unacceptable negative impact on the agricultural production capability of the site. As noted, an EMPr was compiled for the proposed project to ensure that all potential negative impacts identified are suitably managed and mitigated, and potential positive impacts are enhanced. The EMPr has been included in Appendix H of this BA Report. The impact on the sense of place is difficult to predict and would potentially be ambiguous. This is due to the subjective nature of perceptions regarding the relative attraction or disturbance of the project in a rural landscape. The visual impact and considerations have been further assessed as part of the Visual Impact Assessment and is included in Appendix F.5 of this BA Report. The Visual Impact Assessment (VIA) found the visual impact significance associated with the proposed project are of low significance during both construction and decommissioning phases. During operation however, visual impacts from the proposed project would be of moderate significance with relatively few mitigation measures available to reduce the visual impact. This is as a result of the sparse human habitation and the predominance of natural vegetation that covers much of the study area would give the viewer the general impression of a largely natural setting with some pastoral elements. As such, the SEF developments would alter the visual character and contrast significantly with the typical land use and/or pattern and form of human elements present across the broader study area. In addition, a broad-scale assessment of visual sensitivity, based on the physical characteristics of the study area, economic activities and land use that predominates, determined that the area would have a moderate visual sensitivity. An important factor contributing to the visual sensitivity of an area is the presence, or absence of visual receptors that may value the aesthetic quality of the landscape and depend on it to produce revenue and create jobs.

NEED	
Question	**Response**
2.1.4. Municipal Economic Development Strategy ("LED Strategy").	The Beaufort West Municipality Spatial Development Framework (SDF) was found to be most relevant with respect to spatial planning at the local level. It was completed in 2013 and builds on the 2011 Urban Restructuring Framework. The SDF acknowledges the need for the development of renewable energy. However, similar to the provincial SDF, it also highlights the need to minimise impacts on biodiversity and tourism with the R63 identified as a secondary scenic route[49]. Even though the proposed solar facilities will not provide the municipality directly with electricity, the energy produced by the facility will feed into the national grid. The proposed project would also provide advanced skills transfer and training to the local communities and creating contractual and permanent employment in the area.
2.2. Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area? 2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report, for an outline of the socio-economic impacts that could occur due to the proposed development of the solar PV facility.
2.3. How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	
2.4. Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long term? Will the impact be socially and economically sustainable in the short- and long-term?	
2.5. In terms of location, describe how the placement of the proposed development will:	
2.5.1. result in the creation of residential and employment opportunities in close proximity to or integrated with each other,	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report, for an outline of the socio-economic impacts that could occur due to the proposed development of the solar PV facility.

[49] CNdV Africa. 2013. Beaufort West Municipality SDF. CNdV Africa, Cape Town

NEED	
Question	**Response**
	The Socio-Economic Assessment (included in Appendix F.8 of this BA Report) notes that the proposed project is not free of commercial risk nor would it be realistic to expect this. However, the balance between financial benefits and costs are likely to be positive for the applicant and landowner partners barring unforeseen risks. In term of wider positive impacts, the project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. It is considered most likely that the combined positive impacts of each project would exceed its negative impacts resulting in an overall net benefit with mitigation. Creation of employment and business opportunities, generate income for affected landowner/s, promotion of renewable energy projects, and the development and/or growth of locally owned industries were identified as some of the positive socio-economic impacts during the construction and operation phase of the proposed projects.
2.5.2. reduce the need for transport of people and goods,	Not applicable. This is a renewable energy project proposal.
2.5.3. result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),	Not applicable. This is a renewable energy project proposal.
2.5.4. compliment other uses in the area, 2.5.5. be in line with the planning for the area,	The area is a farming area. Low density, grazing is by far the predominant agricultural activity in the area. Should the proposed PV project proceed, approximately 180 ha of the land will be developed on, and it is not expected that this will significantly threaten the agricultural activities present on site. An Agricultural Compliance Statement (Appendix F.1 of this BA Report and summarised in Section J) was undertaken as part of this BA to reflect the impact of the proposed project in terms of agriculture. The conclusion of the Agricultural Compliance Statements is that the proposed developments will not have an unacceptable negative impact on the agricultural production capability of the site.
2.5.6. for urban related development, make use of underutilised land available with the urban edge,	Not applicable. The proposed projects are located within a rural area, and the site is zoned for agricultural use.
2.5.7. optimise the use of existing resources and infrastructure,	The proposed projects will l make use of existing access roads as far as possible. The gravel farm road leading to the solar PV facility will be used for access and will be upgraded as part of the proposed project.
2.5.8. opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),	These projects are a renewable energy project and not related to bulk infrastructure expansion.

NEED	
Question	**Response**
2.5.9. discourage "urban sprawl" and contribute to compaction/densification,	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report, for an outline of the socio-economic impacts that could occur due to the proposed development of the solar PV facility. One of the impacts identified is the disruption of local social structures as a result of the construction work force and in-migration of job seekers. Adequate management measures have been identified in this regard.
2.5.10. contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,	This is not applicable as the proposed projects are located within a rural area, and the sites are zoned for agricultural use.
2.5.11. encourage environmentally sustainable land development practices and processes,	Based on the findings of this BA, the proposed projects would not have a significant ("high") negative impact on the receiving environment, with the implementation of suitable mitigation measures (Section J) and will therefore not go against sustainable land development practices and processes. In addition, the proposed projects will be designed according to relevant national specifications and standards which are regarded as best practice in the renewable energy sector. In addition, the proposed PV project is located in a REDZ 11, and the development proposal will therefore be aligned with national planning priorities.
2.5.12. take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),	Refer to Section C of this BA Report, which deals with Alternatives. This section outlines the suitability of the proposed activity, as well as the selection thereof.
2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),	The Socio-Economic Assessment (included in Appendix F.8 of this BA Report) notes that the proposed project is not free of commercial risk nor would it be realistic to expect this. However, the balance between financial benefits and costs are likely to be positive for the applicant and landowner partners barring unforeseen risks. In term of wider positive impacts, the project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. It is considered most likely that the combined positive impacts of each project would exceed its negative impacts resulting in an overall net benefit with mitigation. Creation of employment and business opportunities, generate income for affected landowner/s, promotion of renewable energy projects, and the development and/or growth of locally owned industries were identified as some of the positive socio-economic impacts during the construction and operation phase of the proposed projects. The project was therefore deemed acceptable in terms of socio-economic impacts and should be allowed to proceed.

NEED	
Question	**Response**
2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and	The impact of the proposed project on heritage features, including archaeology and cultural landscape and palaeontology (Appendix F.6 and Appendix F.7 of this BA Report), has been assessed the Heritage Impact Assessment and Palaeontology Impact Assessment, respectively. Potential impacts to heritage resources were identified as an impact during the construction and decommissioning phases. The overall findings of the Heritage Impact Assessment are that all significant sites have been avoided, and no impacts are anticipated. The study further notes that impacts to the landscape are unavoidable but, in this case, are deemed within acceptable limits. From a palaeontology perspective, disturbance, damage or destruction of fossils within the development footprint due to excavations and surface clearance was identified as an impact, rated with an overall very low significance with the implementation of mitigation measures. In addition, the studied concluded that fossil heritage of scientific and conservational interest in the development footprint is rare
2.5.15. in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	The proposed facility is proposed in REDZ 11. Several renewable energy facilities are proposed in the area, which lends itself potentially to a renewable energy development area. Refer to Section J of this BA Report for an outline of the renewable energy projects authorised in a 30 km radius.
2.6. How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	
2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report.
2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?	
2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	
2.7. How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:	
2.7.1. Negatve impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measues were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report.
2.7.2. Positive impacts. What measures were taken to enhance positive impacts?	

NEED	
Question	**Response**
2.8. Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socioeconomic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?	
2.9. What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	
2.10. What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairl discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	
2.11. What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	
2.12. What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	
2.13. What measures were taken to:	
2.13.1. ensure the participation of all interested and affected parties,	The Public Participation Process (PPP) that has been undertaken as part of this BA is detailed in Section I of this report, as well as in Appendix G. The Draft BA Report was released for a 30-day comment period, to all the relevant authorities and stakeholders. Various methods were employed to notify potential Interested and Affected Parties (I&APs) of the proposed projects, namely, through a newspaper advert, site notice boards and notification letters via email, as well as SMS texts. The BA Process is taking cognisance of all interests, needs and values espoused by all I&APs, where relevant.
2.13.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation,	
2.13.3. ensure participation by vulnerable and disadvantaged persons,	

NEED	
Question	**Response**
2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,	Opportunity for public participation will be provided to all I&APs throughout the BA process in terms of the 2014 NEMA EIA Regulations (as amended).
2.13.5. ensure openness and transparency, and access to information in terms of the process,	
2.13.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge,	
2.13.7. ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein was promoted.	
2.14. Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report.
2.15. What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	An EMPr has been developed to address environmental impacts, as well as health and safety concerns. An Environmental Control Officer (ECO) will be appointed to monitor compliance during the construction and decommissioning phases.
2.16. Describe how the development will impact on job creation in terms of, amongst other aspects:	
2.16.1. the number of temporary versus permanent jobs that will be created,	Refer to the Socio-Economic Assessment summarised in Section J and included in Appendix F.8 of this BA Report.
2.16.2. whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area),	
2.16.3. the distance from where labourers will have to travel,	

NEED	
Question	**Response**
2.16.4. the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits),	
2.16.5. the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).	
2.17. What measures were taken to ensure:	
2.17.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment,	Legislation, policies and guidelines, which could apply to impacts of the proposed project on the environment, have been considered. The scope and content of this BA Report has been informed by applicable integrated environmental management legislation and policies. This has been included in Section D of this BA Report.
2.17.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?	The PPP that has been undertaken as part of this BA is detailed in Section I of this report, as well as in Appendix G. The Draft BA Report was released for a 30-day comment period, to all the relevant authorities and stakeholders. Various methods were employed to notify potential I&APs of the proposed projects, namely, through a newspaper advert, site notice boards and notification letters via email, as well as SMS texts. The BA Process is taking cognisance of all interests, needs and values espoused by all I&APs, where relevant. Opportunity for public participation will be provided to all I&APs throughout the BA process in terms of the 2014 NEMA EIA Regulations (as amended). A detailed CRR will be compiled with comments received during the public comment Phase.
2.18. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	The outcomes of this BA Process and the associated conditions of the EA (should it be received) will serve to address this question.
2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	The proposed mitigation measures included in the EMPr and summarised in Section J of this report have been informed by the specialist studies undertaken and this includes a detailed assessment of the environment as well as the impacts associated with the proposed development. Solar energy facilities can be dismantled and completely removed from the site leased for the development and do not permanently prevent alternative land-uses on the same land parcel. Based on material and socio-economic terms and measured to the value of the best alternative that is not chosen, the proposed project will result in positive opportunity costs.
2.20. What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising	The EMPr of this proposed project must form part of the contractual agreement and be adhered to by both the contractors/workers and the Applicant.

NEED	
Question	**Response**
further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	
2.21. Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	Refer to Section C of this BA Report, which deals with Alternatives. This section outlines the suitability of the proposed activity.
2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	Refer to Section J of this report for a summary of the cumulative impacts. The Socio-Economic Assessment, included in Appendix F.8 of this BA Report, identified the following cumulative impacts and significance: • Cumulative impacts from employment and incomes associated with project activities and expenditure (Very High positive); • Cumulative associated with the funding of socio-economic development, enterprise development and shareholding (Very High positive); • Cumulative impacts associated primarily with the influx of people (Moderate negative); • Cumulative impacts on tourism (Moderate negative); and • Cumulative impacts on surrounding landowners and communities (Moderate negative).
DESIRABILITY	
Is this project part of a national programme to address an issue of national concern or importance?	The proposed project is located in REDZ 11 and the Central Strategic Transmission Corridor. REDZs are geographical areas where the development of large-scale wind and solar PV is encouraged and incentivized with a shorter decision time frame.
Do location factors favour this land use (associated with the development proposal) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.)	

SECTION I: PUBLIC PARTICIPATION

I.1 Introduction to the Public Participation Process

This section provides an overview of the tasks undertaken during the BA Processes, with a particular emphasis on providing a clear record of the Public Participation Process (PPP) that was followed, in accordance with Regulations 41, 42, 43 and 44 of the NEMA EIA Regulations (as amended).

Specifically, an integrated PPP is being undertaken for the BA Processes for the proposed Megora PV 1A-C, PV 2 and EGI 2 projects. The BA Processes for the proposed Megora EGI 1 project will be undertaken at a later stage following receipt of guidance and confirmation from Eskom/NTCSA regarding a suitable connection point from which the power generated by the Megora Solar PV Cluster can be injected into the national grid.

The integrated PPP for the proposed projects ensure that all public participation documents (such as newspaper advertisements, site notices, notification letters, emails etc.) serve to notify I&APs, Stakeholders and Organs of State of the availability of the reports for the abovementioned projects and provide I&APs with an opportunity to comment on the reports. This approach was undertaken due to the projects entailing the same activity (i.e., generation of energy using a renewable source (i.e., Solar PV), and distribution of electricity via power lines) and being located in close proximity to each other, on adjacent farm portions.

The PPP for these BA Processes are driven by a stakeholder engagement process that includes inputs from authorities, I&APs, technical specialists and the project proponent. Guideline 4 on "Public Participation in support of the EIA Regulations" published by the former Department of Environmental Affairs and Tourism (DEAT) in May 2006, states that public participation is one of the most important aspects of the EA Process. This stems from the requirement that people have a right to be informed about potential decisions that may affect them and that they must be afforded an opportunity to influence those decisions. Effective public participation also improves the ability of the Competent Authority (CA) to make informed decisions and results in improved decision-making as the view of all parties are considered.

An effective PPP could therefore result in stakeholders working together to produce better decisions than if they had worked independently. The DEAT guideline, referred to above, states the following in terms of PPP:

- "*Provides an opportunity for I&APs, EAPs and the CA to obtain clear, accurate and understandable information about the environmental impacts of the proposed activity or implications of a decision;*
- *Provides I&APs with an opportunity to voice their support, concern and question regarding the project, application or decision;*
- *Enables an applicant to incorporate the needs, preferences and values of affected parties into its application;*
- *Provides opportunities for clearing up misunderstanding about technical issues, resolving disputes and reconciling conflicting interests;*
- *Is an important aspect of securing transparency and accountability in decision-making; and*
- *Contributes toward maintaining a health, vibrant democracy*."

To the above, one can add the following universally recognised principles for public participation:

- Inclusive consultation that enables all sectors of society to participate in the consultation and assessment processes;
- Provision of accurate and easily accessible information in a language that is clear and sufficiently non-technical for I&APs to understand, and that is sufficient to enable meaningful participation;
- Active empowerment of grassroots people to understand concepts and information with a view to active and meaningful participation;
- Use of a variety of methods for information dissemination in order to improve accessibility, for example, by way of discussion documents, meetings, workshops, focus group discussions, and the printed and broadcast media;
- Affording I&APs sufficient time to study material, to exchange information, and to make contributions at various stages during the assessment process;
- Provision of opportunities for I&APs to provide their inputs via a range of methods, for example, via written submissions or direct contact with members of the BA team; and
- Public participation is a process and vehicle to provide sufficient and accessible information to I&APs in an objective manner to assist I&APs to identify issues of concern, to identify alternatives, to suggest opportunities to reduce potentially negative or enhance potentially positive impacts, and to verify that issues and/or inputs have been captured and addressed during the assessment process.

At the outset it is important to highlight two key aspects of public participation:

- There are practical and financial limitations to the involvement of all individuals within a PPP. Hence, public participation aims to generate issues that are representative of societal sectors, and not each individual. Hence, the PPP will be designed to be inclusive of a broad range of sectors relevant to the proposed project.
- The PPP will aim to raise a diversity of perspectives and will not be designed to force consensus amongst I&APs. Indeed, diversity of opinion rather than consensus building is likely to enrich ultimate decision-making. Therefore, where possible, the PPP will aim to obtain an indication of trade-offs that all stakeholders (i.e., I&APs, technical specialists, the authorities and the development proponent) are willing to accept with regards to the ecological sustainability, social equity and economic growth associated with the project.

The Department of Environmental Affairs (2017), Public Participation Guideline in terms of NEMA EIA Regulations was also considered during this BA Process.

The key steps in the PPP for the BA are described below. This approach is structured in line with the requirements of Chapter 6 (PPP) of the 2014 NEMA EIA Regulations (as amended), as described below. Various mechanisms have been undertaken to provide notice to all potential and registered I&APs of the proposed projects, as described below.

I.2 Pre-Application Meeting and Consultation with the DFFE

An initial Pre-Application Meeting took place with the CA, the National DFFE, on 17 January 2025 (Reference Number: 2024-11-0038) in order to discuss and agree on, Environmental Assessments required for the proposed projects, as well as various aspects, such as the project overview; environmental screening undertaken; specialist studies to be commissioned and motivated against being undertaken; specialist reporting structure; Public Participation; and proposed schedule. At the pre-application meeting, the option of applying for combination and consolidation of reporting and the issuance of multiple EAs was also discussed in detail.

Following the initial pre-application meeting and, subsequently, the receipt of environmental sensitivity data from specialist site visits, the project infrastructure layouts were refined to further avoid sensitive environmental features (where possible). Prior to proceeding with the BA Processes, a query was submitted to the assigned DFFE Case Officers to confirm the level of detail required for the project layouts and the confirm the proposed combination approach. In response to this query, the EAP was advised to request a second pre-application meeting whereby the CAs process related requirements will be discussed. In line with the guidance provided by the assigned Case Officers. A second pre-application meeting invite was circulated and took place on 15 September 2025 (Reference number: 2024-11-0038).

Refer to Appendix E of this BA Report for a copy of the Pre-Application Meeting Request Form submitted to the DFFE and a copy of the presentation delivered at the Pre-Application Meeting undertaken on 17 January 2025, as well as meeting notes from both of the above mentioned meetings. A copy of the formal letter from the DFFE conveying approval of the combination request is also included in Appendix E of this BA Report.

Following the pre-application meeting and after receiving environmental sensitivity data collected during specialist site visits, the project infrastructure layouts were revised to avoid environmental sensitivities (where possible). As noted above, the Draft BA Reports were released to I&APs, Stakeholders and Organs of State (including the National DFFE) for a 30-day comment period. In line with guidance from the DFFE, a separate amended Application for EA is being submitted to the National DFFE at the same time as the Final BA Report. All comments received during the 30-day review have been incorporated and addressed, as applicable and where relevant, into the detailed CRR and appended to this Final BA Report that has been submitted to the DFFE for decision-making together with the amended Application for EA. Copies of the content and proof of correspondence received from I&APs are included in Appendix G.16 of this BA Report.

I.3 Landowner Written Consent

Regulation 39 (1) of the 2014 NEMA EIA Regulations (as amended) states that "*if the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land*".

Regulation 39 (2) of the 2014 NEMA EIA Regulations (as amended) further states that "*sub-regulation (1) does not apply in respect of: (a) linear activities; (b) activities constituting, or activities directly related to prospecting or exploration of a mineral and petroleum resource or extraction and primary processing of a mineral or petroleum resource; and (c) strategic integrated projects as contemplated in the Infrastructure Development Act, 2014*".

The proposed project includes several non-linear activities for which landowner consent is required for the affected farm portion. Written consent has been obtained from the landowner on which the non-linear infrastructure is proposed to be located. The written consent has been included as an appendix to the Application for EA, which is being submitted to the DFFE, together with this BA Report.

I.4 Site Notice Boards

One specific mechanism of informing I&APs of the proposed projects includes the placement of site notice boards. Regulation 41 (2) (a) of the 2014 NEMA EIA Regulations (as amended) requires that a notice board providing information on the project and BA Process is fixed at a place that is conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of the site where the application will be undertaken or any alternative site.

Notice boards in the English, Afrikaans and isiXhosa languages were placed at the entrances and/or along the fences of the affected farm portion on which the proposed project will be constructed, as well as at other strategic locations, such as well-known retail, public and/or government facilities in the wider region. Table I.1 provides a breakdown of the locations at which the site notice boards were placed. A copy of the site notice boards as well as proof of placement of site notice boards are included in Appendix G.1 of this BA Report.

Table I.1: Site Notice Board Placement for the Proposed Projects

#	Locality/ Description	Coordinates
1	Entrance at the Murraysburg Police Station	31°57'52.34"S; 23°45'41.06"E
2	Entrance at the Murraysburg Local Municipal Office	31°57'46.04"S; 23°45'50.00"E
3	At the start of MR00607 in Murraysburg, ~20 km south of the proposed Megora PV Cluster.	31°57'31.23"S; 23°45'35.50"E
4	Along the MR00607, at the entrance to the site access road to the proposed Megora PV 2 project, west of the proposed Megora PV 1A-C projects and east of the proposed Megora PV 2.	31°46'55.24"S; 23°45'15.63"E
5	Along the MR00607, at the entrance to the Option A site access road to the Megora PV 1A-C projects, south of the PV 1A-C projects and southwest of the PV 2 project.	31°48'4.94"S; 23°44'12.94"E
6	Along the MR00607, at the entrance to the Option B site access road to the Megora PV 1A-C projects, north of the Megora PV 1A-C sites and northwest of the PV 2 site.	31°46'22.68"S; 23°45'33.02"E

Site notice boards were placed in English, Afrikaans and isiXhosa; and included the following, in compliance with Regulation 41 (3) of the 2014 NEMA EIA Regulations (as amended):

- The details of the proposed project that are subjected to public participation;
- Explanation that a BA process is applicable to the proposed project;
- The nature and location of the proposed project;
- Details on where further information on the BA project can be obtained; and
- The manner in which and the person to whom representations in respect of the BA Project can be made.

I.5 Newspaper Advertisements

Regulation 41 (2) (c) of the 2014 NEMA EIA Regulations (as amended) requires the placement of a newspaper advertisement in one local newspaper or any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of the NEMA EIA Regulations.

In line with this, in order to notify and inform the public of the proposed projects, to invite I&APs to register on the project database, as well as to inform I&APs of the release of the Draft BA Report for comment, the BA Process will be advertised in two local newspapers at the commencement of the 30-day comment period for the Draft BA Reports. Specifically, newspaper advertisements were placed in the *Courier* and the *George Herald* in English, Afrikaans and isiXhosa. In line with Regulation 41 (3) of the 2014 NEMA EIA Regulations (as amended), the newspaper included the details of the project website, where information available on the proposed project can be downloaded from. Refer to Appendix G of this BA Report for copies the content of the newspaper advertisements. Refer to Appendix G.2 of this BA Report for copies and proof of placement of the newspaper advertisements.

I.6 Determination of Appropriate Consultation Measures, and I&AP Identification, Registration and the Creation of an Electronic Database

In order to accommodate the varying needs of I&APs and develop their capacity to participate in the process, information sharing forms an integral and ongoing component of the BA Process to ensure effective public participation.

In line with Regulation 42 of the 2014 NEMA EIA Regulations (as amended) and prior to the commencement of the BA Processes, an initial database of I&APs (including key stakeholders and Organs of State) was developed. This was undertaken based on research. Appendix D of this BA Report includes a copy of the preliminary I&AP Database, which has been compiled based on stakeholders providing comments, stakeholders communicated with, and additional research to obtain valid email addresses, where possible.

In line with Regulation 41 (2) (b) of 2014 NEMA EIA Regulations (as amended), the database includes the details of the following:

- Landowners of the affected and adjacent farm portions for the study area;
- Occupiers of the affected and adjacent farm portions, where relevant.
- The municipal councillor of the ward in which the proposed projects will be undertaken;
- The municipality which has jurisdiction in the area (i.e. Beaufort West Local Municipality);
- Relevant Organs of State that have jurisdiction in respect of any aspect of the activity (e.g. DEA&DP, Central Karoo District Municipality, DWS, HWC, Eskom etc.); and
- Any other party as required by the Competent Authority.

In addition, the I&AP database includes the Competent Authority (i.e. the DFFE); and potential and registered I&APs.

The above stakeholders, Organs of State and I&AP were sent written notification of the release of the Draft BA Report for comment and written notification of the submission of the Final BA Report. The above stakeholders, Organs of State and I&APs will also be sent written notice conveying the outcome of the EA Application.

While I&APs have been encouraged to register their interest in the project from the start of the process, following the public announcements, the identification and registration of I&APs will be ongoing for the duration of the study. Stakeholders from a variety of sectors, geographical locations and/or interest groups are expected to show an interest in the proposed project, for example:

- Provincial and Local Government Departments;
- Local interest groups, for example, Councillors and Rate Payers associations;
- Surrounding landowners;

- Farmer Organisations;
- Environmental Groups and NGOs; and
- Grassroots communities and structures.

As per Regulation 42 of the 2014 NEMA EIA Regulations (as amended), in terms of the electronic database, I&AP details were captured and automatically updated as and when information was distributed to or received from I&APs. This ongoing record of communication is an important component of the PPP. It must be noted that while not required by the regulations, those I&APs proactively identified at the outset of the BA Process will remain on the project database throughout the process and have will be kept informed of all opportunities to comment and will only be removed from the database by request.

In accordance with the Protection of Personal Information Act (Act 4 of 2013), the CSIR will conduct itself responsibly when collecting, processing, storing and sharing any personal information collected for the purposes of PPP in terms of the 2014 NEMA EIA Regulations (as amended) and the 2025 National Appeal Regulations. By registering as an I&AP and/or submitting information and comments, the stakeholder essentially consents to the collection, collation, processing, and storing of such information and the use and disclosure of such information for the aforementioned purpose, including for purposes of potential appeal processes whereby such information may be made available to an appellant in the case of an appeal to satisfy the requirements of Regulation 4 of the 2025 National Appeal Regulations (as amended)[50].

The above is included on all relevant correspondence sent throughout the BA Process. The stakeholders will also be given an opportunity to send an email to the EAP if they wish to opt out of communications on the proposed projects.

In terms of Regulation 41 (2) (e) of the 2014 NEMA EIA Regulations (as amended), no persons have been identified as desiring but unable to participate in the process. All comments received during this 30-day review period have been captured and adequately responded to in the CRR which is being submitted to the CA with the Final BA Report.

Therefore, no alternative methods have been agreed to by the CA. It was proposed that if during the BA Process, persons are identified as desiring but unable to participate due to illiteracy, disability or any other disadvantage, then the EAP will contact the I&AP to discuss the proposed projects and provide assistance, where needed. No such requests have been received by the EAP.

I.7 Approach to the PPP

In terms of Regulation 41 (6) of GN R326 the section below outlines the PPP for this assessment in order to provide potential I&APs, Stakeholders and Organs of State access to information on the project and the opportunity to comment at the various stages of the assessment process.

I.7.1 BA Report Phase - Review of the Draft BA Report

As noted above, the Draft BA Reports for the Megora PV 1A-C and PV 2 and EGI 2 projects were released to I&APs, Stakeholders and Organs of State for a 30-day comment period extending to 8 April 2026. All comments received during this 30-day review period have been captured and adequately responded to in the detailed CRRs and appended to this Final BA Report that has been submitted to the DFFE for decision-making together with the amended Application for EA. Copies of the content and

[50] CSIR Privacy Notice. Website: https://www.csir.co.za/csir-privacy-notice

proof of correspondence received from I&APs are included in Appendix G.16 of this BA Report. The section below summarises the PPP undertaken for the review of the Draft BA Report.

- **Database Development and Maintenance**: In line with Regulation 42 of GN R326, an initial database of potential I&APs (including key stakeholders and Organs of State) was developed for the BA Processes and will be updated throughout the process. Refer to Appendix D of this BA Report for a copy of the latest I&AP database that includes all I&APs. The database has also been regularly updated based on research to obtain valid email addresses, where possible. Refer to Section I.6 of this chapter for additional information on the I&AP database development and maintenance.

- **Site Notice Board**: As noted in Section I (5) above, notice boards have been placed for the proposed projects. A copy of the content of and proof of placement of the notice boards is included in Appendix G.1 of this BA Report.

- **Newspaper Advertisements:** A newspaper advertisement (in the English, Afrikaans and isiXhosa languages) was placed in two regional newspapers (i.e., The Courier and the George Herald) notifying all potential and registered I&APs of the commencement of the BA Processes and the availability of the Draft BA Report for a 30-day comment period. Refer to Appendix G.2 of this BA Report for copies the content and proof of placement of the newspaper advertisements.

- **Submission of the Application Form and Draft BA Report to the DFFE**: The Application Form for EA and Draft BA Report were submitted to the DFFE via the DFFE OneDrive Shared link (as provided by EIAApplications.dffe.gov.za) and proof of upload was emailed to the DFFE. Proof of submission of the Draft BA Report to the DFFE and proof of upload to the DFFE OneDrive Shared link (as provided by EIAApplications.dffe.gov.za) is included in Appendix G.15 of this Final BA Report.

- **Letter 1 to I&APs (Commencement of the BA Process and Availability of the Draft BA Reports for Public Comment)**: Written notification of the availability of the BA Report (i.e., Letter 1) was sent to all I&APs and Organs of State (including landowners and adjacent landowners) included on the project database via email, where email addresses are available, at the commencement of the 30-day review period on the BA. The letter sent included information on the projects and notification of the release and availability of the reports. A follow up email was also be sent to all I&APs on the database to serve as a reminder of the closure of the comment period and to seek as many comments as possible Proof of the emails, as well as copies of the Letter 1 have been included in Appendix G.6 of this Final BA Report which is being submitted to the CA for decision-making.

- **Text Messaging**: SMS texts were also sent to all potential I&APs on the database (at the time of releasing the Draft BA Report for comment), where cell phone numbers are available, to inform them of the proposed project and how to access the Draft BA Reports. Furthermore, a reminder SMS text was also sent to all I&APs on the database to request for comment on the Draft BA Report and to remind I&APs of the comment period closure. Proof of text messaging has been included in Appendix G.6 of this Final BA Report.

- **Executive Summaries of the BA Report**: Executive Summaries of the BA Report were uploaded to the project website and Google Drive, and the link shared with stakeholders via email upon issuing of Letter 1.

- **30-day Comment Period**: As noted above, potential I&APs, including authorities and Organs of State, were notified via Letter 1, of the 30-day comment and registration period, within which to submit comments on the Draft BA Reports and/or to register on the I&AP database.

- **Availability of Information:** The Draft BA Reports were made available for a 30-day comment period extending to 8 April 2026 and were distributed to ensure access to information on the project and to communicate the outcome of specialist studies. The Draft BA Report was uploaded to the project website (i.e., https://www.csir.co.za/environmental-impact-assessment) for I&APs to access it. As a supplementary mechanism, the Draft BA Report was also being uploaded to an alternative web-platform (i.e., Google Drive). Proof of upload of the Draft BA Report to the project website and Google Drive as mentioned above is included in Appendix G.6 of this Final BA Report. If an I&AP could not access the reports via the project website or via the Google Drive, and if additional information was required (other than what was provided in the Executive Summaries), then the I&AP could have contacted the EAP, who then made an electronic copy available (where feasibly possible). Proof of such delivery made by the EAP is included in Appendix G.6 of this Final BA Report).

- **Comments Received**: A key component of the BA Process is documenting and responding to the comments received from I&APs and the authorities. All comments received during the 30-day comment period of the 30-day comment period of the Draft BA Report are recorded and addressed in the detailed CRR. Copies of all comments received during the during the 30-day comment period of the 30-day comment period of the Draft BA Report are included in Appendix G.16, respectively.

Refer to the feedback below for a summary[51] of the **key** issues raised by stakeholders during the 30-day review of the Draft BA Report:

Summary of Key Issues / Comments Raised	Summary of Response
▪ General comments from the Competent Authority on listed activities, the need to make the reports available to stakeholders who do not have access to the electronic version of the document, recommendations for layout and sensitivity maps, public participation process (PPP), alternatives, cumulative assessment, and specialist assessments	▪ The listed activities included in Table F.1 were revised and activities which are not applicable to the proposed development were removed. ▪ Table F.1 was updated with additional information regarding the applicability of listed activities included in the BA Report. An amended application form has been submitted to the DFFE. ▪ Final layout and sensitivity maps were provided accordingly in the Draft BA Report. The layout maps are final, based on specialist recommendations and deemed acceptable by the specialist team. ▪ The PPP has been undertaken in compliance with the 2014 NEMA EIA Regulations (as amended). A summary of the PPP including dates of circulation of relevant documents was outlined in the CRR (Part C of this BA Report). ▪ Potential I&APs were notified of the availability of the Draft BA Reports for comment via email and SMS (where contact details were available). In addition, newspaper advertisements were placed on 5 March 2026 (*George Herald* publication) and 6 March (*Courier* publication) informing potential I&APs of the availability of the Draft Reports for comment and details on how to access the

[51] It is important to reiterate that this is only a summary of the key issues that were raised during the 30-day review of the Draft BA Report. Refer to the complete Comments and Responses Report appended as Part C of this Final BA Report for a full table of issues/comments raised and the detailed responses.

Summary of Key Issues / Comments Raised	Summary of Response
	documentation. These communications further indicated that, should I&APs be unable to access the reports via the project website or the alternative Google Drive platform, and require additional information beyond the Executive Summary, they could contact the EAP, who would make the documentation available in an appropriate format (including hard copies, where reasonably feasible). No requests for hard copies were received during the public review period. ▪ The cumulative impact assessment was clearly defined by the relevant specialists in the Draft BA Report and included various associated points for consideration. The cumulative impact assessment informed the need and desirability of the projects, and an overall cumulative environmental statement was provided in the Draft BA Report, which is retained in the Final BA Report. ▪ The recommendations for specialist assessments were responded to accordingly, i.e. no-go areas were clearly identified, and studies are final and contain practical mitigation etc. This was undertaken in the Draft BA Report and retained in the Final BA Report.
▪ Comments from DFFE Directorate**:** Forestry Management: Provided guidance to ensure the proposed project is aligned with the requirements of the National Forests Act and that any sensitive forestry resources are appropriately considered in the assessment process. They note that the project area may contain indigenous or protected tree species and therefore recommend that a detailed vegetation survey be undertaken to confirm their presence. If any protected trees are identified, these should be accurately mapped and incorporated into the project design as avoidance or no-go areas where possible. They also highlight that any activities involving the disturbance or removal of indigenous or protected trees would require the relevant permits in terms of the National Forests Act. In addition, they advise that the ecological assessment should consider any biodiversity features such as nesting sites that could be affected, with appropriate authorisations obtained if necessary.	▪ It is confirmed that a detailed Terrestrial Biodiversity and Species Assessment had been undertaken during the Basic Assessment phase, which included two field surveys conducted during optimal flowering periods to ensure accurate species identification. The assessment found that no indigenous forest patches or protected tree species listed under the National Forests Act or NEM:BA were recorded within the project area. It also confirmed that protected faunal and floral species were considered as part of the study, but none of the listed protected tree species were identified on site. Relevant provisions of the National Forests Act (including Sections 7 and 15) and related requirements were acknowledged and incorporated into the Environmental Management Programme (EMPr), where applicable, with reference made to Appendix H of the Basic Assessment Report.
▪ Comments from CapeNature: It was noted that the proposed projects are located within areas containing CBAs, ESAs, and multiple rivers, wetlands, and drainage lines, as well as potential habitat for Species of Conservation Concern. While the vegetation is largely classified as Least Concern, the area remains environmentally sensitive due to its semi-arid ecosystems and freshwater features. They emphasised that all CBAs, ESAs, watercourses, and buffer zones must be strictly avoided, with careful placement of infrastructure and full compliance with permitting requirements for protected species. Concerns were also raised about cumulative impacts from renewable energy developments in the region and recommended a precautionary approach, ongoing monitoring, and consideration of biodiversity offsets where residual impacts remain significant after mitigation.	▪ This comment was addressed by inputs from the Terrestrial, Aquatic, and Avifaunal specialists. It was reiterated that detailed sensitivity mapping informed the final layout, with CBAs, ESAs, drainage lines, and avifaunal sensitivities largely avoided through design refinement and adherence to no-go areas and buffers. Where impacts could not be fully avoided, such as limited habitat loss and necessary watercourse crossings, these were assessed as low to moderate significance with mitigation measures, including rehabilitation, erosion control, and strict construction management, secured through the EMPr. The specialists also confirmed that protected species permitting requirements would be complied with where applicable. Cumulative impacts from surrounding renewable energy and transmission projects within a 30 km radius were assessed using a precautionary approach and found not to present fatal flaws, with overall impacts ranging from very low to moderate negative significance with mitigation.
▪ Comments from Openserve: the original wayleave request was enquired about. Thereafter the stakeholder confirmed that its existing copper and optical fibre services are not affected by the proposed development and noted that Should any unidentified Openserve	▪ The stakeholder was responded to, to convey that the wayleave application processes do not form part of the scope of the Basic Assessment processes currently being undertaken for the proposed Megora Solar PV facilities and that the relevant wayleave request/s will be undertaken by the project proponent or appointed

Summary of Key Issues / Comments Raised	Summary of Response
infrastructure be encountered during construction, work must cease immediately.	engineering team at a later stage (if required), post EA (should EA be granted by the DFFE). The stakeholder was further requested to provide comment on the proposed projects. ▪ The Stakeholders confirmation that the proposed project does not affect its existing copper and optical fibre services was duly noted with thanks. The Project Applicant was made aware that should any unidentified Openserve infrastructure be encountered during construction, work must cease immediately and this office must be notified. Re-application for approval will be undertaken by the Applicant, should the 6-month approval expire before construction commences.
▪ Comments from the SARAO: Confirmed that the proposed projects lie outside of the Northern Cape Province and in particular outside of the declared Astronomy Advantage Areas and that therefore, the relevant regulations promulgated in terms of the Astronomy Geographic Advantage Act would not apply and the facility is considered to be low risk to the SKA telescope	▪ This confirmation is noted with thanks.
▪ Comments from Eskom: Mapping files were requested.	▪ The required files were provided to Eskom accordingly. No further comments were received during the 30-day comment period on the DEIARs.
▪ Comments from the SANRAL: Mapping files were requested. The stakeholder confirmed (in separate correspondence) that If access will be obtained from a Declared National Road, then application must be submitted to SANRAL in terms of the National Roads Act 7 of 1998 to obtain permission to construct or use an existing access road.	▪ The required files were provided to the stakeholder accordingly. ▪ The Project Applicant has been made aware of the need to apply to SANRAL via wrstatutory@nra.co.za, in terms of the National Roads Act 7 of 1998 to obtain permission to construct or use an existing access road if access will be obtained from a Declared National Road.
▪ Comments from the South African Civil Aviation Authority (SACAA): Findings from SACAA's assessment confirmed that the proposed project area is considered to have low civil aviation sensitivity. As a result, SACAA has indicated that it has no comments or objections to the proposed development, as no significant impacts on civil aviation operations are anticipated.	▪ This comment is noted with thanks.
▪ Comments from Transnet: Request for a formal application letter describing the proposed development and a KMZ file showing the proposed location of the project.	▪ The Stakeholder was provided with the I&AP cover letter outlining the BA processes being undertaken. A KMZ file containing the layout of the proposed facilities was also provided. No further comments were received from the stakeholder.
▪ Comments from the BirdLife South Africa: The stakeholder noted that they do not have the capacity to review or comment on the reports and requested that the relevant guidelines be considered as BLSA's input on the projects.	▪ Following this communication, BLSA agreed to participate in a Microsoft Teams meeting with the Project Applicant, the avifaunal specialist, and the EAP to discuss the proposed projects and the avifaunal studies undertaken for the Megora PV Cluster projects currently undergoing BA processes. Detailed meeting notes, which were reviewed and approved by BLSA, are included in Appendix G of this BA Report. The meeting concluded with BLSA confirming that they were satisfied with the scope and findings of the avifaunal studies undertaken and that they had no objection to the proposed projects.
▪ Comments from Heritage Western Cape (HWC): Conveying that HWC has transitioned to SAHRIS for submissions – www.sahirs.org.za – the application must be submitted via SAHRIS in order for comment to be received.	▪ The transition by Heritage Western Cape to the SAHRIS platform for submissions is acknowledged, and the relevant application (Case ID 26432) was submitted via SAHRIS to obtain the required comment and acknowledgement of receipt of the reports and request for comment has been received from HWC.
▪ Comments from Western Cape Infrastructure: Acknowledgment of the invitation to comment. The stakeholder provided a comment letter setting out	▪ This acknowledgement was noted with thanks. The relevant details in the Traffic Impact Assessment were revised to align with the stakeholder's guidance on road

Summary of Key Issues / Comments Raised	Summary of Response
standard technical requirements to be addressed during the detailed design and pre-construction phases. These include aligning the Traffic Impact Assessment with the correct posted speed limits, confirming access arrangements and road safety standards for affected provincial roads, and undertaking the necessary construction impact, maintenance, and abnormal load transport planning in coordination with the Road Authority. All access and road reserve interfaces will be subject to the relevant approvals prior to implementation.	specifications. The Project Applicant was made aware of the standard technical requirements to be addressed in the detailed design and pre-construction phase.
▪ Comments from Western Cape Department of Agriculture: Acknowledgment of the invitation to comment	▪ This acknowledgement was noted with thanks. No further comments were received from this stakeholder.
▪ Comments from Department of Transport Acknowledgment of the invitation to comment	▪ This acknowledgement was noted with thanks. No further comments were received from this stakeholder.
▪ Comments from the Western Cape DEA&DP, Directorate: Development Facilitation: Thanking the project team for the comment reminders and requesting access to the reports as well as confirming the dedicated email address for S24O notifications(deadp.s24o@westerncape.gov.za)	▪ The dedicated email address has been included in the I&AP database for future correspondence. The Draft BA Reports and associated appendices were uploaded to the relevant project websites and made available to the stakeholder. No further comments were received from the stakeholder.
▪ Queries / comments from Interested and Affected Parties (I&APs): Requests to register/de-register from the project as the projects fall outside/inside of the stakeholders interested area, comments for support of the projects.	▪ These comments were noted accordingly.

I.7.2 Compilation of Final BA Report for Submission to the DFFE (Current Stage

Following the 30-day commenting period for the BA Report and incorporation of the comments received into the reports, the Final BA Report along with all relevant appendices and the CRR is being submitted to the DFFE in line with Regulation 19 (1) (a) of the 2014 NEMA EIA Regulations (as amended). [52]

In line with best practice, I&APs on the project database are being notified via Letter 2 via email (where email addresses are available) of the submission of the Final BA Report to the DFFE for decision-making. To ensure ongoing access to information, a copy of the Final BA Report and the CRR (detailing comments received during the BA Phase and responses thereto) will be placed on the project website (i.e., https://www.csir.co.za/environmental-impact-assessment). As a supplementary mechanism, the Final BA Report is also being uploaded to other alternative web-platforms such as Dropbox or Google Drive.

Also, the Final BA Report that has been submitted to the DFFE for decision-making includes proof of the PPP that was undertaken to date in order to inform registered I&APs, Organs of State and key stakeholders of the availability of the Draft BA Report for the 30-day review period (as explained above).

Note that in terms of Regulation 19(1)(a) of the 2014 NEMA EIA Regulations (as amended), the independent EAP is required to submit the Final BA Report to DFFE for decision-making within 90 days of receipt of the application by the DFFE. The DFFE will have 57 days (from receipt of the Final BA Report) to either grant or refuse EA (in line with Regulation 20 (1) of the 2014 NEMA EIA Regulations (as amended) and GN 114 of February 2018).

[52] Note that no significant changes have been made to the information presented in this Final BA report or its associated appendices, and no new impacts have been identified. As such, the revisions outlined in the table of key changes (included in this report ahead of the executive summary) do not constitute significant amendments to the report in terms of Regulation 19(1)(b), as they do not introduce new or materially different information from that already presented in the 30-day public comment period which extended to 08 April 2026.

I.7.3 Environmental Decision-Making and Appeal Period

Subsequent to the decision-making phase, if EAs are granted by the DFFE for the proposed projects, all registered I&APs, Organs of State and stakeholders on the project database will receive notification of the issuing of the EAs and the associated appeal period. The 2014 NEMA EIA Regulations (as amended) (i.e. Regulation 4 (1)) states that after the Competent Authority has a reached a decision, it must inform the Applicant of the decision, in writing, within 5 days of such decision. Regulation 4 (2) of the 2014 NEMA EIA Regulations (as amended) stipulates that I&APs need to be informed of the EA and associated appeal period within 14 days of the date of the decision. All registered I&APs will be informed of the outcome of the EAs and the appeal procedure, as well as the respective timelines.

The distribution of the EAs (should such authorisations be granted by the DFFE), as well as the notification of the appeal period, will include a letter (i.e., Letter 3 (Release of EA and Notification of Opportunity to Appeal) to be sent via email to all registered I&APs, Stakeholders and Organs of State on the database, where email addresses are available. The letter will include information on the appeal period, as well as details regarding where to obtain a copy of the EAs. A copy of the EAs will be emailed with Letter 3. The EAs will also be uploaded to the project website (i.e. https://www.csir.co.za/environmental-impact-assessment). SMS texts will also be sent to all I&APs on the database, where cell phone numbers are available, to inform them of the EAs (should they be granted).

SECTION J: IMPACT ASSESSMENT

This section includes a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the construction phase, operational phase, and decommissioning phase, in line with the requirements of the 2014 NEMA EIA Regulations (as amended).

J.1 Approach to the BA: Methodology of the Impact Assessment

The identification of potential impacts includes impacts that may occur during the construction, operational and decommissioning phases of the proposed development. The assessment of impacts includes direct, indirect as well as cumulative impacts. In order to identify potential impacts (both positive and negative) it is important that the nature of the proposed project is well understood so that the impacts associated with the project can be assessed. The process of identification and assessment of impacts includes:

- Determining the current environmental conditions in sufficient detail so that there is a baseline against which impacts can be identified and measured;
- Determining future changes to the environment that will occur if the activity does not proceed;
- Developing an understanding of the activity in sufficient detail to understand its consequences; and
- Identifying significant impacts which are likely to occur if the activity is undertaken.

The impact assessment methodology has been aligned with the requirements for BA Reports as stipulated in Appendix 1 (3) (1) (j) of the 2014 NEMA EIA Regulations (as amended), which states the following:

"A BA Report must contain the information that is necessary for the Competent Authority to consider and come to a decision on the application, and must include an assessment of each identified potentially significant impact and risk, including –

(i) cumulative impacts;
(ii) the nature, significance and consequences of the impact and risk;
(iii) the extent and duration of the impact and risk;
(iv) the probability of the impact and risk occurring;
(v) the degree to which the impact and risk can be reversed;
(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and
(vii) the degree to which the impact and risk can be mitigated".

As per the then Department of Environmental Affairs and Tourism (DEAT) Guideline 5: Assessment of Alternatives and Impacts, the following methodology is applied to the prediction and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect and cumulative:

- **Direct impacts** are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.

- **Indirect impacts** of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
- **Cumulative impacts** are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

The cumulative impacts have been assessed by identifying other renewable energy projects and other applicable (and relevant) projects, such as construction and upgrade of electricity generation, and transmission or distribution infrastructure in the local area (i.e., within 30 km of the proposed Megora Solar PV Cluster). There are various renewable energy projects being investigated in the local area that are at different stages of planning, ranging from projects that were awarded Preferred Bidder status in terms of the REIPPPP.

The approach for this BA is that the assessment includes all renewable energy and EGI projects within 30 km that have received an EA at the time of the second CA engagement (i.e., September 2025). The information was collected from the National DFFE Renewable Energy EIA Application (REEA) database, 2025 Quarter 2 and Eskom's Generation Connection Capacity Assessment (2020). This is the most accurate and up-to-date data available to the project team. There may be some projects with "in-process" applications for which data is not yet publicly available. This is the data found to be available, and efforts were made to determine gaps and recent amendments. The REEA database contains land parcels, and not the project footprints. In most cases the actual development footprint of the nearby Renewable Energy developments could not be easily quantified or accessed spatially. Hence the land parcels are larger than the land the PV and wind turbines will occupy. Some of the projects may not get developed. For these reasons this data tends towards a worst-case scenario as it will be an overestimation of the extent of the land covered by Solar PV panels and wind turbines.

Table J.1 and Table J.2 provides more details; and Figure J.1 provides an illustration of the projects considered in the cumulative impact assessment.

A summary of the process flow followed in the cumulative impact assessment is provided below:

- A list of authorised Renewable Energy and EGI projects within a 30 km radius was identified based on research, DFFE REEA and the Eskom GCCA.
- This resulted in 28 Renewable Energy and transmission infrastructure projects being identified.
- In addition to the above, the projects comprising the proposed Megora Solar PV Cluster were also considered in conjunction with the projects identified.
- Considering all of the above, the cumulative impacts were then clearly defined, and where possible the size of the identified impact was quantified and indicated, i.e., hectares of cumulatively transformed land. With regards to the levels of transformation, the current state of the affected area was also taken into consideration. In most cases the actual development footprint of the nearby Renewable Energy developments could not be easily quantified or accessed spatially. For example, the REEA database contains land parcels, and not the footprints. Hence the land parcels were considered, which took into account the worst case. This typically allowed the determination of the following aspects (or similar aspects) in the **relevant** specialist assessments:
    - The total affected land parcel area taken up by authorised renewable energy projects and their grid connections within the 30 km radius.
    - Combined land parcel area affected by renewable energy developments within the 30 km radius around the proposed Megora Solar PV Cluster.

- The total area within the 30 km radius around the proposed projects.
- The total combined size of the land parcels affected by renewable energy projects and their grid connections as a percentage of the available habitat in the 30 km radius.

- Therefore, the assessment of cumulative impacts was based on the specialist and EAP's knowledge of similar approved Renewable Energy and EGI projects in the 30 km radius. However, the following points are important to note in terms of the cumulative impact assessment:
  - The assessment of cumulative impacts is not necessarily solely focused on an assessment of impacts linked to previously authorised similar developments and consideration of their mitigation measures, but also about the sensitivities of the land on which the projects take place. For example, from a heritage point of view, it is also about other heritage resources, the type of locations they could occur in, and any other developments that may have impacted on heritage resources.

Table J.1: Proposed renewable energy and EGI projects that have received EA within 30 km of the proposed projects (Source: DFFE REEA, Q2- 2025)

DFFE Reference	EA Process	Shortened Project Title	Applicant	Technology	Capacity	EA Status
14/12/16/3/3/2/2404	Scoping and EIA	The proposed Angora Wind Energy Facility.	Great Karoo Renewable Energy (Pty) Ltd	Wind	140 MW	Approved
14/12/16/3/3/1/2839	Basic Assessment	The proposed development of the Padloper Solar PV Facility 1 and associated infrastructure (Padloper PV 1), near Murraysburg in the Northern Cape Province.	Padloper PV (Pty) Ltd	Solar PV	250 MW	Approved
14/12/16/3/3/1/2840	Basic Assessment	The proposed development of the Padloper Solar PV Facility 2 and associated infrastructure (Padloper PV 2), near Murraysburg in the Northern Cape Province.	Padloper PV (Pty) Ltd	Solar PV	150 MW	Approved
14/12/16/3/3/1/2841	Basic Assessment	The proposed development of the Padloper Solar PV Facility 3 and associated infrastructure (Padloper PV 3), near Murraysburg in the Northern Cape Province.	Padloper PV (Pty) Ltd	Solar PV	150 MW	Approved
14/12/16/3/3/1/2842	Basic Assessment	The proposed development of the Padloper Solar PV Facility 4 and associated infrastructure (Padloper PV 4), near Murraysburg in the Northern Cape Province.	Padloper PV (Pty) Ltd	Solar PV	150 MW	Approved
14/12/16/3/3/1/2842/AM1	Amendment					
14/12/16/3/3/1/2815	Basic Assessment	The proposed development of the Padloper Solar PV Facility 5, the proposed development of 132 kV Electrical Grid Infrastructure between the proposed Padloper PV 4 and the proposed Padloper PV 5, and their associated infrastructure in Beaufort West LM, WC.	Padloper PV (Pty) Ltd	Solar PV and EGI	150 MW	Approved
14/12/16/3/3/1/2816	Basic Assessment	The proposed development of the Padloper Solar PV Facility 6, the proposed development of 132 kV Electrical Grid Infrastructure between the proposed Padloper PV 4 and the proposed Padloper PV 6, and their associated infrastructure in Beaufort West LM, WC.	Padloper PV (Pty) Ltd	Solar PV and EGI	150 MW	Approved

DFFE Reference	EA Process	Shortened Project Title	Applicant	Technology	Capacity	EA Status
14/12/16/3/3/1/2817	Basic Assessment	The proposed development of the Padloper Solar PV Facility 7, the proposed development of 132 kV Electrical Grid Infrastructure between the proposed Padloper PV 4 and the proposed Padloper PV 7, and their associated infrastructure in Beaufort West LM, WC.	Padloper PV (Pty) Ltd	Solar PV and EGI	150 MW	Approved
14/12/16/3/3/1/2906	Basic Assessment	Proposed iNyanga Emoyeni PV1 Solar Energy Facility on the Remainder of Farm No. 2 Gabriels Baken and Farm No. 3 Schietkuil in the Beaufort West Municipality of the Western Cape Province.	Inyanga Emoyeni One (Pty) Ltd	Solar PV	315 MW	Approved
14/12/16/3/3/2/2240	Scoping and EIA	The proposed Merino Wind Farm, Northern Cape Province.	Great Karoo Renewable Energy (Pty) Ltd	Wind	140 MW	Approved
12/12/20/1788	Scoping and EIA	The Proposed Development of the Mainstream Wind and Solar Energy Facility at Victoria West, Northern Cape Province.	South Africa Mainstream Renewable Power Developments (Pty) Ltd	Wind and Solar PV	700 MW	Approved
12/12/20/1788/AM1	Amendment					Approved
12/12/20/1788/AM2	Amendment					Approved
12/12/20/1788/AM3	Amendment					Approved
12/12/20/2351	Scoping and EIA	Proposed Ishwati Emoyeni Wind Energy Facility and Supporting Eskom Transmission and Distribution Grid Connection Infrastructure Near Murraysburg, Beaufort West Local Municipality, Western Cape Province.	Ishwati Emoyeni Project WEF (Pty) Ltd	Wind	280 MW	**Approved***
12/12/20/2351/AM1	Amendment					
12/12/20/2351/AM2	Amendment					
14/12/16/3/3/2/410	Scoping and EIA	Proposed Ishwati Emoyeni Wind Energy Facility and Supporting Eskom Transmission and Distribution Grid Connection Infrastructure Near Murraysburg, Beaufort West Local Municipality, Western Cape Province.	Ishwati Emoyeni Project WEF and Eskom Holdings SOC Limited	Wind	115 MW	Approved
14/12/16/3/3/1/2679	Basic Assessment	Development of proposed substation associated with the Khangela Emoyeni Wind Energy Facility, Western Cape Province.	Khangela Emoyeni Wind Farm (Pty) Ltd	Substation	-	**Approved***

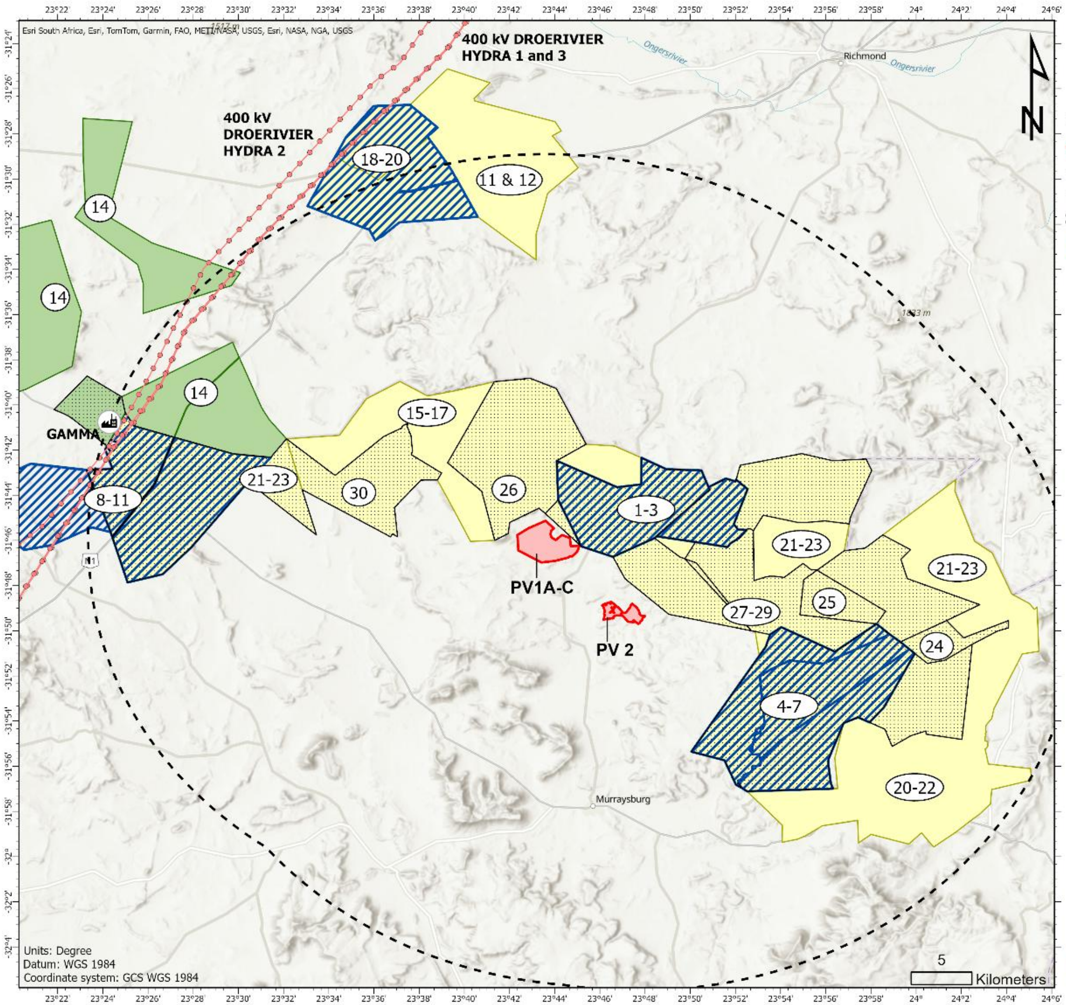
DFFE Reference	EA Process	Shortened Project Title	Applicant	Technology	Capacity	EA Status
14/12/16/3/3/1/2680	Basic Assessment	Development of proposed substation associated with the Umsinde Emoyeni Wind Energy Facility, Western Cape Province.	Umsinde Emoyeni Wind Farm (Pty) Ltd	Substation	-	**Approved***
14/12/16/3/3/2/2115	Scoping and EIA	Nku solar PV facility, Northern Cape Province.	Great Karoo Renewable Energy (Pty) Ltd	Solar PV	100 MW	Approved
14/12/16/3/3/2/2116	Scoping and EIA	Moriri solar PV facility, Northern Cape Province.	Great Karoo Renewable Energy (Pty) Ltd	Solar PV	100 MW	Approved
14/12/16/3/3/2/2118	Scoping and EIA	The establishment of the Moriri and Kwana solar PV facilities, Northern Cape Province.	Great Karoo Renewable Energy (Pty) Ltd	Solar PV	100 MW	Approved
14/12/16/3/3/2/686	Scoping and EIA	Proposed Umsinde Emoyeni wind energy facility phase 1 and its associated electrical grid connection phase 1, Western and Northern Cape Provinces.	Emoyeni Wind Farm Project Proprietary Limited	Wind	147 MW	**Approved***
14/12/16/3/3/2/686/AM1	Amendment					
14/12/16/3/3/2/686/AM2	Amendment		Umsinde Emoyeni Wind Farm (Pty) Ltd			
14/12/16/3/3/2/687	Scoping and EIA	Proposed Umsinde Emoyeni wind energy facility phase 2 and its associated electrical grid connection phase 2, Western and Northern Cape Provinces.	Emoyeni Wind Farm Project Proprietary Limited	Wind	147 MW	Approved
14/12/16/3/3/2/687/AM1	Amendment					
14/12/16/3/3/2/687/AM2	Amendment	The Khangela Emoyeni WEF near Murrayburg within the Beaufort West and Ubuntu LM'S in the Western Cape and the Northern Cape Provinces.	Khangela Emoyeni Wind Farm (Pty) Ltd			
14/12/16/3/3/1/2717	Basic Assessment	Proposed Ilanga Emoyeni PV1 Solar Energy Facility on the Remainder of Farm Schietkuil No. 3 in the Beaufort West Municipality of the Western Cape Province.	Seriti Green Developments South Africa (Pty) Ltd	Solar PV	200 MW	Approved
14/12/16/3/3/1/2718	Basic Assessment	Proposed Ilanga Emoyeni PV2 Solar Energy Facility on the Remainder of Farm Schietkuil No. 3 in the Beaufort West Municipality of the Western Cape Province.	Seriti Green Developments South Africa (Pty) Ltd	Solar PV	201 MW	Approved

DFFE Reference	EA Process	Shortened Project Title	Applicant	Technology	Capacity	EA Status
14/12/16/3/3/1/2719	Basic Assessment	Proposed Ilanga Emoyeni PV3 Solar Energy Facility on the Remainder of Farm Schietkuil No. 3 in the Beaufort West Municipality of the Western Cape Province.	Seriti Green Developments South Africa (Pty) Ltd	Solar PV	147 MW	Approved
14/12/16/3/3/1/2844	Basic Assessment	The proposed development of a 132 kV Overhead Power Line and associated Electrical Grid Infrastructure between the proposed Padloper PV 1 and the proposed authorised Ishwati Emoyeni Collector Substation (i.e., Padloper EGI 1), near Murraysburg in the Northern Cape and Western Cape Provinces.	Padloper PV (Pty) Ltd	EGI	132 kV	Approved
14/12/16/3/3/1/2845	Basic Assessment	The proposed development of a 132 kV Overhead Power Line and associated Electrical Grid Infrastructure between the proposed Padloper PV 2 and the proposed authorised Ishwati Emoyeni Collector Substation (i.e., Padloper EGI 2), near Murraysburg in the Western Cape Province.	Padloper PV (Pty) Ltd	EGI	132 kV	Approved
14/12/16/3/3/1/2845/AM1	Amendment					
14/12/16/3/3/1/2846	Basic Assessment	The proposed development of a 132 kV Overhead Power Line and associated Electrical Grid Infrastructure between the proposed Padloper PV 2 and the proposed Padloper PV 3 (i.e., Padloper EGI 3), near Murraysburg in the Western Cape Province.	Padloper PV (Pty) Ltd	EGI	132 kV	Approved
14/12/16/3/3/1/2847	Basic Assessment	The proposed development of a 132 kV Overhead Power Line and associated Electrical Grid Infrastructure between the proposed Padloper PV 4 and the proposed authorised Ishwati Emoyeni Collector Substation (i.e., Padloper EGI 4), near Murraysburg in the Northern Cape and Western Cape Provinces.	Padloper PV (Pty) Ltd	EGI	132 kV	Approved
14/12/16/3/3/1/2847/AM1	Amendment					
14/12/16/3/3/1/2626	Basic Assessment	The proposed new 132 KV grid connection and associated infrastructure for the authorised.	Eskom Holdings SOC Limited	EGI	132 kV	Approved

* <u>Projects in construction as confirmed by the Project Developer</u>

Table J.2: Proposed Megora PV and EGI developments

DFFE Reference	EA Process	Project Title	Applicant	Technology	EA Status
14/12/16/3/3/1/3272	Basic Assessment	The proposed development of the Megora Solar PV Facility 1A and associated infrastructure (i.e., Megora PV 1A), near Murraysburg in the Western Cape Province.	Megora PV (Pty) Ltd	Solar PV	In Process
14/12/16/3/3/1/3273	Basic Assessment	The proposed development of the Megora Solar PV Facility 1B and associated infrastructure (i.e., Megora PV 1B), near Murraysburg in the Western Cape Province.	Megora PV (Pty) Ltd	Solar PV and EGI	In Process
14/12/16/3/3/1/3274	Basic Assessment	The proposed development of the Megora Solar PV Facility 1C and associated infrastructure (i.e., Megora PV 1C), near Murraysburg in the Western Cape Province.	Megora PV (Pty) Ltd	Solar PV and EGI	In Process
14/12/16/3/3/1/3276	Basic Assessment	The proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2), near Murraysburg in the Western Cape Province.	Megora PV (Pty) Ltd	Solar PV	In Process
14/12/16/3/3/1/3275	Basic Assessment	Basic Assessment for the proposed development of a 132kV overhead power line and associated infrastructure between the proposed Megora Solar PV Facility 2 and the proposed Megora Solar Facility 1A (i.e., Megora EGI 2) near Murraysburg in the Western Cape Province.	Megora PV (Pty) Ltd	EGI	In Process



No.	DFFE Reference	Technolo	Capacity
EA Status: Approved			
1	14/12/16/3/3/1/2839	Solar	250 MW
2	14/12/16/3/3/1/2840	Solar	150 MW
3	14/12/16/3/3/1/2841	Solar	150 MW
4	14/12/16/3/3/1/2842	Solar	150 MW
5	14/12/16/3/3/1/2815	Solar	150 MW
6	14/12/16/3/3/1/2816	Solar	150 MW
7	14/12/16/3/3/1/2817	Solar	150 MW
8	14/12/16/3/3/1/2906	Solar	315 MW
9	14/12/16/3/3/1/2717	Solar	200 MW
10	14/12/16/3/3/1/2718	Solar	201 MW
11	14/12/16/3/3/1/2719	Solar	147 MW
12	14/12/16/3/3/2/2404	Wind	140 MW
13	14/12/16/3/3/2/2240	Wind	140 MW
14	12/12/20/1788 12/12/20/1788/AM1 12/12/20/1788/AM2 12/12/20/1788/AM3	Wind and Solar	700 MW
15	12/12/20/2351 12/12/20/2351/AM1 12/12/20/2351/AM2	Wind	280 MW
16	14/12/16/3/3/2/410	Wind	115 MW
17	14/12/16/3/3/2/411	Wind	-
18	14/12/16/3/3/2/2115	Solar	100 MW
19	14/12/16/3/3/2/2116	Solar	100 MW
20	14/12/16/3/3/2/2118	Solar	100 MW
21	14/12/16/3/3/2/686 14/12/16/3/3/2/686/AM1 14/12/16/3/3/2/686/AM2	Wind	147 MW
22	14/12/16/3/3/2/687 14/12/16/3/3/2/687/AM1	Wind	147 MW
23	14/12/16/3/3/2/687/AM2	Wind	140 MW
24	14/12/16/3/3/1/2679	Substation	-
25	14/12/16/3/3/1/2680	Substation	-
26	14/12/16/3/3/1/2844	Powerline	132kV
27	14/12/16/3/3/1/2845	Powerline	132kV
28	14/12/16/3/3/1/2846	Powerline	132kV
29	14/12/16/3/3/1/2847	Powerline	132kV
29	14/12/16/3/3/1/2626	Powerline	132kV

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Figure J.1: Projects within the 30 km radius considered for the Cumulative Impact Assessment.

In addition to the above, the impact assessment methodology includes the following aspects:

Nature of impact/risk - The type of effect that a proposed activity will have on the environment.

Status - Whether the impact/risk on the overall environment will be:
- Positive - environment overall will benefit from the impact/risk;
- Negative - environment overall will be adversely affected by the impact/risk; or
- Neutral - environment overall not be affected.

Spatial extent – The size of the area that will be affected by the impact/risk:
- Site specific;
- Local (<10 km from site);
- Regional (<100 km of site);
- National; or
- International (e.g., Greenhouse Gas emissions or migrant birds).

Duration – The timeframe during which the impact/risk will be experienced:
- Very short term (instantaneous);
- Short term (less than 1 year);
- Medium term (1 to 10 years);
- Long term (the impact will cease after the operational life of the activity (i.e., the impact or risk will occur for the project duration)); or
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e., the impact will occur beyond the project decommissioning)).

Consequence – The anticipated consequence of the risk/impact:
- Extreme (extreme alteration of natural systems, patterns or processes, i.e., where environmental functions and processes are altered such that they permanently cease);
- Severe (severe alteration of natural systems, patterns or processes, i.e., where environmental functions and processes are altered such that they temporarily or permanently cease);
- Substantial (substantial alteration of natural systems, patterns or processes, i.e., where environmental functions and processes are altered such that they temporarily or permanently cease);
- Moderate (notable alteration of natural systems, patterns or processes, i.e., where the environment continues to function but in a modified manner); or
- Slight (negligible alteration of natural systems, patterns or processes, i.e., where no natural systems/environmental functions, patterns, or processes are affected).

Reversibility of the Impacts - the extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase):
- High reversibility of impacts (impact is highly reversible at end of project life i.e., this is the most favourable assessment for the environment);
- Moderate reversibility of impacts;
- Low reversibility of impacts; or
- Impacts are non-reversible (impact is permanent, i.e., this is the least favourable assessment for the environment).

Irreplaceability of Receiving Environment/Resource Loss caused by impacts/risks – the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase):

- High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e., this is the least favourable assessment for the environment);
- Moderate irreplaceability of resources;
- Low irreplaceability of resources; or
- Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e., this is the most favourable assessment for the environment).

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

Probability – The probability of the impact/risk occurring:

- Extremely Unlikely (little to no chance of occurring);
- Very Unlikely (<30% chance of occurring);
- Unlikely (30-50% chance of occurring)
- Likely (51 – 90% chance of occurring); or
- Very Likely (>90% chance of occurring regardless of prevention measures).

To determine the significance of the identified impact/risk, the consequence is multiplied by probability (qualitatively as shown in Figure J.2). This approach incorporates internationally recognised methods from the Intergovernmental Panel on Climate Change (IPCC) (2014) assessment of the effects of climate change and is based on an interpretation of existing information in relation to the proposed activity, to generate an integrated picture of the risks related to a specified activity in a given location, with and without mitigation. Risk is assessed for each significant stressor (e.g. physical disturbance), on each different type of receiving entity (e.g. the municipal capacity, a sensitive wetland), qualitatively (very low, low, moderate, high, and very high) against a predefined set of criteria (i.e. probability and consequence):

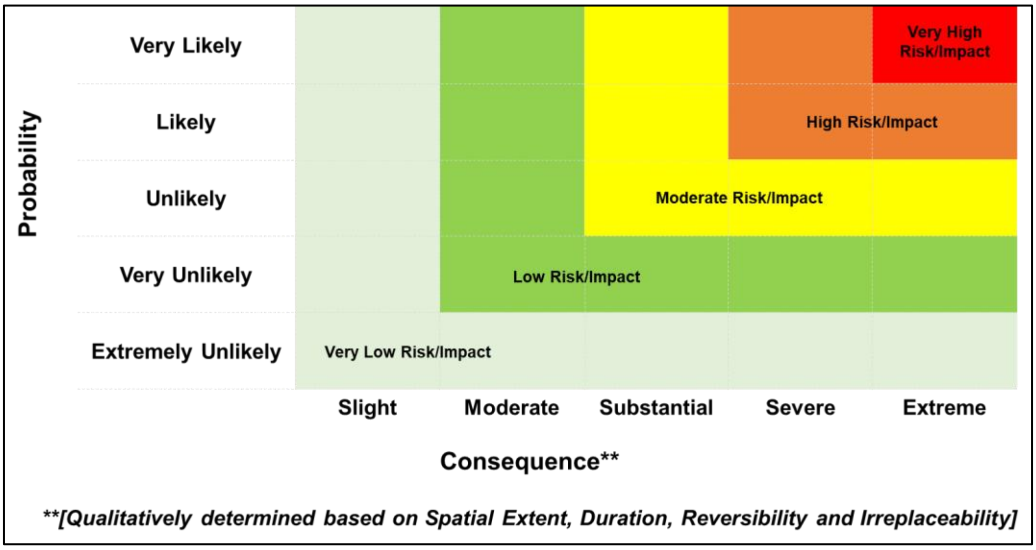

Figure J.2: Guide to assessing risk/impact significance as a result of consequence and probability.

Significance – Will the impact cause a notable alteration of the environment?

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

With the implementation of mitigation measures, the residual impacts/risks will be ranked as follows in terms of significance (based on Figure D.2):

- Very low = 5;
- Low = 4;
- Moderate = 3;
- High = 2; and
- Very high = 1.

Confidence – The degree of confidence in predictions based on available information and specialist knowledge:

- Low;
- Medium; or
- High.

Impacts have been collated into the EMPr (Appendix H of the BA Report) and these include the following:

- Quantifiable standards for measuring and monitoring mitigatory measures and enhancements (as applicable). This includes a programme for monitoring and reviewing the recommendations to ensure their ongoing effectiveness.
- Identifying negative impacts and prescribing mitigation measures to avoid or reduce negative impacts. Where no mitigatory measures are possible this is stated.
- Positive impacts and augmentation measures have been identified to potentially enhance positive impacts where possible.

Other aspects to be taken into consideration in the assessment of impact significance are:

- Impacts are evaluated for the construction and operational phases of the development. The assessment of impacts for the decommissioning phase is brief, as there is limited understanding at this stage of what this might entail. The relevant rehabilitation guidelines and legal requirements applicable at the time will need to be applied;
- Impacts have been evaluated with and without mitigation in order to determine the effectiveness of mitigation measures on reducing the significance of a particular impact;

- The impact evaluation has, where possible, taken into consideration the cumulative effects associated with this and other facilities/projects which are either developed or in the process of being developed in the local area; and
- The impact assessment attempts to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards are used as a measure of the level of impact.

J.2 Assessment of Environmental Risks and Impacts

The issues and impacts presented in this Section have been identified via the environmental *status quo* of the receiving environment (environmental, social and heritage features present on site - as discussed in Section D of this BA Report) and input from specialists that form part of the project team. The impact assessments of the specialist studies undertaken to inform this BA have been summarised in this section. It should be noted that unless otherwise stated, impacts identified, and their associated significance are deemed to be negative.

Refer to Appendix D of this report for the full specialist studies undertaken (including the Terms of Reference for each study). All proposed mitigation measures, as relevant, have been carried over into the EMPr, included in Appendix H of this report.

J.2.1 Agriculture

The Agriculture Compliance Statement for the proposed project was undertaken by Johann Lanz and David Lakey of SoilZA Pty (Ltd) to inform the outcome of this BA from an agricultural and soils perspective. The complete Agriculture Compliance Statement is included in Appendix F.1 of this report. The assessment was based on a verification of current agricultural land use on the facility footprint and was informed by existing soil and agricultural potential data for the facility footprint. This includes soil data, land capability data, field crop boundaries etc. The following section provides a summary of the Approach, Key Findings, Impact Assessment (formal rating of impacts is not required by the Agriculture Protocol, GN 320), and Concluding Statement undertaken for the Agriculture Compliance Statement. The information below is extracted from Lanz and Lakey (2025).

J.2.1.1 Approach and Methodology

An Agricultural Compliance Statement for the proposed project was required and undertaken in terms of the requirements of the *Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources by onshore wind and/or solar photovoltaic energy generation facilities where the electricity output is 20 megawatts or more*, gazetted on 20 March 2020 in GN 320. Various information and desktop sources of information were used.

J.2.1.2 Relevant Project Aspects relating to Agricultural Impacts

For agricultural impacts, the exact nature of the different infrastructure within the boundary fence of the proposed PV facility has no bearing on the significance of impacts. What is of most relevance is simply the occupation of the land and whether it is being occupied by a solar panel, a road, a building, switching station or a substation makes no difference. What is of most relevance and addressed in the assessment, therefore, is simply the total footprint of the facility that excludes agricultural land use or impacts agricultural land.

J.2.1.3 Potential Impacts

The following potential impact mechanisms of the proposed development are identified:

- **Loss of agricultural production potential** due to soil degradation, which includes soil erosion and loss of topsoil. This could occur predominantly in the construction and decommissioning phases of development. It can be effectively prevented by generic mitigation measures that are all inherent in the project engineering of such a development and are standard, best-practice for construction sites. Soil degradation does not therefore pose a significant impact risk.
- **Increase in agricultural production potential** due to increased financial security for farming operations through rental income generation for the farm during the operational phase of the development. This provides reliable and predictable income that is independent of variable agricultural economic factors such as weather, agricultural markets and agricultural input costs. This is a big economic advantage for a farmer and can improve farming operations and productivity on other, higher potential parts of the farm or farms owned by the same farmer, through increased investment into farming.
- **Improved security against stock theft and other crime** due to the presence of security infrastructure and security personnel at the energy facility.

The potential cumulative agricultural impact of importance is a regional loss (including by degradation) of future agricultural production potential. The defining question for assessing the cumulative agricultural impact is this:

- What loss of future agricultural production potential is acceptable in the area, and will the loss associated with the proposed development, when considered in the context of all past, present or reasonably foreseeable future impacts, cause that level in the area to be exceeded?

The DFFE requires compliance with a specified methodology for the assessment of cumulative impacts. This is positive in that it ensures engagement with the important issue of cumulative impacts. However, the required compliance has some limitations and can, in the opinion of the author, result in an over-focus on methodological compliance, while missing the more important task of effectively answering the above defining question.

This cumulative impact assessment of this development determines the quantitative loss of agricultural land if all renewable energy project applications within a 30 km radius become operational. Note that EGI projects do not contribute to a significant loss of agricultural land and are not therefore included in this calculation of cumulative land loss.

In quantifying the cumulative impact, the area of land taken out of agricultural use as a result of all the projects considered in the cumulative impact assessment (total generation capacity of 4822 MW) will amount to a total of approximately 8493 hectares. This is calculated using the industry standards of 2.5 and 0.3 hectares per megawatt for solar and wind energy generation respectively, as per the Department of Environmental Affairs (DEA) Phase 1 Wind and Solar Strategic Environmental Assessment (SEA) (2015). As a proportion of the total area within a 30 km radius (approximately 282,700 ha), this amounts to only 3% of the surface area. This is well within an acceptable limit in terms of loss of low potential agricultural land, which is only suitable for grazing, and of which there is no scarcity in the country. This is particularly so when considered within the context of the following point.

For South Africa to develop the renewable energy generation that it urgently needs, agriculturally zoned land will need to be used for renewable energy generation. It is preferable to incur a cumulative loss of lower potential agricultural land in a region which has been designated as a REDZ, than to lose agricultural land that has a higher potential, and that is much scarcer, to renewable energy development elsewhere in the country. The area has been declared a REDZ precisely because it is an environment that can accommodate numerous renewable energy developments without exceeding acceptable levels of loss of agricultural production potential. This is primarily because of the availability of land that is limited to only being suitable for grazing within the REDZ, and the fact that such land is not a scarce agricultural resource in South Africa.

In terms of the loss of agricultural land to renewable energy, it should also be noted that renewable energy development can only be located in fairly close proximity to a substation that has available capacity. This effectively protects most agricultural land in the country from renewable energy development because only a small proportion of the country's total land surface is located in close enough proximity to an available substation to be viable for renewable energy development.

Furthermore, it should be noted that there are few land uses, other than renewable energy, that are competing for agricultural land use in this area. The cumulative impact from developments, other than renewable energy, is therefore likely to be low. The loss of agricultural potential by soil degradation can effectively be prevented for renewable energy developments by generic mitigation measures that are all inherent in the project engineering and/or are standard, best practice for construction sites. Soil degradation does not therefore pose a cumulative impact risk.

Due to all the considerations discussed above, the cumulative impact of loss of future agricultural production potential is assessed as low. It will not have an unacceptable 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.

J.2.1.4 Concluding Statements for the proposed project

An Agricultural Compliance Statement is not required to formally rate agricultural impacts. It is only required to indicate whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site.

Nevertheless, the overall conclusion of this assessment is that the proposed development is acceptable because it leads to no loss of cropland and therefore minimal loss of future agricultural production potential. It was confirmed that that proposed development will not occupy scarce, viable cropland, and that its negative impact is offset by economic and other benefits to farming, the overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of low significance and as acceptable.

In addition, the cropping potential of the area is completely limited by the combination of climate (arid climate with low moisture availability) and soil constraints (limited soil depth) so that it is unsuitable for rain-fed crop production.

Therefore, from an agricultural impact point of view, it is recommended that the proposed project be approved.

J.2.2 Visual Impact Assessment

The Visual Impact Assessment for the proposed project was undertaken by Kamogelo Rakale of SLR Consulting (Pty) Ltd, to inform the outcome of this BA from a visual perspective. The complete Visual Impact Assessment (VIA) is included in Appendix F.5 of this BA report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the VIA. The information below is extracted from Rakale (2025).

J.2.2.1 Approach and Methodology

The VIA was undertaken in a phased approach with the methodology being based on a combination of desktop-level assessment supported by field-based observation. A three-day site visit was undertaken between 6 and 8 December 2023 (early-Summer) in Phase 1 of the proposed project[53] to:

- verify the landscape characteristics identified via desktop means;
- conduct a photographic survey of the proposed study area;
- verify the sensitivity of visual receptor locations identified via desktop means;
- eliminate receptor locations that are unlikely to be influenced by the proposed development;
- identify any additional visually sensitive receptor locations within the study area; and
- inform the assessment and rating of receptor impacts.

Physical landscape characteristics such as topography, vegetation and land use are important factors influencing the visual character and visual sensitivity of the study area. Baseline information about the physical characteristics of the study area was initially sourced from spatial databases provided by Google Earth imagery, National Geospatial Information (NGI), the South African National Biodiversity Institute (SANBI) and the South African National Land Cover Dataset (Geoterraimage – 2020). The characteristics identified via desktop means were later verified during a site visit. In addition, visual receptor locations and routes that are sensitive and / or potentially sensitive to the visual intrusion of the proposed development were assessed to determine the impact of the proposed development on each of the identified receptor locations.

A rating matrix was used to objectively evaluate the significance of the potential visual impacts associated with the proposed project, both before and after implementing mitigation measures. Mitigation measures were identified (where possible) to minimise the potential visual impact of the proposed development. The rating matrix is based on several different factors including geographical extent, probability, reversibility, irreplaceable loss of resources, duration, extent and consequence in order to assign a level of significance to the potential visual impact of the project.

A separate rating matrix was used to assess the visual impact of the proposed project on the identified visual receptor locations (both sensitive and potentially sensitive). This matrix is based on three parameters, namely the distance of an identified visual receptor from the proposed development, the presence of screening factors and the degree to which the proposed development would contrast with the surrounding environment.

Refer to Appendix F.5 of this BA Report for the detailed rating matrix as well as the full list of main information sources used in the VIA.

Relevant Project Aspects relating to Visual Impacts Components of the proposed project that are relevant in terms of visual aspects are those typically associated with such developments, with a specific focus on solar PV facilities and overhead power lines.

J.2.2.2 Potential Impacts identified

The potential direct visual impacts resulting from the proposed PV project on landscape features and receptors are listed below for each of the project phases, including cumulative impacts.

Construction Phase:

- Potential alteration of the visual character and sense of place resulting from construction activities.

[53] Refer to Section C of this BA Report for further detail on Phase 1 and Phase 2 of the proposed project.

- Potential visual impacts of construction affecting receptors in the study area, including:
  - visual intrusion resulting from large construction vehicles and equipment;
  - visual effect of construction laydown areas and material stockpiles;
  - impacts of increased dust emissions from construction activities and related traffic;
  - visual scarring of the landscape as a result of site clearance and earthworks; and
  - visual pollution resulting from littering on the construction site.

Operational Phase:

- Potential alteration of the visual character and sense of place:
  - The development will contrast with the Karoo, rural / pastoral landscape and alter the visual character and sense of place within the surrounding area.
- Potential visual impacts affecting receptors in the study area, including:
  - visual intrusion resulting from the presence of PV arrays, particularly in more natural undisturbed settings;
  - visual clutter caused by the substation and other associated on-site infrastructure;
  - impacts of increased dust emissions from maintenance vehicles accessing the site via gravel access roads; and
  - visual scarring of the landscape as a result of site clearance and earthworks; and
- Potential glint and glare impacts on passing motorists and nearby receptors; and
- Potential visual impact on the night-time visual environment.

Decommissioning Phase:

- Potential visual impacts of decommissioning affecting receptors in the study area, including:
  - visual intrusion resulting from vehicles and equipment involved in the decommissioning process;
  - impacts of increased dust emissions resulting from decommissioning activities and related traffic;
  - visual scarring of the landscape as a result of decommissioning activities; and
  - visual intrusion of any remaining infrastructure on the site.

Cumulative visual impacts of the project for the construction, operation and decommissioning phases:

- The additional renewable energy facility in the broader area will alter the natural character of the study area towards a more industrial landscape and expose a greater number of receptors to visual impacts.
- Visual intrusion of multiple renewable energy facilities may be exacerbated, particularly in more natural undisturbed settings.
- Additional renewable energy facilities in the area would generate additional traffic on gravel roads thus resulting in increased impacts from dust emissions and dust plumes.
- The night-time visual environment could be altered as a result of operational and security lighting at multiple renewable energy facilities in the broader area.

J.2.2.3 Impact Assessment

The table below includes an assessment of the potential impacts identified for the proposed project for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE (Direct Impacts)						
▪ Large construction vehicles and equipment will alter the natural character of the study area and expose visual receptors to impacts associated with construction. ▪ Construction activities may be perceived as an unwelcome visual intrusion, particularly in more natural undisturbed settings. ▪ Dust emissions and dust plumes from increased traffic on the gravel roads serving the construction site may evoke negative sentiments from surrounding viewers. ▪ Surface disturbance during construction would expose bare soil (scarring) which could visually contrast with the surrounding environment. ▪ Temporary stockpiling of soil during construction may alter the flat landscape. Wind blowing over these disturbed areas could result in dust which would have a visual impact. ▪ Litter on the construction site may result in visual pollution.	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	Negative Local Short Term Substantial Very Likely High Low	*Moderate (3)*	▪ Carefully plan to minimise the construction period and avoid construction delays. ▪ Restrict construction activities to daylight hours to negate or reduce the visual impacts associated with lighting, where possible. ▪ Position laydown areas and related storage/stockpile areas in unobtrusive positions in the landscape, where possible. ▪ Minimise vegetation clearing and rehabilitate cleared areas as soon as possible. ▪ Vegetation clearing should take place in a phased manner. ▪ Make use of existing roads and servitudes where possible. ▪ Limit the number of vehicles and trucks travelling to and from the proposed site, where possible. ▪ Ensure that suitable dust suppression techniques are implemented: ○ on all access roads; ○ in all areas where vegetation clearing has taken place; ○ on all soil stockpiles. ▪ Maintain a neat construction site by removing litter, rubble and waste materials regularly.	*Moderate (3)*	*Medium*

<table>
<tr><th>Impact</th><th colspan="2">Impact Criteria</th><th>Significance and Ranking (Pre-Mitigation)</th><th>Potential Mitigation Measures</th><th>Significance and Ranking (Post-Mitigation)</th><th>Confidence Level</th></tr>
<tr><td colspan="7">OPERATIONAL PHASE</td></tr>
<tr><td rowspan="7">• The PV arrays may be perceived as an unwelcome visual intrusion, particularly in more natural undisturbed settings.
• The proposed solar PV facility will alter the visual character of the surrounding area and expose potentially sensitive visual receptor locations to visual impacts.
• Glint and glare may impact nearby receptors.
• Dust emissions and dust plumes from maintenance vehicles accessing the site via gravel roads may evoke negative sentiments from surrounding viewers.
• The nighttime visual environment will be altered because of operational and security lighting at the proposed PV facility.</td><td>Status</td><td>Negative</td><td rowspan="7">Moderate (3)</td><td rowspan="7">▪ Restrict vegetation clearance on the site to that which is required for the correct operation of the facility.
▪ Conform with Eskom/NTCSA standards regarding the operation of the substation.
▪ As far as possible, limit the number of maintenance vehicles which are allowed to access the site.
▪ Ensure that suitable dust suppression techniques are implemented on all gravel access roads.
▪ As far as possible, limit the amount of security and operational lighting present on site.
▪ Light fittings for security at night should reflect the light toward the ground and prevent light spill.
▪ Lighting fixtures should make use of minimum lumen or wattage.
▪ Mounting heights of lighting fixtures should be limited, or alternatively, foot-light or bollard level lights should be used.
▪ If economically and technically feasible, make use of motion detectors on security lighting.
▪ Buildings on the site should be painted with natural tones that fit with the surrounding environment.
▪ Non-reflective surfaces should be utilised where possible.</td><td rowspan="7">Moderate (3)</td><td rowspan="7">Medium</td></tr>
<tr><td>Spatial Extent</td><td>Local</td></tr>
<tr><td>Duration</td><td>Long term</td></tr>
<tr><td>Consequence</td><td>Substantial</td></tr>
<tr><td>Probability</td><td>Very Likely</td></tr>
<tr><td>Reversibility</td><td>Moderate</td></tr>
<tr><td>Irreplaceability</td><td>Low</td></tr>
<tr><td colspan="7">DECOMMISSIONING PHASE</td></tr>
<tr><td rowspan="2">▪ Vehicles and equipment required for decommissioning will alter the natural character of the study area</td><td>Status</td><td>Negative</td><td rowspan="2">Moderate (3)</td><td rowspan="2">▪ All infrastructure that is not required for post-decommissioning use should be removed.</td><td rowspan="2">Low (4)</td><td rowspan="2">Medium</td></tr>
<tr><td>Spatial Extent</td><td>Local</td></tr>
</table>

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
and expose visual receptors to visual impacts. ▪ Decommissioning activities may be perceived as an unwelcome visual intrusion. ▪ Dust emissions and dust plumes from increased traffic on the gravel roads serving the decommissioning site may evoke negative sentiments from surrounding viewers. ▪ Surface disturbance during decommissioning would expose bare soil (scarring) which could visually contrast with the surrounding environment. ▪ Temporary stockpiling of soil during decommissioning may alter the flat landscape. Wind blowing over these disturbed areas could result in dust which would have a visual impact. ▪ Decommissioned infrastructure left on the site may be visually intrusive.	*Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	*Short Term* *Substantial* *Very Likely* *High* *Low*		▪ Carefully plan to minimize the decommissioning period and avoid delays. ▪ Maintain a neat decommissioning site by removing rubble and waste materials regularly. ▪ Ensure that dust suppression procedures are maintained on all gravel access roads and disturbed area that are prone to wind erosion throughout the decommissioning phase. ▪ All cleared areas should be rehabilitated as soon as possible.		

The table below includes an assessment of the potential **cumulative impacts** identified for the proposed project for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
• Combined visual impacts from several renewable energy and associated grid connection infrastructure developments in the broader area could potentially alter the sense of place and visual character of the area. • Combined visual impacts from several renewable energy and associated grid connection infrastructure developments in the broader area could potentially exacerbate visual impacts on visual receptors.	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	*Negative* *Local* *Short Term* *Substantial* *Very Likely* *Moderate* *Low*	*Moderate (3)*	▪ Carefully plan to minimise the construction period and avoid construction delays. ▪ Where possible, restrict construction activities to daylight hours to negate or reduce the visual impacts associated with lighting. ▪ Position laydown areas and related storage/stockpile areas in unobtrusive positions in the landscape, where possible. ▪ Minimise vegetation clearing and rehabilitate cleared areas as soon as possible. ▪ Vegetation clearing should take place in a phased manner. ▪ Inform receptors within 500 m of the site of the construction programme and schedules. ▪ Make use of existing gravel access roads where possible. ▪ Limit the number of vehicles and trucks travelling to and from the proposed sites, where possible. ▪ Ensure that suitable dust suppression techniques are implemented: ○ on all access roads; ○ in all areas where vegetation clearing has taken place; and ○ on all soil stockpiles. ▪ Maintain a neat construction site by removing litter, rubble and waste materials regularly.	*Moderate (3)*	*Medium*

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
OPERATIONAL PHASE						
• Combined visual impacts from several renewable energy and associated grid connection infrastructure developments in the broader area could potentially alter the sense of place and visual character of the area. • Combined visual impacts from several renewable energy and associated grid connection infrastructure developments in the broader area could potentially exacerbate visual impacts on visual receptors.	*Status*	*Negative*	*Moderate (3)*	▪ Restrict vegetation clearance on the site to that which is required for the correct operation of the facility. ▪ Conform with Eskom/NTCSA standards regarding the operation of the substation. ▪ As far as possible, limit the number of maintenance vehicles which are allowed to access the site. ▪ Ensure that suitable dust suppression techniques are implemented on all gravel access roads. ▪ As far as possible, limit the amount of security and operational lighting present on site. ▪ Where possible, avoid placing lights on tower/ pylon structures. ▪ Light fittings for security at night should reflect the light toward the ground and prevent light spill. ▪ Lighting fixtures should make use of minimum lumen or wattage. ▪ Mounting heights of lighting fixtures should be limited, or alternatively, foot-light or bollard level lights should be used. ▪ If economically and technically feasible, make use of motion detectors on security lighting. ▪ Buildings on the site should be painted with natural tones that fit with the surrounding environment. ▪ Non-reflective surfaces should be utilised where possible.	*Moderate (3)*	*Medium*
	Spatial Extent	*Local*				
	Duration	*Long Term*				
	Consequence	*Substantial*				
	Probability	*Very Likely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Low*				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
DECOMMISSIONING PHASE						
• Combined visual impacts from several renewable energy and associated grid connection infrastructure developments in the broader area could potentially alter the sense of place and visual character of the area. • Combined visual impacts from several renewable energy and associated grid connection infrastructure developments in the broader area could potentially exacerbate visual impacts on visual receptors.	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	*Negative* *Local* *Short Term* *Moderate* *Very Likely* *High* *Low*	*Low (4)*	▪ All infrastructure that is not required for post-decommissioning use should be removed. ▪ Carefully plan to minimize the decommissioning period and avoid delays. ▪ Maintain a neat decommissioning site by removing rubble and waste materials regularly. ▪ Ensure that dust suppression procedures are maintained on all gravel access roads throughout the decommissioning phase. ▪ All cleared areas should be rehabilitated as soon as possible.	*Low (4)*	*Medium*

J.2.2.4 Concluding Statement

A broad-scale assessment of visual sensitivity, based on the physical characteristics of the study area, economic activities and land use that predominates, determined that the area would have a moderate visual sensitivity. An important factor contributing to the visual sensitivity of an area is the presence, or absence of visual receptors that may value the aesthetic quality of the landscape and depend on it to produce revenue and create jobs. No formal protected areas and relatively few sensitive or potentially sensitive receptor locations were identified in the study area, thus confirming the moderate level of visual sensitivity.

The study area is not typically valued for its tourism significance and only two guesthouses were identified within 5 km of the proposed development. The assessment identified a total of three visual receptor locations within the study area, one of which could be regarded as a potentially sensitive visual receptor as it is located within a mostly rural / pastoral setting that will likely be altered by the proposed project. Two locations were identified as sensitive visual receptors as they were found to be nature/leisure-based tourism facilities mostly associated with the pristine and picturesque qualities of the Karoo cultural landscape. Out of the one sensitive and one potentially sensitive receptor that fall within the proposed development's viewshed, none would experience high levels of visual impact as a result of the proposed development. SR1 could potentially experience moderate levels of visual impact, while VR1 could potentially experience only low levels of visual impact.

A preliminary assessment of overall impacts was conducted to allow the visual impact to be assessed alongside other environmental parameters. The assessment revealed that, visual impacts (post mitigation) associated with the proposed project are of Low significance during the decommissioning phase of the project. During construction and operation however, visual impacts resulting from the visual intrusion and alteration of the Karoo landscape, sense of place and light pollution at night, would be of Moderate significance with relatively few mitigation measures available to reduce the visual impact.

A number of additional renewable energy developments were identified within a 30 km radius of the Megora PV 1A project. These developments and their associated infrastructure, in conjunction with the proposed project and the greater Megora Solar PV Cluster, will inevitably introduce an increasingly industrial character into a largely natural, pastoral landscape, thus giving rise to significant cumulative impacts and thereby increasing the number of receptors affected by the visual intrusion of the developments. It is however expected that these developments in close proximity to each other would be seen as one large renewable energy facility rather than several separate developments and although this will not necessarily reduce impacts on the visual character of the area, it could potentially reduce the cumulative impacts on the landscape. Considering this, the cumulative impacts (post-mitigation) have also been rated as Moderate during the construction and operation phases of the project and Low during the decommissioning phase. It is however anticipated that these impacts could be mitigated to acceptable levels with the implementation of the recommended mitigation measures. In addition, none of the roads within the study area (i.e., R63 and MR00607) are specifically valued or utilised for their scenic or tourism potential and are therefore not regarded as visually sensitive.

Based on the above, it is the specialists opinion that, although the potential visual impacts associated with the proposed Megora PV 1A project and associated infrastructure are negative and of moderate significance, the visual effects of the project on individual receptors have been assessed to be tolerable. As such, the project is deemed acceptable from a visual perspective, and the EA should be granted. The specialist is of the opinion that the impacts associated with the construction, operation and decommissioning phases can be mitigated to acceptable levels provided the recommended mitigation measures are implemented.

J.2.3 Heritage Impact Assessment (Archaeology and Cultural Landscape)

The Heritage Impact Assessment for the proposed project was undertaken by John Gribble of TerreMare Archaeology (Pty) Ltd, to inform the outcome of this BA from an archaeology and cultural landscape perspective. The complete Heritage Impact Assessment is included in Appendix F.6 of this BA Report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Heritage Impact Assessment. The information below is extracted from Gribble (2025).

J.2.3.1 Approach and Methodology

Two physical heritage surveys have been conducted in the Megora PV Cluster project area. The first was undertaken in Phase 1 of the project (High-level Environmental Screening Phase[54]) by Dr. Jayson Orton of ASHA Consulting (Pty) Ltd, assisted by Anja Huisamen between 30 November and 3 December 2023. The second visit by a TerraMare Archaeology team consisting of Gail Euston-Brown and Madelon Tusenius visited the Megora Cluster project area on 11 and 12 October 2025. Portions of the Megora PV Cluster project area were also surveyed by ACO Associates in September 2013 as part of heritage assessment work conducted for the authorized Ishwati Emoyeni Wind Energy Facility (WEF), immediately adjacent to the north and east (Halkett, 2014). The two surveys took place in summer and spring respectively. Although much of the study area was well vegetated with Karoo scrub and grasses, ground visibility was sufficient during both visits for survey purposes and did not negatively affect the outcome of the survey.

Members of the field teams carried hand-held GPS receivers loaded with the Megora PV Cluster project and infrastructure area outlines, available project layout information, local roads and farm tracks captured from Google Earth, points of potential heritage interest identified from Google Earth or other mapping sources, and for the 2025 visit, the survey tracks and find spots recorded during the 2023 visit.

The walk tracks of the field teams were logged by the GPS units and waypoints were entered on the units at the location of any identified heritage resources. Photographs were taken of most sites and heritage resources located, of examples of artefacts seen and of the landscape setting, to provide context.

The analysis of heritage resources was based upon the experience of the various team members who are familiar with the standard classification systems for this artefactual material and can roughly date and characterise an archaeological site based on its visible content and artefacts. No archaeological material was removed from the project site, and all observations were based on visible surface material.

A survey of available literature was carried out to assess the general heritage context into which the development would be set. The information sources consulted in the assessment include maps, aerial photographs, cadastral data and data from SAHRIS.

J.2.3.2 Relevant Project Aspects relating to Heritage Impacts

All aspects of the proposed development are relevant since excavations for foundations may impact on archaeological and/or palaeontological remains, while the above-ground aspects create potential visual (contextual) impacts to the cultural landscape and any significant heritage sites that might be visually sensitive.

J.2.3.3 Potential Impacts identified

The potential impacts identified during the Heritage Impact Assessment include:

[54] Refer to Section C of this BA Report for further detail on Phase 1 and Phase 2 of the proposed project.

Construction Phase:

- Loss of or damage to archaeological resources
- Intrusion of solar facility and equipment into the cultural landscape

Operational Phase:

- Intrusion of solar facility and equipment into the landscape resulting in alteration of the natural landscape

Decommissioning Phase:

- Loss of or damage to archaeological resources
- Intrusion of solar facility and equipment into the cultural landscape

Cumulative impacts:

- Damage or destruction of archaeological materials
- Intrusion of solar facility and equipment into the landscape

J.2.3.4 Impact Assessment

The assessments for palaeontology are provided in the following section. The table below includes an assessment of the potential **direct impacts** identified for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Damage or destruction of archaeological materials by the proposed project	Status	Negative	Low (4)	▪ If significant archaeological material is uncovered during the course of development, work in the immediate area must be halted and the find reported to the heritage authorities. The find may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.	Very low (5)	High
	Spatial extent	Site Specific				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Non-reversible				
	Irreplaceability	High				
Intrusion of solar facility and equipment into the landscape	Status	Negative	Moderate (3)	▪ Minimise the construction period and avoid construction delays. ▪ Restrict construction activities to daylight hours to negate or reduce the visual impacts associated with lighting. ▪ Position laydown areas and related storage/stockpile areas in unobtrusive positions in the landscape, where possible. ▪ Minimise vegetation clearing and rehabilitate cleared areas as soon as possible.	Low (4)	High
	Spatial extent	Local				
	Duration	Long Term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Irreplaceability	Moderate		▪ Vegetation clearing should take place in a phased manner. ▪ Make use of existing roads and servitudes where possible. ▪ Limit the number of vehicles and trucks travelling to and from the proposed site, where possible. ▪ Ensure that suitable dust suppression techniques are implemented: ○ on all access roads; ○ in all areas where vegetation clearing has taken place; ○ on all soil stockpiles. ▪ Maintain a neat construction site by removing litter, rubble and waste materials regularly.		
OPERATIONAL PHASE						
Intrusion of solar facility into the landscape	Status	Negative	Moderate (3)	▪ Restrict vegetation clearance on the site to that which is required for the correct operation of the facility. ▪ As far as possible, limit the number of maintenance vehicles which are allowed to access the site. ▪ Ensure that suitable dust suppression techniques are implemented on all gravel access roads. ▪ As far as possible, limit the amount of security and operational lighting present on site. ▪ Light fittings for security at night should reflect the light toward the ground and prevent light spill.	Low (4)	High
	Spatial extent	Local				
	Duration	Long Term				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				▪ Lighting fixtures should make use of minimum lumen or wattage. ▪ Mounting heights of lighting fixtures should be limited, or alternatively, footlight or bollard level lights should be used. ▪ If economically and technically feasible, make use of motion detectors on security lighting. ▪ Buildings on the site should be painted with natural tones that fit with the surrounding environment. ▪ Non-reflective surfaces should be utilised where possible.		
***DECOMMISSIONING PHASE* (assuming original facility footprint)**						
Intrusion of solar facility and equipment into the landscape	Status	Negative	Moderate (3)	▪ Minimise duration of decommissioning period. ▪ Ensure effective rehabilitation of all areas disturbed by decommissioning activities.	Low (4)	High
	Spatial extent	Local				
	Duration	Permanent				
	Consequence	Substantial				
	Probability	Unlikely				
	Reversibility	Non-reversible				
	Irreplaceability	High				
Damage or destruction of archaeological	Status	Negative	Low (4)	If significant archaeological material is uncovered during the course of decommissioning, work in the immediate area must be halted and the find	Very low (5)	High
	Spatial extent	Site Specific				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
materials by the proposed project	Duration	Permanent		reported to the heritage authorities. The find may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.		
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Non-reversible				
	Irreplaceability	High				
CUMULATIVE IMPACTS						
Loss of or damage to archaeological resources because of construction activities	Status	Negative	Low (4)	• Implementation of mitigation measures recommended for individual projects will ensure that cumulative impacts to heritage resources in the area can be managed, mitigated and reduced. • The sympathetic design of projects can reduce visual impact. • Other measures include: ○ Minimise the construction period and avoid construction delays. ○ Restrict construction activities to daylight hours to negate or reduce the visual impacts associated with lighting. ○ Position laydown areas and related storage/stockpile areas in unobtrusive positions in the landscape, where possible. ○ Minimise vegetation clearing and rehabilitate cleared areas as soon as possible. ○ Vegetation clearing should take place in a phased manner.	Very low (5)	High
	Spatial extent	Local				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Non-reversible				
	Irreplaceability	High				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				○ Make use of existing roads and servitudes where possible. ○ Limit the number of vehicles and trucks travelling to and from the proposed site, where possible. ○ Ensure that suitable dust suppression techniques are implemented: ▪ on all access roads; ▪ in all areas where vegetation clearing has taken place; ▪ on all soil stockpiles. Maintain a neat construction site by removing litter, rubble and waste materials regularly.		

J.2.3.5 Concluding Statement

The detailed Heritage Impact Assessment concluded that the proposed site is a heritage environment of variable sensitivity but that significant impacts on palaeontological, archaeological and other heritage resources arising from the project are unlikely since no archaeological sites are under threat and no other heritage resources will be significantly impacted.

Impacts on the cultural landscape are expected to be the most significant impacts, but these may be reduced through the implementation of suitable mitigatory measures. If the project were not implemented, the site would stay as it currently is with a neutral impact significance.

It is the specialist's reasoned opinion, therefore, that from a heritage perspective the Megora PV 1A project may be authorised, but subject to the implementation of the recommendations contained within the detail assessment.

J.2.4 Palaeontology Impact Assessment

The Palaeontology Impact Assessment (PIA) was undertaken by Elize Butler of Banzai Environmental (Pty) Ltd, to inform the outcome of this BA from a palaeontological perspective. As noted above, an integrated HIA containing Archaeology, Cultural Landscape and Palaeontology has been undertaken for the project. However, for ease of reference, this section only deals with the Palaeontology. The complete Heritage Impact Assessment is included in Appendix F.6 of this BA Report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Palaeontology Impact Assessment. The information below is extracted from Butler (2025) (Appendix F.7 of this BA Report).

J.2.4.1 Approach and Methodology

The present field-based PIA assesses the potential impacts of fossil heritage on the development. footprint. The approach to this study can be briefly summarized as follows. All possible information and experts were reviewed and consulted. This included National DFFE Screening Tool, Google Earth KMZ files, Terms of Reference for the proposed development obtained from CSIR Project Team; Google Earth satellite imagery; Palaeosensitivity map on SAHRIS website, 1;250 000 Beaufort West 3222 (1979) Geological Map (Council for Geosciences, Pretoria) including 1:250 000 geological map (3122 Victoria West) and relevant sheet explanations (i.e. Roux and Keyser 1988); Published geographical and paleontological literature; relevant PIAs in the area; a three day site visit was conduct on two occasions, from 23 January 2023 and between 15 and 17 January 2024, to conduct a comprehensive site-specific field survey of the development footprint for the combined projects on foot and motor vehicle. The fossil potential of the proposed development area was determined by criss-crossing the development footprint and by physically investigating all bedrock outcrops to determine the lithology and fossil content of the outcrops.

J.2.4.2 Relevant Project Aspects relating to Palaeontological Impacts

All aspects of the proposed development are relevant since excavations for foundations may impact on archaeological and/or palaeontological remains.

J.2.4.3 Potential Impacts

The key impacts on local palaeontological heritage resources considered are direct and relate to the potential disturbance, damage, destruction or sealing-in of scientifically important and legally protected fossils preserved at or beneath the surface of the ground due to construction phase excavations (e.g., PV module footings, building foundations, underground cables, storm water channels), and ground clearance (e.g., access roads, solar arrays).

The impacts identified only apply to the construction phase of the proposed developments since further significant impacts on fossil heritage during the planning, operational and decommissioning phases of the facilities are not anticipated.

Construction Phase:

- Loss of fossil heritage

Cumulative impact:

- Construction Phase: Loss of fossil heritage

J.2.4.4 Impact Assessment

The table below includes an assessment of the potential **direct impacts** identified for the proposed project.

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Loss of fossil Heritage	*Status*	Negative	*Very High (1)*	▪ Implement the Chance Find Protocol as well as the training of accountable supervisory personnel by a qualified palaeontologist.	*Low (4)*	High
	Spatial Extent	Site specific				
	Duration	Permanent				
	Consequence	Extreme				
	Probability	Very Likely				
	Reversibility	Non-reversible				
	Irreplaceability	Irreplaceable				

The table below includes an assessment of the cumulative impact during construction phase for the proposed project.

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Loss of fossil Heritage	*Status*	Negative	*Moderate (3)*	▪ Implement the Chance Find Protocol as well as the training of accountable supervisory personnel by a qualified palaeontologist.	*Low (4)*	High
	Spatial Extent	Site specific				
	Duration	Permanent				
	Consequence	Substantial				
	Probability	Unlikely				
	Reversibility	Non-reversible				
	Irreplaceability	Irreplaceable				

J.2.4.5 Concluding Statement

Several fossiliferous outcrops were identified within the development area. Fairly well-preserved to weathered tetrapod and plant fossils were found ex situ in close proximity to two of the koppies within the footprint. The site comprises a relatively flat central area with isolated koppies, surrounded by low mountain ridges. No fossils were detected on the flat central portions of the development footprint.

Although several fossiliferous outcrops were outside the northern boundary of the project area, the field investigation and supporting desktop review (National Museums Database and published literature) indicate that fossil occurrences of scientific or conservation significance in this area are relatively rare. In addition, the proposed project footprint avoids all fossiliferous outcrops. Available data suggest that fossil localities are generally sporadic, scattered, and unpredictable in distribution. *Ex situ* fossiliferous outcrops identified during the site visit were buffered out of the proposed layout as such have been completely avoided by the layout.

It is therefore recommended that the proposed project receive EA. The proposed Megora PV 1A and associated infrastructure are thus not fatally flawed from a palaeontological perspective. However, the recommended mitigation measures must be included within the EMPr. These recommendations must be implemented in full during the construction phase.

J.2.5 Terrestrial Biodiversity and Species

The Terrestrial Biodiversity and Species Assessment was undertaken by Tarryn Martin and Amber Jackson of Biodiversity Africa (Pty) Ltd. The complete Terrestrial Biodiversity and Species Assessment is included in Appendix F.2 of this BA Report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Terrestrial Biodiversity and Species Assessment. The information below is extracted from Martin and Jackson (2025).

J.2.5.1 Approach and Methodology

The approach and methodology adopted in the Terrestrial Biodiversity and Species Assessment is described in this section.

A detailed desktop review was conducted prior to the field survey to identify the known diversity of the vertebrate fauna (excluding birds and bats) and plant species, and in the project area as well as determine the threat status of each species. Animal species known from the region, or from adjacent regions, whose preferred habitat(s) were known to occur within the study area, were also included. The most recent literature sources were consulted. A desktop assessment was also undertaken to determine whether there are any terrestrial biodiversity features within the project area that are considered sensitive. The vegetation types present within the project area and key features driving the CBA status were identified and confirmed during the field survey.

Two field surveys were undertaken; the first field survey was conducted during the late flowering season (29 November – 2 December 2023) and the second field survey was undertaken from 27-28 October 2025). Both periods fall during the optimal flowering period for this region and as such most species were in flower and could be easily identified.

The purpose of the botanical survey was to assess the site-specific botanical state of the PAOI by recording the species present (both indigenous and alien invasive species), identifying sensitive plant communities such as vegetation associated with rocky outcrops, riparian areas, or areas likely to contain Species of Conservation Concern (SCC), and identifying the current land use. At each sample point, plots were analysed by determining the dominant species in each plot, as well as any alien invasive species and SCC. Each sample plot was sampled until no new species were recorded. Vegetation communities were then described according to the dominant species recorded from each type and these were mapped and assigned a sensitivity score. The project area was also driven to obtain an understanding of the distribution of vegetation types and the biophysical characteristics of the broader project area. Plant species observed were uploaded onto iNaturalist: https://www.inaturalist.org/projects/aced-anthem-megora-sef.

The purpose of the faunal field survey was to determine the faunal habitats present within the project area and conduct searches for mammal, reptile, and amphibian species that may utilise these habitats. The project area was driven, and active searching conducted in various habitats present. Sample sites for the faunal assessment were the same as for the botanical assessment as the specialists worked together, and as such, sampling effort described above is the same for the faunal assessment. Active searching for amphibians, reptiles and mammals includes direct and indirect observation:

- Direct observations were made by walking and driving through the project area and recording species seen. When a species was seen, the Global Positioning System (GPS) location was recorded and when feasible, photographs of the species were taken.

- Indirect observation is the searching for evidence of faunal presence and includes spoor, skat, roadkill, skulls, quills, dens, burrows, hairs, scrapings and diggings.

In addition, habitats that typically provide refuge for faunal species were targeted to search for specific species. These habitats are listed in the full assessment included as Appendix F.2 of this BA Report.

Habitat areas (based on the species compositions of the vegetation analysis, topography and soils) were ranked into High / No-Go, Medium or Low classes in terms of their significance based on the Ecological Sensitivity and Conservation Importance. A sensitivity and habitat map (including buffer zones if applicable) was produced based on the above information.

J.2.5.2 Relevant Project Aspects relating to Terrestrial Biodiversity and Species Impacts

The following project-related activities are relevant from a terrestrial biodiversity perspective:

- Clearance or partial clearance of vegetation, where applicable, during the construction phase.
- Establishment of roadways (i.e., access roads leading to the site and internal gravel access roads) and hard panning of surfaces, with minor storm water management aspects being introduced during the construction and operational phases.
- Establishment of modular arrays with concomitant cabling and provision of invertors within the arrays.
- Establishment of a BESS; offices and related infrastructure, as well as a yard for storage and general operations.
- Establishment of an on-site substation, which will be fenced and isolated from the balance of the site.

J.2.5.3 Potential Impacts

The following impacts have been identified for each phase:

Construction Phase:

The clearing of vegetation for the construction of the SEF, internal cabling, access roads, and associated infrastructure could result in the following impacts:

- The direct and permanent loss of plant communities (Eastern Upper Karoo and Upper Karoo Hardeveld) and associated plant species, including SCC.

- Clearing of vegetation resulting in breaks in habitat that will lead to habitat fragmentation and edge effects.
- Impacts on the management objectives of CBAs and ESAs.
- Clearing of vegetation and subsequent disturbance to the soil, and therefore seed bank, leading to the infestation of alien invasive plant species and other ruderal species.
- The loss of faunal habitat.
- Loss of faunal SCC.
- Disturbance to faunal species and their livelihood due to construction related activities.
- Faunal mortality due to earthworks, roadkill and persecution.

Operational Phase:

- Infestation of Alien Plant Species.
- Faunal mortality due to roadkill and persecution.

Decommissioning Phase:

- Loss of indigenous vegetation.
- Infestation of Alien Plant Species.
- Disturbance to faunal species and potential reduction in abundance and mortality of faunal species.

Cumulative Impacts:

The cumulative impact assessment considers other proposed, approved and existing facilities and power lines within the 30 km radius.

Given the above, cumulative impacts arising from the implementation of this project and other land use changes in the region are likely to exhibit the following:

- Additional activities within delineated Very High Sensitivity areas
- Displacement of fauna
- Displacement of flora

J.2.5.4 Impact Assessment

The table below includes an assessment of the potential impacts identified for the proposed project.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Loss of Eastern Upper Karoo, Eastern Upper Karoo: Wash, and Upper Karoo Hardeveld	*Status*	Negative	*Low (4)*	**Avoid** The layout has undergone several iterations to ensure that the placement of infrastructure is outside of sensitive areas. **Mitigate** The permanent loss of vegetation is difficult to mitigate; however, the following measures will help reduce indirect impacts: • All construction vehicles and machinery must remain strictly within the demarcated project footprint and access routes. Compliance will be monitored through weekly site inspections, with the expectation of zero recorded incidents of vehicles entering designated "no-go" areas. This requirement is achievable using visible signage, fencing, and mandatory contractor induction sessions. By ensuring adherence, unnecessary vegetation loss and fragmentation outside the approved footprint will be prevented. The measure will be in place from site handover and must be maintained until the completion of construction. • The indigenous seedbank must be preserved by preserving the topsoil. Where feasible, soil disturbance must be minimised and areas should be brush cut rather than stripped. This will facilitate more effective and rapid rehabilitation compared to areas where vegetation and topsoil are completely removed. Where this is not feasible, the upper 30 cm of topsoil, where present, must be stripped from all areas to be disturbed and stockpiled in designated low (preferable)- or medium-sensitivity areas. Stockpiles must not exceed 2 m in height and must be stored for as short a period as possible. Topsoil must be used for rehabilitation of areas impacted by construction activities and no longer required during operational phase. • Temporary infrastructure, including laydown areas, camps, and	*Low (4)*	High
	Spatial Extent	Site specific				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	Low				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				batching plants, must be located within already disturbed or degraded sites (i.e. areas of low or medium sensitivity) wherever feasible. This infrastructure must not be sited in areas of high sensitivity. Due to the relatively small and localised nature of these disturbed areas, natural recolonisation and recovery from adjacent intact vegetation is considered feasible and is expected to further support the rehabilitation process. • Existing access roads must be utilised where feasible to reduce habitat fragmentation. • To ensure that these vegetation types are not negatively impacted through accidental wildfires, employees must be prohibited from making open fires during the construction phase. Compliance must be measured by ensuring zero recorded incidents of open fires by staff, with monitoring conducted on a monthly basis. This can be re-enforced through induction training, clear signage around the site, and regular toolbox talks. • Alien invasive plant species must be removed from the project area in line with the alien invasive management plan (included in the EMPr). The project area should be clear of category 1 and category 2 species three years from completion of construction. **Rehabilitate** • Areas disturbed during construction but no longer required for the operational phase must be rehabilitated back to their natural state. It is recommended that the natural state is representative of 70% of the original species composition characteristic of the project area and that this is achieved within ten years of implementing the rehabilitation plan. • Only species indigenous to the project area (i.e. locally indigenous species) must be used for rehabilitation. No exotic plant species are permitted to be planted or utilised for landscape or rehabilitation. • The revegetation and rehabilitation recommendations included in the EMPr for this project, must be implemented.		
	Status	Negative	*Moderate (3)*		*Low (4)*	High

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Loss of Southern Karoo Riviere	*Spatial Extent*	Site Specific		• Refer to mitigation measures listed under the first impact of this table (i.e., Loss of Eastern Upper Karoo, Eastern Upper Karoo: Wash, and Upper Karoo Hardeveld).		
	Duration	Permanent				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Low Reversibility				
	Irreplaceability	Moderate				
Disruption of Ecosystem Function and Process	*Status*	Negative	*Moderate (3)*	**Avoidance** Project infrastructure has been designed to avoid areas of high sensitivity. Other than road and powerline crossings, all other infrastructure has been located in areas of medium and low sensitivity. **Mitigation** In addition to the mitigation measures listed under impact 1, the following should be implemented: • Natural corridors along drainage lines and slope crests must be maintained between large intact patches of habitat to facilitate habitat connectivity. • All temporary access tracks, laydown areas, and disturbed areas not required for long-term operations must be rehabilitated within six months of construction completion in that section. • Where feasible, all access roads must follow pre-existing roads and farm tracks or previously disturbed alignments wherever possible.	*Low (4)*	High
	Spatial Extent	Local				
	Duration	Permanent				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				
Disruption of management objectives of CBAs	*Status*	Negative	*Low (4)*	Implement all mitigation measures outlined in impacts 1 (i.e., Loss of Eastern Upper Karoo, Eastern Upper Karoo: Wash, and Upper Karoo Hardeveld) and 2 (i.e., Loss of Southern Karoo Riviere) as well as those in the aquatic impact assessment report.	*Low (4)*	High
	Spatial Extent	Site Specific				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Unlikely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Disruption to management objectives of ESAs	*Status*	Negative	*Low (4)*	Implement all mitigation measures outlined in the aquatic impact assessment report.	*Low (4)*	High
	Spatial Extent	Site Specific				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				
Loss of Plant Species of Conservation Concern	*Status*	Negative	Very Low (5)	All mitigation measures listed under impact 1 above must be implemented in addition to the following: Mitigation • An ecological walk-through of the development footprint must be undertaken prior to construction to identify plant SCC and protected plant species that can be translocated. Furthermore, the ecological walkthrough must identify plant species requiring permits for their destruction and/or removal. • Plant permits for the removal and/or destruction of protected plant species must be obtained prior to clearing activities commencing. • The *in situ* search and rescue recommendations included in the project EMPr must be implemented for protected succulents and geophytes that will be impacted by the construction of the project. These recommendations must be implemented prior to clearing commencing. • Plant translocation to adjacent suitable habitat may only be done for species that are not range restricted and for populations that have not been quantified as regionally significant. In such cases that this is not feasible, any	Very Low (5)	High
	Spatial Extent	Site Specific				
	Duration	Medium Term				
	Consequence	Slight				
	Probability	Very Unlikely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				requirement for translocation must be discussed with the relative authorities prior to translocation taking place.		
Infestation of Alien Plant Species	*Status*	Negative	High (3)	Mitigation • Site surveys must be conducted by a qualified botanist or Environmental Control Officer (ECO)/onsite Environmental Officer EO to detect new infestations of alien invasive species every four months. Any Category 1a and 1b species must be removed within three months of detection. Compliance will be confirmed in quarterly monitoring reports. This ensures infestations are contained before spreading and will continue for the full duration of construction and operation. • All topsoil and construction material stockpiles must be monitored quarterly for alien invasive plant species (AIP) colonisation. Any invasive plants found must be removed within one month of detection. • Rehabilitated areas are prone to infestation by alien invasive plant species. These areas must be checked regularly for the presence of alien invasive plant species and mitigation measures implemented to prevent their spread. • The ECO (with input from a botanist if needed) must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present. • Inspect all construction vehicles, machinery, and equipment for soil, plant material, and seeds prior to entering the site. Any equipment brought onto site must be clean to ensure no transfer or introduction of seeds.	Low (4)	High
	Spatial Extent	Local				
	Duration	Long Term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Replaceable				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• The Alien Invasive Management Plan that forms part of the EMPr must be implemented at the start of the construction phase.		
Loss of Faunal Habitat	*Status*	Negative	Moderate (3)	**Mitigation** • Where feasible, the development must align road networks and powerline corridors in the same servitudes to minimise the loss of faunal habitat. • All construction and construction related activities (including parking of vehicles and machinery) must remain within the approved project footprint. **Rehabilitation** • Microhabitats (e.g. rock stacks and logs) in the project area that are cleared must be relocated to the same habitat immediately adjacent to the removal site. e.g. Rock stacks should be restacked when moved to the new location. • Temporary infrastructure (laydown areas, widened roads, etc.) must be rehabilitated and habitat must be provided for faunal species by placing logs and rocks at strategic sites to provide shelter for small mammals and reptiles.	Low (4)	High
	Spatial Extent	Site Specific				
	Duration	Permanent				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Low Reversibility				
	Irreplaceability	Moderate				
Loss of Faunal SCC: Disturbance or mortality of the Tent Tortoise (*Psammobates tentorius)*	*Status*	Negative	Moderate (3)	**Avoidance** • The day prior to an area being cleared, the Environmental Site Officer (ESO) employed by the Contractor must carry out a walk-though over the area accompanied by the Environmental Control Officer (ECO) looking for tortoises. • Any tortoises encountered in the construction footprint must be relocated to areas of intact habitat, within the project area, but outside of the development footprint. Tortoises must be released the same day they are captured (within 4 hours of being caught) and may not be kept overnight. It is recommended that they are transported in **well-ventilated boxes** that have a substrate on the base to prevent them from sliding around and being injured during transport. **Mitigation**	Low (4)	High
	Spatial Extent	Site Specific				
	Duration	Short Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Construction staff must undergo environmental induction training highlighting the identification and conservation status of the Tent Tortoise. Induction training must educate staff that no handling, collection, or killing of tortoises by construction personnel will be permitted. Any individuals encountered must be reported to the ECO for relocation. • Speed limits (≤ 40 km/h) will be enforced on all access and internal roads to reduce the risk of vehicle collisions with tortoises and other slow-moving fauna. • All holes must be covered with fine mesh or cover board the same day they are opened and sand placed around edge of mesh or board to prevent animals crawling under and into hole or trench. All open holes or trenches must be checked daily for individuals that may have fallen in. These individuals must be relocated to adjacent suitable habitat within the PAOI. • A faunal management plan must be compiled and implemented prior to construction and must include species-specific methodologies and protocols for all fauna likely to be affected, including tortoise.		
Loss of SCC: Southern Mountain Reedbuck (*Redunca fulvorufula fulvorufula*), Grey Rhebok (*Pelea capreolus*), Black-footed Cat (*Felis nigripes*), African Striped Weasel (*Poecilogale albinucha*).	*Status*	Negative	Moderate (3)	**Mitigation measures** • Construction activities should be restricted to daylight hours. No construction should take place after sunset or before sunrise. • Construction staff must undergo environmental induction training highlighting the identification and CI of faunal SCC. Induction training must educate staff that no handling, collection, or killing of faunal SCC by construction personnel will be permitted. Any faunal SCC individuals encountered must be reported to the ECO for relocation. • No hunting, snaring, or persecution of fauna by construction personnel will be tolerated; strict penalties and immediate dismissal to be enforced in line with a “zero tolerance” policy.	Low (4)	High
	Spatial Extent	Site Specific				
	Duration	Short Term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				This must be included in induction training and a clause included in the Contractor's contract. • No wild animals must be imported into, exported from or transported in or through the province. • No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or any item manufactured from the carcass unless they have been appointed to undertake a bird carcass survey or to translocate faunal species. • Should any fauna SCC be encountered during construction and operation, these must be recorded (i.e. be photographed, GPS co-ordinates taken), placed on iNaturalist, and either relocated or allowed to move out of harm's way before recommencing with construction activities. • The ECO must create a list with accompanying photographs of possible faunal SCC that could occur in the project area prior to construction. This photo guide must be used to determine if faunal SCC are encountered. • A faunal management plan must be compiled and implemented prior to construction and provide details of how to move species that are encountered or what to do if faunal species are injured.		
Disturbance to faunal species and their livelihood due to construction related activities.	*Status*	Negative	Low (4)	**Mitigation measures** • Dust suppression measures must be implemented in the dry and/or windy months. • Construction activities should be restricted to daylight hours. No construction should take place after sunset or before sunrise. • All machinery, vehicles and earth moving equipment must be maintained and the noise these create must meet industry minimum standards. e.g. the sound generated by a machine must be below a certain decibel as prescribed in the relevant noise control regulations. • Runoff must be prevented from entering aquatic systems and causing siltation and pollution of this faunal habitat. • No construction night lighting must be allowed. If required,	Low (4)	High
	Spatial Extent	Local				
	Duration	Short Term				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				lighting in open space areas must be minimised within the development footprint. Any external lights must be down lights placed as low as possible to the ground. Low UV emitting lights must be used. • Steep sided drains, gutters, canals and open pits/trenches must be covered with mesh (5mm x 5mm) or sloped to prevent fauna falling in and getting stuck. • All open holes and trenches must be checked every morning for fauna that may have fallen in. This must be done the same day the holes are opened up. All open holes must be checked daily by the ECO. • No unnecessary structures that would act as pitfall traps for animals must be constructed.		
Increased mortality of faunal species due to earthworks, roadkill and persecution.	*Status*	Negative	Moderate (3)	**Mitigation** • Speed limits (e.g., ≤ 40 km/h) must be enforced on all access and internal roads to minimise the risk of road collisions. Road signage must be installed at regular intervals along access routes to indicate the speed limit and alert drivers to the possible presence of fauna, including tortoises and other small animals. Night driving (sunset to sunrise) must be avoided where feasible as this is when the highest mortalities of species occur. Furthermore, construction activities should be restricted to daylight hours. No construction should take place after sunset or before sunrise. • Mortality on roads must be monitored and reported (carcasses of the Tent Tortoise must be collected and frozen and circumstances of roadkill investigated) and sent to SANBI Kirstenbosch Research Centre. All roadkill incidents must be recorded in an environmental incident log. If more than three medium-to-large vertebrate fatalities occur per month, or if any SCC is affected, the ECO must investigate the cause and implement adaptive management measures (e.g., reduced speed limits, additional signage, temporary road closures during peak activity periods). • Workers must be prohibited from intentionally harming or killing any fauna, including snakes; awareness and regular toolbox talks will highlight the ecological value and legal protection of	Low (4)	High
	Spatial Extent	Local				
	Duration	Short Term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				these species. • A clause relating to fines, possible dismissal and legal prosecution must be included in all contracts for ALL personnel (i.e. including contractors) working on the project should any speeding or persecution of animals occur. • Lighting controls must be applied to minimise disturbance to nocturnal SCC (e.g., Black-footed Cat, African Striped Weasel), using downward-facing, motion-sensitive, and low-lux lighting placed as close to the ground as possible. • Awareness and induction training for all staff and contractors will include identification of SCC, legal protection status, and protocols for reporting sightings to the ECO. • No hunting, snaring, or persecution of fauna by construction personnel will be tolerated; strict penalties and immediate dismissal to be enforced in line with a “zero tolerance” policy. This must be included in induction training and a clause included in the Contractor’s contract. • No wild animals must be imported into, exported from or transported in or through the province. • No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or any item manufactured from the carcass unless they have been appointed to undertake a bat or bird carcass survey or to translocate faunal species.		
OPERATIONAL PHASE						
Infestation of Alien Plant Species	*Status*	Negative	*Moderate (3)*	**Mitigation** • Site surveys must be conducted by a qualified botanist or ECO/onsite EO to detect new infestations of alien invasive species every four months. Any Category 1a and 1b species must be removed within three months of detection. Compliance will be confirmed in quarterly monitoring reports. This ensures infestations are contained before spreading and will continue for the full duration of operation. • All topsoil and construction material stockpiles must be monitored quarterly for alien invasive plant colonisation. Any invasive plants found must be removed within one month of detection.	*Low (4)*	High
	Spatial Extent	Site Specific				
	Duration	Long Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High Reversibility				
	Irreplaceability	Low				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Rehabilitated areas are prone to infestation by alien invasive plant species. These areas must be checked regularly for the presence of alien invasive plant species and mitigation measures implemented to prevent their spread. • The ECO (with input from a botanist if needed) must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present. • Inspect all vehicles, machinery, and equipment for soil, plant material, and seeds prior to entering the site. Any equipment brought onto site must be clean to ensure no transfer or introduction of seeds. • The Alien Invasive Management Plan that forms part of the EMPr must be implemented from the start of the construction phase.		
Increased mortality of faunal species due to operational maintenance	*Status*	Negative	*Moderate (3)*	**Mitigation** • Speed limits (e.g., ≤ 40 km/h) must be enforced on all access and internal roads to minimise the risk of road collisions. • Night driving (sunset to sunrise) must be avoided where feasible as this is when the highest mortalities of faunal species occur. • Mortality on roads must be monitored and reported (carcasses of the Tent Tortoise must be collected and frozen and circumstances of roadkill investigated). All roadkill incidents must be recorded in an environmental incident log. If more than three medium-to-large vertebrate fatalities occur per month, or if any SCC is affected, the ECO must investigate the cause and implement adaptive management measures (e.g., reduced speed limits, additional signage, temporary road closures during peak activity periods). • Workers must be prohibited from intentionally harming or killing any fauna, including snakes; awareness and toolbox talks will highlight the ecological value and legal protection of these species. • A clause relating to fines, possible dismissal and legal	*Very Low (5)*	High
	Spatial Extent	Site Specific				
	Duration	Long Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				prosecution must be included in all contracts for ALL personnel (i.e. including contractors) working on the project should any speeding or persecution of animals occur. • Lighting controls must be applied to minimise disturbance to nocturnal SCC (e.g., Black-footed Cat, African Striped Weasel), using downward-facing, motion-sensitive, and low-lux lighting placed as close to the ground as possible. • Awareness and induction training for all staff and contractors will include identification of SCC, legal protection status, and protocols for reporting sightings to the ECO. • No hunting, snaring, or persecution of fauna by operational personnel will be tolerated; strict penalties and immediate dismissal to be enforced in line with a “zero tolerance” policy. This must be included in induction training and a clause included in the Contractor’s contract. • No wild animals must be imported into, exported from or transported in or through the province. • No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or any item manufactured from the carcass unless they have been appointed to undertake a bat or bird carcass survey or to translocate faunal species.		
DECOMMISSIONING PHASE						
Loss of Vegetation Communities	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	Negative Site Specific Medium Term Moderate Likely Moderate Moderate	*Low (4)*	**Avoid** The layout has undergone several iterations to ensure that the placement of infrastructure is outside of sensitive areas. **Mitigate** The permanent loss of vegetation is difficult to mitigate; however, the following measures will help reduce indirect impacts: • All vehicles and machinery must remain strictly within the demarcated project footprint and access routes. Compliance will be monitored through weekly site inspections, with the expectation of zero recorded incidents of vehicles entering designated “no-go” areas. This requirement is achievable through the use of visible signage, fencing, and mandatory contractor induction sessions. By ensuring adherence,	*Low (4)*	High

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				unnecessary vegetation loss and fragmentation outside the approved footprint will be prevented. The measure will be in place from site handover and must be maintained until the completion of decommissioning. • The indigenous seedbank must be preserved by preserving the topsoil. As such, the upper 30 cm of topsoil, where present, must be stripped from all areas to be disturbed and stockpiled in designated low (preferable)- or medium-sensitivity areas. Stockpiles must not exceed 2 m in height and must be stored for as short a period as possible. Topsoil must be used for rehabilitation of areas impacted by activities in the prior phases. • Temporary infrastructure, including laydown areas, camps, and batching plants, must be located within already disturbed or degraded sites (i.e. areas of low or medium sensitivity) wherever feasible. This infrastructure must not be sited in areas of high sensitivity. • Existing access roads must be utilised where feasible to reduce habitat fragmentation. • To ensure that these vegetation types are not negatively impacted through accidental wildfires, employees must be prohibited from making open fires during the construction phase. Compliance must be measured by ensuring zero recorded incidents of open fires by staff, with monitoring conducted on a monthly basis. This can be re-enforced through induction training, clear signage around the site, and regular toolbox talks. • Alien invasive plant species must be removed from the project area in line with the alien invasive management plan that forms part of this application. The project area should be clear of category 1 and category 2 species three years from completion of operations. **Rehabilitate** • Areas disturbed during construction but no longer required for the operational phase must be rehabilitated back to their natural state. It is recommended that the natural state is representative of 70% of the original species composition characteristic of the		

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				project area and that this is achieved within ten years of implementing the rehabilitation plan. • Only species indigenous to the project area (i.e. locally indigenous species) must be used for rehabilitation. No exotic plant species are permitted to be planted or utilised for landscape or rehabilitation. • The revegetation and rehabilitation plan drafted as part of the EMPr, must be implemented.		
Infestation of Alien Plant Species	*Status*	Negative	*Moderate (3)*	**Mitigation** • Site surveys must be conducted by a qualified botanist or ECO/onsite EO to detect new infestations of alien invasive species every four months. Any Category 1a and 1b species must be removed within three months of detection. Compliance will be confirmed in quarterly monitoring reports. This ensures infestations are contained before spreading and will continue for the full duration of construction and operation. • All topsoil and construction material stockpiles must be monitored quarterly for AIP colonisation. Any invasive plants found must be removed within one month of detection. • Rehabilitated areas are prone to infestation by alien invasive plant species. These areas must be checked regularly for the presence of alien invasive plant species and mitigation measures implemented to prevent their spread. • The ECO (with input from a botanist if needed) must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present. • Inspect all construction vehicles, machinery, and equipment for soil, plant material, and seeds prior to entering the site. Any equipment brought onto site must be clean to ensure no transfer or introduction of seeds. • The Alien Invasive Management Plan that forms part of the EMPr must be implemented from the start of the construction phase.	*Low (4)*	High
	Spatial Extent	Site Specific				
	Duration	Long Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High Reversibility				
	Irreplaceability	Low				
Disturbance to faunal species and their livelihood	Status	Negative	*Low (4)*	**Mitigation**	*Very Low (5)*	High
	Spatial Extent	Site Specific				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
due to decommissioning related activities.	Duration	Medium Term		• Speed limits (e.g., ≤ 40 km/h) must be enforced on all access and internal roads to minimise the risk of road collisions. Road signage must be installed at regular intervals along access routes to indicate the speed limit and alert drivers to the possible presence of fauna, including tortoises and other small animals. Night driving (sunset to sunrise) must be avoided where feasible as this is when the highest mortalities of species occur. Furthermore, Activities should be restricted to daylight hours. No decommissioning should take place after sunset or before sunrise. • Mortality on roads must be monitored and reported (carcasses of the Tent Tortoise must be collected and frozen and circumstances of roadkill investigated) and sent to SANBI Kirstenbosch Research Centre. All roadkill incidents must be recorded in an environmental incident log. If more than three medium-to-large vertebrate fatalities occur per month, or if any SCC is affected, the ECO must investigate the cause and implement adaptive management measures (e.g., reduced speed limits, additional signage, temporary road closures during peak activity periods). • Workers must be prohibited from intentionally harming or killing any fauna, including snakes; awareness and regular toolbox talks will highlight the ecological value and legal protection of these species. • A clause relating to fines, possible dismissal and legal prosecution must be included in all contracts for ALL personnel (i.e. including contractors) working on the project should any speeding or persecution of animals occur. • Lighting controls must be applied to minimise disturbance to nocturnal SCC (e.g., Black-footed Cat, African Striped Weasel), using downward-facing, motion-sensitive, and low-lux lighting placed as close to the ground as possible.		
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Moderate Reversibility				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Awareness and induction training for all staff and contractors will include identification of SCC, legal protection status, and protocols for reporting sightings to the ECO. • No hunting, snaring, or persecution of fauna by construction personnel will be tolerated; strict penalties and immediate dismissal to be enforced in line with a "zero tolerance" policy. This must be included in induction training and a clause included in the Contractor's contract. • No wild animals must be imported into, exported from or transported in or through the province.No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or any item manufactured from the carcass unless they have been appointed to undertake a bat or bird carcass survey or to translocate faunal species.		
Increased mortality of faunal species due to earthworks, roadkill and persecution	Status	Negative	*Low (4)*	**Mitigation** • Where feasible, the decommissioning must align road networks and powerline corridors in the same servitudes to minimise the loss of faunal habitat. • All decommissioning related activities (including parking of vehicles and machinery) must remain within the approved project footprint. **Rehabilitation** • Microhabitats (e.g. rock stacks and logs) in the project area that are cleared must be relocated to the same habitat immediately adjacent to the removal site. E.g. Rock stacks should be restacked when moved to the new location. • Temporary infrastructure (laydown areas, widened roads, etc.) must be rehabilitated and habitat must be provided for faunal species by placing logs and rocks at strategic sites to provide shelter for small mammals and reptiles.	*Very Low (5)*	*High*
	Spatial Extent	Site specific				
	Duration	Medium Term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Cumulative impacts arise when the effects of a project interact with those of other existing or proposed developments within the broader landscape, leading to an incremental and often compounded impact on biodiversity. For renewable energy facilities, this may include the progressive loss and fragmentation of natural habitat, increased disturbance to fauna through traffic, noise, and lighting, and greater pressures on threatened or endemic species that may already be experiencing population declines.

The assessment of cumulative impacts is essential to understand the broader ecological consequences of multiple projects occurring within the same region. However, these assessments present several challenges (all which are listed in the detailed assessment, Appendix F.2 of this BA Report). These limitations mean that cumulative impact assessments may either overestimate or underestimate cumulative risks, particularly for species of conservation concern, habitat fragmentation and the loss of faunal habitat and plant communities. Despite these challenges, the assessment assesses cumulative impacts within the geographic boundary of a 30 km radius of the project area.

The table below includes an assessment of the potential cumulative impacts identified for the proposed project for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Loss of Eastern Upper Karoo, Upper Karoo Hardeveld and Southern Karoo Riviere	*Status*	Negative	*Low (4)*	**Avoid** The layout has undergone several iterations to ensure that the placement of infrastructure is outside of sensitive areas. **Mitigate** The permanent loss of vegetation is difficult to mitigate; however, the following measures will help reduce indirect impacts: • All construction, decommissioning and operations vehicles and machinery must remain strictly within the demarcated project footprint and access routes. Compliance will be monitored through weekly site inspections, with the expectation of zero recorded incidents of vehicles entering designated “no-go” areas. This requirement is achievable using visible signage, fencing, and mandatory contractor induction sessions. By ensuring adherence, unnecessary vegetation loss and fragmentation outside the approved footprint will be prevented.	*Low (4)*	High
	Spatial Extent	Site specific				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Low				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				The measure will be in place from site handover and must be maintained until the completion of construction. • The indigenous seedbank must be preserved by preserving the topsoil. As such, the upper 30 cm of topsoil, where present, must be stripped from all areas to be disturbed and stockpiled in designated low (preferable)- or medium-sensitivity areas. Stockpiles must not exceed 2 m in height and must be stored for as short a period as possible. Topsoil must be used for rehabilitation of areas impacted by activities undertaken in the prior phase and no longer required during the subsequent phase. • Temporary infrastructure, including laydown areas, camps, and batching plants, must be located within already disturbed or degraded sites (i.e. areas of low or medium sensitivity) wherever feasible. This infrastructure must not be sited in areas of high sensitivity. • Existing access roads must be utilised where feasible to reduce habitat fragmentation. • To ensure that these vegetation types are not negatively impacted through accidental wildfires, employees must be prohibited from making open fires during the construction phase. Compliance must be measured by ensuring zero recorded incidents of open fires by staff, with monitoring conducted monthly. This can be re-enforced through induction training, clear signage around the site, and regular toolbox talks. • Alien invasive plant species must be removed from the project area in line with the alien invasive management plan that forms part of this application. The project area should be clear of category 1 and category 2 species three years from completion of construction. **Rehabilitate** • Areas disturbed during construction but no longer required for the operational phase must be rehabilitated back to their natural state. It is recommended that the natural state is representative of 70% of the original species composition characteristic of the		

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				project area and that this is achieved within ten years of implementing the rehabilitation plan. • Only species indigenous to the project area (i.e. locally indigenous species) must be used for rehabilitation. No exotic plant species are permitted to be planted or utilised for landscape or rehabilitation. The revegetation and rehabilitation plan drafted as part of the EMPr, must be implemented.		
Disruption of Ecosystem Function and Process	*Status*	Negative	*Moderate (3)*	**Avoidance** Project infrastructure has been designed to avoid areas of high sensitivity. Other than road and powerline crossings, all other infrastructure has been located in areas of medium and low sensitivity. **Mitigation** In addition to the mitigation measures listed under impact 1, the following should be implemented: • Natural corridors along drainage lines and slope crests must be maintained between large intact patches of habitat to facilitate habitat connectivity. • All temporary access tracks, laydown areas, and disturbed areas not required for long-term operations must be rehabilitated within six months of construction completion in that section. • Where feasible, all access roads must follow pre-existing roads and farm tracks or previously disturbed alignments wherever possible.	*Low (4)*	High
	Spatial Extent	Local				
	Duration	Permanent				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
Disruption of management objectives of CBAs and ESAs	*Status*	Negative	Low (4)	**Avoid** The layout has undergone several iterations to ensure that the placement of infrastructure is outside of sensitive areas. **Mitigate** The permanent loss of vegetation is difficult to mitigate; however, the following measures will help reduce indirect impacts:	Low (4)	High
	Spatial Extent	Site Specific				
	Duration	Permanent				
	Consequence	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Probability	Very Likely		• All construction, decommissioning and operations vehicles and machinery must remain strictly within the demarcated project footprint and access routes. Compliance will be monitored through weekly site inspections, with the expectation of zero recorded incidents of vehicles entering designated "no-go" areas. This requirement is achievable through the use of visible signage, fencing, and mandatory contractor induction sessions. By ensuring adherence, unnecessary vegetation loss and fragmentation outside the approved footprint will be prevented. The measure will be in place from site handover and must be maintained until the completion of construction. • The indigenous seedbank must be preserved by preserving the topsoil. As such, the upper 30 cm of topsoil, where present, must be stripped from all areas to be disturbed and stockpiled in designated low (preferable)- or medium-sensitivity areas. Stockpiles must not exceed 2 m in height and must be stored for as short a period as possible. Topsoil must be used for rehabilitation of areas impacted by construction activities and no longer required during operational phase. • Temporary infrastructure, including laydown areas, camps, and batching plants, must be located within already disturbed or degraded sites (i.e. areas of low or medium sensitivity) wherever feasible. This infrastructure must not be sited in areas of high sensitivity. • Existing access roads must be utilised where feasible to reduce habitat fragmentation. • To ensure that these vegetation types are not negatively impacted through accidental wildfires, employees must be prohibited from making open fires during the construction phase. Compliance must be measured by ensuring zero recorded incidents of open fires by staff, with monitoring conducted on a monthly basis. This can be re-enforced through induction training, clear signage around the site, and regular toolbox talks. • Alien invasive plant species must be removed from the project area in line with the alien invasive management plan included in the EMPr. The project area should be clear of category 1 and		
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				category 2 species three years from completion of construction. • Implement all mitigation measures outlined in the aquatic impact assessment report. **Rehabilitate** • Areas disturbed during construction but no longer required for the operational phase must be rehabilitated back to their natural state. It is recommended that the natural state is representative of 70% of the original species composition characteristic of the project area and that this is achieved within ten years of implementing the rehabilitation plan. • Only species indigenous to the project area (i.e. locally indigenous species) must be used for rehabilitation. No exotic plant species are permitted to be planted or utilised for landscape or rehabilitation. • The revegetation and rehabilitation recommendations included in the EMPr for this project, must be implemented		
Loss of Plant Species of Conservation Concern	*Status*	*Negative*	Very Low (5)	All mitigation measures listed under impact 1 above must be implemented in addition to the following: **Mitigation** • An ecological walk-through of the development footprint must be undertaken prior to construction to identify SCC and protected species that can be translocated. Furthermore, the ecological walkthrough must identify species requiring permits for their destruction and/or removal. • Plant permits for the removal and/or destruction of protected plant species must be obtained prior to clearing activities commencing. • The in situ search and rescue plan developed as part of the EMPr must be implemented for protected succulents and geophytes that will be impacted by the construction of the project. This plan must be implemented prior to clearing commencing. • Plant translocation to adjacent suitable habitat may only be done for species that are not range restricted and for	Very Low (5)	High
	Spatial Extent	*Site Specific*				
	Duration	*Medium Term*				
	Consequence	*Slight*				
	Probability	*Very Unlikely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				populations that have not been quantified as regionally significant. In such cases that this is not feasible, any requirement for translocation must be discussed with the relative authorities prior to translocation taking place.		
Infestation of Alien Plant Species	*Status*	Negative	High (2)	Mitigation • Site surveys must be conducted by a qualified botanist or ECO/onsite EO to detect new infestations of alien invasive species every four months. Any Category 1a and Category 1b species must be removed within three months of detection. Compliance will be confirmed in quarterly monitoring reports. This ensures infestations are contained before spreading and will continue for the full duration of construction and operation. • All topsoil and material stockpiles must be monitored quarterly for AIP colonisation. Any invasive plants found must be removed within one month of detection. • Rehabilitated areas are prone to infestation by alien invasive plant species. These areas must be checked regularly for the presence of alien invasive plant species and mitigation measures implemented to prevent their spread. • The ECO (with input from a botanist if needed) must create a list with accompanying photographs of possible alien invasive species that could occur on site prior to construction. This photo guide must be used to determine if any alien invasive species are present. • Inspect all construction, decommissioning and operations vehicles, machinery, and equipment for soil, plant material, and seeds prior to entering the site. Any equipment brought onto site must be clean to ensure no transfer or introduction of seeds. • The Alien Invasive Management Plan that forms part of the EMPr must be implemented at the start of the construction phase.	Low (4)	High
	Spatial Extent	Local				
	Duration	Long Term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Replaceable				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Disturbance to faunal species and their livelihood due to construction related activities.	*Status*	Negative	Moderate (3)	**Avoidance** • The day prior to an area being cleared, the Environmental Site Officer (ESO) employed by the Contractor must carry out a walk-though over the area accompanied by the Environmental Control Officer (ECO) looking for tortoises. • Any tortoises encountered in the footprint must be relocated to areas of intact habitat, within the project area, but outside of the development footprint. Tortoises must be released the same day they are captured (within 4 hours of being caught) and may not be kept overnight. It is recommended that they are transported in well-ventilated boxes that have a substrate on the base to prevent them from sliding around and being injured during transport. **Mitigation** • Staff must undergo environmental induction training highlighting the identification and conservation status of the Tent Tortoise and CI of faunal SCC. Induction training must educate staff that no handling, collection, or killing of faunal SCC by personnel will be permitted. Induction training must educate staff that no handling, collection, or killing of tortoises by construction personnel will be permitted. Any individuals encountered must be reported to the ECO for relocation. • All holes must be covered with fine mesh or cover board the same day they are opened and sand placed around edge of mesh or board to prevent animals crawling under and into hole or trench. All open holes or trenches must be checked daily for individuals that may have fallen in. These individuals must be relocated to adjacent suitable habitat within the PAOI. • A faunal management plan must be developed prior to construction and must include species-specific methodologies and protocols for all fauna likely to be affected, including tortoise. • Activities should be restricted to daylight hours. No construction, decommissioning or operations activities should	Low (4)	High
	Spatial Extent	Local				
	Duration	Short Term				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Irreplaceability	Moderate		take place after sunset or before sunrise. • Dust suppression measures must be implemented in the dry and/or windy months. • The ECO must create a list with accompanying photographs of possible faunal SCC that could occur in the project area prior to construction. This photo guide must be used to determine if faunal SCC are encountered. • A faunal management plan must be development prior to construction and provide details of how to move species that are encountered or what to do if faunal species are injured. • All machinery, vehicles and earth moving equipment must be maintained and the noise these create must meet industry minimum standards. e.g. the sound generated by a machine must be below a certain decibel as prescribed in the relevant noise control regulations. • Runoff must be prevented from entering aquatic systems and causing siltation and pollution of this faunal habitat. • No night lighting must be allowed. If required, lighting in open space areas must be minimised within the development footprint. Any external lights must be down lights placed as low as possible to the ground. Low UV emitting lights must be used. • Steep sided drains, gutters, canals and open pits/trenches must be covered with mesh (5mm x 5mm) or sloped to prevent fauna falling in and getting stuck. • No unnecessary structures that would act as pitfall traps for animals must be constructed. • Speed limits (e.g., ≤ 40 km/h) must be enforced on all access and internal roads to minimise the risk of road collisions. Road signage must be installed at regular intervals along access routes to indicate the speed limit and alert drivers to the possible presence of fauna, including tortoises and other small animals. Night driving (sunset to sunrise) must be avoided where feasible as this is when the highest mortalities of species occur. Furthermore, construction activities should be restricted to daylight hours. No construction should take place after sunset or before sunrise.		

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Mortality on roads must be monitored and reported (carcasses of the Tent Tortoise must be collected and frozen and circumstances of roadkill investigated) and sent to SANBI Kirstenbosch Research Centre. All roadkill incidents must be recorded in an environmental incident log. If more than three medium-to-large vertebrate fatalities occur per month, or if any SCC is affected, the ECO must investigate the cause and implement adaptive management measures (e.g., reduced speed limits, additional signage, temporary road closures during peak activity periods). • Workers must be prohibited from intentionally harming or killing any fauna, including snakes; awareness and regular toolbox talks will highlight the ecological value and legal protection of these species. • A clause relating to fines, possible dismissal and legal prosecution must be included in all contracts for ALL personnel (i.e. including contractors) working on the project should any speeding or persecution of animals occur. • Lighting controls must be applied to minimise disturbance to nocturnal SCC (e.g., Black-footed Cat, African Striped Weasel), using downward-facing, motion-sensitive, and low-lux lighting placed as close to the ground as possible. • Awareness and induction training for all staff and contractors will include identification of SCC, legal protection status, and protocols for reporting sightings to the ECO. • No hunting, snaring, or persecution of fauna by construction personnel will be tolerated; strict penalties and immediate dismissal to be enforced in line with a “zero tolerance” policy. This must be included in induction training and a clause included in the Contractor’s contract. • No wild animals must be imported into, exported from or transported in or through the province. • No wild animals will be sold, bought, donated and no person associated with the development will be in possession of any live wild animal, carcass or any item manufactured from the carcass unless they have been appointed to undertake a bat or bird carcass survey or to translocate faunal species.		

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Loss of fauna and fauna SCC.	Status	Negative	*Moderate (3)*	The mitigation measures stipulated for the impact above apply.	Low (4)	High
	Spatial Extent	Local				
	Duration	Long Term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
Loss of Faunal Habitat	Status	Negative	*Moderate (3)*	The mitigation measures stipulated for the 'Disturbance to faunal species and their livelihood due to construction related activities' impact above applies.	Low (4)	High
	Spatial Extent	Local				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Low				

J.2.5.5 Concluding Statement

The project layout has undergone several iterations between the initial survey and the submission of the Draft BA Report. Specialists, together with the Developer and EAP have assessed the project area to find a layout that will reduce the impact of the development through the application of the mitigation hierarchy (avoid, minimise and restore).

Where feasible, avoidance mitigation has been applied to project infrastructure that was positioned in CBAs and ESAs as well as within areas classified as high sensitivity. Furthermore, the residual impacts associated with the proposed development were determined to be low and very low. As such, it is the opinion of the specialists that the development can proceed, provided that the recommendations and mitigation measures outlined in this report are implemented.

J.2.6 Aquatic Biodiversity and Species

The Aquatic Biodiversity and Species Assessment for the proposed project was undertaken by Russell Tate of Tate Environmental Services (Pty) Ltd to inform the outcome of this BA from an aquatic biodiversity perspective. The complete Aquatic Biodiversity and Species Assessment is included in Appendix F.3 of this BA Report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Aquatic Biodiversity and Species Assessment. The information below is extracted from Tate (2025).

J.2.6.1 Approach and Methodology

This aquatic assessment complies with requirement set out in Section 2 of the Aquatic Biodiversity Protocol (GN 320) and Animal and Plant Species Protocol (GN 1150, as amended in GN 3717). A literature and desktop assessment was undertaken reviewing the following databases:

- Wetland Map 5 (NBA, 2018).
- National Freshwater Ecosystem Priority Areas (NFEPA, Nel *et al*., 2011).
- 2023 Western Cape Critical Biodiversity Area's Spatial dataset.

The assessment of the ecosystem services supplied by the identified wetland was conducted as per the guidelines as described in the WET-EcoServices manual (Kotze *et al*., 2020). A desktop assessment was completed prior to the survey where the following aspects related to domestic, agricultural, commercial and recreational activities were noted:

- Downstream water users
- Within wetland water users
- Within wetland and downstream effected communities.

Following the desktop assessment, the wetland areas were delineated in accordance with the DWAF (2005) guidelines. A single survey was completed for this study and was undertaken between the 8th to the 11th of January 2024. The proposed development site was enlarged by 500 m to delineate the screening area. This 500 m screening area was considered for the wetland and freshwater biodiversity assessment. In situ water quality was obtained at each site using a calibrated Extech DO-600 Multimeter. Fish were also captured, photographed and identified in the field using Skelton (2001) whereafter they were released at the point of capture. Fish were captured using a seine drag net. The identified fish species were compared to those expected to be present for the quaternary catchment and SQR. The expected fish species list was developed from a literature survey and included sources such as (Kleynhans *et al*., 2007) and Skelton (2001, Skelton, 2024). Only qualitative fish analysis took place.

Findings from the desktop assessment and field survey were interrogated to determine potential impacts and comment on wetland, riverine condition, and ecosystem services and sensitivity.

J.2.6.2 Relevant Project Aspects relating to Aquatic Biodiversity and Species Impacts

The following project related activities are relevant from an aquatic biodiversity perspective:

- Site access and clearing of vegetation for permanent structures, laydown yards and roads;
- Establishment of laydown yard/construction camps;
- Excavations and earthworks for infrastructure setting;
- Stockpiling and movement of soils and construction materials;
- Storage and use of chemicals, fuels and oils;
- Diversion and crossing of watercourses by roadways; and
- Stormwater management.

J.2.6.3 Potential Impacts

Due to the nature of the project layouts, the overall impacts are typically related to the construction and decommissioning phases of the project, i.e., when the soils are disturbed when the road networks and hard surface areas are developed.

Construction Phase:

- Water and aquatic habitat impacts stemming from site access and clearing of vegetation in working areas.
- Water and aquatic habitat impacts stemming from the establishment of laydown yards/construction camps.
- Water and aquatic habitat impacts stemming from the excavations and earthworks for the setting of PV Structures and stormwater controls.
- Water and aquatic habitat impacts stemming from the storage and use of chemicals, fuels and oils.
- Water and aquatic habitat impacts stemming from the alteration of surface drainage and hydrological processes.

Operational Phase:

- Water and aquatic habitat impacts stemming from the alteration of surface drainage and hydrological processes.
- Water and aquatic habitat impacts stemming from the storage and use of chemicals, fuels and oils.

Decommissioning Phase:

- Water and aquatic habitat impacts stemming from the storage and use of chemicals, fuels and oils.
- Water and aquatic habitat impacts stemming from the alteration of surface drainage and hydrological processes.
- Water and Aquatic Habitat Impacts stemming from the excavations and earthworks for the removal of structures
- Water and Aquatic Habitat Impacts stemming from the establishment of laydown yards/decommissioning camps
- Water and Aquatic Habitat Impacts stemming from clearing of vegetation in working areas

Cumulative Impacts:

- Water and Aquatic Habitat Impacts stemming from the alteration of surface drainage and hydrological processes.

J.2.6.4 Impact Assessment

The table below includes an assessment of the potential impacts identified for the proposed project for the construction, operational and decommissioning phases.

<table>
<tr><th>Impact</th><th colspan="2">Impact Criteria</th><th>Significance and Ranking (Pre-Mitigation)</th><th>Potential Mitigation Measures</th><th>Significance and Ranking (Post-Mitigation)</th><th>Confidence Level</th></tr>
<tr><td colspan="7">CONSTRUCTION PHASE</td></tr>
<tr><td>Water and Aquatic Habitat Impacts stemming from site access and clearing of vegetation in working areas: Altering chemical and physical conditions in local watercourses; decrease surface roughness in the watersheds resulting in sedimentation and erosion of downstream reaches as a resultant impact of increased surface flow velocity and substrate erodibility.</td><td>Status
Spatial Extent
Duration
Consequence
Probability
Reversibility
Irreplaceability</td><td>Negative
Local
Medium Term
Substantial
Likely
Moderate
Moderate</td><td>Moderate (3)</td><td>Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167).

• A pre-construction walk-through by an aquatic specialist is recommended so they can assist with the development of the SWMP and Aquatic Construction Rehabilitation and Monitoring Plan, coupled to micro-siting of the final layout.
• All alien plant re-growth, which is currently low within the greater region must be monitored and should it occur, these plants must be eradicated within the project footprints and especially in areas near the proposed crossings.
• Should culverts be utilised, watercourses are recommended to be crossed by multiple culverts spread across the watercourse as opposed a single culvert, this is recommended to ensure the spread flows across the systems and the maintenance of alluvial deposition in riparian habitats.
• Should culverts not be utilised due to the design requirements of the project, it is recommended that reinforced drift structures are utilised with erosion control measures.
• All contractors and staff are to be familiarised with the method statement and have undergone an induction / training on the location of sensitive No-Go areas and basic environmental awareness using the mitigation provided in this report.</td><td>Low (4)</td><td>Medium</td></tr>
</table>

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level

				• Areas where construction is to take place must be clearly demarcated. Any areas not demarcated must be avoided.
				• Stormwater generated from roadways must be captured and buffered, where flow velocities are to be significantly reduced before discharge into the environment.
				• Stormwater verges as well as other denuded areas must be grassed (re-vegetated) with local indigenous grasses to protect against erosion.
				• Any materials excavated must not be deposited in the wetlands or areas where it is prone to being washed downstream or impeding natural flow.
				• Disturbed areas must be re-vegetated after completion of the phase - a three-month timeframe for the initiation of this action;
				  o Ripping of the soils should occur in two directions; and
				  o Removed vegetation and topsoil can be harvested and applied here.
				• Drainage channels constructed for the access roads must be constructed so as not to result in erosion.
				• An alien vegetation removal and management plan must be implemented along the verges of the roads and crossing points.
				• General storm-water management practices should be included in the design phase and implemented during the construction phase of this project.
				• Following the completion of the phase, all construction materials and debris should be removed and disposed of in a suitable area. An inspection should be completed within 4 weeks of phase completion.		

	Status	Negative	*Moderate (3)*		*Low (4)*	Medium

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Water and Aquatic Habitat Impacts stemming from the establishment of laydown yards/construction camps	*Spatial Extent*	Local		Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • Any materials excavated must not be deposited in the wetlands or areas where it is prone to being washed downstream or impeding natural flow. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100 m of a watercourse. • All construction camps, laydown areas, wash bays, batching plants or areas and any stores should be more than 50 m from any demarcated water courses. • Littering and contamination associated with construction activity must be avoided through effective construction camp management.		
	Duration	Medium Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Water and Aquatic Habitat Impacts stemming from the excavations and earthworks for the setting of PV Structures and stormwater controls	*Status*	Negative	*High (2)*	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167)
				• Any materials excavated must not be deposited in the wetlands or areas where it is prone to being washed downstream or impeding natural flow.
				• Disturbed areas must be re-vegetated after completion of the phase- A three-month timeframe for the initiation of this action;
				  ○ Ripping of the soils should occur in two directions; and
				  ○ Removed vegetation and topsoil can be harvested and applied here.
				• Drainage channels constructed for the access roads must be constructed so as not to result in erosion.
					Low (4)	Medium

	Spatial Extent	Local				
	Duration	Medium Term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

<table>
<tr><th>Impact</th><th colspan="2">Impact Criteria</th><th>Significance and Ranking (Pre-Mitigation)</th><th>Potential Mitigation Measures</th><th>Significance and Ranking (Post-Mitigation)</th><th>Confidence Level</th></tr>
<tr><td></td><td></td><td></td><td></td><td>An alien vegetation removal and management plan must be implemented along the verges of the roads and crossing points.
A pre-construction walkthrough by an aquatic specialist is recommended so they can assist with the development of the SWMP and Aquatic Construction Rehabilitation and Monitoring Plan, coupled to micro-siting of the final layout.
Suitable stormwater management systems must be installed along roads and other areas associated with the PV structures and monitored during the first few months of use. Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc).
Furthermore, the following applies to watercourse crossing upgrades associated with the proposed development:
All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised.
River levels, regardless of the current state of the river / water course will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown.
Where large cut and fill areas are required, these must be stabilised and rehabilitated during the construction process, to minimise erosion and sedimentation.
Monitoring
All alien plant re-growth, which is currently low within the greater region must be monitored and should it occur, these plants must be eradicated within the project footprints and especially in areas near the proposed crossings.</td><td></td><td></td></tr>
<tr><td rowspan="4">Water and Aquatic Habitat Impacts stemming from the storage and use of chemicals, fuels and oils:</td><td>Status</td><td>Negative</td><td rowspan="4">Moderate (3)</td><td rowspan="4">Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167).</td><td rowspan="4">Low (4)</td><td rowspan="4">Medium</td></tr>
<tr><td>Spatial Extent</td><td>Site specific</td></tr>
<tr><td>Duration</td><td>Medium Term</td></tr>
<tr><td>Consequence</td><td>Substantial</td></tr>
</table>

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
impacts on water quality as a result of spills and leaks	*Probability*	*Unlikely*		• All liquid chemicals including fuels and oil, including for the BESS, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100 m of a watercourse. • All construction camps, laydown areas, wash bays, batching plants or areas and any stores should be more than 50m from any demarcated water courses. • Littering and contamination associated with construction activity must be avoided through effective construction camp management. • A spill response kit must be available at all times. The incident must be reported on and if necessary, a wetland specialist must investigate the extent of the impact and provide rehabilitation recommendations. • Stockpiling or storage of materials and/or waste must be placed beyond the defined buffers in this report for each respective activity. • No vehicles shall enter watercourse buffer zones outside of construction footprints. • All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable. • Clean and dirty surface water separation and storm-water management plan must be put into place via standard best practice methods. • An effective storm-water management plan for the solar facility must be implemented.		
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				
	Spatial Extent	*Local*	*High (2)*		*Low (4)*	Medium

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level

Water and Aquatic Habitat Impacts stemming from the alteration of surface drainage and hydrological processes	*Duration*	Medium Term		Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167).
				• The implementation of the buffer zones provided in this report.
				• Clean and dirty surface water separation and storm-water management plan must be put into place via standard best practice methods.
				• An effective storm-water management plan for the solar facility must be implemented.
				• The revegetation of disturbed non active cleared areas must take place within 1 month of completing the construction phase.
				• Avoid the creation of concentrated discharge points from PV pad runoff; distribute flows evenly using level spreaders.
				• No water abstraction from ephemeral channels; all water must be sourced from authorised boreholes or municipal supply.
				• Implement an erosion-control seed mix using local Stipagrostis species to stabilise disturbed soils.
				• Fence crossings over drainage lines with raised spans to avoid blocking sediment transport.
				  ○ The above must be audited within 3 months of completing the phase.
				• No discharge of domestic water must occur if possible. Domestic water must be reused for dust suppression. Should domestic water be required to be discharge, the management of nitrogen concentrations is imperative.
				• A SWMP must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. Effective stormwater management must include effective stabilisation (gabions and reno mattresses) of exposed soil.
				  • Monitoring should occur monthly for 6 months post construction and where any unstable soils occur, these		

	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				must be protected with temporary stabilisation dependent on the scale of the impact i.e., sand bags - hay bales) until areas become revegetated. If any areas require permanent erosion protection (e.g., gabions or stone pitching) then this must be included in the WULA / GA application.		
OPERATIONAL PHASE						
Water and Aquatic Habitat Impacts stemming from the alteration of surface drainage and hydrological processes: Creation of hard surfaces resulting in runoff, erosion and sedimentation	*Status*	Negative	*High (2)*	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • The implementation of the buffer zones provided in this report. • Clean and dirty surface water separation and storm-water management plan must be put into place via standard best practice methods. • An effective storm-water management plan for the solar facility must be implemented. • The revegetation of disturbed non active cleared areas must take place within 1 month of completing the construction phase. • Avoid the creation of concentrated discharge points from PV pad runoff; distribute flows evenly using level spreaders. • No water abstraction from ephemeral channels; all water must be sourced from authorised boreholes or municipal supply. • Implement an erosion-control seed mix using local Stipagrostis species to stabilise disturbed soils. • Fence crossings over drainage lines with raised spans to avoid blocking sediment transport. ○ The above must be audited within 3 months of completing the phase. • No discharge of domestic water must occur if possible. Domestic water must be reused for dust suppression. Should domestic water be required to be discharge, the management of nitrogen concentrations is imperative.	*Low (4)*	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• A SWMP must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. Effective stormwater management must include effective stabilisation (gabions and reno mattresses) of exposed soil. • Monitoring should occur monthly for 6 months post construction and where any unstable soils occur, these must be protected with temporary stabilisation dependent on the scale of the impact i.e., sand bags - hay bales) until areas become revegetated. If any areas require permanent erosion protection (e.g., gabions or stone pitching) then this must be included in the WULA / GA application.		
Water and Aquatic Habitat Impacts stemming from the storage and use of chemicals, fuels and oils: impacts on water quality as a result of splills and leaks	*Status*	Negative	Moderate (3)	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • All liquid chemicals including fuels and oil, including for the BESS, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100 m of a watercourse. • All wash bays, batching plants or areas and any stores should be more than 50m from any demarcated water courses. • Littering and contamination must be avoided through effective construction camp management. • A spill response kit must be available at all times. The incident must be reported on and if necessary a wetland specialist must investigate the extent of the impact and provide rehabilitation recommendations.	Low (4)	Medium
	Spatial Extent	Local				
	Duration	Long Term				
	Consequence	Substantial				
	Probability	Unlikely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Stockpiling or storage of materials and/or waste must be placed beyond the defined buffers in this report for each respective activity. • No vehicles shall enter watercourse buffer zones outside of construction footprints. • All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable. • Clean and dirty surface water separation and storm-water management plan must be put into place via standard best practice methods. • An effective storm-water management plan for the solar facility must be implemented.		
DECOMMISSIONING PHASE						
Water and Aquatic Habitat Impacts stemming from the alteration of surface drainage and hydrological processes: Creation of hard surfaces resulting in runoff, erosion and sedimentation as a result of decommissioning activities	*Status*	Negative	*High (2)*	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • The implementation of the buffer zones provided in this report. • Clean and dirty surface water separation and storm-water management plan must be put into place via standard best practice methods. • An effective storm-water management plan for the solar facility must be implemented. • The revegetation of disturbed non active cleared areas must take place within 1 month of completing the construction phase. • Avoid the creation of concentrated discharge points from PV pad runoff; distribute flows evenly using level spreaders. • No water abstraction from ephemeral channels; all water must be sourced from authorised boreholes or municipal supply. • Implement an erosion-control seed mix using local Stipagrostis species to stabilise disturbed soils. • Fence crossings over drainage lines with raised spans to avoid blocking sediment transport. This must be audited within 3 months of completing the phase.	*Low (4)*	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• No discharge of domestic water must occur if possible. Domestic water must be reused for dust suppression. Should domestic water be required to be discharge, the management of nitrogen concentrations is imperative. • A SWMP must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. Effective stormwater management must include effective stabilisation (gabions and reno mattresses) of exposed soil. ◦ Monitoring should occur monthly for 6 months post construction and where any unstable soils occur, these must be protected with temporary stabilisation dependent on the scale of the impact i.e., sand bags - hay bales) until areas become revegetated. If any areas require permanent erosion protection (e.g., gabions or stone pitching) then this must be included in the WULA / GA application.		
Water and Aquatic Habitat Impacts stemming from the storage and use of chemicals, fuels and oils: impacts on water quality as a result of splills and leaks	*Status*	Negative	Moderate (3)	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • All liquid chemicals including fuels and oil, including for the BESS, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100m of a watercourse. • All laydown areas, wash bays and any stores should be more than 50m from any demarcated water courses.	Low (4)	Medium
	Spatial Extent	Local				
	Duration	Long-term				
	Consequence	Substantial				
	Probability	Unlikely				
	Reversibility	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Littering and contamination must be avoided through effective construction camp management. • No stockpiling should take place within or near a water course. • All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable. • Clean and dirty surface water separation and stormwater management plan must be put into place via standard best practice methods. • An effective storm-water management plan for the solar facility must be implemented.		

Water and Aquatic Habitat Impacts stemming from the excavations and earthworks for the removal of structures	Status	Negative	*High (2)*	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167)
				• Any materials excavated must not be deposited in the wetlands or areas where it is prone to being washed downstream or impeding natural flow.
				• Disturbed areas must be re-vegetated after completion of the phase- A three-month timeframe for the initiation of this action;
				  ○ Ripping of the soils should occur in two directions; and
				  ○ Removed vegetation and topsoil can be harvested and applied here.
				• Drainage channels constructed for the access roads must be constructed so as not to result in erosion.
				• An alien vegetation removal and management plan must be implemented along the verges of the roads and crossing points.
				• A pre-construction walkthrough by an aquatic specialist is recommended so they can assist with the development of the SWMP and Aquatic Construction Rehabilitation and Monitoring Plan, coupled to micro-siting of the final layout.
				• Suitable stormwater management systems must be installed along roads and other areas associated with the PV structures and monitored during the first few months of use.
					Low (4)	Medium

	Spatial Extent	Local				
	Duration	Medium Term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc). • Furthermore, the following applies to watercourse crossing upgrades associated with the proposed development: ○ All pipe culverts must be removed and replaced with suitable sized box culverts, where road levels are raised. ○ River levels, regardless of the current state of the river / water course will be reinstated thus preventing any impoundments from being formed. The related designs must be assessed by an aquatic specialist during a pre-construction walkdown. Monitoring All alien plant re-growth, which is currently low within the greater region must be monitored and should it occur, these plants must be eradicated within the project footprints and especially in areas near the proposed crossings.		
Water and Aquatic Habitat Impacts stemming from the establishment of laydown yards/decommissioning camps	Spatial Extent	Local	Moderate (3)	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • Any materials excavated must not be deposited in the wetlands or areas where it is prone to being washed downstream or impeding natural flow. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100 m of a watercourse. • All decommissioning camps, laydown areas, wash bays, batching plants or areas and any stores should be more than 50 m from any demarcated water courses.	Low (4)	Medium
	Duration	Medium Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Littering and contamination associated with construction activity must be avoided through effective construction camp management.		
Water and Aquatic Habitat Impacts stemming from clearing of vegetation in working areas	Status	Negative	*Moderate (3)*	Mitigation actions and infrastructure design must ensure compliance in the implementation of the standards and measures stipulated in General Notice (GN) 4167 published in Government Gazette 49833 of 8 December 2023 (GN 4167). • Implementation of the SWMP and Aquatic Construction Rehabilitation and Monitoring Plan. • All alien plant re-growth, which is currently low within the greater region must be monitored and should it occur, these plants must be eradicated within the project footprints and especially in areas near the proposed crossings. • Should culverts be utilised, watercourses are recommended to be crossed by multiple culverts spread across the watercourse as opposed a single culvert, this is recommended to ensure the spread flows across the systems and the maintenance of alluvial deposition in riparian habitats. • Should culverts not be utilised due to the design requirements of the project, it is recommended that reinforced drift structures are utilised with erosion control measures. • All contractors and staff are to be familiarised with the method statement and have undergone an induction / training on the location of sensitive No-Go areas and basic environmental awareness using the mitigation provided in this report. • Areas where decommissioning is to take place must be clearly demarcated. Any areas not demarcated must be avoided.	Low (4)	Medium
	Spatial Extent	Local				
	Duration	Medium Term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level

				• Stormwater generated from roadways must be captured and buffered, where flow velocities are to be significantly reduced before discharge into the environment.
				• Stormwater verges as well as other denuded areas must be grassed (re-vegetated) with local indigenous grasses to protect against erosion.
				• Any materials excavated must not be deposited in the wetlands or areas where it is prone to being washed downstream or impeding natural flow.
				• Disturbed areas must be re-vegetated after completion of the phase - a three-month timeframe for the initiation of this action;
				  ○ Ripping of the soils should occur in two directions; and
				  ○ Removed vegetation and topsoil can be harvested and applied here.
				• Drainage channels constructed for the access roads must be constructed so as not to result in erosion.
				• An alien vegetation removal and management plan must be implemented along the verges of the roads and crossing points.		

The table below includes an assessment of the potential cumulative impacts identified for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION, OPERATIONAL AND DECOMMISSIONING PHASES						
Water and Aquatic Habitat Impacts stemming from the alteration of surface drainage and hydrological processes	*Status*	*Negative*	*High (2)*	It is assumed that all projects will adhere to the site-specific recommendations in their respective EMPrs to ensure that impacts are mitigated where possible – including avoidance of identified sensitive systems and usage of existing disturbance areas.	*Low (4)*	Medium
	Spatial Extent	*Local*				
	Duration	*Long Term*				
	Consequence	*Severe*				
	Probability	*Likely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				

J.2.6.5 Concluding Statement

The outcome of this assessment delineated 4 watercourse HGM units within the Area of Interest. These watercourses were derived to range from largely modified (class D) and moderately modified (class C) PES. The watercourses were classified as having High and Moderate EIS ratings. A scientific buffer was calculated for the watercourses, where a 40m buffer for wetlands and 30m for rivers was utilised to protect these sensitive environments.

The outcomes of the risk assessment indicate minor impacts from the proposed activities. The minor impacts can be attributed to the avoidance of the sensitive habitats, implementation of buffer zones as well as incorporation of suitable mitigation measures into the EMPr for implementation. Should avoidance and basic mitigation actions be implemented, limited impacts to aquatic biodiversity can be expected. In the view of the proposed new activities, should the proposed mitigation actions be implemented, no fatal flaw was identified. In line with the recommendations, avoidance must be implemented.

J.2.7 Avifauna Impact Assessment

The Avifauna Impact Assessments for the proposed project was undertaken by Anja Albertyn of Holland & Associates Environmental Consultants (Pty) Ltd, to inform the outcome of this BA from an avifaunal perspective. The complete Avifauna Impact Assessment is included in Appendix F.4 of this BA Report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Avifauna Impact Assessment. The information below is extracted from Albertyn (2025).

J.2.7.1 Approach and Methodology

The Avifauna Impact Assessment includes a description of the affected environment from an avifaunal perspective, mapping of the sensitivity of the site in terms of avifaunal features such as habitat use, roosting, feeding and nesting / breeding, feedback of the sensitivity in terms of the Screening Tool, an assessment of the potential impacts of the proposed development on avifauna including cumulative impacts, and recommendations for sufficient mitigation measures.

The PAOI for avian species was determined based on the species identified as potentially present at a desktop level and confirmed through the results of pre-construction monitoring, as an area of up to 2 km from the proposed PV area, in line with IFC Performance Standard 1 (8) and South African Best Practice Guidelines (SANBI, 2022; Jenkins, *et al.,* 2017). Two seasonal pre-construction monitoring surveys were conducted in line with Sampling Regime 2 of the Best Practice Guidelines (Jenkins, *et al.,* 2017) on the three proposed PV sites over 7 days in summer from 8 – 15 December 2023 and over 7 days in winter from 8 – 14 July 2024. Each avifaunal survey consisted of walked transects, driven transects, focal site, nest surveys, incidental observations and checklist surveys.

Cumulative impacts were assessed for past, existing, and proposed projects within a 30 km radius of the project. Avifaunal reports were obtained for adjacent projects as far as possible. The Final Monitoring Report and Site Sensitivity Verification presents the findings of the pre-construction monitoring and is a suitable baseline for Avian Species Specialist Assessments in terms of the applicable protocol. It also includes recommendations, avifaunal constraints mapping that informed the project layout design, and likely mitigation measures required for the proposed development. Refer to Appendix F.4 of this BA Report for the full detailed Avifauna Impact Assessment.

J.2.7.2 Relevant Project Aspects relating to Avifaunal Impacts

Components of the proposed project that are relevant in terms of avifauna are listed below:

- Solar Field, comprising Solar Arrays;
- Building Infrastructure including offices; operational and maintenance control centre; warehouse/workshop; ablution facilities; converter/inverter stations; on-site substation and/or a switching substation; and guard houses; associated infrastructure;
- Internal low voltage cables;
- BESS;
- Access roads;
- Internal gravel roads;
- Fencing around the PV Facilities; and
- Construction work area (i.e. laydown area).

J.2.7.3 Potential Impacts

The potential impacts include:

Construction Phase:

- Disturbance and displacement of avifauna
- Habitat loss and displacement

Operational Phase:

- Disturbance
- Collisions with PV Panels and associated infrastructure
- Electrocutions on electrical infrastructure
- Barrier effects

Decommissioning Phase:

- Disturbance
- Habitat Loss

Cumulative Impacts:

- Loss of habitat due to clearing, alteration and exclusion, as well as from reclamation
- Increased barrier effect and displacement of birds

J.2.7.4 Impact Assessment

The table below includes an assessment of the potential impacts identified for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Disturbance and displacement of avifauna	**Status**	Negative	*Low (4)*	• Ensure that the layout avoids sensitive areas identified by the avifauna specialist. • Avifaunal Pre-construction walk-through (EMPr).	*Very Low (5)*	High
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	High				
Habitat loss and displacement	**Status**	Negative	*High (2)*	• Ensure that the layout avoids sensitive areas identified by the avifauna specialist. Note that the current layout assessed as part of the BA Process has already achieved this. • Avifaunal Pre-construction walkthrough (EMPr)	*Moderate (3)*	High
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Severe				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Low				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
OPERATIONAL PHASE						
Disturbance	**Status**	Negative	*Low (4)*	• Ensure that the layout avoids sensitive areas identified by the avifauna specialist. • Note that the current PV area layout assessed as part of the BA Process has already achieved this. • Minimisation of disturbance footprint to the development footprint (EMPr).	*Very Low (5)*	High
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Low				
Collisions with PV Panels	**Status**	Negative	*Moderate (3)*	• Ensure that the layout avoids sensitive areas identified by the avifauna specialist. Note that the current layout assessed as part of the BA Process has already achieved this. • Bury all internal medium voltage powerlines. • Single-fence design (EMPr). • Operational monitoring and	*Low (4)*	Medium
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	High				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				carcass searching (EMPr).		
Electrocutions	**Status**	Negative	*Moderate (3)*	• Insulation of all electrical infrastructure, and use of bird friendly designs as per Eskom Technical Standards (EMPr). • Operational monitoring and carcass searching (EMPr).	*Very low (5)*	High
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	High				
Barrier effects	**Status**	Negative	*Low (4)*	• Ensure that the layout avoids sensitive areas identified by the avifauna specialist. • Note that the current layout assessed as part of the BA Process has already achieved this.	*Low (4)*	Medium
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Unlikely				
	Reversibility	High				
	Irreplaceability	Low				
DECOMMISSIONING PHASE						
Disturbance	**Status**	Negative	*Low (4)*		*Very low (5)*	High

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Spatial Extent	Local		• Ensure that the layout avoids sensitive areas identified by the avifauna specialist. • Note that the current layout assessed as part of the BA Process has already achieved this. • Avifaunal pre-decommissioning walk-through (EMPr).		
	Duration	Medium				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	Low				
Habitat Loss	**Status**	Negative	*Very low (5)*	• Avifaunal pre-decommissioning walkthrough (EMPr). • Rehabilitation of disturbed vegetation within the entire development footprint.	*Moderate (3)*	Medium
	Spatial Extent	Site-specific				
	Duration	Long term				
	Consequence	Slight				
	Probability	Unlikely				
	Reversibility	High				
	Irreplaceability	Low				
CUMULATIVE IMPACTS						
Habitat loss and displacement of avifauna	**Status**	Negative	*Moderate (3)*	• Implementation of EMPrs for all projects.	*Moderate (3)*	Medium
	Spatial Extent	Regional				
	Duration	Long term				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Consequence	Substantial		• Authorisation, auditing and enforcement (Competent Authority).		
	Probability	Likely				
	Reversibility	Medium				
	Irreplaceability	Low				

J.2.7.5 Concluding Statement

The Site Ecological Importance rating of Medium indicates that the site is potentially suitable for development if minimisation and restoration mitigation are implemented. Impacts of medium negative impact significance are acceptable, if followed by restoration activities (SANBI 2022).

The proposed PV area site avoids all areas identified as of high sensitivity during pre-application monitoring and is considered the preferred site alternative and layout alternative from an avifaunal perspective. A Jackal Buzzard nest and two Verreaux's Eagle nest was identified south of the site, the Jackal Buzzard nest being in close proximity to the Option A site access road and appropriate buffers assigned. Both nests were active during pre-application monitoring, and the alignment should avoid the buffers if technically possible. The Jackal Buzzard nest is located approximately 115 m from the proposed alignment on a ridge and the Verreaux's Eagle nest is located approximately 580 m from the alignment on a ridge. The Option B site access road crosses a NFEPA river and it's 200 m buffer, however this is acceptable from an avifaunal perspective. Site access road Option A crosses a 200 m Jackal Buzzard nest No-Go buffer and a 1 km Verreaux's Eagle nest No-Go buffer. However, the avifaunal assessment confirmed that the current road alignment would be acceptable provided the recommended mitigation measures are implemented, such as no construction activities taking place during the winter breeding season, if the nests are active. Both nests are near existing roads, and the birds appear to be habituated to some degree to human activity.

The impact assessment has identified potential impacts to avian species, most of which can be mitigated to a very low or low negative level. No residual impacts of high significance were identified for the proposed development.

Due to the footprint of the proposed development, approximately 175 ha of potential SCC habitat would be lost, and even with mitigation this impact is expected to be of medium negative significance for the SCCs that occur here (confirmed or high probability of occurrence), including Blue Crane, Karoo Korhaan, Ludwig's Bustard, Lanner Falcon, Martial Eagle, and Verreaux's Eagle. However, due to these species having much surrounding equivalent habitat available, this loss of habitat is not deemed to have unacceptably high impacts on these species, if the recommended mitigation measures are implemented.

The cumulative impact of the proposed developments in a 30 km radius on avifauna is rated as of moderate negative impact significance with and without mitigation. The contribution of the Megora PV 1A to the cumulative impact is relatively small, and the proposed Megora PV 1A development will not result in a change in impact significance for cumulative impacts.

Based on the above results of the assessment, the proposed development is deemed acceptable from an avifaunal perspective, if all of the recommended mitigation measures are included for implementation in the EMPr.

J.2.8 Socio-Economic Assessment

The Socio-Economic Assessment was undertaken by Hugo Van Zyl and Holly Johnson of Independent Economic Researchers (Pty) Ltd, to inform the outcome of this BA from a socio-economic perspective. The complete Socio-Economic Assessment is included in Appendix F.8 of this BA Report. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Socio-Economic Assessment. The information below is extracted from Van Zyl and Johnson (2025).

J.2.8.1 Approach and Methodology

Guidance on the approach was taken primarily from the Department of Environmental Affairs and Development Planning (Western Cape) guidelines on economic specialist input to EIA processes (van Zyl *et al.*, 2005) augmented by the guidelines on social specialist input to EIA processes (Barbour, 2007). This included guidance on the appropriate level of detail required for the assessment in order that it be adequate for informing decision-making without going into superfluous detail (i.e., superfluous detail in this report as well when the briefs of other specialist studies forming part of the BA Process are considered).

A list of stakeholders that were interviewed is included in the detailed Socio-economic assessment. In addition, interviews conducted with stakeholders during the BA process for the Padloper Solar PV Cluster were also considered. The Padloper PV Solar Cluster is situated next to the proposed Megora PV Solar Cluster, and the BA process was conducted three years prior to this project and as such these interviews provide valuable insight to the general sentiments about renewable energy developments in the area.

Information was analysed to establish status quo socio-economic conditions, prevailing social structures, local demographic trends, and potential change processes present in the study area. The overview was then used to interpret the impacts and measure the extent of socio-economic impacts that could be derived from the proposed activities.

J.2.8.2 Relevant Project Aspects relating to Socio-Economic Impacts

From a socio-economic perspective, the most important project related aspects are employment creation over the lifetime of the project; and the Economic Development Plan (EDP) the Applicant is to develop for implementation should the projects obtain preferred bidder status in terms of the REIPPPP or similar tender processes.

J.2.8.3 Potential Impacts

The potential impacts identified for the Socio-Economic Assessment include:

Construction Phase:

- Impacts on employment and income associated with project activities and expenditure
- Impacts associated primarily with the influx of people
- Impacts on tourism
- Impacts on surrounding landowners and communities

Operational Phase:

- Impacts from employment and income associated with project activities and expenditure
- Impacts associated with the funding of local socio-economic development, enterprise development and shareholding during operations
- Impacts associated primarily with the influx of people
- Impacts on tourism
- Impacts on surrounding landowners and communities

Decommissioning Phase:

- Impacts from employment and incomes associated with the project activities
- Impacts associated primarily with the influx of people
- Impacts on tourism
- Impacts on surrounding landowners and communities

Cumulative Impacts:

The impacts below are relevant to the construction, operational and decommissioning phases.

- Cumulative impacts from employment and incomes associated with the project activities
- Cumulative impacts associated with the funding of local socio-economic development, enterprise development and shareholding
- Cumulative impacts associated primarily with the influx of people
- Cumulative impacts on tourism
- Cumulative impacts on surrounding landowners and communities

J.2.8.4 Impact Assessment

The table below includes an assessment of the potential socio-economic impacts identified for the proposed project and its associated infrastructure for the construction, operational and decommissioning phases.

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
CONSTRUCTION PHASE						
Impacts from expenditure on the construction of the project	*Status*	Positive	*Moderate (3)*	• Set targets for how much local labour should be used based on the needs of the Applicant and the availability of existing skills and people that are willing to undergo training. Opportunities for the training of unskilled and skilled workers from local communities should be maximized. • Source as high as possible portion of construction employees from the local area followed by the region and then the province, with the aim of ensuring local communities derive the greatest benefit. • Maximise opportunities for the training of unskilled and skilled workers from local communities. • Prioritise the use of local sub-contractors where feasible and require non-local contractors to meet specified targets for employing local labour. • Optimise and enhance local community benefits through focus on broad-based BEE and preferential procurement. • Set up a skills and services database in collaboration with the local municipality and civil society for the local area before making any hiring or contracting decisions are made. This can help to ensure fairness and limit potential interference in hiring processes.	*Moderate (3)*	High
	Spatial Extent	Regional				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Low				
	Irreplaceability	Replaceable				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				• Implement a comprehensive induction programme to help new employees adapt to the responsibilities of maintaining employment, including life skills and basic financial literacy training. • Counselling services should be made available to employees to ensure that they have adequate guidance. • Assist smaller enterprises where possible in tendering for contracts and in accessing finance. • Avoid service provider appointments that may lead to abuse or local dissatisfaction. For example, only appointing one accommodating rental agent or one catering supplier may lead to local dissatisfaction regarding the spreading of project benefits. • As far as possible, avoid significant variation in salaries between various contractors for the same types of jobs.		
Impacts associated primarily with the influx of people	*Status*	Negative	*Low (4)*	▪ Implement a "locals first" policy for labour. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Implement a Tuberculosis and HIV/AIDS awareness programme at the outset of the construction phase. ▪ Enable workers from outside the area to return home over the weekends or at regular intervals. ▪ Make condoms freely available to employees and all contract workers. ▪ Conduct weekly alcohol testing for all construction workers.	*Low (4)*	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				▪ Ensure non-local workers are transported home after the construction phase ends. ▪ Coordinate closely with the local municipality through regular meetings and involve the municipality in identifying and developing mitigation measures to address 'social ills' given the municipality's important role and willingness to assist. ▪ Ensure the public receives clear information about employment and procurement procedures. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
Impacts on tourism	*Status*	Negative	Low (4)	• Impacts on tourism are dependent on how the site is developed and managed to minimise negative biophysical impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) would thus also minimise tourism impacts.	Low (4)	High
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				
Impacts on surrounding landowners and communities	*Status*	Negative	Low (4)	▪ Prohibit workers, except security personnel, from residing or sleeping on site overnight. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Require contractors to manage and monitor worker movements, including arranging transport to and from the site.	Low (4)	High
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				▪ Implement measures, agreed with surrounding landowners before construction, to prevent or fairly compensate for farm damage, stock theft, or disruptions to farming activities (if directly linked to the construction activities associated with the proposed project). ▪ Define procedures in the EMPr for fire management and managing and storing waste on site, with specific provisions for plastic waste that could endanger livestock. ▪ Adhere to mitigation measures proposed by other specialists, particularly those prescribed in the Traffic, Noise and Visual Impact Assessments. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
OPERATIONAL PHASE						
Impacts from expenditure on the operation of the project	*Status*	Positive	*Moderate (3)*	▪ Set targets for how much local labour should be used based on the needs of the Applicant and the availability of existing skills and people that are willing to undergo training. Opportunities for the training of unskilled and skilled workers from local communities should be maximized. ▪ Source as high as possible portion of employees from the local area followed by the region and then the province, with the aim of ensuring local communities derive the greatest benefit. ▪ Maximise opportunities for the training of unskilled and skilled workers from local communities. ▪ Prioritise the use of local sub-contractors where feasible and require non-local contractors to meet specified targets for employing local labour. ▪ Optimise and enhance local community benefits through focus on broad-based BEE and preferential procurement. ▪ Set up a skills and services database in collaboration with the local municipality and civil society for the local	*High (2)*	High
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Low				
	Irreplaceability	Replaceable				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				area before making any hiring or contracting decisions are made. This can help to ensure fairness and limit potential interference in hiring processes. ▪ Implement a comprehensive induction programme to help new employees adapt to the responsibilities of maintaining employment, including life skills and basic financial literacy training. Counselling services should be made available to employees to ensure that they have adequate guidance. ▪ Assist smaller enterprises where possible in tendering for contracts and in accessing finance. ▪ Avoid service provider appointments that may lead to abuse or local dissatisfaction. For example, only appointing one accommodating rental agent or one catering supplier may lead to local dissatisfaction regarding the spreading of project benefits. ▪ As far as possible, avoid significant variation in salaries between various contractors for the same types of jobs.		
Impacts associated with the funding of local socio-economic development, enterprise development and shareholding	*Status*	Positive	*Moderate (3)*	▪ The project must comply with the requirements of the REIPPPP and/or BBBEE requirements. ▪ The Applicant must establish a communications committee early in the project to ensure inclusive planning and regular feedback from stakeholders. ▪ Community development should be guided by a community needs analysis, drawn up by a third party and based on local socio-economic conditions, a review of planning documents such as the IDP, and discussions with local and district-level government and community representatives. Interventions should be planned in collaboration with other energy developers in the area where relevant. ▪ Close liaison with local and district-level municipal managers, local councillors and other stakeholders involved in socio-economic development is required to ensure that any projects are integrated into wider socio-economic development strategies and plans.	*Moderate (3)*	Medium
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very likely				
	Reversibility	Low				
	Irreplaceability	Replaceable				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
Impacts associated primarily with the influx of people	*Status*	*Negative*	*Low (4)*	▪ A 'locals first' policy with regards to operational labour needs. ▪ The community should be able to contact the site manager or his/her representative to report any issues which they may have. The site manager and his/her representative should be stationed within the area and should therefore be available on hand to deal with and address any concerns which may be raised. ▪ A complaints register should be available on site to any individual who may have a particular complaint with regards to the operations processes. ▪ The Applicant and the contractors should develop a Code of Conduct for the project. The code should identify what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. For example, access on land that is not part of the development will not be allowed. ▪ Condoms should be freely available to employees and all contractor workers. ▪ Ensure the public receives clear information about employment and procurement procedures. ▪ Close coordination with the district and local municipalities is encouraged. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.	*Low (4)*	Medium
	Spatial Extent	*Local*				
	Duration	*Long term*				
	Consequence	*Moderate*				
	Probability	*Likely*				
	Reversibility	*High*				
	Irreplaceability	*Moderate*				
Impacts on tourism	*Status*	Negative	*Moderate (3)*	▪ Impacts on tourism are dependent on how the site is developed and managed to minimise negative biophysical impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) would thus also minimise tourism impacts.	*Low (4)*	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				

Impact	**Impact Criteria**		**Significance / Ranking (Pre-Mitigation and Pre-Enhancement)**	**Potential Mitigation Measures**	**Significance / Ranking (Post-Mitigation and Post-Enhancement)**	**Confidence Level**
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				
Impacts on surrounding landowners and communities	*Status*	Negative	*Low (4)*	▪ Prohibit workers, except security personnel, from residing or sleeping on site overnight. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Require contractors to manage and monitor worker movements, including arranging transport to and from the site. ▪ Implement measures, agreed with surrounding landowners before operations, to prevent or fairly compensate for farm damage, stock theft, or disruptions to farming activities (if directly linked to the operational activities associated with the proposed project). ▪ Define procedures in the EMPr for fire management and managing and storing waste on site, with specific provisions for plastic waste that could endanger livestock. ▪ Adhere to mitigation measures proposed by other specialists, particularly those prescribed in the Traffic, Noise and Visual Impact Assessments. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.	*Low (4)*	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				

<table>
<tr><th>Impact</th><th colspan="2">Impact Criteria</th><th>Significance / Ranking (Pre-Mitigation and Pre-Enhancement)</th><th>Potential Mitigation Measures</th><th>Significance / Ranking (Post-Mitigation and Post-Enhancement)</th><th>Confidence Level</th></tr>
<tr><td colspan="7">DECOMMISSIONING PHASE</td></tr>
<tr><td rowspan="7">Impacts from expenditure and incomes on the decommissioning of the project</td><td>Status</td><td>Positive</td><td rowspan="7">Low (4)</td><td rowspan="7">Set targets for how much local labour should be used based on the needs of the Applicant and the availability of existing skills and people that are willing to undergo training. This can be done in consultation with local government.
Maximise opportunities for the training of unskilled and skilled workers from local communities.
Prioritise the use of local sub-contractors where feasible and require non-local contractors to meet specified targets for employing local labour.
Optimise and enhance local community benefits through focus on broad-based BEE and preferential procurement.
Set up a skills and services database in collaboration with the local municipality and civil society for the local area before making any hiring or contracting decisions.
Implement a comprehensive induction programme to help new employees adapt to the responsibilities of maintaining employment, including life skills and basic financial literacy training.
Assist smaller enterprises where possible in tendering for contracts and in accessing finance which are common constraints to their participation in projects.
Avoid service provider decisions that may lead to abuse or local dissatisfaction. For example, only appointing one accommodating rental agent or one catering supplier may lead to local dissatisfaction regarding the spreading of project benefits.
As far as possible, avoid significant variation in salaries between various contractors for the same types of jobs.</td><td rowspan="7">Moderate (3)</td><td rowspan="7">High</td></tr>
<tr><td>Spatial Extent</td><td>Regional</td></tr>
<tr><td>Duration</td><td>Medium term</td></tr>
<tr><td>Consequence</td><td>Moderate</td></tr>
<tr><td>Probability</td><td>Very Likely</td></tr>
<tr><td>Reversibility</td><td>Low</td></tr>
<tr><td>Irreplaceability</td><td>Replaceable</td></tr>
</table>

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				When variations are too high, the likelihood of dissatisfaction increases.		
Impacts associated primarily with the influx of people	*Status*	Negative	*Low (4)*	• A 'locals first' policy with regards to decommissioning labour needs. • The community should be able to contact the site manager or his/her representative to report any issues which they may have. The site manager and his/her representative should be stationed within the area and should therefore be available on hand to deal with and address any concerns which may be raised. • A complaints register should be available on site to any individual who may have a particular complaint with regards to the decommissioning process. • The Applicant and the contractors should, develop a Code of Conduct for the project. The code should identify what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. For example, access on land that is not part of the development will not be allowed. • The Applicant and the contractor should implement a TB and HIV/AIDS awareness programme for all workers at the outset of the decommissioning phase. • Arrangements must be made to enable workers from outside the area to return home at reasonably regular intervals. This would reduce the risk posed by non-local decommissioning workers to local family structures and social networks. • Condoms should be freely available to employees and all contractor workers. • The contractor should make the necessary arrangements for ensuring that all non-local decommissioning phase workers are transported back to their place of residence once the decommissioning phase is completed.	*Low (4)*	*Medium*
	Spatial Extent	Local				
	Duration	Medium Term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				

Impact	**Impact Criteria**		**Significance / Ranking (Pre-Mitigation and Pre-Enhancement)**	**Potential Mitigation Measures**	**Significance / Ranking (Post-Mitigation and Post-Enhancement)**	**Confidence Level**
				• Close coordination with the municipality is required, including regular meetings. • Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
Impacts on tourism	*Status*	Negative	*Low (4)*	• Impacts on tourism are dependent on how the site is developed and managed to minimise negative biophysical impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) would thus also minimise tourism impacts.	*Very Low (5)*	*High*
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				
Impacts on surrounding landowners and communities	*Status*	Negative	*Low (4)*	▪ Prohibit workers, except security personnel, from residing or sleeping on site overnight. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Require contractors to manage and monitor worker movements, including arranging transport to and from the site. ▪ Implement measures, agreed with surrounding landowners before decommissioning, to prevent or fairly compensate for farm damage, stock theft, or disruptions to farming activities (if directly linked to the decommissioning activities associated with the proposed project). ▪ Define procedures in the EMPr for fire management and managing and storing waste on site, with specific	*Low (4)*	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				provisions for plastic waste that could endanger livestock. ▪ Adhere to mitigation measures proposed by other specialists, particularly those prescribed in the Traffic, Noise and Visual Impact Assessments. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		

The table below includes an assessment of the potential cumulative impacts identified for the proposed project and associated infrastructure for the construction, operational and decommissioning phase.

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
CONSTRUCTION PHASE						
Impacts from expenditure on the construction of the project	*Status*	Positive	*High (2)*	• Set targets for how much local labour should be used based on the needs of the Applicant and the availability of existing skills and people that are willing to undergo training. • Opportunities for the training of unskilled and skilled workers from local communities should be maximized. • Source as high as possible portion of construction employees from the local area followed by the region and then the province, with the aim of ensuring local communities derive the greatest benefit. • Maximise opportunities for the training of unskilled and skilled workers from local communities.	*Very High (1)*	High
	Spatial Extent	Regional				
	Duration	Medium term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				• Prioritise the use of local sub-contractors where feasible and require non-local contractors to meet specified targets for employing local labour. • Optimise and enhance local community benefits through focus on broad-based BEE and preferential procurement. • Set up a skills and services database in collaboration with the local municipality and civil society for the local area before making any hiring or contracting decisions are made. This can help to ensure fairness and limit potential interference in hiring processes. • Implement a comprehensive induction programme to help new employees adapt to the responsibilities of maintaining employment, including life skills and basic financial literacy training. • Counselling services should be made available to employees to ensure that they have adequate guidance. • Assist smaller enterprises where possible in tendering for contracts and in accessing finance. • Avoid service provider appointments that may lead to abuse or local dissatisfaction. For example, only appointing one accommodating rental agent or one catering supplier may lead to local dissatisfaction regarding the spreading of project benefits. • As far as possible, avoid significant variation in salaries between various contractors for the same types of jobs.		
Impacts associated primarily with the influx of people	*Status*	Negative	*Moderate (3)*	▪ Implement a "locals first" policy for labour. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly	*Moderate (3)*	High
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
	Irreplaceability	Moderate		outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Implement a TB and HIV/AIDS awareness programme at the outset of the construction phase. ▪ Enable workers from outside the area to return home over the weekends or at regular intervals. ▪ Make condoms freely available to employees and all contract workers. ▪ Conduct weekly alcohol testing for all construction workers. ▪ Ensure non-local workers are transported home after the construction phase ends. ▪ Coordinate closely with the local municipality through regular meetings and involve the municipality in identifying and developing mitigation measures to address 'social ills' given the municipality's important role and willingness to assist. ▪ Ensure the public receives clear information about employment and procurement procedures. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
Impacts on tourism	*Status*	Negative	Moderate (3)	• Impacts on tourism are dependent on how the site is developed and managed to minimise negative biophysical impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) would thus also minimise tourism impacts.	Moderate (3)	High
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
Impacts on surrounding landowners and communities	*Status*	Negative	Moderate (3)	▪ Prohibit workers, except security personnel, from residing or sleeping on site overnight. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly.	Moderate (3)	High
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
	Reversibility	Moderate		▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Require contractors to manage and monitor worker movements, including arranging transport to and from the site. ▪ Implement measures, agreed with surrounding landowners before construction, to prevent or fairly compensate for farm damage, stock theft, or disruptions to farming activities (if directly linked to the construction activities associated with the proposed project). ▪ Define procedures in the EMPr for fire management and managing and storing waste on site, with specific provisions for plastic waste that could endanger livestock. ▪ Adhere to mitigation measures proposed by other specialists, particularly those prescribed in the Traffic, Noise and Visual Impact Assessments. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
	Irreplaceability	Moderate				
OPERATIONAL PHASE						
Impacts from expenditure on the operation of the project	*Status*	Positive	*High (2)*	▪ Set targets for how much local labour should be used based on the needs of the Applicant and the availability of existing skills and people that are willing to undergo training. Opportunities for the training of unskilled and skilled workers from local communities should be maximized. ▪ Source as high as possible portion of employees from the local area followed by the region and then the province, with the aim of ensuring local communities derive the greatest benefit. ▪ Maximise opportunities for the training of unskilled and skilled workers from local communities.	*Very High (1)*	Very High
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				▪ Prioritise the use of local sub-contractors where feasible and require non-local contractors to meet specified targets for employing local labour. ▪ Optimise and enhance local community benefits through focus on broad-based BEE and preferential procurement. ▪ Set up a skills and services database in collaboration with the local municipality and civil society for the local area before making any hiring or contracting decisions are made. This can help to ensure fairness and limit potential interference in hiring processes. ▪ Implement a comprehensive induction programme to help new employees adapt to the responsibilities of maintaining employment, including life skills and basic financial literacy training. Counselling services should be made available to employees to ensure that they have adequate guidance. ▪ Assist smaller enterprises where possible in tendering for contracts and in accessing finance. ▪ Avoid service provider appointments that may lead to abuse or local dissatisfaction. For example, only appointing one accommodating rental agent or one catering supplier may lead to local dissatisfaction regarding the spreading of project benefits. ▪ As far as possible, avoid significant variation in salaries between various contractors for the same types of jobs.		
Impacts associated with the funding of local socio-economic development, enterprise development and shareholding	*Status*	Positive	*High (2)*	▪ The project must comply with the requirements of the REIPPPP and/or BBBEE requirements. ▪ The Applicant must establish a communications committee early in the project to ensure inclusive planning and regular feedback from stakeholders. ▪ Community development should be guided by a community needs analysis, drawn up by a third party and based on local socio-economic conditions, a review of planning documents such as the IDP, and discussions	*Very High (1)*	High
	Spatial Extent	Regional				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Low				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
	Irreplaceability	Moderate		with local and district-level government and community representatives. Interventions should be planned in collaboration with other energy developers in the area where relevant. ▪ Close liaison with local and district-level municipal managers, local councillors and other stakeholders involved in socio-economic development is required to ensure that any projects are integrated into wider socio-economic development strategies and plans.		
Impacts associated primarily with the influx of people	*Status*	*Negative*	*Moderate (3)*	▪ A 'locals first' policy with regards to operational labour needs. ▪ The community should be able to contact the site manager or his/her representative to report any issues which they may have. The site manager and his/her representative should be stationed within the area and should therefore be available on hand to deal with and address any concerns which may be raised. ▪ A complaints register should be available on site to any individual who may have a particular complaint with regards to the operations processes. ▪ The Applicant and the contractors should develop a Code of Conduct for the project. The code should identify what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. For example, access on land that is not part of the development will not be allowed. ▪ Condoms should be freely available to employees and all contractor workers. ▪ Ensure the public receives clear information about employment and procurement procedures ▪ Close coordination with the district and local municipalities is encouraged. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.	*High (2)*	High
	Spatial Extent	*Local*				
	Duration	*Long term*				
	Consequence	*Substantial*				
	Probability	*Likely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
Impacts on tourism	*Status*	Negative	*Moderate (3)*	▪ Impacts on tourism are dependent on how the site is developed and managed to minimise negative biophysical impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) would thus also minimise tourism impacts.	*Moderate (3)*	High
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
Impacts on surrounding landowners and communities	*Status*	Negative	*Moderate (3)*	▪ Prohibit workers, except security personnel, from residing or sleeping on site overnight. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land).	*Moderate (3)*	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
	Irreplaceability	Moderate		▪ Require contractors to manage and monitor worker movements, including arranging transport to and from the site. ▪ Implement measures, agreed with surrounding landowners before operations, to prevent or fairly compensate for farm damage, stock theft, or disruptions to farming activities (if directly linked to the operational activities associated with the proposed project). ▪ Define procedures in the EMPr for fire management and managing and storing waste on site, with specific provisions for plastic waste that could endanger livestock. ▪ Adhere to mitigation measures proposed by other specialists, particularly those prescribed in the Traffic, Noise and Visual Impact Assessments. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
DECOMMISSIONING PHASE						
Impacts from expenditure and incomes on the decommissioning of the project	*Status*	Positive	*Moderate (3)*	• Set targets for how much local labour should be used based on the needs of the Applicant and the availability of existing skills and people that are willing to undergo training. This can be done in consultation with local government. • Maximise opportunities for the training of unskilled and skilled workers from local communities. • Prioritise the use of local sub-contractors where feasible and require non-local contractors to meet specified targets for employing local labour. • Optimise and enhance local community benefits through focus on broad-based BEE and preferential procurement. • Set up a skills and services database in collaboration with the local municipality and civil society for the local area before making any hiring or contracting decisions. • Implement a comprehensive induction programme to help new employees adapt to the responsibilities of	*High (2)*	*High*
	Spatial Extent	Regional				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				maintaining employment, including life skills and basic financial literacy training. • Assist smaller enterprises where possible in tendering for contracts and in accessing finance which are common constraints to their participation in projects. • Avoid service provider decisions that may lead to abuse or local dissatisfaction. For example, only appointing one accommodating rental agent or one catering supplier may lead to local dissatisfaction regarding the spreading of project benefits. • As far as possible, avoid significant variation in salaries between various contractors for the same types of jobs. When variations are too high, the likelihood of dissatisfaction increases.		
Impacts associated primarily with the influx of people	*Status*	Negative	*Moderate (3)*	• A 'locals first' policy with regards to decommissioning labour needs. • The community should be able to contact the site manager or his/her representative to report any issues which they may have. The site manager and his/her representative should be stationed within the area and should therefore be available on hand to deal with and address any concerns which may be raised. • A complaints register should be available on site to any individual who may have a particular complaint with regards to the decommissioning process. • The Applicant and the contractors should agree to a Code of Conduct for the project. The code should identify what types of behaviour and activities by workers are not permitted in agreement with surrounding landowners and land managers. For example, access on land that is not part of the development will not be allowed. • The Applicant and the contractor should implement a TB and HIV/AIDS awareness programme for all workers at the outset of the decommissioning phase. • Arrangements must be made to enable workers from outside the area to return home at reasonably regular	*High (2)*	*High*
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				intervals. This would reduce the risk posed by non-local decommissioning workers to local family structures and social networks. • Condoms should be freely available to employees and all contractor workers. • The contractor should make the necessary arrangements for ensuring that all non-local workers are transported back to their place of residence once the decommissioning phase is completed. • Close coordination with the municipality is required, including regular meetings. • Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		
Impacts on tourism	*Status*	Negative	*Moderate (3)*	• Impacts on tourism are dependent on how the site is developed and managed to minimise negative biophysical impacts. The measures recommended in other specialist reports to these impacts (primarily the minimisation of visual, heritage, traffic and ecological impacts) would also minimise tourism impacts.	*Moderate (3)*	*High*
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
Impacts on surrounding landowners and communities	*Status*	Negative	*Moderate (3)*	▪ Prohibit workers, except security personnel, from residing or sleeping on site overnight. ▪ Ensure the site manager or a designated representative is based locally and available to address community concerns directly. ▪ A complaints register should be available on site to any individual who may have a particular complaint. ▪ Develop a Code of Conduct, in collaboration with surrounding landowners and land managers, clearly outlining unacceptable worker behaviours (e.g. accessing off-limits land). ▪ Require contractors to manage and monitor worker movements, including arranging transport to and from the site. ▪ Implement measures, agreed with surrounding landowners before decommissioning, to prevent or fairly	*Moderate (3)*	High
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance / Ranking (Pre-Mitigation and Pre-Enhancement)	Potential Mitigation Measures	Significance / Ranking (Post-Mitigation and Post-Enhancement)	Confidence Level
				compensate for farm damage, stock theft, or disruptions to farming activities (if directly linked to the decommissioning activities associated with the proposed project). ▪ Define procedures in the EMPr for fire management and managing and storing waste on site, with specific provisions for plastic waste that could endanger livestock. ▪ Adhere to mitigation measures proposed by other specialists, particularly those prescribed in the Traffic, Noise and Visual Impact Assessments. ▪ Learn from experience with other projects in the area, and in particular the Padloper Solar PV Facility, and adapt when necessary.		

J.2.8.5 Concluding Statement

In term of wider positive impacts, the project would be largely supportive of local and regional socio-economic development and energy supply planning imperatives including the diversification of the economy and energy sources. In addition, the project would contribute to local socio-economic and enterprise development. These positive impacts would be especially important at a local level where unemployment remains extremely high amid low economic growth and a lack of new opportunities to assist with much needed rejuvenation. Impacts associated with expenditure on the construction and operation of the project are rated as having positive moderate and positive high significance respectively.

Negative impacts would primarily arise at a local scale. It is anticipated that, with mitigation, the risks posed to the community by the influx of people, including job seekers, would be manageable and of a low significance with mitigation. This rating comes with the caveat that the impact on individually affected community members has the potential to be high. Tourism facilities and attractions in the areas surrounding the project site are relatively limited and sparsely distributed. The tourism context combined with likely visual and associated heritage impacts in a landscape with scenic qualities should limit tourism impacts to a low significance during both construction and operations with mitigation. Impacts on surrounding landowners and communities, including to their sense of place, are expected to be low negative with mitigation during construction and operations.

It is considered most likely that the positive impacts of the project would exceed its negative impacts resulting in an overall net benefit with mitigation compared to the no-go alternative (status quo). The project is therefore deemed acceptable in terms of socio-economic impacts and should be allowed to proceed.

J.2.9 Geohydrology Assessment

The Geohydrology Assessment was undertaken by GEOSS South Africa (Pty) Ltd to inform the outcome of this BA from a geohydrological perspective. The complete Geohydrology Assessment is included in Appendix F.12 of this BA Report. The following section provides a summary of the Approach, Key Findings, and Concluding Statement undertaken for the Geohydrology Assessment. The information below is extracted from GEOSS (2025).

J.2.9.1 Approach and Methodology

The procedure adopted for this study involved a desktop study. The initial desktop study involved obtaining and reviewing all relevant data to the project. This included analysing data from the National Groundwater Archive (NGA), as well as additional groundwater yield and groundwater chemistry from other databases, as well as geological maps of the area.

The site visit was conducted between 28th and 30th January 2025. During this time a hydrocensus was completed (i.e., visit boreholes in the area, measure water quality (pH, EC and TDS)). Information such as borehole depth and borehole yields was obtained if available.

Groundwater from the site was sampled in such a way to enable the specialist to define the regional geohydrological conditions of the study area. A total of six samples were collected and submitted to an accredited laboratory for a SANS241 inorganic chemistry analysis. The laboratory and hydrocensus data are analysed in the Geohydrology Assessment report using geohydrological methods to address the questions raised in the project objectives as set out by the client. This includes the use of rating tables to qualitatively evaluate type and significance of risk associated with the proposed site development plan and activities.

Additional information has been discussed in the Geohydrology Assessment report addressing the potential use of boreholes identified during the hydrocensus, as well as, providing areas optimal for further groundwater development should existing sources prove insufficient. Finally, the hydrogeological risks associated with the proposed developments are highlighted and appropriate mitigation measures provided where possible.

During the undertaking of the geohydrological impact study, all landowners were contacted to ensure that GEOSS was able to locate their boreholes and inspect the landforms across their properties. This was mainly done to ensure consent was granted; this was achieved telephonically by Hardy Luttig of GEOSS South Africa (Pty) Ltd.

J.2.9.2 Relevant Project Aspects relating to Geohydrology Impacts

As noted in Section A of this BA Report the Applicant's preferred water source is water sourced from boreholes on site. The two other potential water sources have been discussed in Section A of this BA Report.

Generally, groundwater can be impacted negatively in two manners, namely:

- Over-abstraction (where groundwater abstraction exceeds recharge rates) which can result in the alteration of groundwater flow directions and gradients; and
- Quality deterioration (i.e., from anthropogenic activities negatively impacting groundwater quality).

J.2.9.3 Potential Impacts

The potential impacts identified in the Geohydrology Assessment are listed below and are applicable to all phases of the proposed development.

- Potential Lowering of the Groundwater Level; and
- Potential Groundwater Contamination.

Cumulative impacts:

Note: These cumulative impacts encompass the construction, operational, and decommissioning phases across all proposed projects. In general, the types of impacts associated with the different phases are similar; however, their combined intensity increases as multiple projects progress concurrently, resulting in a higher probability of cumulative effects.

- Potential lowering of groundwater levels as a result of over-abstraction during the construction, operational, and decommissioning phases.
  - The cumulative water requirement for the Megora Solar PV Cluster during the construction phase exceeds the total allowable volume under GA (General Authorisation) for the Remainder of Farm Badfontein No. 10. This requirement is only marginally met when including groundwater abstraction from four neighbouring farm portions in addition to that from the Remainder of Farm Badfontein No. 10. Should the construction, operational, and decommissioning phases of other renewable projects occur concurrently with those of the Megora Solar PV Cluster, the resulting stress on the underlying fractured aquifer is likely to increase, potentially exceeding the expected average borehole yield of 0.50–2.00 L/s.
- Potential negative impact on groundwater quality arising from:
  - Accidental oil spillages or fuel leakages
  - Use of cleaning agents for solar panel washing
  - Washing and cleaning activities at operational and maintenance facilities
  - Wastewater discharges from ablution facilities
  - Spillages associated with BESS facilities

J.2.9.4 Impact Assessment

The table below includes an assessment of the potential **impacts** identified for the proposed project and the associated infrastructure.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Potential lowering of the groundwater level	*Status*	Negative	Moderate (3)	NOTE: Mitigation only applies if groundwater is abstracted: • Boreholes must be correctly yield tested according to the National Standard (SANS 10299-4:2003, Part 4 – Test pumping of water boreholes). This includes a step test, constant discharge test and recovery monitoring. • Use multiple boreholes to meet water requirements during construction. • Measure the annual volume of groundwater abstracted by farmers prior to construction using flow meters. • Implement and enforce water-saving techniques. • Implement the groundwater monitoring plan at least two years prior to construction and continue to monitor groundwater according to the plan throughout operations and respond to significant variances in groundwater levels or quality accordingly.	Very Low (5)	High
	Spatial extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Replaceable				
Potential groundwater contamination	Status	Negative	Moderate (3)	▪ Vehicles must be regularly serviced and maintained to check and ensure there are no leakages. ▪ Any engines that stand in one place for an excessive length of time must have drip trays.	Very Low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Probability	Likely		▪ Diesel fuel storage tanks, if required, should be above ground on an impermeable surface in a bunded area. ▪ Vehicles and equipment should also be refuelled on an impermeable surface and a designated area should be established at the construction site camp for this purpose, if off-site refuelling is not possible. ▪ If spillages occur, they should be contained and removed as rapidly as possible, with correct disposal procedures of the spilled material, as reported. Proof of disposal (waste disposal slips or waybills) should be obtained and retained on file for auditing purposes. ▪ Concrete batching plants to be located away from springs and shallow water tables. ▪ Should waste water from batching activities be used its quality must not degrade the current groundwater quality. ▪ Barriers and/or liners to be implemented where foundation casting will happen below the groundwater table. ▪ Implement a comprehensive monitoring program to record water quality prior to construction and during construction to pick up potential water quality degradation as soon as possible.		
	Reversibility	Moderate				
	Irreplaceability	Moderate				
OPERATIONAL PHASE						
	Status	Negative	Moderate (3)		Very low (5)	High

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Potential lowering of the groundwater level	Spatial extent	Local		NOTE: Mitigation only applies if groundwater is abstracted: • Boreholes must be correctly yield tested according to the National Standard (SANS 10299-4:2003, Part 4 – Test pumping of water boreholes). This includes a step test, constant discharge test and recovery monitoring. • Use multiple boreholes to meet water requirements during operation. • Measure the annual volume of groundwater abstracted by farmers prior to operations using flow meters. • Implement and enforce water-saving techniques. • Implement the groundwater monitoring throughout the operational phase and continue to monitor groundwater according to the plan throughout operations and respond to significant variances in groundwater levels or quality accordingly.		
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Replaceable				
Contamination of the Subsurface and Loss of Topsoil	Status	Negative	Moderate (3)	• Ensure that all electrolyte or chemicals stored or used on site have secondary containment systems in place with reliable leak detection. • Chemicals to be handled on concrete bunded surfaces and not on bare soil. • Hazardous waste products from the BESS/substations/maintenance. buildings/ablution) to be appropriately removed and disposed. • Proposed BESS and substations to be positioned at least 50 m away from any existing borehole. • Waste water from potential firefighting not to be allowed to runoff into the environment.	Very low (5)	High
	Spatial extent	Site specific				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Waste water to be appropriately managed e.g. low-flow faucets and toilets, treatment systems and/or waste water plants. • Utilise biodegradable cleaning agents. • Implement a comprehensive monitoring program to record water quality during operation to pick up potential water quality degradation as soon as possible. Use environmentally safe cleaning agents that breakdown naturally and do not cause adverse effects.		
DECOMMISSIONING PHASE:						
Potential lowering of the groundwater level)	Status	Negative	Moderate (3)	<u>NOTE</u>: Mitigation only applies if groundwater is abstracted: • Boreholes must be correctly yield tested according to the National Standard (SANS 10299-4:2003, Part 4 – Test pumping of water boreholes). This includes a step test, constant discharge test and recovery monitoring. • Use multiple boreholes to meet water requirements during decommissioning. • Measure the annual volume of groundwater abstracted by farmers prior to decommissioning using flow meters. • Implement and enforce water-saving techniques. • Implement the groundwater monitoring throughout the decommissioning phase and continue to monitor groundwater according to the plan throughout operations and respond to significant variances in groundwater levels or quality accordingly.	Very low (5)	High
	Spatial extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	Moderate				
	Status	Negative	Moderate (3)	• Vehicles must undergo regular servicing and maintenance to prevent leakages.	Very low (5)	High

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Potential groundwater contamination	Spatial extent	Site specific		• Engines that remain stationary for extended periods must be equipped with drip trays. • Diesel fuel storage tanks, if necessary, should be placed above ground on an impermeable surface within a bunded area. • Refuelling of vehicles and equipment should occur on an impermeable surface, ideally at a designated area within the decommissioning site camp if off-site refuelling is not feasible. • In the event of spillages, they should be promptly contained, removed, and disposed of according to proper procedures. • Proof of disposal (waste disposal slips or waybills) should be obtained and retained for auditing purposes.		
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

The table below includes an assessment of the potential **cumulative impacts** identified.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Potential lowering of the groundwater level	*Status*	Negative	Moderate (3)	NOTE: Mitigation only applies if groundwater is abstracted: • Boreholes must be correctly yield tested according to the National Standard (SANS 10299-4:2003, Part 4 – Test pumping of water boreholes). This includes a step test, constant discharge test and recovery monitoring. • Use multiple boreholes to meet water requirements during construction.	Very Low (5)	High
	Spatial extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very likely				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Reversibility	High		• Measure the annual volume of groundwater abstracted by farmers prior to construction using flow meters. • Implement and enforce water-saving techniques. • Implement the groundwater monitoring plan at least two years prior to construction and continue to monitor groundwater according to the plan throughout operations and respond to significant variances in groundwater levels or quality accordingly. • Explore additional water sources and use it to supplement groundwater sources.		
	Irreplaceability	Replaceable				
Potential groundwater contamination	Status	Negative	High (2)	▪ Vehicles must be regularly serviced and maintained to check and ensure there are no leakages. ▪ Any engines that stand in one place for an excessive length of time must have drip trays. ▪ Diesel fuel storage tanks, if required, should be above ground on an impermeable surface in a bunded area. ▪ Vehicles and equipment should also be refuelled on an impermeable surface and a designated area should be established at the construction site camp for this purpose, if off-site refuelling is not possible. ▪ If spillages occur, they should be contained and removed as rapidly as possible, with correct disposal procedures of the spilled material, as reported. Proof of disposal (waste disposal slips or waybills) should be obtained and retained on file for auditing purposes.	Low (4)	High
	Spatial extent	Site specific				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				▪ Concrete batching plants to be located away from springs and shallow water tables. ▪ Should waste water from batching activities be used its quality must not degrade the current groundwater quality. ▪ Barriers and/or liners to be implemented where foundation casting will happen below the groundwater table. ▪ Implement a comprehensive monitoring program to record water quality prior to construction and during construction to pick up potential water quality degradation as soon as possible.		
OPERATIONAL PHASE						
Potential lowering of the groundwater level	Status	Negative	Moderate (3)	NOTE: Mitigation only applies if groundwater is abstracted: • Boreholes must be correctly yield tested according to the National Standard (SANS 10299-4:2003, Part 4 – Test pumping of water boreholes). This includes a step test, constant discharge test and recovery monitoring. • Use multiple boreholes to meet water requirements during operations. • Measure the annual volume of groundwater abstracted by farmers prior to operations using flow meters. • Implement and enforce water-saving techniques. • Implement the groundwater monitoring throughout the decommissioning phase and continue to monitor groundwater according to the plan throughout operations and respond to significant variances in groundwater levels or quality accordingly.	Very low (5)	High
	Spatial extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	Replaceable				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Explore additional water sources and use it to supplement groundwater sources.		
Contamination of the Subsurface and Loss of Topsoil	Status	Negative	High (2)	• Ensure that all electrolyte or chemicals stored or used on site have secondary containment systems in place with reliable leak detection. • Chemicals to be handled on concrete bunded surfaces and not on bare soil. • Hazardous waste products from the BESS/substations/maintenance. buildings/ablution) to be appropriately removed and disposed. • Proposed BESS units and substations to be positioned at least 50 m away from any existing borehole. • Waste water from potential firefighting not to be allowed to runoff into the environment. • Waste water to be appropriately managed e.g. low-flow faucets and toilets, treatment systems and/or waste water plants. • Utilise biodegradable cleaning agents. • Implement a comprehensive monitoring program to record water quality during operation to pick up potential water quality degradation as soon as possible. • Use environmentally safe cleaning agents that breakdown naturally and do not cause adverse effects.	Low (5)	High
	Spatial extent	Site specific				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
DECOMMISSIONING PHASE						
Potential lowering of the groundwater level	Status	Negative	Moderate (3)	NOTE: Mitigation only applies if groundwater is abstracted: • Boreholes must be correctly yield tested according to the National Standard (SANS 10299-4:2003, Part 4 – Test pumping of water	Very low (5)	High
	Spatial extent	Local				
	Duration	Long term				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Consequence	Substantial		boreholes). This includes a step test, constant discharge test and recovery monitoring. • Use multiple boreholes to meet water requirements during decommissioning. • Measure the annual volume of groundwater abstracted by farmers prior to decommissioning using flow meters. • Implement and enforce water-saving techniques. • Implement the groundwater monitoring throughout the decommissioning phase and continue to monitor groundwater according to the plan throughout operations and respond to significant variances in groundwater levels or quality accordingly. • Explore additional water sources and use it to supplement groundwater sources.		
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	Replaceable				
Potential groundwater contamination	Status	Negative	High (2)	• Vehicles must undergo regular servicing and maintenance to prevent leakages. • Engines that remain stationary for extended periods must be equipped with drip trays. • Diesel fuel storage tanks, if necessary, should be placed above ground on an impermeable surface within a bunded area. • Refuelling of vehicles and equipment should occur on an impermeable surface, ideally at a designated area within the decommissioning site camp if off-site refuelling is not feasible. • In the event of spillages, they should be promptly contained, removed, and disposed of according to proper procedures. • Proof of disposal (waste disposal slips or waybills) should be obtained and retained for auditing purposes.	Low (4)	High
	Spatial extent	Site specific				
	Duration	Long term				
	Consequence	Severe				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

J.2.9.5 Concluding Statement

The regional study area of the proposed project is underlain by a fractured aquifer directly overlain by an unsaturated horizon of silty sand of variable thickness. The fractured aquifer which directly underlies the proposed project has potential average borehole yields of 0.50 L/s to 2.00 L/s. The maximum anticipated water demand of proposed project at any time between the construction- and decommissioning phase is anticipated to be 0.95 L/s. This requirement is less than the expected regional average borehole yields. As such, groundwater demand from the project is low relative to the potential regional supply. It is therefore deemed that sufficient groundwater is available to address the water requirements for the project during the different project phases.

In addition, there are several boreholes which can act as a potentially viable source of groundwater for the development of proposed project, should the use of borehole water be considered a requirement. The use of these boreholes will depend on the construction and operational requirements of the facility, negotiations with the landowners and proximity to the facility.

If the individual facilities forming part of the proposed Megora Solar PV Cluster be constructed simultaneously along with other approved renewable facilities, the utilisation of multiple boreholes on the Remainder of the Farm Badfontein No. 10 as well as its neighbouring farm portions may be considered. An additional option would be to investigate additional water sources to supplement groundwater for the water demands of the renewable facilities. The simultaneous development of the proposed Megora Solar PV Cluster along with nearby approved renewable projects should be carefully considered with regards to groundwater supply. Although the anticipated water requirements should potentially be met by the utilisation of multiple boreholes from affected farm portions the specialist notes that farming activities in the Central Karoo is highly dependable on groundwater for mainly livestock and is some cases for domestic use. Sustainable development and utilisation of groundwater for renewable energy facilities and farming to take place simultaneously is essential.

Given these conclusions, from a geohydrological perspective, the specialist recommends that development of the proposed project be authorised to proceed given that proper mitigation measures are implemented during each phase of the project to suppress the intensity of identified potential impacts.

J.2.10 Geotechnical impacts

This section is informed by the desktop Geotechnical Assessment included in Appendix F.11 of the BA Report. The Geotechnical Assessment was undertaken by GEOSS South Africa (Pty) Ltd to inform the outcome of this BA from a geotechnical perspective. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the Geotechnical Assessment. The information below is extracted from GEOSS (2025).

J.2.10.1 Potential Impacts

The potential impacts identified in the desktop Geotechnical Assessment are listed below:

Construction Phase:

- Displacement of Geologic Materials: Removal of rocks and other geologic materials for site levelling and grading, resulting in loss of geologic materials, e.g. topsoil removal/loss, and potentially the destruction of habitats of endemic species.
- Contamination of the Subsurface and Loss of Topsoil: Contamination of geologic materials as a consequence of the construction activities by earthworks machinery and other apparatus.

Operational and Decommissioning Phases:

- Increased Water Runoff and Erosion: Increased unnatural hard surfaces yielding increased runoff, potentially increasing erosion.
- Contamination of the Subsurface and Loss of Topsoil: Contamination of geologic materials as a consequence of typical maintenance activities, as example, washing of solar panels, or spillages associated with BESS.

Cumulative Impacts:

Note: The cumulative impacts identified include the impacts related to the construction, operational and decommissioning phases across the proposed Megora Solar PV Cluster. In general, the impacts during the different phases of the project are quite similar therefore, their intensities increase as the project progresses resulting in a higher probability for the impact to occur. As such, the mitigation measures for the Construction-, Operational- and Decommissioning Phases contained in the table below are also applicable to the identified cumulative impacts.

Construction Phase:

- Displacement of geologic materials
- Contamination of geologic materials

Operational and Decommissioning Phases:

- Increased water runoff and erosion
- Contamination of geologic materials

J.2.10.2 Impact Assessment

The table below includes an assessment of the potential impacts identified for the proposed project and the associated infrastructure.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Displacement of geologic materials (i.e. Removal of rocks and other geologic materials for site levelling and grading, resulting in loss of geologic materials, e.g. topsoil removal/loss, and potentially the destruction of habitats of endemic species.)	*Status*	Negative	Moderate (3)	• All road cuttings must be designed by an appropriately qualified professional to ensure slope stability and to minimise unnecessary disturbance of geological materials. • Drainage systems must be properly designed and managed to prevent erosion and undermining of road or structure foundations. • The geotechnical suitability of each structure must be confirmed prior to construction to ensure adequate bearing capacity beneath each footing. These investigations are not required to fulfil the requirements of this BA Process but are essential before construction commences. • Only vegetation necessary for the immediate next phase of construction should be cleared to limit exposure of bare soil. • Install temporary drainage systems where required to divert stormwater away from active construction areas. • Develop a detailed Stormwater Management Plan during the preconstruction phase. The plan must specify stormwater control structures and management interventions to prevent concentrated surface runoff into natural systems (in consultation with suitably qualified professionals). Effective stormwater management must include stabilisation of exposed soils (e.g., using gabions, Reno mattresses, or similar). • Implement suitable stormwater management systems along roads and other disturbed areas and monitor their effectiveness during the first few months of use. Address any erosion or	Very Low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				sedimentation issues through additional interventions where required (e.g., energy dissipaters, flow spreaders, or extensions). • All slopes affected by construction activities must be stabilised promptly to ensure effective rehabilitation and erosion control. • Sloped areas must be stabilised using structures or vegetation as specified in the approved design. Contract design specifications must be strictly adhered to during implementation. • Schedule rehabilitation activities to coincide with optimal periods for vegetation establishment, thereby enhancing revegetation success. • Where earthworks occur near watercourses, stabilise slopes using suitable materials (e.g., sandbags, geotextile fabric) to prevent sediment from entering channels. • Implement appropriate rehabilitation and revegetation measures for disturbed watercourse banks as soon as possible. Stabilisation should be carried out incrementally, in line with construction progress.		
Contamination of the Subsurface and Loss of Topsoil (i.e., Contamination of geologic materials as a consequence of the construction activities by earthworks	Status	Negative	Moderate (3)	▪ Appropriate measures must be implemented during construction to prevent pollution or contamination of the surrounding environment, particularly riparian areas. This includes ensuring that all construction equipment and vehicles are well maintained to prevent fuel, oil, or hydraulic fluid leaks. ▪ Refuelling activities must take place at designated refuelling or storage areas	Very Low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Very likely				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
machinery and other apparatus.)	Reversibility	Moderate		protected by an impermeable groundcover to prevent infiltration of hydrocarbons into the soil. Where dispensing equipment is used, drip trays must be installed to contain minor spills. ▪ Where refuelling away from the designated refuelling area is unavoidable, a mobile refuelling unit must be used. Suitable ground protection, such as drip trays or portable spill mats, must be placed beneath the equipment to contain any leaks or spills. ▪ All spillages must be contained, cleaned up, and disposed of as soon as possible using approved procedures. Contaminated materials must be removed from site and disposed of at a licensed waste disposal facility. Proof of disposal (e.g., waste disposal slips or waybills) must be retained for auditing and record-keeping purposes. ▪ Prior to construction, topsoil (typically the upper 150–300 mm, depending on site conditions) must be stripped and stored separately from subsoil and spoil materials to preserve its fertility and structure. ▪ Stripped topsoil must be stockpiled in low, stable heaps (not exceeding 2 m in height) to prevent compaction and degradation. Stockpiles must be protected against erosion and contamination by locating them away from drainage lines and covering them with		
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				geotextile fabric or vegetative cover where possible.		
OPERATIONAL PHASE						
Increased Water Runoff and Erosion (i.e., Increased unnatural hard surfaces yielding increased runoff, potentially increasing erosion)	Status	Negative	Moderate (3)	• A Stormwater Management Plan must guide all drainage and erosion control measures during the operational phase. The following mitigation measures are recommended to minimise the risk of increased water runoff and subsequent erosion associated with the facility's infrastructure: ○ Drainage systems must be installed, where required, to divert stormwater away from operational activities, roads, tracks, and structures in order to prevent ponding, erosion, and undermining of foundations. ○ The SMP, developed during the preconstruction phase, must detail the stormwater control structures and management interventions required to manage increases in surface runoff and to prevent direct discharge into natural systems (where possible and lawful). Effective stormwater management must include the stabilisation of exposed soils using suitable measures such as gabions, Reno mattresses, or other engineered structures. ○ Suitable stormwater management systems must be installed along access roads and other disturbed areas and monitored during the initial operational period. Any erosion or sedimentation issues must be promptly addressed through additional interventions, such as the installation of flow spreaders, energy dissipaters, or system extensions, where required.	Very low (5)	High
	Spatial extent	Site specific				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				○ All sloped areas must be stabilised using engineered structures or vegetation, as specified in the approved design, to prevent erosion of embankments and maintain long-term stability. ○ All operational and maintenance activities must remain strictly within the authorised project footprint. Vehicles must remain on designated roads and tracks at all times to avoid unnecessary disturbance and erosion of surrounding areas.		
Contamination of the Subsurface and Loss of Topsoil	Status	Negative	Moderate (3)	• Appropriate measures must be implemented throughout operations to prevent pollution and contamination of the surrounding environment, particularly riparian zones. This includes ensuring that all operational vehicles, machinery, and equipment are well maintained to prevent leaks of oil, fuel, or hydraulic fluids. • Refuelling activities must occur only at designated refuelling or storage areas equipped with impermeable groundcover and bunding to protect underlying soil from hydrocarbon infiltration. Where dispensing equipment is used, drip trays must be provided to contain minor spills. • If refuelling away from the designated refuelling area is unavoidable, a mobile refuelling unit must be used. Appropriate ground protection measures, such as drip trays or portable spill mats, must be placed beneath the equipment to capture any leaks or spills. • Potential electrolyte leakage from batteries or other energy storage systems must be mitigated through the use of leak detection systems, double containment, and suitably	Very low (5)	High
	Spatial extent	Site specific				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				designed bunding approved by a qualified professional. • Any spillages must be contained, cleaned up, and disposed of promptly according to approved waste-handling procedures. Contaminated materials must be transported to a licensed waste disposal facility. Proof of proper disposal (e.g., waste disposal slips or waybills) must be retained for record-keeping and auditing purposes. • Disturbance to topsoil during maintenance or operational activities must be minimised. Where disturbance occurs, topsoil must be retained on site and reused during localised rehabilitation to maintain soil productivity and prevent erosion.		
DECOMMISSIONING PHASE						
Increased Water Runoff and Erosion (i.e., Increased unnatural hard surfaces yielding increased runoff, potentially increasing erosion)	Status	Negative	Moderate (3)	• Restrict the movement and parking of vehicles to designated access routes and work areas only, to prevent unnecessary disturbance and compaction of soil. • Rehabilitate disturbed areas to a near-natural state following infrastructure removal. This includes the removal of all foundations and hard-surfaced areas, and the backfilling of any resultant voids with suitable material. Replacement soil should be sourced locally to ensure homogeneity with the surrounding environment. • Reinstate the natural topography of the site, particularly where cut-and-fill embankments were previously constructed, to promote natural drainage and reduce concentrated runoff. • Apply standard environmental management procedures during infrastructure removal,	Very low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				including erosion control, dust suppression, and stormwater management, to prevent soil loss and sedimentation.		
Contamination of the Subsurface and Loss of Topsoil	Status	Negative	Moderate (3)	• Appropriate measures must be implemented throughout the decommissioning phase to prevent pollution and contamination of the surrounding environment, particularly riparian areas. This includes ensuring that all decommissioning equipment and vehicles are well maintained to prevent leaks of oil, fuel, or hydraulic fluids. • Refuelling activities must take place only at designated refuelling or storage areas protected by an impermeable groundcover to prevent hydrocarbon infiltration into the soil. Where dispensing equipment is used, drip trays must be provided to contain minor spills. • Where refuelling away from the designated refuelling station is unavoidable, a mobile refuelling unit must be used. Appropriate ground protection measures, such as drip trays or portable spill mats, must be used to prevent soil contamination. • Any spillages must be contained, cleaned up, and disposed of as soon as possible in accordance with approved waste-handling procedures. Contaminated materials must be disposed of at a licensed waste disposal facility. Proof of proper disposal (e.g., waste disposal slips or waybills) must be obtained and retained for record-keeping and auditing purposes. • Disturbance to topsoil during dismantling or rehabilitation activities must be minimised. Where topsoil is disturbed or removed, it must be stockpiled separately, protected from	Very low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				contamination and erosion, and reused during final site rehabilitation to restore natural soil structure and productivity.		

The table below includes an assessment of the potential cumulative impacts identified for the proposed project and associated infrastructure for the construction, operational and decommissioning phase.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
Displacement of geologic materials	*Status*	Negative	Moderate (3)	• Vegetation Clearance: Only clear vegetation necessary for the immediate next phase of construction to limit unnecessary disturbance and exposure of soil surfaces. • Temporary Drainage: Install temporary drainage systems, where required, to divert stormwater away from active construction areas and prevent concentrated flow paths that may trigger erosion or sediment movement. • Stormwater Management Plan (SMP): Develop a detailed SMP during the preconstruction phase. The plan must specify the stormwater control structures and management interventions required to prevent increased surface water flows into natural systems. The SMP should be prepared in consultation with suitably qualified professionals. Effective stormwater management must include stabilisation of exposed soils using measures such as gabions, Reno mattresses, or equivalent structures.	Very Low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				• Stormwater Monitoring: Install suitable stormwater management systems along access roads and disturbed areas and monitor their performance during the initial construction period. Address any erosion or sedimentation issues promptly using additional interventions where required (e.g., extensions, energy dissipaters, or flow spreaders). • Slope Stabilisation: Stabilise all slopes affected by construction activities to ensure proper rehabilitation and effective erosion control. • Design Adherence: Sloped areas must be stabilised using engineered structures or vegetation as specified in the approved design. Contract design specifications must be strictly adhered to during implementation. • Rehabilitation Timing: Schedule rehabilitation activities to coincide with optimal periods for vegetation establishment, thereby promoting successful revegetation and long-term soil stability. • Watercourse Protection: Where earthworks occur near watercourses, stabilise slopes using suitable materials such as sandbags or geotextile fabric to prevent sediment or rock from entering the channel. • Watercourse Rehabilitation: Implement appropriate rehabilitation and revegetation measures for disturbed watercourse banks as soon as possible. Stabilisation should be conducted incrementally in accordance with construction progress to prevent sediment transport into drainage systems.		
	Status	Negative	High (2)		Low (4)	High

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Contamination of the Subsurface and Loss of Topsoil (i.e., Contamination of geologic materials as a consequence of the construction activities by earthworks machinery and other apparatus.)	Spatial extent	Site specific		▪ During construction, appropriate measures must be implemented to prevent pollution and contamination of the surrounding and riparian environments. This includes ensuring that all construction equipment is properly maintained and free from leaks. ▪ Refuelling must take place only within designated storage or refuelling areas, where the ground surface is protected with an impermeable cover. Drip trays must be used beneath dispensing equipment to contain small spills. ▪ Where refuelling away from the dedicated refuelling station is unavoidable, a mobile refuelling unit must be used. Suitable ground protection measures, such as drip trays or spill mats, must be applied. ▪ In the event of any spillage, the material must be contained and removed immediately. All spilled material must be disposed of following approved procedures, and proof of disposal (e.g., waste disposal slips or waybills) must be retained for recordkeeping and audit purposes.		
	Duration	Medium term				
	Consequence	Severe				
	Probability	Very likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
OPERATIONAL PHASE						
Increased Water Runoff and Erosion	Status	Negative	Moderate (3)	• Install appropriate drainage systems to divert stormwater away from operational areas, access roads/tracks, and structures where required. Implement general management measures applicable to infrastructure associated with the	Low (4)	High
	Spatial extent	Site specific				
	Duration	Long term				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Consequence	Substantial		proposed development, including the following: • A SMP must be developed during the pre-construction phase. This plan should outline the stormwater structures and management interventions to be installed to control increased surface water flows and to prevent direct discharge into natural systems, where possible and lawful. Effective stormwater management must include the stabilisation of exposed soils using suitable structures such as gabions or Reno mattresses. • Appropriate stormwater management systems must be installed along roads and other infrastructure. These systems should be monitored during the initial months of operation, and any observed erosion or sedimentation must be addressed promptly through suitable interventions (e.g., extensions, energy dissipaters, or spreaders). • Sloped areas must be stabilised using either engineered structures or vegetation, as specified in the design, to prevent erosion of embankments. • Routine maintenance activities must be restricted to the authorised development footprint, and all vehicles must remain on designated access roads and tracks at all times.		
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
	Status	Negative	High (2)	• During operational activities, appropriate measures must be implemented to prevent pollution and contamination of the riparian and surrounding environments. This	Very low (5)	High
	Spatial extent	Site specific				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
Contamination of the Subsurface and Loss of Topsoil	Duration	Long term		includes ensuring that all operational equipment is properly maintained and free from leaks • Refuelling activities must take place at designated storage or refuelling areas equipped with impermeable groundcover and bunding to prevent soil contamination. Where dispensing equipment is used, drip trays must be installed to contain minor spills. • Where refuelling is required away from the designated refuelling area, a mobile refuelling unit must be utilised. Suitable ground protection measures, such as drip trays, must always be in place. • Electrolyte or hazardous chemical spillages must be mitigated through double containment and appropriately designed bunding, as approved by a qualified professional. • In the event of a spillage, it must be contained and cleaned up immediately, with all spilled material disposed of in accordance with approved waste management procedures. Proof of disposal (e.g., waste disposal slips or waybills) must be retained for auditing and compliance verification purposes.		
	Consequence	Severe				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
DECOMMISSIONING PHASE						
Increased Water Runoff and Erosion	Status	Negative	Moderate (3)	NOTE: Mitigation only applies if groundwater is abstracted: • Restrict vehicle movement and parking to designated areas only to minimise surface disturbance and compaction.	Low (4)	High
	Spatial extent	Site specific				
	Duration	Medium term				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
	Consequence	Substantial		• Rehabilitate disturbed land to a near-natural state by removing all foundations and hard-surfaced areas and backfilling any resultant voids with suitable local material to ensure soil compatibility and homogeneity. • Reinstate natural topography in areas where cut-and-fill embankments were previously constructed to restore natural drainage patterns and reduce concentrated runoff. • Implement general environmental management procedures applicable to infrastructure decommissioning, including erosion prevention, surface stabilisation, and proper handling of construction debris.		
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				
Contamination of the Subsurface and Loss of Topsoil	Status	Negative	Moderate (3)	• Appropriate measures must be implemented throughout the decommissioning phase to prevent pollution and contamination of the surrounding environment, particularly riparian areas. This includes ensuring that all decommissioning equipment and vehicles are well maintained to prevent leaks of oil, fuel, or hydraulic fluids. • Refuelling activities must take place only at designated refuelling or storage areas protected by an impermeable groundcover to prevent hydrocarbon infiltration into the soil. Where dispensing equipment is used, drip trays must be provided to contain minor spills. • Where refuelling away from the designated refuelling station is unavoidable, a mobile refuelling unit must be used. Appropriate ground protection measures, such as drip trays or portable spill mats, must be used to prevent soil contamination. • Any spillages must be contained, cleaned up, and disposed of as soon as possible in	Very low (5)	High
	Spatial extent	Site specific				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Very Likely				
	Reversibility	Moderate				
	Irreplaceability	Moderate				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				accordance with approved waste-handling procedures. Contaminated materials must be disposed of at a licensed waste disposal facility. Proof of proper disposal (e.g., waste disposal slips or waybills) must be obtained and retained for record-keeping and auditing purposes. • Disturbance to topsoil during dismantling or rehabilitation activities must be minimised. Where topsoil is disturbed or removed, it must be stockpiled separately, protected from contamination and erosion, and reused during final site rehabilitation to restore natural soil structure and productivity.		

J.2.10.3 Concluding Statement

Soil and rock conditions vary across the proposed Megora Solar PV Cluster study area, resulting in likely variations in geotechnical properties that may be encountered. These variations could influence foundation conditions and design, drainage characteristics, excavatability of soils and rock masses, and the occurrence of problem soils. It is therefore vital that an intrusive geotechnical investigation be undertaken prior to the development of the proposed project to confirm the anticipated geotechnical conditions identified in the Geotechnical Assessment report. The intrusive geotechnical investigation is not required to fulfil the requirements of the BA Process; however, it is recommended that it be conducted post EA (should such authorisation be granted) and prior to construction.

The proposed project may affect the environment through increased soil erosion and the potential contamination of geological material. However, these impacts are expected to be 'very low' significance following proper mitigation. The dominant existing land use in the area is livestock farming, and it is therefore crucial that project-related impacts remain confined within the approved development footprints of proposed facility. Although impacts from neighbouring renewable energy facilities are expected to be similar to those of proposed project, the cumulative intensity of such impacts could increase if appropriate mitigation measures are not implemented. Properly designed and enforced mitigation measures across all developments will be essential to ensure that post-mitigation impact significance remains low.

Based on the geotechnical assessment conducted, the specialist recommends that the proposed project be authorised, as no fatal flaws were identified during this desktop evaluation. However, the implementation of the recommended mitigation and monitoring measures during all phases of the project remains critical to minimise the intensity and extent of potential impacts.

J.2.11 Traffic Impacts

This section is informed by the desktop Traffic Impact Assessment included in Appendix F.9 of the BA Report.

The Traffic Impact Assessment (TIA) was undertaken by Iris Wink of iWink Consulting (Pty) Ltd to inform the outcome of this BA from a traffic perspective. The following section provides a summary of the Approach, Key Findings, Impact Assessment and Concluding Statement undertaken for the TIA. The information below is extracted from Wink (2025).

J.2.11.1 Approach and Methodology

The TIA investigates the transportation implications associated with the abnormal load vehicles transporting components to the site and the transportation of construction materials, equipment and workers to the site during the construction, operational and decommissioning phases. The broad methodology adopted for the TIA included a desktop assessment, where available project related information was reviewed such as planned spatial development within the project region to determine the following:

Access and Internal Roads Assessment

- Assessment of the proposed access points including:
  - Feasible location of access points
  - Motorised and non-motorised access requirements
  - Stacking requirements
  - Sight distances and required access spacing

- Comments on internal circulation requirements and observations

Haulage Route Assessment

- Determination of possible haulage routes to site regarding:
  - National routes
  - Local routes
  - Site access points
  - Road limitations due to abnormal loads

Traffic Estimation and Impact

- Construction, operational, and decommissioning phase vehicle trips
  - Generated vehicles trips
  - Abnormal load trips
  - Access requirements
- Investigation of the impact of the development traffic generated during construction, operation, and decommissioning.

J.2.11.2 Relevant Project Aspects relating to Traffic Impacts

The relevant project aspects relating to traffic impacts are linked to the vehicles that need to access the project sites for various reasons. As noted in Section A of this report, it is understood that traffic will be generated as a result of building materials being transported to and from site. Solar panels, frames and inverters are also to be transported via double axle trucks; and transformers will be transported by abnormal load trucks for which a permit will need to be applied for in terms of Section 81 of the National Road Traffic Act.

J.2.11.3 Potential Impacts

The potential impacts identified in the TIA include the following for the construction, operation and decommissioning phases:

Construction phase:

- Increase in traffic particularly abnormal load traffic;
- Noise and dust pollution associated with potential traffic,
- Possible damage to road surfaces, and
- Road safety concerns.

Operational Phase:

- light increase in traffic due to permanent staff traveling to site and possibly bi-annual water delivery for cleaning of panels.

Decommissioning Phase:

- Increase in traffic particularly abnormal load traffic,
- Noise and dust pollution associated with potential traffic,
- Possible damage to road surfaces, and
- Road safety concerns.

J.2.11.4 Impact Assessment

The table below includes an assessment of the potential impacts identified for the Megora Solar PV 1A (i.e. proposed project), and the associated infrastructure for the construction, operation and decommissioning phases and cumulative impact.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION PHASE						
▪ Increase in trips on external roads due to transport of components, material and labour to site ▪ Noise/dust pollution during transport and construction activities on site ▪ Possible damage to road surfaces along the haulage routes (specifically near the site) caused by construction vehicles	*Status*	*Negative*	*Moderate (3)*	• Where possible, stagger the delivery of components to the site and schedule trips to occur outside of peak traffic periods, where possible. • If possible, reduce duration of construction phase. • All required upgrades of roads and bellmouths need to be conducted as recommended in the TIA report. • Dust suppression of gravel roads located within the site boundary, including the main access road to the site and the site access roads, during the construction phase with spraying water regularly on gravel/sand road surfaces. • Regular maintenance of gravel roads located within the site boundary, including the access roads to the site (i.e. that are used by and impacted on by the proposed project, under approval of the relevant road authorities), by the Contractor during the construction phase. • The use of existing licensed quarries near the site to decrease the traffic impact on the surrounding road network, if available and feasible. • Staff and general trips should occur outside of peak traffic periods as far as possible. • If required, low hanging overhead lines (lower than 5.1m) e.g., Eskom and Telkom lines, along the proposed routes, will have to be moved (to be arranged by the haulage company and communicated beforehand with the service provider of the overhead	*Low (4)*	*High*
	Spatial Extent	*Regional*				
	Duration	*Medium Term*				
	Consequence	*Substantial*				
	Probability	*Likely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				line) to accommodate the abnormal load vehicles. The Contractor and the Developer are to ensure that the haulage company is aware of this requirement. The haulage company is to provide evidence to the Contractor and the Developer that any affected overhead lines have been moved or raised. • The Contractor needs to ensure that any gravel sections of the haulage routes (i.e., the site access roads that are used by and impacted on by the proposed development) remain in good condition and are maintained during the additional loading of the construction phase and reinstated after construction is completed (based on approval and agreement by the relevant road authorities).		
OPERATIONAL PHASE						
▪ Slight increase of traffic due to permanent staff traveling to site ▪ Delivery of water for cleaning of modules (possibly bi-annually)	*Status*	*Negative*	*Very Low (5)*	• Permanent staff trips are deemed very low, and no mitigation measures are required. • Stagger delivery of water, if applicable, over several days to reduce daily trips. Assess alternative methods to obtain water for the cleaning of panels (i.e., boreholes).	*Very Low (5)*	*High*
	Spatial Extent	*Local*				
	Duration	*Long term*				
	Consequence	*Slight*				
	Probability	*Unlikely*				
	Reversibility	*High*				
	Irreplaceability	*High*				
DECOMMISSIONING PHASE						
▪ Increase in trips on external roads due to transport of components,	*Status*	*Negative*	*Moderate (3)*	• Stagger the delivery and removal of components and schedule trips to occur outside of peak traffic periods, where possible.	*Low (4)*	*High*
	Spatial Extent	*Regional*				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
material and labour to and from site ▪ Noise/dust pollution during transport and decommissioning activities on site ▪ Possible damage to road surfaces along the haulage routes (specifically near the site) caused by construction vehicles	*Duration*	*Medium term*		• If possible, reduce duration of decommissioning phase. • All required upgrades of roads and bellmouths need to be conducted as recommended in the TIA. • Dust suppression of gravel roads located within the site boundary, including the main access road to the site and the site access roads, with spraying water regularly on gravel/sand road surfaces. • The use of existing licensed quarries near the site to decrease the traffic impact on the surrounding road network, if available and feasible. • Staff and general trips should occur outside of peak traffic periods as far as possible. • If required, low hanging overhead lines (lower than 5.1m) e.g., Eskom and Telkom lines, along the proposed routes, will have to be moved (to be arranged by the haulage company and communicated beforehand with the service provider of the overhead line) to accommodate the abnormal load vehicles. The Contractor and the Developer are to ensure that the haulage company is aware of this requirement. The haulage company is to provide evidence to the Contractor and the Developer that any affected overhead lines have been moved or raised. • The Contractor needs to ensure that any gravel sections of the haulage routes (i.e., the site access roads that are used by and impacted on by the proposed development) remain in good condition and are maintained during the additional loading of the decommissioning phase and reinstated after decommissioning is completed (based on approval and agreement by the relevant road authorities).		
	Consequence	*Substantial*				
	Probability	*Likely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				

The table below includes an assessment of the cumulative impacts during construction and decommissioning phases for the proposed project and the associated infrastructure if all projects in 30 km radius from the project site have similar construction schedules.

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
CONSTRUCTION AND DECOMMISSIONING PHASE						
▪ *Further increase in trips on external roads due to transport of components, material and labour to site.* ▪ *Additional Noise/dust pollution during transport and construction and decommissioning activities on site.* ▪ *Possible damage to road surfaces along the haulage routes (specifically near the site) caused by construction and decommissioning vehicles*	*Status*	*Negative*	*High (2)*	• Where possible, stagger the transportation of components and schedule trips to occur outside of peak traffic periods. • If possible, reduce duration of both phases. • All required upgrades of roads and bellmouths need to be conducted as recommended in the TIA. • Dust suppression of gravel roads located within the site boundary, including the main access road to the site and the site access roads, with spraying water regularly on gravel/sand road surfaces. • The use of existing licensed quarries near the site to decrease the traffic impact on the surrounding road network, if available and feasible. • Staff and general trips should occur outside of peak traffic periods as far as possible. • If required, low hanging overhead lines (lower than 5.1 m) e.g., Eskom and Telkom lines, along the proposed routes, will have to be moved (to be arranged by the haulage company and communicated beforehand with the service provider of the overhead line) to accommodate the abnormal load vehicles. The Contractor and the Developer are to ensure that the haulage company is aware of this requirement. The haulage company is to	*Low (4)*	High
	Spatial Extent	*Regional*				
	Duration	*Medium term*				
	Consequence	*Severe*				
	Probability	*Very likely*				
	Reversibility	*Moderate*				
	Irreplaceability	*Moderate*				
	Reversibility	*Moderate*				
	Irreplaceability	*Low*				

Impact	Impact Criteria		Significance and Ranking (Pre-Mitigation)	Potential Mitigation Measures	Significance and Ranking (Post-Mitigation)	Confidence Level
				provide evidence to the Contractor and the Developer that any affected overhead lines have been moved or raised. • The Contractor needs to ensure that any gravel sections of the haulage routes (i.e., the site access roads that are used by and impacted on by the proposed development) remain in good condition and are maintained during the additional loading of the phases and reinstated after activity is completed (based on approval and agreement by the relevant road authorities). • If at all possible, agree on delivery schedules between projects at construction.		

J.2.11.5 Concluding Statement

The TIA found that the main impact on the external road network will be during the construction phase. This phase is temporary in comparison to the operational period. The number of abnormal loads vehicles was estimated and found to be able to be accommodated by the road network including the recommended mitigation measures. During operation, it is expected that permanent staff will travel to site and periodically delivery of water for cleaning of panels may occur (i.e., twice a year). It is expected that the generated trips can be accommodated by the external road network, and the impacts are rated very low. The traffic generated during the decommissioning phase will be similar to or even less than the construction phase traffic and the impact on the surrounding road network will also be considered to be of negative low impact with mitigation measures. For the cumulative impact, all approved or planned developments in a radius of 30 km from the project site were assessed for the impact rating, assuming a worst-case scenario in which they will be developed at the same time (which will in reality be unlikely). This would result in a negative high impact. A rating of a negative low impact was given with mitigation measures.

Overall, no fatal flaws were picked up during the assessment, provided that the mitigation measures made in this report are adhered to as far as possible. In addition, the two proposed access road options are feasible, provided the recommendations in detailed TIA (Appendix F. 9 of this BA Report) are taken into account.

As the upgrade of existing/construction of new access road(s) as well the construction of new internal site roads (including widening and lengthening of existing internal roads) are required, it needs to be ensured that all bellmouths and radii of bends on the internal roads and the access roads to site accommodate the largest construction vehicle. The dimensions will be communicated as part of the detail design stage as per the Municipal Road Authority’s Geometric Design guidelines.

The construction and decommissioning phases of a solar energy facility are the only significant traffic generators and therefore noise and dust pollution will be higher during these phases. The duration of these phases is of temporary nature, i.e., the impact of the solar energy facility on the external traffic on the surrounding road network is temporary and solar facilities, when operational, do not add any significant traffic to the road network.

It should be noted that changes to the internal layout of the facility, such as location of buildings, will not affect the traffic impact on the surrounding road network (as assessed in this report). These alternatives will have the same implications and are considered equally acceptable from a transport perspective.

The proposed project is therefore deemed acceptable from a traffic engineering perspective, provided the recommendations and mitigation measures in this report are implemented, and hence the EA should be granted for the BA application.

J.2.12 Impacts relating to the BESS

This section is informed by the high-level SHE risk assessment for the proposed development of the BESS included in Appendix F.10 of the BA Report.

The assessment was undertaken by Deborah Mitchell of iSHEcon (Pty) Ltd to inform the outcome of placement of the BESS within the site layout. The following section provides a summary of the key recommendations and concluding statement undertaken for the assessment. The information below is extracted from Mitchell (2025).

The proposed project will have a BESS of up to 720 MWh located adjacent the on-site substation. Considering the nature of the project, all available BESS technologies that could be implemented were assessed to enable to Project Applicant to select and develop the specific type/technology based on market demands and technology availability at the time of construction. Therefore, Lithium-ion (or Sodium-ion), solid state BESS and Redox flow (e.g. Vanadium) were assessed as technology alternatives. However, following the 30-day public comment period, the Applicant elected to proceed with an application for authorisation only for Lithium-ion, Sodium-ion and Solid State BESS technologies at the proposed project. The specific technology, or combination of technologies, to be implemented from these authorised alternatives (should authorisation be granted) will only be determined during the Engineering, Procurement and Construction (EPC) procurement phase.

J.2.12.1 Potential Impacts and Recommended Mitigation Measures

The high-level SHE risk assessment for the proposed development of BESS had the below recommendations for each of the considered technologies:

GENERAL RECOMMENDATIONS

- This Risk Assessment has found that with suitable preventative and mitigative measures in place, none of the identified potential risks are excessively high, i.e., from a SHE perspective no fatal flaws were found with either type of technology (solid state - lithium-ion (or Sodium-ion) or redox flow - vanadium) for the BESS installations at the proposed PV facility.

- At a large facility, without installation of the state-of-the-art battery technology that includes protective features, there can be significant risks to employees and first responders. The latest battery designs include many preventative and mitigative measures to reduce these risks to tolerable levels. State-of-the-art technology should be used, i.e., not old technology, such as liquid phase lithium-ion batteries, that may have been prone to fire and explosion risks.

The design should be subject to a full Hazard and Operability Study (HAZOP) prior to commencement of procurement. A HAZOP is a detailed technical systematic study that looks at the intricacies of the design, the control system, the emergency system etc. and how these may fail under abnormal operating conditions. Additional safeguards may be suggested by the team doing the study.

LITHIUM-ION AND SODIUM-ION BATTERIES

- With lithium-ion batteries, the most significant hazard with battery units is the possibility of thermal runaway and the generation of toxic and flammable gases. There have been numerous such incidents around the world with batteries at all scales and modern technology providers include many preventative and mitigation features in their designs. This type of event also generates heat which may possibly propagate the thermal runaway event to neighbouring batteries if suitable state of the art technology is not employed.

- The flammable gases generated may ignite leading to a fire which accelerates the runaway process and may spread the fire to other parts of the BESS or other equipment located near-by.

- If the flammable gases accumulate within the container before they ignite, they may eventually ignite with explosive force. This type of event is unusual but has happened with an older technology container installed at McMicken in the USA in 2019.

- Due to a variety of causes, thermal runaway could happen at any point during transport to the facility, during construction or operation / maintenance at the facility or during decommissioning and safe making for disposal.

- Due to the containerized approach as well as the usual good practice of separation between containers, which should be applied on this project, and therefore the likely restriction of events to one container at a time, the main risks are close to the containers i.e., to transport drivers, employees at the facilities and first responders to incidents.

- In terms of a worst conceivable case container fires, the significant impact zone is likely to be limited to within 10 m of the container and mild impacts to 20 m. Based on the current proposed layouts, impacts at the closest isolated farmhouses to the proposed project is not expected.

- In terms of a worst conceivable case explosion, the significant impact zone is likely to be limited to with 10 m of the container and minor impacts such as debris within 50 m. Based on the current proposed layouts, impacts at the closest isolated farmhouses to proposed project is not expected.

- In terms of a worst reasonably conceivable toxic smoke scenario, provided the units are placed suitably far apart to prevent propagation from one unit to another and large external fires are prevented, the amount of material burning should be limited to one container at any one time. In this case, beyond the immediate vicinity of the fire, the concentrations of harmful gases within the smoke should be low. Beyond 500m the likelihood of harmful effects is negligible.

- There are no occupied farmhouse complexes located within 500 m of the proposed BESS and toxic smoke risks are therefore not a concern.

- Ideally BESS facilities should be located 150 m from busy public roads, i.e. regional “R” roads. There are no major public roads that run through the development area, and this is therefore not a concern.

VANADIUM REDOX FLOW (VRF) BATTERY INSTALLATIONS

- The most significant hazard with VRF battery units is the possibility of spills of corrosive and environmentally toxic electrolyte. Many preventative and mitigation features will be included in the design and operation, e.g., full secondary containment, level control on tanks, leak detection on equipment etc.

- There are no major rivers located close to the proposed electrical infrastructure hubs although there are small streams running through the development area. The proposed location for the BESS is over 50 m from any steam, borehole/water reservoir and therefore aquatic pollution risks are not a concern. Refer to the aquatic study for detailed distances.

- VRF batteries do not present significant fire and electrical arcing hazards provided they are correctly designed, operated, maintained and managed. Suitable Battery Management System, safety procedures, operating instructions, maintenance procedures, trips, alarms and interlocks should be in place.

TECHNOLOGY AND LOCATION OF BESS FACILITIES

- From a safety and health point of view, the above Risk Assessment shows that risks posed by VRFB systems may be slightly lower than those of Lithium BESS facilities, particularly with respect to fire and explosion risks. From an environmental spill and pollution point of view the

VRFB systems present higher short-term risks than the Lithium-ion BESSs. However, the above conclusions may be due to the fact that the VRFB technology is not as mature as Lithium-ion technology and therefore there is not as much operating experience and accident information available for the VRFB. Overall, from a SHE RA point of view, there is no specific preference for a type of technology.

- From a SHE RA point of view, where there is a choice of location that is further from public roads, water courses or isolated farmhouses, this would be preferred. VRFB hazards are mostly related to possible loss of containment of electrolyte and Lithium-ion BESSs to fires producing toxic smoke and fire fighting which may result in contaminated of firewater runoff. One would not want these liquids to enter water courses nor the smoke to pass close to houses / public traffic.

CUMULATIVE IMPACTS

- Unless another BESS is installed within 500 m of the BESS location proposed for this project, cumulative impacts of other developments in the greater area do not affect the safety and health of employees, contractors of members of the public within the BESS impact zone. The same can be said for the BESS electrical infrastructure.

RECOMMENDATIONS

The following recommendations have been made in the SHE RA for the BESS:

- There are numerous different battery technologies, but using one consistent battery technology system for the BESS installations associated with all the development in the Megora Solar PV Cluster would allow for ease of training, maintenance, emergency response and could significantly reduce risks.

- Where reasonably practicable, state-of-the-art battery technology should be used with all the necessary protective features e.g., draining of cells during shutdown and standby-mode, full Battery Management System with deviation monitoring and trips, leak detection systems.

- There are no fatal flaws associated with the proposed Megora Solar PV 1A Battery Energy Storage Facility for either technology type, although the exact location within the proposed development footprint can be optimized to reduce risks. Detailed suggestions for managing and reducing risks are contained in the BESS Risk Assessment (Appendix F.10 of this BA Report) and have been incorporated into the EMPrs where necessary and applicable.

- The overall BESS design should be subject to a full HAZOP prior to finalization of the design.

- For the VRFB systems an end of life (and for possible periodic purging requirements) solution for the large quantities of hazardous electrolyte should be investigated, e.g., can it be returned to the supplier for re-conditioning.

- Prior to bringing any solid-state battery containers into the country, the contractor should ensure that:

    - An Emergency Response Plan is in place that would be applicable for the full route from the ship to the site. This plan would include details of the most appropriate emergency response to fires both while the units are in transit and once they are installed and operating.

  - An End-of-Life Plan is in place for the handling, repurposing or disposal of dysfunctional, severely damaged batteries, modules and containers.

- The site layout and spacing between lithium-ion BESS containers should be such that it mitigates the risk of a fire or explosion event spreading from one container to another. The battery supplier should be able to provide guidance as well as technical proof that the proposed container to container separation distances are adequate.

- Suitable separation must also be ensured between the BESS containers and other onsite facilities such as transformers, any high voltage overhead powerlines etc. In this regard there are National Fire Protection Agency (NFPA - USA) and Eskom guidelines. Separation from offices (O&M Building) areas should be at least 25 m to avoid direct damage from possible explosions and fires and possibly be 50 m to avoid minor impacts explosion debris. Note that this recommendation has been included in the EMPr (Appendix H) for implementation and will be taken into consideration during the detailed design phase of the project (i.e., the BESS infrastructure will be located more than 25 m away from any infrastructure within the 2.5 ha area demarcated for BESS).

- Under certain weather conditions, the noxious smoke from a fire in a lithium battery container could travel some distance from the unit. The smoke will most likely be acrid and could cause irritation, coughing, distress etc. Close to the source of the smoke, the concentration of toxic gases may be high enough to cause irreversible harmful effects. Location of the facilities needs to ensure a suitable separation distance from public facilities and residences (500 m) / public roads (150 m). None of the dwellings in the area is within 500 m of the proposed BESS locations for the proposed project.

- In terms of aquatic risks, VRFB hazards are mostly related to possible loss of containment of electrolyte and Lithium-ion systems to fires producing toxic smoke and fire fighting which may result in contaminated of firewater runoff. One would not want these liquids to enter water courses nor the smoke to pass close to houses / industries / public traffic. The proposed location for the BESS is over 50 m from any steam, borehole/water reservoir and are therefore suitable from an aquatic pollution risk perspective.

- The proposed location of the BESS is acceptable from both a toxic smoke risk and aquatic pollution point of view.

- The specialist confirms that there is no reason why the proposed Megora Solar PV 1A facility should not be approved from a BESS risk perspective provided that the mitigation and safety measures contained herein are complied with.

- Finally, it is suggested that pre-construction, once the technology has been chosen and more details of the actual design are available, the necessary updated Risk Assessments should be in place.

J.2.13 Civil Aviation

The Site Sensitivity Verification for Civil Aviation is detailed in this section (Appendix F.13).

GN R320 specifically includes a protocol that provides the criteria for the specialist assessment and minimum report content requirements for impacts on civil aviation installations for relevant activities requiring EA. This protocol replaces the requirements of Appendix 6 of the 2014 NEMA EIA Regulations (as amended).

This specific protocol states that proposed developments (where relevant) that occur on sites identified and verified as Very High, High or Medium sensitivity, as depicted on the Screening Tool, must include a Civil Aviation Compliance Statement. It further states that there are no requirements if the proposed developments occur on sites identified as Low sensitivity on the Screening Tool. However, a Site Sensitivity Verification is required for the Civil Aviation Protocol for all sensitivity levels.

Therefore, since the proposed projects require an EA in terms of the 2014 NEMA EIA Regulations (as amended), and Civil Aviation was identified as a relevant theme in the Screening Tool Report, GN R320 must be complied with.

Screening Tool Reports and/or maps were generated for the proposed projects using the following classifications:

- *Utilities Infrastructure; Electricity; Generation; Renewable; Solar; PV*
- *Utilities Infrastructure; Electricity; Distribution and Transmission; Substation*

The Solar PV classification results in the use of the Solar PV methodology, whilst the substations, switching stations and power line classification results in the use of the general methodology on the Screening Tool.

The civil aviation theme (for Solar PV development) on the Screening Tool depicted that the entire study area is in **a low sensitivity area from a civil aviation perspective** i.e., there are no major or other types of civil aviation aerodromes or buffers that intersect with the proposed project site.

The proposed project study area was determined and verified to be of low sensitivity (as it relates to civil aviation). Additionally, the site visit conducted by the CSIR confirmed that there are structures such as farm steads, waterpoints, farm roads and fences within the area. Grazing is the dominant agricultural land use on the site and surrounds. No civil aviation installations were found within the project boundary or the proposed development footprint during the site visit or whilst reviewing existing databases. Therefore, the Low sensitivity from a civil aviation perspective identified by the Screening Tool for the proposed project was verified. Based on the above, in terms of GN R320, no further requirements are applicable i.e., a Compliance Statement is not required.

J.2.14 <u>Defence</u>

The Site Sensitivity Verification for Defence is detailed in this section (Appendix F.14)

GN R320 specifically includes a protocol that provides the criteria for the specialist assessment and minimum report content requirements for impacts on defence installations for relevant activities requiring EA. This protocol replaces the requirements of Appendix 6 of the 2014 NEMA EIA Regulations (as amended).

This specific protocol states that proposed developments (where relevant) that occur on sites identified and verified as Very High, High or Medium sensitivity, as depicted on the Screening Tool, must include a Defence Compliance Statement. It further states that there are no requirements if the proposed developments occur on sites identified as Low sensitivity on the Screening Tool. However, a Site Sensitivity Verification is required for the Defence Protocol for all sensitivity levels.

Therefore, since the proposed projects require an EA in terms of the 2014 NEMA EIA Regulations (as amended), and Defence was identified as a relevant theme in the Screening Tool Report, GN R320 must be complied with. The defence theme (for Solar PV developments) on the Screening Tool depicted that the entire study area is in a **low sensitivity area from a defence perspective** i.e., there are no major or other types of defence installations or buffers that intersect with the proposed project site.

The proposed project study area was determined and verified to be of low sensitivity (as it relates to defence installations). This was determined through a site visit and based on existing databases, which confirmed that no defence installations were found within the project boundary or the proposed development footprint. Therefore, the Low sensitivity from a defence perspective identified by the Screening Tool for the proposed project was verified. Based on the above, in terms of GN R320, no further requirements are applicable i.e., a Compliance Statement is not required.

J.3 Environmental Sensitivity Mapping

Based on the impact assessment undertaken and the relevant environmental sensitivities identified, the site layout of the solar PV facility has been identified and displayed in the context of the environmental sensitivity and features maps ,(Figures J.11 and J.12) and Appendix C of this BA Report. Based on the specialist studies, the key environmental features that have been avoided in terms of the layout of the facilities are listed below.

- **Agriculture**
  - The agricultural protocol requires confirmation that all reasonable measures have been taken through micro-siting to minimize fragmentation and disturbance of agricultural activities. However, the agricultural uniformity and low agricultural potential of the environment, means that the exact positions of all infrastructure will make no material difference to agricultural impacts.
  - The Site Sensitivity Verification verified that the entire project site is low to medium agricultural sensitivity because of its assessed cropping potential.

- **Visual**
  - Farmsteads: There are very few farmsteads located within the vicinity of the project area. Surrounding farmsteads, particularly those within 500 m of the project, could be sensitive to the visual intrusion of the various project infrastructure, so buffers should be applied accordingly. However, there are no farmsteads within close proximity i.e. within 500 m of the proposed project.
  - Protected Areas, Private Reserves / Game Farms, Scenic Routes and Arterial Roads: No scenic routes, arterial roads, protected areas, private reserves, or game farms have been identified within the project area.
  - Topographical Features: The nature of the topography and the position of viewers or receptors within the landscape are strong factors influencing the visual intrusion of a development. Infrastructure placed on high-elevation slopes or ridge tops would be highly visible, while those placed in valleys or enclosed plateaus would be far less visible. The project area has several areas where there are steep slopes (>1:4), and these areas should be avoided for placement of prominent infrastructure such as PV panels.
  - Scenic Water Features: There are numerous watercourses scattered throughout the project area. In the semi-arid Karoo landscape, the water features identified provide scenic value. As such, waterbodies and wetlands that are of scenic value are no-go areas.
  - Towns / Settlements: Murraysburg is located approximately 20 km south of the project and is not susceptible to the visual impacts posed by the project as it is located outside of the visual study area.
  - Sensitivity Ratings:
    - Slopes between 1:4 and 1:10 as well as scenic water features 250-500 m from the PV panels and buildings (including substation, BESS, and laydown areas) are allocated a High sensitivity rating.

- Slopes greater than 1:4 and scenic water features that are within 250 m from the panel area and buildings (including substation, BESS, and laydown areas), are allocated a Very High (No-go) sensitivity rating.

- The PV 1A area avoids the visual no-go areas although the southeastern portion of the PV area is within a high visual sensitivity area.
- All of the associated buildings avoid the visual no-go areas however, all buildings but the western laydown area and the O&M building are within high visual sensitivity areas

- **Heritage (Archaeology and Cultural Landscape)**
  - Sites of local heritage significance form the Grade 3 tier of the system, with those of high local significance designated as Grade 3A. Those of medium or low local significance are designated Grades 3B and 3C respectively. It is generally assumed that Grade 3A heritage resources should be preserved in their entirety, while Grade 3B and 3C sites, if they cannot be avoided, can be mitigated or part preserved, as appropriate.
    Resources which do not meet the Grade 3 criteria are referred to as Not Conservation-Worthy, although this author prefers the term "Ungradable" and this is used in this report. Generally, ungradable resources require no further action or mitigation in respect of development proposed on a site.
  - The survey of the proposed footprint of the Megora PV 1A facility found very little archaeology within the project footprint and surrounding area. The three known sites in the Megora PV 1A development footprint, however, are considered ungradable and of low significance and need not be preserved.
  - The site visit and a review of satellite imagery indicates that there are no extant historical built structures within the Megora PV 1A project footprint.
  - Two 350 m long earthen-walled dams with central concrete spillways (1678, 1681) were recorded just outside the north-western end of the project area during the site visit. These structures are identifiable in the 1959 aerial photography of the area, so are more than 60 years old. Both occurrences were assessed to be ungradable and thus of very low heritage significance.
  - Near to survey point 1681, at point 1682, is a wind pump, reservoir and large poplar tree, at least some which appear to be present in 1959 aerial photograph. This was also assessed to be ungradable and thus of very low significance.
  - The nearest historical farm complex to the Megora PV 1A project area is Badfontein, approximately 1.9 km south in the valley of the Snyderskraalrivier. The 1959 aerial photograph indicates that the avenue of bluegums (1683) leading to the farmhouse and the trees surrounding the farmstead were already present although substantially smaller. Most of the buildings in the complex were also present, but the current main farmhouse post-dates 1959. The buildings were not examined during the site visit, and the grading (3C) (i.e. low local significance) pertains only to the gum trees.
  - Two farm cemeteries were recorded surrounding the Megora PV Cluster footprint approximately 2.5 km and 7 km north of the proposed project. Both graveyards were assessed to be of high local significance and given a grading of 3A (Very High No-go). No formal graves were noted or recorded within the Megora PV 1A project footprint during the 2023 site visit.

- **Palaeontology**
  - Representative exposures of fossiliferous rocks in and around the development area were investigated. No fossiliferous outcrops were identified in the Megora PV 1A area, although fairly well - preserved to weathered fossils (tetrapod as well plant fossils) were found ex-situ in close proximity to two of the "koppies" in the development footprint. These

fossiliferous koppies were allocated a Very High (no-go) sensitivity rating and have been excluded from the project layout.

- **Terrestrial Biodiversity and Species**
  - The specialist assigned the following sensitivity ratings for Terrestrial Biodiversity:
    - Eastern Upper Karoo, Southern Karoo Riviere and Upper Karoo Hardeveld: Medium sensitivity.
    - Eastern Upper Karoo: Wash: High sensitivity.
    - Transformed land: Very Low Sensitivity.
  - Rocky ridges and outcrops within the broader study area were rated as Very High (no-go). The assessment found that the highest number of impacts on terrestrial features will result from the development of PV panel areas, roads, installation of cables and other infrastructures across the site. However, it was concluded that due to the relatively small size of the project area, retention of much of the natural area is allowed so the ecosystems should remain largely unaffected. This is largely based on the assumption that all Very High sensitivity habitats can be avoided, through the use of the existing tracks and roads shown in this assessment.

- **Aquatic Biodiversity and Species**
  - The watercourses were found to provide moderately high ecosystem services for downstream and in project area users. During the assessment this was effectively illustrated through where examples of fauna diversity are provided in the Aquatic Assessment. It is noted that there is no listed obligate aquatic fauna that is associated with the project.
  - A CBA is associated with the perennial riverine units, while ESA classified habitats are associated with the drainage lines, wetlands and non-perennial rivers of the Area of Interest. The aquatic CBA and ESA classifications provided by latest WCBSP of features surrounding the site was found to be inaccurate based on the outcomes of the field assessment. It was found that the CBA classification utilised the dense stands of terrestrial vegetation as the wetland indicator, while the ESA classifications are based off desktop level assessments completed by the surveyor general. The important aquatic features therefore provided in this study provide a more accurate delineation of the CBA extent.
  - The assessment delineated core functional areas of watercourses with and without riparian vegetation, alluvial washes, drainage lines. Alluvial washes and watercourses were rated as Very High sensitivity whereas drainage lines were rated as Moderate to Low sensitivity. All Core Functional areas were identified as No-go areas for placement of infrastructure. The site layout for the proposed development has avoided all core functional areas within the proposed project sites.
  - The watercourses were classified as having High and Moderate EIS ratings. A scientific buffer was calculated for the watercourses, where a 40m buffer for wetlands and 30m for rivers was utilised to protect these sensitive environments.

- **Avifauna**
  - A 200 m area surrounding the NFEPA rivers and a 100 m area surrounding the NFEPA wetlands are considered of medium avifaunal sensitivity.
  - A Jackal Buzzard nest and two Verreaux's Eagle nest was identified south of the site, the Jackal Buzzard nest being in close proximity to the Option A site access road and appropriate buffers assigned. The Jackal Buzzard nest is located approximately 115 m from the proposed alignment on a ridge and the Verreaux's Eagle nest is located approximately 580 m from the alignment on a ridge.
    - The Option B site access road crosses a NFEPA river and it's 200 m buffer, as well as but this is acceptable from an avifaunal perspective.

    - Site access road Option A crosses a 200 m Jackal Buzzard nest No-Go buffer and a 1 km Verreaux's Eagle nest No-Go buffer. However, the avifaunal assessment confirmed that the current road alignment would be acceptable provided the recommended mitigation measures are implemented, such as no construction activities taking place during the winter breeding season, if the nests are active.
  - The Avifaunal Assessment confirmed that the proposed layout of the Megora Solar PV 1A area avoids all identified avifaunal constraints.
  - Refer to Figure J.8 for the avifauna sensitivity map.

- **Geotechnical**
  - The Geotechnical Assessment identifies unfavourable steep slopes within the study area. Such slopes are particularly vulnerable to increased levels of erosion, undercutting of geological units less susceptible to weathering and block and wedge failures of jointed geological formations especially in sandstones, mudstones and siltstones. As such slope with an angle of greater than 12° have been rated as Very High (no-go) sensitivity. It must be noted that no infrastructure is planned on slopes rated as Very High (no-go) sensitivity.
  - Refer to Figure J.9 for the geotechnical sensitivity map.

- **BESS**
  - The following Moderate – High buffers were applied to guide the placement of the BESS:
  - Existing main road network (i.e., R 63) – 150 m buffer
  - Occupied farmhouse complexes
    - 500 m buffer to accommodate potential toxic smoke scenarios
    - 10 - 50m buffer from the BESS container to accommodate potential explosion related impacts.
    - 10 – 20 m buffer to accommodate potential container fire related impacts
  - Streams (i.e. aquatic features), borehole/water reservoir – 50 m buffer to mitigate any potential aquatic pollution risks

- **Socio-Economic**
  - Sensitivity maps in terms of areas to avoid are not applicable for the Socio-Economic Assessment.

- **Geohydrology**
  - It is recommended that all BESS are placed a minimum of 50 m from any existing confirmed boreholes.
- **Traffic**
  - Sensitivity maps in terms of areas to avoid are not applicable for the Traffic Impact Statement.

Key sensitivity features have been annotated in Figure J.3and J.4 (i.e., sensitivity and feature map). For detailed feature maps, refer to the Specialist Assessments (Appendix F of this Final BA Report).

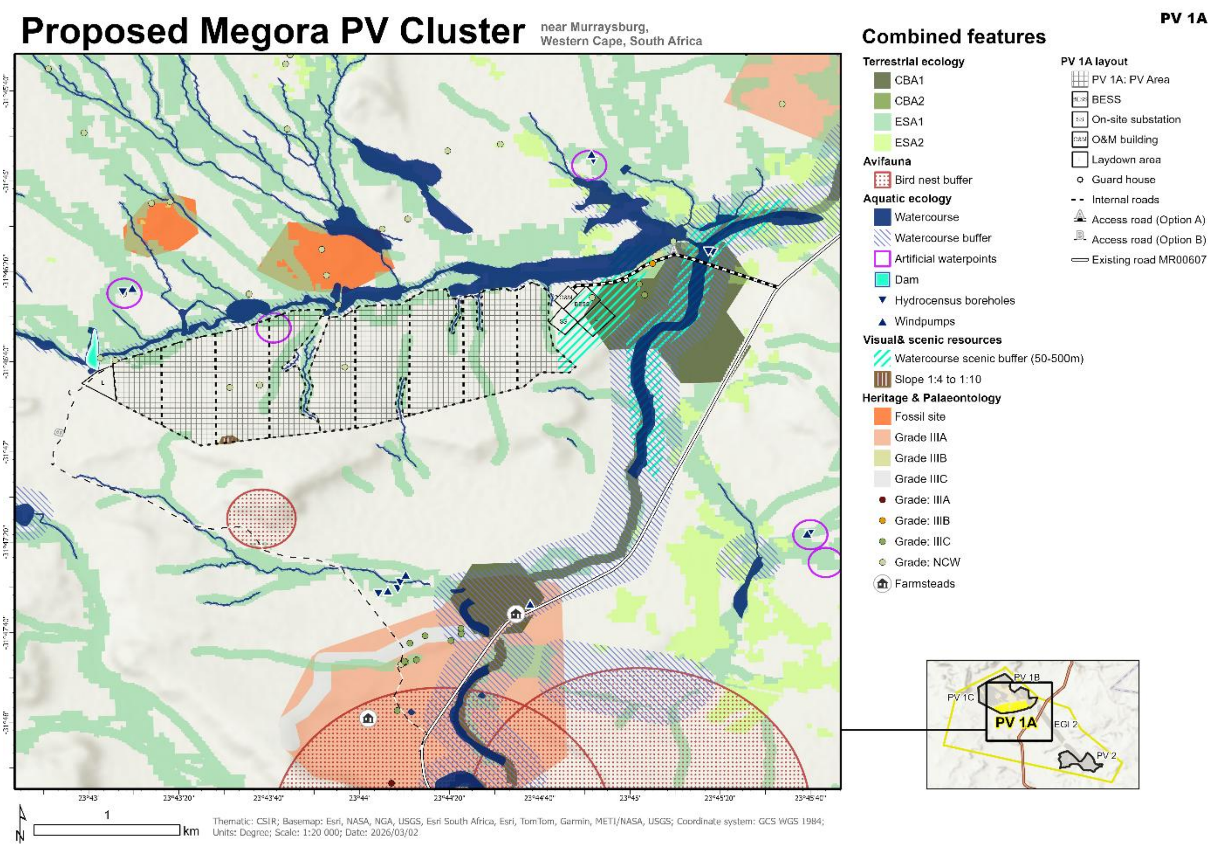

Figure J.3: Combined Sensitivity Features Map for the proposed development.

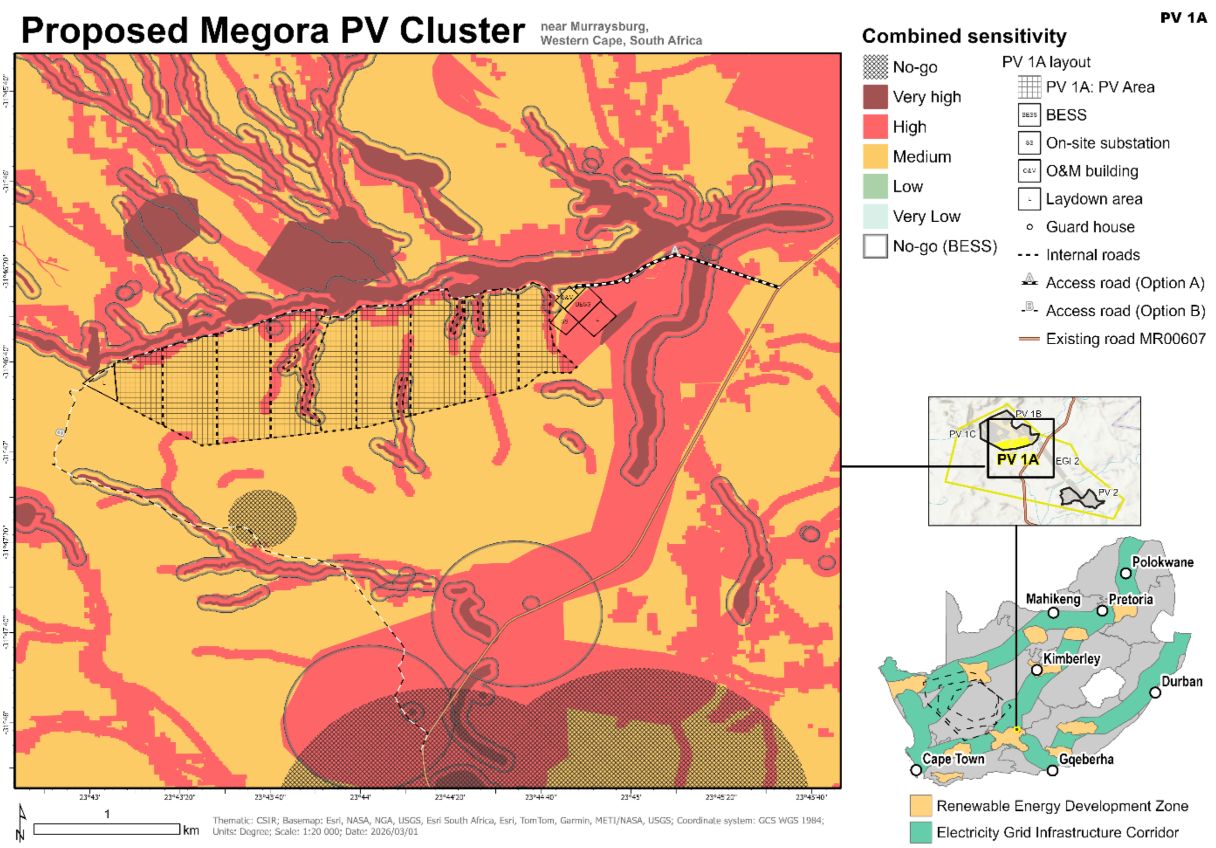

Figure J.4: Combined Sensitivity Map for the proposed development.

SECTION K: RECOMMENDATION OF PRACTITIONER & ENVIRONMENTAL IMPACT STATEMENT

The information presented in this BA, contributes to this overall environmental impact statement and reasoned opinion from the EAP as to whether the proposed project should or should not be authorised, including any conditions that should be made in respect of the authorisation (should it be granted).

This BA Report has investigated and assessed the significance of potential positive and negative direct, indirect and cumulative impacts associated with the proposed **Megora PV 1A project**. All direct and cumulative impacts have been identified and rated accordingly, and indirect impacts were discussed where relevant by the specialists. No negative impacts have been identified within this BA that, in the opinion of the EAP who has conducted this BA Process, should be considered "fatal flaws" from an environmental perspective, and thereby necessitate substantial re-design or termination of the project.

Section 24 of the Constitutional Act states that "*everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures, that prevents pollution and ecological degradation; promotes conservation; and secures ecologically sustainable development and use of natural resources while promoting justifiable economic and social development*". Based on this, this BA was undertaken to ensure that these principles are met through the inclusion of appropriate management and mitigation measures, and monitoring requirements. These measures will be undertaken to promote conservation by avoiding the sensitive environmental features present on site and through appropriate monitoring and management plans (refer to the EMPr in Appendix H of this BA Report).

Alternatives

As noted above, in Section C of this BA report, the preferred activity alternative was determined to be the development of a renewable energy facility on site using solar PV as the preferred technology alternative. In terms of the preferred location of the site, a strategic site, location and development footprint identification process was followed, where the selection is informed by the environmental constraints identified through screening. This is based on the mitigation hierarchy approach of firstly trying to avoid impacts through careful siting. Therefore, it must be noted that different sites, location or development footprint alternatives are not ranked, but rather a strategic process was followed (as shown in Figure C.6) where sensitive features are screened out, in order to reach the preferred location or development footprint within the preferred site to ensure that the proposed developments would have the least possible overall negative impact. The specialists considered desktop data, field work, existing literature and the Screening Tool to determine the site sensitivity. Based on this, a preferred layout for the solar PV facility was determined. This layout avoids the features on site that have been identified as no-go areas, as explained in Section C.

The development footprint and buildable areas largely avoid the "no-go" sensitive features identified and mapped by the respective specialists, where relevant and applicable, as discussed in Section J of this BA Report. As noted above, in some cases, linear infrastructure traverse areas of high or very high sensitivity, however the relevant specialists have confirmed that this is acceptable with recommended mitigation measures. None of the specialists noted fatal flaws with the BESS alternatives. In addition, from a terrestrial biodiversity and species perspective, there is minor encroachment of non-linear infrastructure into provincial CBAs however the Terrestrial Biodiversity and Aquatic specialist have confirmed that impacts on such features will be negligible

Need and Desirability of the Proposed Project

This BA considered the nature, scale and location of the proposed development as well as the wise use of land (i.e., is this the right time and place for the development of the Megora Solar PV cluster). The entire Megora PV1A site is located within REDZ 11 (Beaufort West) which is a geographical area that has been identified on a strategic planning level to have reduced negative environmental impacts but high commercial attractiveness (due to its proximity to, inter alia, the national grid) and socio-economic benefit to the country. In addition, Megora PV 1A project is located entirely within the Central Strategic Transmission corridor, which are one of 5 corridors declared as geographical areas of strategic importance for large scale electricity transmission infrastructure.

The development of solar energy is important for South Africa to reduce its overall environmental footprint from power generation (including externality costs), and thereby to steer the country on a pathway towards sustainability. When considering the timing of this project, the IRP 2019 proposed to secure 17 800 MW of renewable energy capacity by 2030. Furthermore, based on the Proposed Balanced Plan for new generation capacity in the 2025 IRP, solar PV energy has a current base of 3 646 MW at the end of 2025; and approximately 10 313 MW of new capacity is estimated for the period of 2026 to 2030 (i.e. medium term horizon); and approximately 18 400 MW of new capacity is estimated for the period of 2031 to 2042 (i.e. transition horizon and long-term period). As discussed in the preceding sections of this BA Report, it is the Project Applicant's intention to bid this project in the future bidding rounds of the REIPPPP or similar tender process. The project would contribute in the order of 120 MW renewable energy generation capacity to national energy generation, which has direct and indirect benefits for national economic growth, especially when noting that wind and solar energy are the lowest cost options for new electricity generation in South Africa.

On a municipal planning level, the proposed project supports the objectives of the Beaufort West Local Municipality IDP (2017-2022) which identifies sustainable development, local economic development and job creation as key priorities to improve its economic sector. The IDP of the abovementioned local municipality promotes the creation of an enabling environment to attract investment and support the local economy.

The proposed project is therefore aligned with the vision and goals of the District and Local Municipalities. The projects will also stimulate the creation of employment which is much needed in the municipal areas. It will therefore be supportive of the IDP's objective of creating more job opportunities and the creation of an enabling environment to attract investment and support the local economy.

Summary of Key Impact Assessment Findings

Based on the findings of the specialist studies, the proposed project is considered to have an overall **moderate to very low negative environmental impact and an overall moderate positive socio-economic impact in all phases (construction, operation and decommissioning), with there being a potential high positive impact during the operational phase** (with the implementation of respective mitigation and enhancement measures).

Table K.1 below provides a summary of the impact assessment for each phase of the proposed Megora PV 1A project **post mitigation for direct impacts**. Table K.2 provides the same information for the **cumulative impacts for the proposed project**.

Table K.1: Overall Impact Significance with the Implementation of Mitigation Measures for Direct Negative and Positive Impacts for the Megora PV1A project

<table>
<tr><th>Specialist Assessment</th><th colspan="2">Construction Phase</th><th colspan="2">Operational Phase</th><th colspan="2">Decommissioning Phase</th></tr>
<tr><td colspan="7">DIRECT NEGATIVE IMPACTS</td></tr>
<tr><td>Visual</td><td colspan="2">Moderate</td><td colspan="2">Moderate</td><td colspan="2">Low</td></tr>
<tr><td>Heritage (Archaeology and Cultural Landscape)</td><td>Very Low</td><td>Low</td><td colspan="2">Low</td><td>Very Low</td><td>Low</td></tr>
<tr><td>Palaeontology</td><td colspan="2">Low</td><td colspan="2">Insignificant and/or not identified and/or not applicable</td><td colspan="2">Insignificant and/or not identified and/or not applicable</td></tr>
<tr><td>Terrestrial Biodiversity and Species</td><td colspan="2">Low</td><td>Very Low</td><td>Low</td><td>Very Low</td><td>Low</td></tr>
<tr><td>Aquatic Biodiversity and Species</td><td colspan="2">Low</td><td colspan="2">Low</td><td colspan="2">Low</td></tr>
<tr><td>Avifauna</td><td>Very Low</td><td>Moderate</td><td>Low</td><td>Very Low</td><td>Very Low</td><td>Moderate</td></tr>
<tr><td>Socio-Economic</td><td colspan="2">Low</td><td colspan="2">Low</td><td colspan="2">Low</td></tr>
<tr><td>Geohydrology</td><td colspan="2">Very Low</td><td colspan="2">Very Low</td><td colspan="2">Very Low</td></tr>
<tr><td>Geotechnical</td><td colspan="2">Very Low</td><td colspan="2">Very Low</td><td colspan="2">Very Low</td></tr>
<tr><td>Traffic</td><td colspan="2">Low</td><td colspan="2">Very Low</td><td colspan="2">Low</td></tr>
<tr><td colspan="7">DIRECT POSITIVE IMPACTS</td></tr>
<tr><td>Socio-Economic</td><td colspan="2">Moderate</td><td>Moderate</td><td>High</td><td colspan="2">Moderate</td></tr>
</table>

As indicated in Table K.1, the majority of the **direct negative impacts** were rated with a **<u>low to very low</u> post mitigation impact significance** for **all three phases**, with only the Avifauna and Visual impacts being rated as **<u>moderate to very low</u>**. In terms of **positive impacts**, the Socio-Economic impacts are rated as **<u>moderate</u> significance** for the construction and decommissioning phase and **<u>moderate to high</u>** for the operational phase.

Table K.2: Overall Impact Significance with the Implementation of Mitigation Measures for Cumulative Negative and Positive Impacts for the Megora PV 1A project

Specialist Assessment	Construction Phase	Operational Phase	Decommissioning Phase
CUMULATIVE NEGATIVE IMPACTS			
Visual	Moderate	Moderate	Low
Heritage (Archaeology and Cultural Landscape)	Very Low	Very Low	Very Low
Palaeontology	Low	Insignificant and/or not identified and/or not applicable	Insignificant and/or not identified and/or not applicable
Terrestrial Biodiversity and Species	Low	Low	Low
Aquatic Biodiversity and Species	Low	Low	Low
Avifauna	Moderate	Moderate	Moderate

Specialist Assessment	Construction Phase		Operational Phase		Decommissioning Phase	
Socio-Economic	**Moderate**		**Moderate**		**Moderate**	
Geohydrology	**Very Low**	**Low**	**Very Low**	**Low**	**Very Low**	**Low**
Geotechnical	**Very Low**	**Low**	**Very Low**	**Low**	**Very Low**	**Low**
Traffic	**Low**		**Low**		**Low**	
CUMULATIVE POSITIVE IMPACTS						
Socio-Economic	**Very High**		**Very High**		**High**	

Based on Table K.2, the majority of the **cumulative negative impacts** were rated **very low to low post mitigation impact significance** with **moderate** impact significance being recorded for the Visual, Socio-economic and Avifauna themes. In terms of **positive impacts**, the Socio-Economic impacts are rated as **Very High** significance for the construction and operational phase, and **high** for the decommissioning phase.

All the specialists have recommended that the proposed project receives EA on condition that the recommended mitigation measures are implemented. Also, note that all conclusions and recommendations made in the respective Specialist Impact Assessment Reports have been incorporated into the project specific EMPr for adherence.

Overall Environmental Impact Statement

Taking into consideration the findings of the BA Process, as well as location of the proposed **Megora PV 1A** within the Beaufort West REDZ (REDZ 11) and the Central Strategic Transmission Corridor, and given the national and provincial strategic requirements for infrastructure development, particularly from an electricity generation perspective, and based on the fact that the no-go areas have been avoided, it is the opinion of the EAP, that the project benefits outweigh the costs and that the project will make a positive contribution to sustainable infrastructure development in the nearby towns (i.e., Murraysburg and Graaff-Reinet) and surrounding regions, as well as making a positive contribution to energy generation for South Africa. <u>Provided that the specified mitigation measures are applied effectively, it is recommended that the proposed projects receive EAs in terms of the EIA Regulations promulgated under the NEMA.</u>

It is understood that the information contained in this BA Report and appendices is sufficient to make a decision in respect of the Listed Activities being applied for. It is recommended that the EA be valid for a period of 10 years.

<u>In addition, it is recommended that the EMPrs compiled as part of this BA Process, included in Appendix H of this BA Report, be approved concurrently in the EA (should it be granted). A detailed final layout of the solar PV facility and associated infrastructure was identified during the BA Phase and is included in Section B and J, as well as Appendix C and the EMPrs.</u>

<u>If any changes are needed to the detailed final layout post EA (should such an authorisation be granted), the specialists have confirmed that such changes would be deemed acceptable if the changes remain within the approved buildable areas and area assessed during the BA Process with no-go sensitive areas avoided. Any changes can be subjected to an EA amendment process, where warranted.</u>

Cumulative Environmental Impact Statement

The cumulative impacts have been assessed by all the specialists on the project team. The cumulative assessment included approved renewable energy projects within a 30 km radius of the project sites, as well as existing and planned transmission lines, and also the additional proposed projects comprising the Megora PV Cluster. No cumulative impacts have been identified that were considered to be fatal flaws. The specialists recommended that the projects receive EA in terms of the EIA Regulations promulgated under the NEMA, including consideration of cumulative impacts, provided that mitigation is applied. Based on the findings of the detailed specialist assessments and technical studies, the proposed project is considered to have an overall Very Low to Moderate negative cumulative environmental impact, and an overall highly significant positive cumulative socio-economic impact (with the implementation of respective mitigation and enhancement measures).

It is also important to note that the proposed projects are located within geographical areas that support the development of large-scale wind and solar energy developments (i.e., the Beaufort West REDZ) and are considered to be of strategic importance for large scale electricity transmission infrastructure (i.e., Central Transmission Corridor). The proposed projects are therefore in line with the national planning vision for wind and solar development in South Africa.

Conditions to be included in the EA

In order to ensure the effective implementation of the mitigation and management actions, the relevant and applicable EMPrs have been compiled and are included in Appendix H of this BA Report. The mitigation measures necessary to ensure that the proposed projects are planned and carried out in an environmentally responsible manner are listed in these EMPrs. The EMPrs include the mitigation measures noted in this report and the specialist reports. The EMPr is a dynamic document that should be updated as required and provides clear and implementable measures for the proposed project. The frequency of monitoring and auditing compliance with the conditions of the EA (should such an authorisation be granted) and EMPr, is recommended in the EMPr. The compliance monitoring ranges from weekly to bi-monthly to monthly. It is recommended that regular monitoring be undertaken, as specified in the EMPr. It is further recommended that the submission of compliance reports to the Competent Authority be undertaken quarterly.

Listed below are the **main** recommendations that should be considered for inclusion in the EA (should such authorisation be granted by the DFFE). These main recommendations as well as additional recommendations are included in the EMPr and BA Report.

- **Agriculture Impacts**

The conclusions of the Agricultural Compliance Statements are that that the proposed project is acceptable and the recommendation for this approval is not subject to any conditions.

- **Visual Impacts:**
  - All key mitigation measures outlined in the Visual Impact Assessment and captured in the relevant EMPrs and implemented. No conditions were recommended by the specialist.

- **Heritage Impacts (Archaeology and Cultural Landscape):**
  - Construction, Operational and Decommissioning Phases:
    - If significant archaeological material is uncovered during development, work in the immediate area must be halted and the find reported to ECO. The ECO must inform HWC of any such discovery so that the find can be assessed by an archaeologist and

  arrangements made to mitigate it, if necessary. Such finds may require inspection or collection/excavation by an archaeologist. Such heritage is the property of the state and will need to be curated in a suitable, designated repository.
  - Should previously unknown human remains be encountered, work in the vicinity of the find must cease, the remains must be left in situ but made secure, and HWC must be notified immediately so that mitigatory action can be determined and be implemented.
- Construction Phase:
  - Restrict construction activities to daylight hours in order to negate or reduce the visual impacts associated with lighting.
  - Position laydown areas and related storage/stockpile areas in unobtrusive positions in the landscape, where possible.
  - Minimise vegetation clearing and rehabilitate cleared areas as soon as possible.
  - Make use of existing roads and servitudes where possible.
  - Limit the number of vehicles and trucks travelling to and from the proposed site, where possible.
- Operational Phase:
  - Restrict vegetation clearance on the site to that which is required for the correct operation of the facility.
  - As far as possible, limit the number of maintenance vehicles which are allowed to access the site.
  - As far as possible, limit the amount of security and operational lighting present on site.
  - Light fittings for security at night should reflect the light toward the ground and prevent light spill.
  - Lighting fixtures should make use of minimum lumen or wattage.
  - Mounting heights of lighting fixtures should be limited, or alternatively, foot-light or bollard level lights should be used.
  - If economically and technically feasible, make use of motion detectors on security lighting.
  - Buildings on the site should be painted with natural tones that fit with the surrounding environment.
  - Non-reflective surfaces should be utilised where possible.

- **Palaeontological Impacts**

  - The Environmental Control Officer (ECO) for this project must be informed that the Teekloof and Balfour Formations of the Adelaide Subgroup (Beaufort Group, Karoo Supergroup) have a very high palaeontological sensitivity. The Palaeozoic bedrocks in the study area are largely concealed due to poor exposure, primarily visible along major drainage lines and some steeper hillslopes.
  - Accountable supervisory personnel should be trained by a qualified palaeontologist in the recognition of fossil heritage.
  - If palaeontological heritage is uncovered during surface clearing or excavations, the Chance Finds Protocol included in the PIA must be implemented immediately. Fossil discoveries must be protected in situ (if possible), and the ECO or site manager must report the find to the relevant heritage authority, namely the Heritage Western Cape (3rd Floor, Protea Assurance Building, 142 Longmarket Street, Cape Town City Centre, Cape Town 8000; Tel: +27 (0)21 483 9598; Fax: +27 (0)21 483 9845; Web: www.hwc.org.za), so that appropriate mitigation measures, including the recording and collection of fossils by a qualified specialist, can be carried out.
  - Before any fossil material can be collected from the development site, the specialist involved would need to apply for a collection permit from SAHRA. Fossil material must be housed in an official collection (museum or university), while all reports and fieldwork should meet the minimum standards for palaeontological impact studies proposed by SAHRA (2012).

- **Terrestrial Biodiversity and Species Impacts**
  - All key mitigation measures outlined in the Terrestrial Biodiversity, Plant and Animal Species Impact Assessment and captured in the relevant EMPrs and implemented. No specific conditions for inclusion in the potential EA were recommended by the specialist.
- **Aquatic Biodiversity and Species Impacts**
  - An appointed Environmental Control Officer (ECO) must oversee the construction phase of the project to ensure compliance with the proposed buffer zones.
  - It is recommended that 1:100 floodlines are delineated/developed for the proposed project.
  - A suitable stormwater management plan (SWMP) must be developed for the project. This plan must include details of erosion control measures and management.
  - The SWMP should consider suitable attenuation strategies, where deemed necessary by the professional.
  - The implementation of a non-native invasive flora species management plan must be compiled and implemented for the duration of the development construction activities as well as for 24 months following completion of the construction activities.
- **Avifauna Impacts**
  - All key mitigation measures outlined in the Avifaunal Impact Assessment and captured in the relevant EMPrs and implemented. No specific conditions for inclusion in the potential EA were recommended by the specialist.
- **Socio-Economic Impacts**
  - All key mitigation measures outlined in the Socio-economic Impact Assessment and captured in the relevant EMPrs and implemented. No specific conditions for inclusion in the potential EA were recommended by the specialist.
- **Geohydrology Impacts**
  - It is recommended that the water requirements for the construction and decommissioning of the proposed Megora PV 1A or the simultaneous construction of the Megora Solar PV Cluster must be met by multiple boreholes across the area earmarked for the development including neighbouring farm portions. This is purely to minimise the potential impact water abstraction may have on groundwater resources seeing that this is an important resource for livestock and domestic use in a region that experiences drought on a regular basis.
  - The proposed monitoring plan should be followed with a special focus on groundwater level monitoring coupled with more detailed investigations should the groundwater levels vary by more than 0.5 standard deviation from the statistical norm. This is to prevent a worst-case scenario where the aquifer is over abstracted to the point that groundwater levels fall below current borehole pumping depths in the region.
  - All proposed impact mitigation measures are to be implemented during the development of the project. These include the use of environmentally safe cleaning agents, the construction of BESS facilities 50 m from any boreholes, such as in the current layout, along with appropriate bunding and secondary containment, and the recommended precautionary approaches aimed at preventing oil spills, fuel leaks, uncontrolled wastewater disposal and over abstraction of groundwater.
- **Geotechnical Impacts**
  - Vegetation clearance should be kept to a minimum and undertaken only where necessary.

- A SWMP must be developed prior to the construction phase by a suitably qualified professional.
- The SWMP should be actively implemented and managed throughout the duration of the project to effectively mitigate potential soil erosion.
- Rehabilitation of soils and geological materials should commence during the construction phase where feasible, or immediately thereafter, to ensure successful re-vegetation.
- Only authorised vehicles should access the site, using designated access points and internal roads within the approved project footprint.
- Following decommissioning, the land should be reinstated to a natural or near-natural condition.
- Machinery and equipment must be properly maintained throughout all project phases.
- Appropriate ground protection measures must be implemented during maintenance and refuelling operations.
- Suitably designed bunding structures, double containment systems, and leak detection mechanisms must be implemented at all BESS facilities.
- Any spillages must be promptly contained, removed, and disposed of following correct procedures.
- All key mitigation measures are contained in the relevant EMPrs. No specific conditions for inclusion in the potential EA were recommended by the specialist.

- **Traffic Impacts**

  - All key mitigation measures outlined in the Traffic Impact Assessment and captured in the relevant EMPrs and implemented. No specific conditions for inclusion in the potential EA were recommended by the specialist.

Paul Lochner

NAME OF EAP

03 June 2026

SIGNATURE OF EAP | DATE

References:

Refer to detailed reference lists included in each Specialist Assessment report in Appendix F of this BA Report. In addition to each of the Specialist Assessments referred to in the text above, as well as various footnotes, below is a list of the key references used.

CSIR (Council for Scientific and Industrial Research). 2017. Protecting South Africa's strategic water source areas. https://www.csir.co.za/protecting-south-africa%E2%80%99s-strategic-water-source-areas. Date accessed: Feb. 2019

Department of Environmental Affairs, 2015. Strategic Environmental Assessment for wind and solar photovoltaic energy in South Africa. CSIR Report Number: CSIR/CAS/EMS/ER/2015/0001/B. Stellenbosch.

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Department of Environment, Forestry and Fisheries, 2019. Strategic Environmental Assessment for the Expansion of Electricity Grid Infrastructure Corridors in South Africa. CSIR Report Number: CSIR/SPLA/EMS/ER/2019/0076/B. ISBN Number: ISBN 978-0-7988-5648-5. Stellenbosch and Durban.

Department of Environment, Forestry and Fisheries, 2019. Strategic Environmental Assessment for the Development of a Phased Gas Pipeline Network in South Africa. CSIR Report Number: CSIR/SPLA/EMS/ER/2019/0077/B. ISBN Number: ISBN 978-0-7988-5649-2. Stellenbosch and Durban.