

Basic Assessments for the proposed development of the Megora Solar Photovoltaic Facility 2 (i.e., Megora PV 2), as well as the proposed development of a 132kV overhead power line between the proposed Megora Solar PV 2 and the proposed Megora Solar PV 1A (i.e., Megora EGI 2), and their associated infrastructure, near Murraysburg in the Western Cape Province

EXECUTIVE SUMMARY

Megora EGI 2



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



Executive Summary

MEGORA EGI 2 PROJECT

INTRODUCTION

Megora PV (Pty) Ltd (hereinafter referred to as “the Project Applicant²”) 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.4).

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

² The ‘Project Applicant’ and ‘Project Developer’ are used synonymously through the BA Report.

BASIC ASSESSMENT REPORT: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2) and 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., 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 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 which provides a summary schematic depicting the projects comprising the Megora Solar PV Cluster.

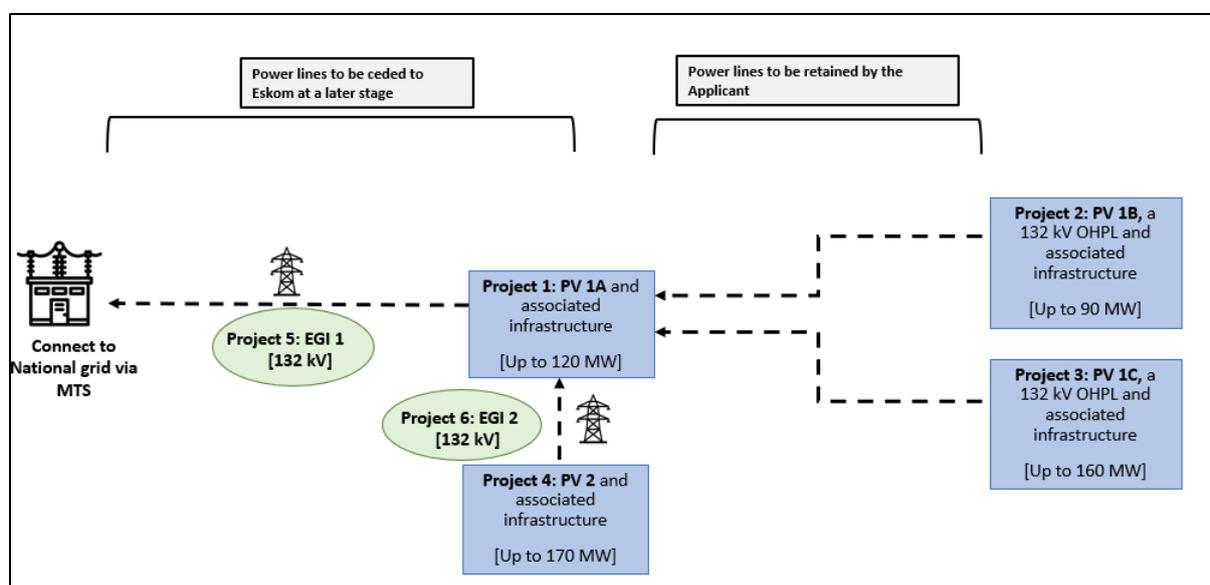


Figure A. Summary schematic of the project comprising the proposed Megora Solar PV Cluster

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).

This combined BA Report pertains to Megora PV 2 (Project 4) and Megora EGI 2 (Project 6). Separate Draft BA Reports have been prepared for Projects 1–3 (i.e., Megora PV 1A–C) and are being released concurrently to all Interested and/or Affected Parties (I&APs), Organs of State, and relevant stakeholders for a 30-day public review period. All comments received during the review period will be recorded and addressed in a comprehensive Comments and Responses Report (CRR).

The entire proposed Megora PV 2 site and the proposed Megora EGI 2 route 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

BASIC ASSESSMENT REPORT: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2) and 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

generation facilities (GG 41445, GN 114; 16 February 2018 and GN 144; 26 February 2021). 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. In addition, the entire Megora PV 2 site and Megora EGI 2 route 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, both of the proposed projects are subject to BA Processes instead of a full Scoping and EIA processes and a reduced decision making period of 57 days, in terms of the NEMA and the 2014 NEMA EIA Regulations (as amended). Separate BA Processes (with combined reporting as outlined in Section A.2 above) in terms of Appendix 1 of the 2014 NEMA EIA Regulations (as amended) are therefore being undertaken for the proposed projects.

As requested, the combined BA Report is submitted with distinct and clear sections dedicated to the PV facility and EGI. As such this Executive Summary only outlines the findings of the assessments undertaken for the Megora EGI 2 project. Refer to the summary table included ahead of Section A of the combined BA Report outlining in which sections of the report are applicable to Megora PV 2 project and/or the Megora EGI 2 project.

PROJECT LOCATION

The locality of the proposed Megora EGI 2 project is shown below in Figure B. The co-ordinates of the proposed project sites are detailed in Section B of this BA Report.

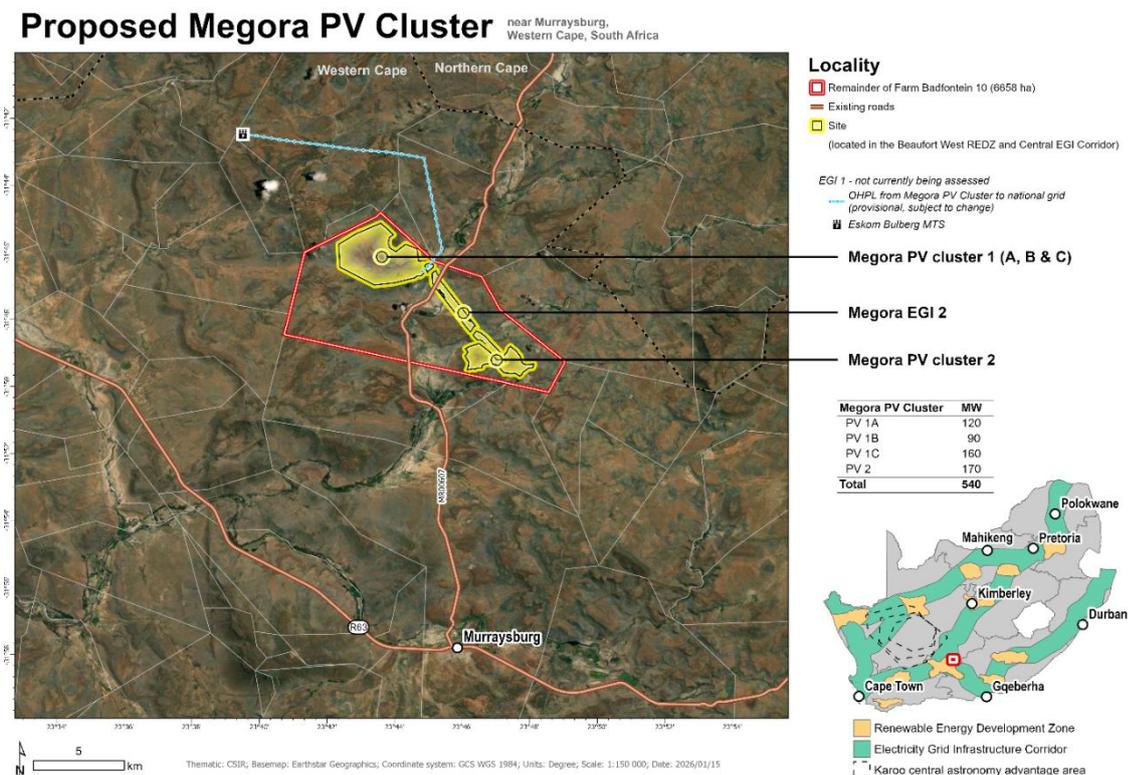


Figure B. Locality of the proposed Megora PV Cluster.

BASIC ASSESSMENT REPORT: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2) and 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

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 (<i>Registered EAP (2019/745)</i>)	CSIR	EAP and Project Leader
Rohaida Abed (<i>Registered EAP (2021/4067)</i>)	CSIR	Project Team Member
Dhiveshni Moodley (<i>Pr.Sci.Nat.</i>)	CSIR	Project Manager
Luanita Snyman-van der Walt (<i>Pr.Sci.Nat.</i>)	CSIR	Project Mapping
Suvasha Ramcharan (<i>Cert.Sci.Nat and Cand. EAP</i>)	CSIR	Project Officer
Helen Antonopoulos (<i>Cand.Sci.Nat.</i>)	CSIR	Project Officer
Sonto Mkize (<i>Cand. Planner</i>)	CSIR	Project Officer
Kimara Moodley (<i>Cand.EAP</i>)	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 Megora PV 2)
Debbie Mitchell	Ishecon	BESS Risk Assessment (only undertaken for the Megora PV 2)
Iris Wink	iWink Consulting	Traffic Impact Assessment (only undertaken for the Megora PV 2)
Hardy Luttig, Dale Barrow and Shane Teek	GEOSS South Africa (Pty) Ltd	Geohydrology Assessment (only undertaken for the Megora PV 2)
Hardy Luttig and Shane Teek		Desktop Geotechnical Assessment
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 EGI 2 comprises of an on-site switching substation and a 132 kV power line extending from the on-site switching substation at the proposed Megora PV 2 site to the proposed Collector Substation (to be assessed at a later stage as part of the proposed Megora EGI 1 project) on the Megora PV 1A site. A 400 m assessment corridor (i.e., 200 m on either side of centre line) was surveyed for the routing of the Megora EGI 2 project, in addition to the 1 100 ha area that was surveyed for the proposed PV facilities. These areas are defined as the study areas. Sensitive environmental features were identified and following consideration of the sensitive features, the 7 km power line servitude length and switching station, covering 1.5 ha, was proposed.

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.

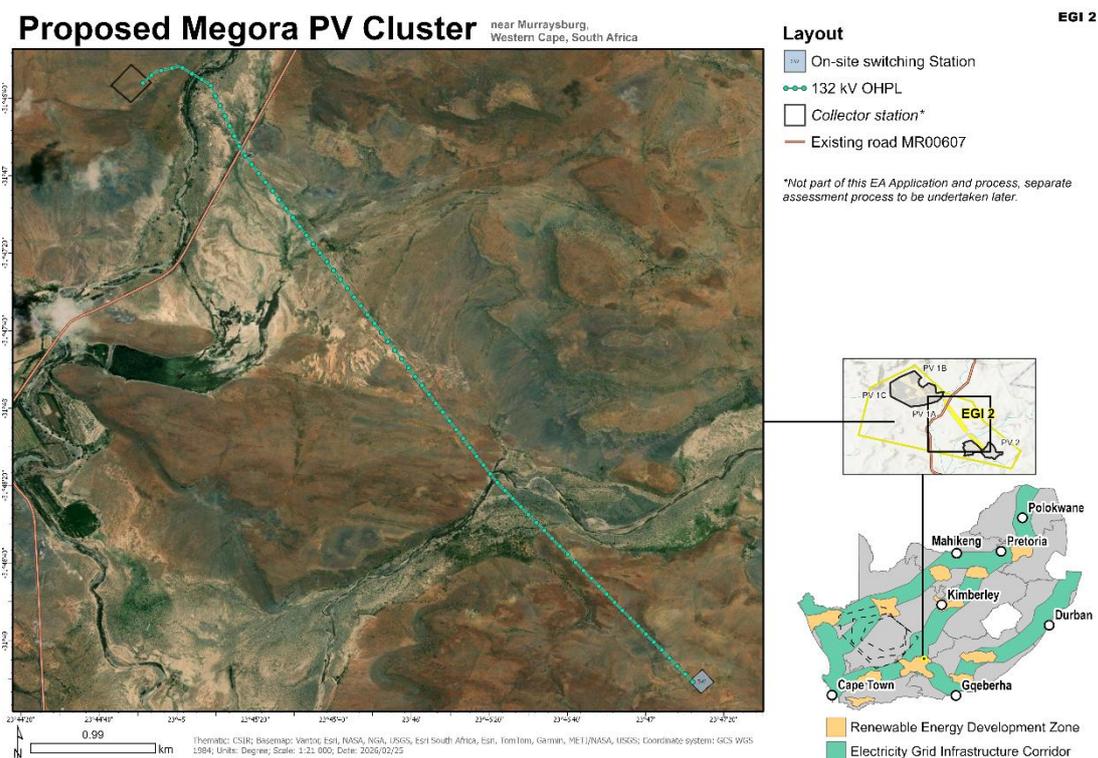


Figure C: Layout of the proposed project

A summary of the key components of the proposed Megora PV 2 and associated infrastructure and technical information is described and listed in Table B below.

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Table B: Description of the Project Components

Infrastructure	Component	Dimensions / Specifications					
Overhead power line	Capacity	132 kV					
	Foundation	The size of the footprint area will range from 0.6 m x 0.6 m to 1.5 m x 1.5 m. The minimum working area required around a structure position is 20 m x 20 m.					
	Pylon	Steel monopole or lattice towers					
	Tower type	Self-supporting and Angle Strain towers					
	Height	17.4 m – 21 m					
	Servitude length	Approximately 7 km					
	Servitude width	<p>The registered servitude will be up to 50 m wide or where multiple adjacent power lines occur, in line with guideline and requirements for 132 kV power lines stipulated in the 2011 Eskom Distribution Guide Part 19.</p> <p>Guideline and requirements for 132 kV power lines (Extracted from Eskom Distribution Guide Part 19, 2011)</p> <table border="1" data-bbox="614 918 1412 1070"> <thead> <tr> <th>Voltage</th> <th>Building restriction on each side of centre line</th> <th>Separation distance between parallel lines</th> </tr> </thead> <tbody> <tr> <td>132 kV</td> <td>18 metres (15.5 - 20)</td> <td>15 metres (21 - 24)</td> </tr> </tbody> </table> <p>Note: The entire servitude will not be cleared of vegetation. Vegetation clearance within the servitude will be undertaken in compliance with relevant standards and specifications. A 400 m wide corridor (i.e., 200 m on either side of center line) was assessed by specialists, in order to identify sensitivities and features that need to be avoided.</p>	Voltage	Building restriction on each side of centre line	Separation distance between parallel lines	132 kV	18 metres (15.5 - 20)
Voltage	Building restriction on each side of centre line	Separation distance between parallel lines					
132 kV	18 metres (15.5 - 20)	15 metres (21 - 24)					
	Proximity to grid connection	This proposed 132 kV overhead power line will facilitate the connection of the proposed Megora PV 2 to the National grid, via the proposed Megora PV 1A on-site substation and the adjacent proposed Collector Substation (to be assessed separately as part of the proposed Megora EGI 1 project).					
Associated infrastructure							
Service roads	It is anticipated that a service road of approximately 4 m wide (usually only jeep tracks) below the power line will be required. There are a number of existing gravel farm roads (some just jeep tracks) with widths ranging between 4 m and 5 m located around and within the proposed power line assessment corridor. Surrounding existing farm tracks may also be utilised where needed pending agreements with landowners						
Switching station	A 132 kV facility switching substation complex will be located within the site, adjacent to the facility substation, and will have a height of up to 18 m. The area of switching station relevant to the proposed power line is approximately 1.5 ha.						
Construction period	Approximately 18-24 months						

NEED FOR THE BA

As noted above, in terms of the 2014 NEMA EIA Regulations (as amended) published in GN R326, R327 and R324, as well as GN 114 for procedures within a REDZs, a full BA Process is required for the proposed project. The need for the BA is triggered by, amongst others, the inclusion of Activity 11 listed in GN R327 (Listing Notice 1):

- *“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”.*

Section I of this BA Report contains the detailed list of activities contained in GN R327 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

A summary of the specialist studies is outlined below.

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

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 Statements are included in Appendix F. 1 of the BA report.

The specialist confirmed that the entire development footprint is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it totally unsuitable as viable cropland. The proposed development on this land will therefore result in negligible loss of future agricultural production potential.

The proposed overhead power line has negligible agricultural impact, regardless of the agricultural potential and sensitivity of the land it crosses. The agricultural impact of a power line is negligible in almost all environments but is even more so where agricultural land use is predominantly grazing, which it is in the environment that is the subject of this assessment. All possible agricultural activities can continue entirely unhindered underneath the power line. The direct, permanent, physical footprint that has any potential to interfere with agriculture is confined to pylon bases and a service and maintenance track underneath the power lines and is therefore insignificantly small.

The only potential source of impact of the power line is minimal disturbance to the land (erosion and topsoil loss) during construction (and decommissioning). This impact can be completely prevented with standard, generic mitigation measures that are all inherent in the project engineering and/or are standard, best-practice for construction sites, and are included in the generic EMPr (Appendix H).

Due to the fact that the assessed power line and associated infrastructure contribute negligibly to a loss of agricultural land it cannot cause acceptable levels of change in terms of agricultural land loss to be exceeded. The cumulative impact of the power line and associated infrastructure can therefore

confidently be assessed as being of negligible significance and therefore as acceptable. 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 power line be approved.

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 assessment identified a total of four visual receptor locations within the study area, two of which could be regarded as a potentially sensitive visual receptor as they are located within a mostly rural / pastoral setting that will likely be altered by the proposed EGI. 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 four identified visual receptor locations, none would experience high levels of visual impact as a result of the proposed development.

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 EGI are of Low significance during the construction and decommissioning phases of the project. During 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 some mitigation measures available to reduce the visual impact.

A number of additional renewable energy and EGI 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 (including EGI) 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 EGI 2 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.

The proposed Megora EGI 2 project is deemed acceptable from a visual perspective EA should be granted. The specialist is of the opinion that the visual impacts associated with the construction, operation and decommissioning phases can be maintained at acceptable levels provided the recommended mitigation measures are implemented.

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 project containing Archaeology, Cultural Landscape and Palaeontology were undertaken. However, for ease of reference, this section only deals with the Archaeology and Cultural Landscape (Appendix F.6) of this BA Report.

The survey of the proposed footprint of the Megora EGI 2 powerline corridor found only two archaeological occurrences: Points 1670 and 1671 which are both small LSA scatters each about 10 m in diameter with artefacts in hornfels, wacke and tuff. The sites are located roughly 80 m apart on a ridge to the west of the Snyderskraal River. These lithic scatters were assessed to be Grade 3C and thus of low local heritage significance.

No extant historical built structures are located within the power line assessment corridor. The nearest historical farm complex is Badfontein, approximately 2.7 km to the west of the EGI 2 corridor, in the valley of the Snyderskraalrivier. The cultural landscape which reflects the recent historical use of the land on which the Megora EGI corridor 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 EGI 2 project will 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 EGI 2 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.

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 P of this BA Report).

Palaeontology Impact Assessment

The Palaeontology Impact Assessment 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 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 proposed site is underlain by Middle Permian continental fluvial and lacustrine sediments of the Hoedemaker Member (Pth, green, Teekloof Formation, Adelaide Subgroup of the Beaufort Group, Karoo Supergroup), Jurassic Dolerite (Jd, red) as well as Quaternarily alluvium.

Although several fossiliferous outcrops were recorded west 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, no fossils or fossiliferous outcrops were identified within the power line assessment corridor. Available data suggest that fossil localities are generally sporadic, scattered, and unpredictable in distribution.

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 by 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 avoids Critical Biodiversity Areas (CBAs). According to the WCBSP (2023), the current layout project infrastructure will cross a CBA 1 and some ESA 1 aquatic features. The CBA 1 area is associated with a riparian corridor comprised of Southern Karoo Riviere. The field survey conducted by the Aquatic specialist found that the CBA and ESA classifications, as delineated in the WCBSP 2023, within the study area, are inaccurate. The biodiversity features driving the ESA and nearby CBA classifications for the project area are discussed in detail in Appendix F.2 and 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 specialist concluded that where feasible, avoidance mitigation has been applied to project infrastructure traversing CBA and ESA habitats 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 and L21E quaternary catchments of the Fish-Tsitsikamma Water Management Area. The nearest Sub Quaternary Reach (SQR) associated with the established Area of Interest (AoI) included the the L21C-06621 of the Bakensklip River as well as an unnamed tributary of the L21E-06789 SQR 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 AoI. These watercourses were derived to range from largely modified (Class D) and largely natural (Class B) Present Ecological Status (PES). The watercourses were classified as having Moderate Ecological Importance and Sensitivity (EIS) ratings. A scientific buffer was calculated for the watercourses, where a 30m for rivers and 40m for wetlands was utilised to protect these sensitive environments. Based on the proposed layouts, all infrastructure avoids buffered features. All mitigation measures recommended in the assessment have been incorporated into the EMPs (Appendix H of this BA Report).

Overall, the outcome of the risk assessment indicates minor impacts from the proposed activities and no fatal flaws were identified from an aquatic perspective. The minor impacts can be attributed to the avoidance of the sensitive habitats and implementation of buffer zones. Should avoidance and basic mitigation actions be implemented, limited impacts to aquatic biodiversity can be expected.

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.

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.

Two avifaunal habitats were identified by the specialist: karoo scrub and drainage lines, with both having a calculated Site Ecological Importance rating of medium, which means with minimisation and restoration mitigation, development activities with medium impact are acceptable if followed by appropriate restoration activities.

A total of 206 species were identified as potentially occurring in the study area with 162 species confirmed present during avifaunal pre-construction monitoring. 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.

The specialist assessment confirmed that the proposed alignment of the Megora EGI 2 avoids all identified avifaunal No-Go areas. The alignment crosses two high sensitivity NFEPA buffers and traverses CBA 1 habitat, however this confirmed as acceptable from an avifaunal perspective, provided the recommended mitigation measures are applied. The specialist assessment further confirmed that no residual impacts of high significance were identified for the proposed development.

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 EGI 2 with a length of up to 7 km to the existing cumulative impact is relatively small, and the proposed Megora EGI 2 development will not result in a change in impact significance for cumulative impacts from an avifaunal perspective.

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 EMP.

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.

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.

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

The preferred activity alternative was determined to be the transmission of electricity generated by the proposed Megora PV 2 facility (i.e., development of a renewable energy facility on site using solar PV). 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 Screening Tool to determine the site sensitivity. Based on this, a preferred routing for the proposed power line and layout of associated infrastructure was determined. It is important to note that the location, alignment and need for the proposed powerline are intrinsically linked to the optimal siting of the solar PV facility. The powerline constitutes enabling infrastructure required to evacuate electricity generated by the facility to the national grid and, as such, cannot be considered in isolation. The final routing and technical specifications of the powerline are therefore dependent on the preferred layout and positioning of the solar facility, which have been informed by environmental constraints, technical feasibility, and grid connection requirements.

The powerline routing 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 O.3 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 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 (with the implementation of mitigation measures). Whilst the socio-economic assessment focused on the Megora PV 2 development (as per the Screening Tool recommendations), the proposed EGI project will also result in positive impacts and benefits, as it will provide construction phase employment opportunities, but will also enable the development of the Megora PV 2 development, thereby playing a pivot role in realising the overall highly significant positive impacts identified for the Megora PV 2 project.

Table C below provides a summary of the impact assessment for each phase of the proposed Megora PV 2 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 Impacts for the proposed project

Specialist Assessment	Construction Phase		Operational Phase		Decommissioning Phase	
DIRECT NEGATIVE IMPACTS						
Visual	Low		Moderate		Low	
Heritage (Archaeology and Cultural Landscape)	Very Low	Low	Low		Very 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	Very Low	Low
Aquatic Biodiversity and Species	Low		Low		Low	
Avifauna	Very Low	Low	Very Low		Very Low	Moderate
Geotechnical	Very Low		Very Low		Very Low	

As indicated in Table C, 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 for the decommissioning phase, and operational phase, respectively**.

BASIC ASSESSMENT REPORT: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2) and 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

Table D: Overall Impact Significance with the Implementation of Mitigation Measures for Cumulative Negative Impacts for the proposed 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	
Geotechnical	Very Low	Low	Very Low	Low	Very Low	Low

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 and Avifauna themes.

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 EMP 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 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, solar and EGI development in South Africa.

BASIC ASSESSMENT REPORT: Basic Assessment for the proposed development of the Megora Solar PV Facility 2 and associated infrastructure (i.e., Megora PV 2) and 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

Overall Environmental Impact Statement

Taking into consideration the findings of the BA Process, as well as location of the proposed **Megora EGI 2** 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. 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.