BOESMANLAND SOLAR FARM, NORTHERN CAPE PROVINCE

Site Verification and Motivation for Amendment of the Environmental Authorisation

DFFE Ref.: 14/12/16/3/3/2/222

July 2023

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PROJECT DETAILS

Title	:	Boesmanland Solar Farm on Portion 6 (a Portion of Portion 2) of Farm 62 Zuurwater, Aggeneys in the Northern Cape Province
DFFE Reference	:	14/12/16/3/3/2/222
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Client	:	Boesmanland Solar Farm (Pty) Ltd
Report Status	:	Draft Amendment Motivation Report for authority and public review and comment

When used as a reference this report should be cited as: Savannah Environmental (2023) Motivation Report for the Amendment to the Environmental Authorisation for the Boesmanland Solar Farm near Aggeneys within the Northern Cape Province.

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PURPOSE OF THE REPORT

Boesmanland Solar Farm (Pty) Ltd has requested an amendment to an existing Environmental Authorisation (EA) for the authorised Boesmanland Solar Farm and associated infrastructure (DFFE Reference: 14/12/16/3/3/2/222, EA issued on the 16 July 2013). The project is located on a portion of Portion 6 (a portion of Portion 2) of Farm 62 Zuurwater, Aggeneys, within the Khâi-Ma Local Municipality in the Northern Cape Province. The amendment being applied for relates to an extension of the validity of the EA by an additional 10 years as well as other administrative amendments.

An application for amendment has been submitted to the Department of Forestry, Fisheries and the Environment (DFFE). Additional information has been requested (in terms of Regulation 30(1)(a) of the EIA Regulations, 2014 as amended) for the Department to be able to process the application for amendment. Savannah Environmental, as independent consultant, has prepared this Site Verification and Motivation Report in support of the application for the proposed amendment on behalf of Boesmanland Solar Farm (Pty) Ltd.

This report aims to provide details pertaining to the environmental impacts as a result of the requested amendment in order for interested and affected parties to be informed and submit comments for the competent authority to be able to reach a decision in this regard. This report is supported by specialist site verification and motivation reports to inform the conclusion and recommendations regarding the proposed amendment (refer to **Appendix A** and **G** of this report). This Site Verification and Motivation Report must be read together with these specialist reports to obtain a complete understanding of the proposed amendments and the implications thereof from an environmental perspective.

This Motivation Report has been made available for a 30-day review and comment period in accordance with Regulation 32(1) (aa) of the EIA Regulations, 2014 (as amended) from **Friday 7 July 2023** to **Monday 7 August 2023**. The availability of the Motivation Report for the 30-day comment and review period was communicated via email and/or mail to all registered I&AP's and advertised in the **Die Plattelander Newspaper** on **Friday, 7 July 2023**.

The Motivation Report is available for download from Savannah Environmental's website: https://www.savannahsa.com/public-documents/energy-generation/. To register on the project database as an interested and affected party, as well as obtain further information about the project, or submit written comments, please contact:

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All comments received during the 30-day review and comment period will be included within a Comments and Responses Report (C&RR) to be submitted to the DFFE with the Final Amendment Motivation Report for consideration and decision-making.

1. OVERVIEW OF THE PROJECT

1.1. Location

The proposed project site is located near Aggeneys and falls within the jurisdiction of the Namakwa District Municipality and Khâi-Ma Local Municipality (see **Figure 1.1**). The project is located on a Portion 6 (a Portion of Portion 2) of Farm 62 Zuurwater.

A development area of approximately 450ha forms part of the lease agreement with the landowner, Blommeland Boerdery BK, for the purposed of renewable energy generation. This development area is situated approximately 7km north of the N14 National Road, visually screened from the N14 by a series of dunes extending west from the N14 to a nearby inselberg/koppie named Hoedekop. Vehicular access to the site is either via existing roads off the Aggeneys turn off the N14 and through the Black Mountain Mine (latter with special permission) or alternatively via a series of narrow tracks (accessible by four-wheel drive) approaching the property from the east (de Kock, 2012).

The authorised Boesmanland Solar Farm will consist of solar photovoltaic panels with a feed-in capacity of 75MW (megawatts) Alternating Current (AC) / >90MW Direct Current (DC), as well as associated infrastructure, which will include:

» On-site substation
» Auxiliary buildings (administration / security, workshop, storage and ablution)
» Inverters, transformers and internal electrical reticulation (underground cabling);
» Access road and internal road network;
» Overhead electrical transmission line (to connect to existing Aggeneis Substation);
» Rainwater tanks
» Parameter fencing

1.2. Status (baseline) of the Environment assessed through the Environmental Impact Assessment (EIA) Process (EIA report, December 2010)

The findings of the specialist studies undertaken during the EIA in 2013 assessed both the benefits and potential negative impacts anticipated as a result of the proposed WEF development and concluded that there are no environmental fatal flaws that should prevent the proposed project from proceeding.

Table 1.1 summarises the baseline status of the environment that was assessed through the EIA process in 2013 for the authorised Boesmanland Solar Farm.

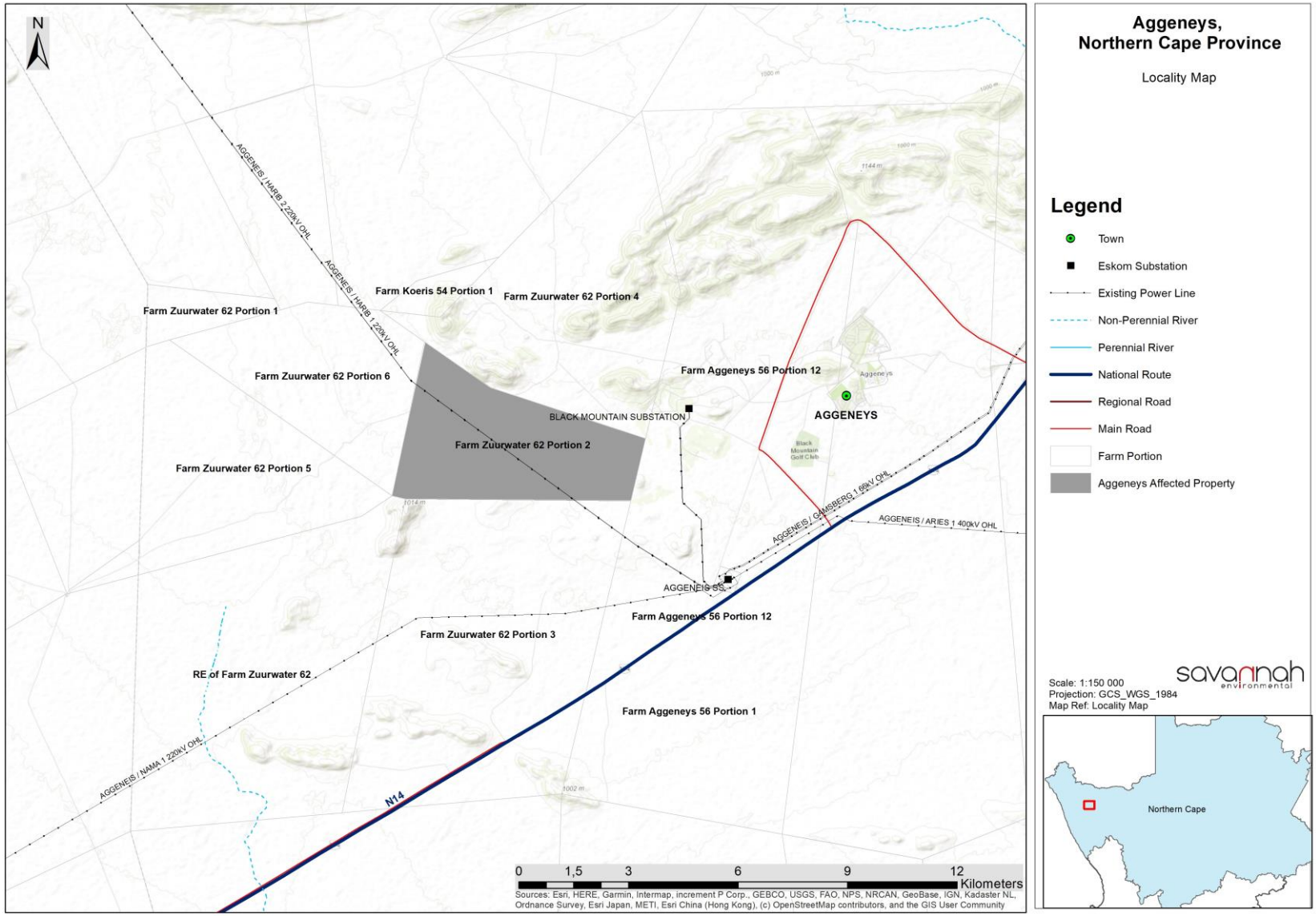

Figure 1.1: Locality map showing the location of the Boesmanland Solar Farm and associated Grid Connection.

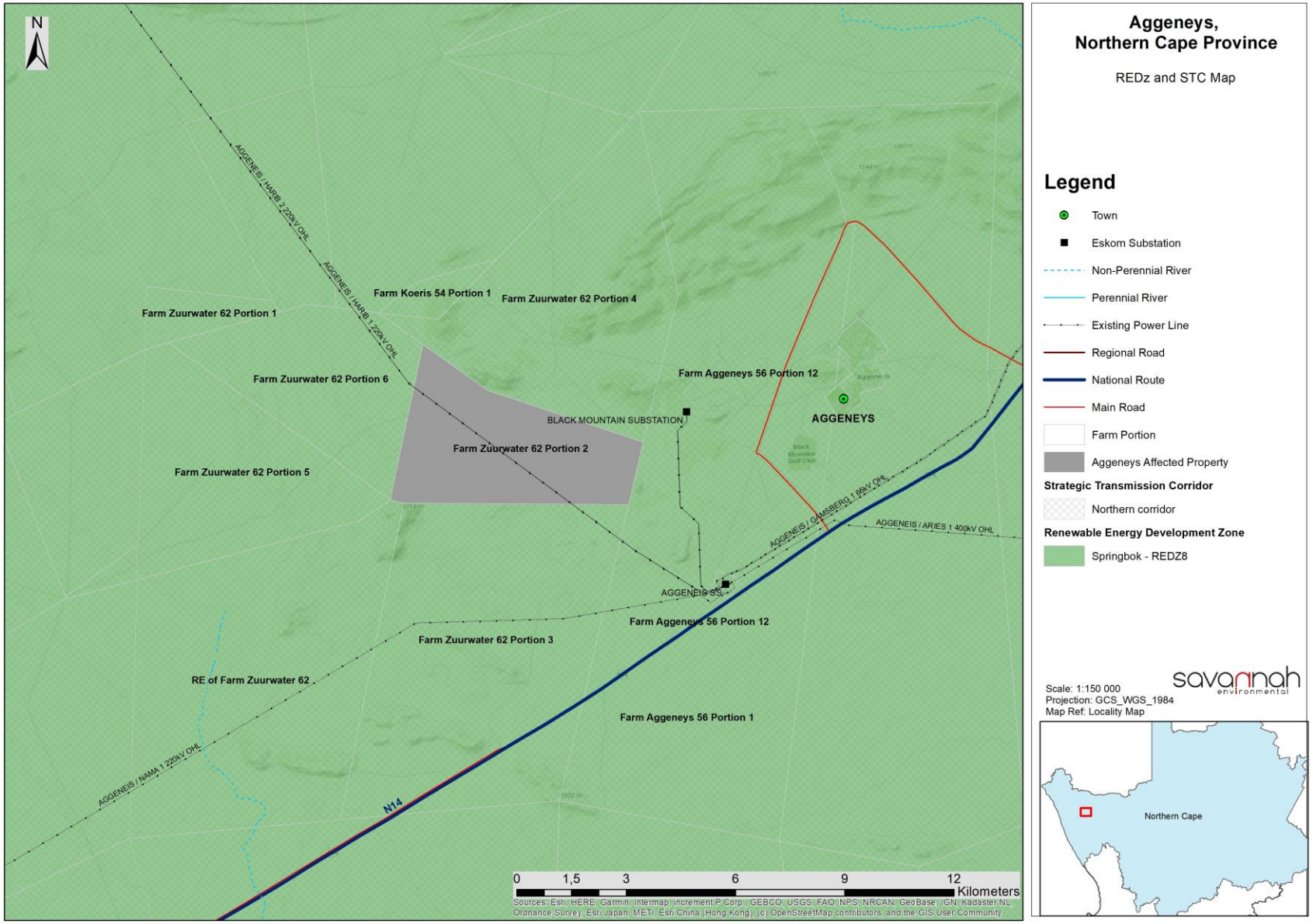

Figure 1.2: Locality map showing the location of the Boesmanland Solar Farm within the Springbok Renewable Energy Development Zone (REDZ).

Table 1.1: Baseline status of the environment assessed through the EIA process.

site extent and Topography	The area of land designated for the proposed Boesmanland Solar Farm forms part of the lease agreement with the landowner for approximately 450ha, located directly west of the Vedanta Black Mountain Mine and town of Aggeneys. The development footprint is approximately 265ha for the Boesmanland Solar Farm. The proposed development area is a generally flat, undulating plain of low dunes of red Kalahari sands interspersed with gravel and stony plains, which falls entirely within the Bushmanland Sandy Grassland vegetation type. Those parts of the site with sandy soils tend to be dominated by perennial grasses with scattered shrubs and low trees, while the areas of stony and gravel plains are dominated by woody shrubs and occasional succulents. There are no significant rocky outcrops or large drainage lines within the proposed development area itself, although these features are present within the broader area.
Environmental Considerations	The 450-hectare development area was assessed by specialists during the Scoping Phase to identify sensitive areas, and the preferred development footprint of approximately 265 hectares was chosen, taking into account and avoiding the site constraints. Wind erosion was highlighted as a significant concern in the areas of red sands, which are currently. stabilized, but could become mobilized if the vegetation is disturbed. The major drainage line, the inselbergs, patches of quartz and the deep red sand dunes (habitat of endemic Red Lark) to the south-east of the development area are considered highly sensitive. Several *Hoodia gordonii* plants and provincially protected plants are located throughout the development area, which will require a permit to be removed and/ transplanted, with no significant impact on the viability of the local populations of species. Impacts associated with the development are considered to be of low significance and not likely to result in significant biodiversity loss or degradation of the receiving environment.
Land use type	The site is currently zoned as Agricultural Zone 1. The current land use on the site is extensive livestock farming, which involves raising livestock over a large area. This indicates that the site is primarily used for grazing animals such as cattle, sheep, or goats. The land is utilized for the purpose of sustaining livestock and supporting their feeding and grazing needs. However, there is a proposed alternative land use for the site, which is the development of a solar energy facility. If this development goes ahead, the land would be transformed into a facility for generating solar power. The solar energy facility would involve the installation of solar panels or other solar technologies to capture sunlight and convert it into usable energy. It is important to note that the discussion primarily revolves around these two potential land uses: extensive livestock farming as the current land use and the solar energy facility as a proposed alternative. The focus is on evaluating the economic potential and environmental impacts associated with each option. The majority of the proposed Boesmanland Solar Farm development area, and a large proportion of the broader site, falls within a National Protected Areas Expansion Strategy focus area (see **Figure 1.3**). This indicates that the site is potentially important from a broad-scale conservation perspective. Measures to ensure that the development does not impact on broader-scale ecological processes may therefore be required. Given the proximity of the site to the Black Mountain Mine, it is however unlikely that the development of the site would lead to broad-scale disruption of ecological processes, given that there is a large amount of less disturbed land to the north and south of the site contains very similar habitat. The development is relatively small in extent when considered in light of the overwhelmingly intact nature of the surrounding landscape.

	Furthermore, the proximity of the development to the existing ESKOM substation and power lines would decrease the cumulative impact of the development on the connectivity of the landscape.
Heritage, Archaeology and Palaeontology	The proposed development site is situated in a remote wilderness area that is far away from local tourism routes and popular destinations, such as the Orange River corridor. There are some older structures, like a farmstead and two outbuildings, located southeast of the site, but they are not of significant cultural value and are not within the planned development area. The site has minimal archaeological and paleontological importance.
Visual	This development area is situated approximately 7km north of the N14 National Road, visually screened from the N14 by a series of dunes extending west from the N14 to a nearby inselberg/koppie named Hoedekop. The N14 National Road alignment between Springbok and Pofadder is just south of Aggeneys and is the most important route through this area and offers unique views across the surrounding landscape, which is sensitive to visual encroachment through possible inappropriate development. The proposed development site would be set back from the N14 National Road by at least 5km and would not be visible from any main roads or other important public vantage points. Taken in conjunction with this setback, as well as the flat nature of this landscape, the entire development site is in fact hidden from view through natural landscape features such as Inselbergs and a series of high dunes. Historic maps of the area dating back to 1906 – 1914 describes this dune system as being, "waves of very heavy sand dunes causing considerable delay to traffic [wagons and carts]" and 40ft (c. 12.2m) in height. Even if there were a possibility for proposed development being marginally visible from the N14, such views would clearly be within the context of existing buildings, infrastructure, works and landscape transformation associated with the Black Mountain Mine. Therefore, the specialist concluded that the proposal would not materially alter existing views from the N14, or any other known area or site considered to be of moderate to high local, provincial or national aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value cultural significance (de Kock, 2012).

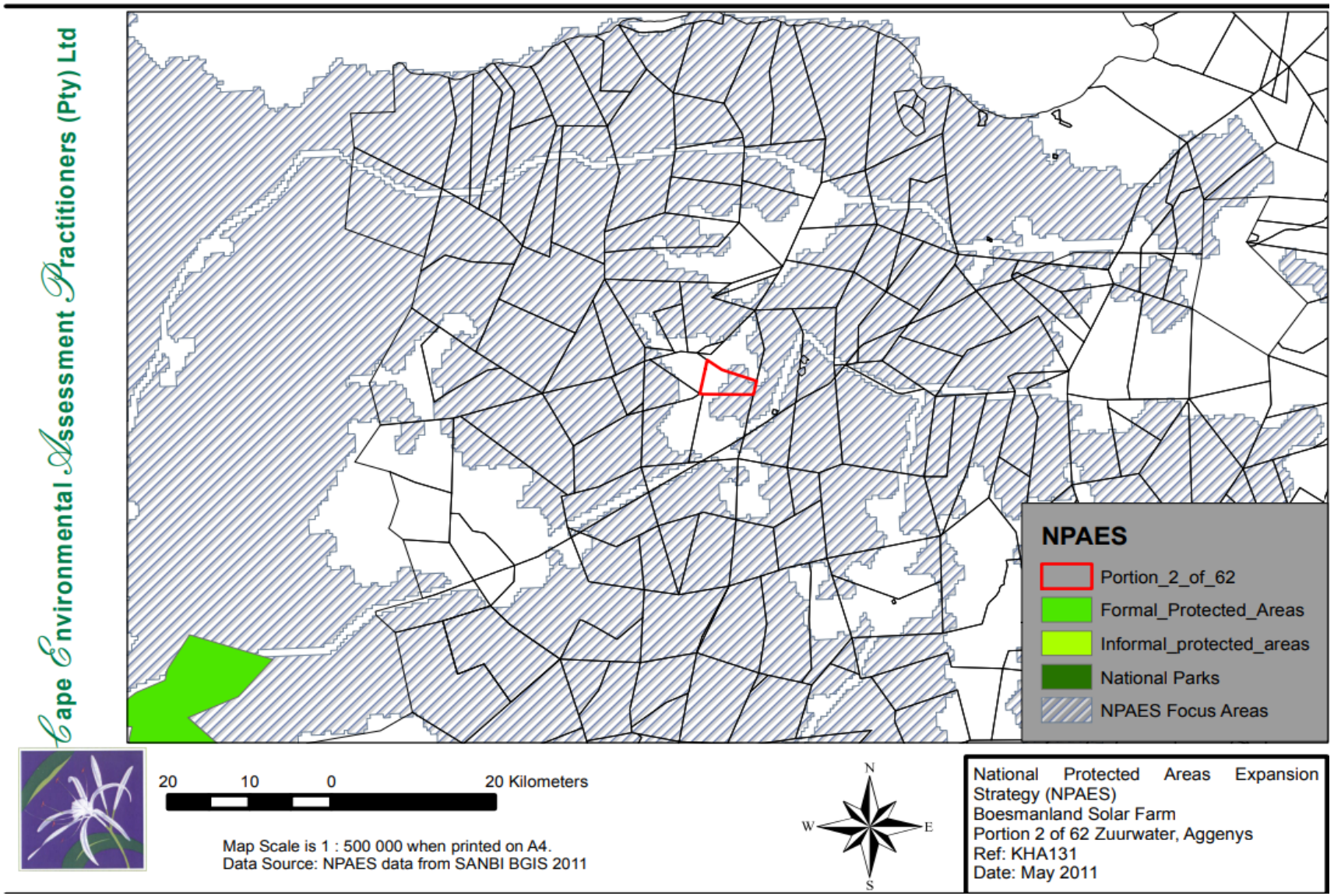

Figure 1.3: Locality Map showing Boesmanland Solar Farm relative to the National Protected Areas Expansion Strategy focus area (Source: Cape Environmental Assessment Practitioner Pty Ltd EIA)

Industry and Economic Stimulus	The Northern Cape region is economically challenged due to its arid climate, challenging agricultural conditions, lack of water and limited natural resources (away from the Orange River). The Northern Cape is well-known for the large number of copper and zinc mines in the area, but since the early 1990's, many of these mines have closed down, leaving a devastating trail of unemployment behind. The local economy, mainly supported by limited agriculture, simply isn't enough to accommodate the high level of unemployment. The population for the Khai-Ma Municipality was estimated at 11 340 people (Khai-Ma SDF, 2010). The municipality is sparsely populated (±1 person/km²), with most people settled in its 5 small towns: Pofadder, Aggeneys, Onseepkans, Pella and Witbank. The availability and accessibility of resources (natural or human) has had a major impact on the potential for economic development in the Khai Ma municipal area. While its main economic sectors are agriculture, mining and tourism, these activities are limited to small pockets of activity where considerable private sector investment has taken place (Khai-Ma SDF, 2010). Private sector development, particularly in Aggeneys, is seen to offer opportunities to access Enterprise Development funds of the main mining groups. This can contribute to entrepreneurial activities linked to their supply chain (Khai-Ma SDF, 2010). The same applies to the investment, in terms of employment opportunities and entrepreneurial activities, associated with renewable energy projects. Power generation is one of the rare growth opportunities for the Northern Cape due to the high solar irradiation levels and its strategic position relative to the National Transmission Network. This setup creates unprecedented growth opportunities for the area and the establishment of a renewable energy project is considered important to diversify and compliment the economic development of the region.
Site access	The site is accessible by means of two existing mine roads passing through the Vedanta Black Mountain Mine. These routes are considered to be options for future access, however the expected traffic increases associated with the construction and operation of the Boesmanland Solar Farm may interfere with the mining activities and would implicate unnecessary safety and security measures and complications for any further mining developments at the Black Mountain Mine. Transport to the solar site will be along appropriate national, provincial and local roads. The transport routes to Aggeneys will be from Upington or Springbok, along the N14. This is a tarred national road, and no alterations should be necessary to handle construction traffic and traffic involved in the operation phase. The proposed access road to the Boesmanland Solar Farm facility will be via the Aggeneys turnoff off the N14. SANRAL confirmed their preference of the route option via the existing tarred Aggeneys Road. As this access off the N14 is existing road.
Other planned Projects in the area (during EIA Phase)	There is another solar facility planned near to the ESKOM substation, and the Black Mountain Mine and the town of Aggeneys also represents a source of disturbance and habitat loss, which when combined with the current proposed development would result in some cumulative impact. However, when taken in context of the broader landscape, the cumulative impacts are not likely to be highly significant given the extensive intact nature of the landscape as a whole. The cumulative impacts were identified during the EIA assessment (conducted 2013 by Cape Environmental Assessment Practitioners (Pty) Ltd), to fall mainly in the spheres of land use change and visual impact. Based on the findings of all the credible specialists who undertook their respective specialist studies (based on the approved terms of references), it was concluded that the overall impact of this development is low.

1.3. Potential Environmental Impacts determined through the Environmental Impact Assessment (EIA) Process:

From the specialist investigations undertaken as part of the EIA completed by Cape Environmental Assessment Practitioners in 2013 for the Boesmanland Solar Farm and associated infrastructure (DEA Reference: 14/12/16/3/3/2/222), the following environmental impacts relevant to the site and to the amendment application were identified and assessed. Following the identification of environmental sensitivities, the following specialist studies were undertaken as part of the EIA process:

- Ecological (including flora, fauna, freshwater an avifauna)
- Agricultural Potential
- Heritage, Archaeology and Palaeontology (including consideration of visual aspects)

According to the EIA (Cape Environmental Assessment Practitioners, 2013), the management and mitigation of the impacts will result in no significant impacts in the surrounding environment. Based on the findings of all the credible specialists who undertook their respective specialist studies (based on the approved terms of references), it was concluded that the overall impact of this development is low. The impacts during the construction and operational phases are summarised below and will occur over a localised extent.

The key conclusions and recommendations of the original EIA pertinent to this application, as reported in the EIA are summarised as follows.

1.3.1. Summary of environmental findings in the Environmental Impact Assessment (2013)

i) Ecological Impacts

A Fauna & Flora impact assessment was undertaken by Simon Todd Consulting (2013), and assessed anticipated fauna and flora impacts.

The proposed development area is a generally flat, undulating plain of low dunes and sandy areas interspersed with gravel and stony plains. Those parts of the site with sandy soils tend to be dominated by perennial grasses with scattered shrubs and low trees, while the areas of stony and gravel plains are dominated by woody shrubs and occasional succulents. There are no significant rocky outcrops or large drainage lines within the proposed development area itself, although these features are present within the broader study area.

The construction phase of the project will create a lot of disturbance at the site, which will leave the site vulnerable to wind and water erosion, as well as result in habitat loss for fauna. Wind erosion is highlighted as a potential significant concern in the areas of red sands, which are currently stabilized, but could become mobilized if the vegetation is disturbed. In terms of flora, the site was not highly sensitive and the only species of conservation concern observed at the site was *Hoodia gordonii*, which is protected but is not rare or threatened. The specimens within the development footprint would need to be transplanted to a similar area on site but outside the development footprint. There were also a number of other provincially protected species present that would need to be translocated prior to construction.

Faunal disturbance during the construction phase is inevitable and cannot be fully mitigated. The impact is however restricted to the construction phase and fauna are likely to return to the area during the operational

phase of the project. Given the relatively large number of listed bird species which occur in the area, including the narrow endemic Red Lark *Calendulauda burra*, the potential impacts of the development on avifauna are quite high. However, the risk to larger avifauna can be mitigated by fitting bird flappers to the new lines as well as insulating the live components in the high-risk areas. The potential impacts on the Red Lark are a potential concern, but the extent of the development is small in comparison to the range of this species, the resultant habitat loss would not be of high overall significance for this species.

ii) Heritage and Archaeological Impacts

An integrated Heritage Impact Assessment was undertaken by Perception Heritage Planning in April 2012 and a summary of the finding is described below.

- **Heritage** – the Boesmanland Solar Farm proposal would not materially impact on heritage resources of the built environment, would not alter any natural or cultural landscape of cultural significance and would not negatively impact on any heritage resource, or the visual-spatial relationships and associations between such resources. No buildings, ruins or any other structures were noted on the site.
- **Archaeology** - from an archaeological perspective, there would be no inhibitors to construction of the solar facility.
- **Palaeontology** – as there are no palaeontological resources likely to occur in the area, it is recommended that no further palaeontological studies or mitigation be undertaken in respect of the proposed development site.

Chance find procedures and objective mitigation measures to minimise impacts on archaeology, palaeontology and cultural heritage and ensure opportunities to identify and add to new scientific information should be undertaken in line with the EMPr and specialist recommendations.

vi) Agricultural Potential

An Agricultural Potential Assessment was undertaken by Hendri Beukes in May 2012 and a summary of the finding is described below.

The project site has a low carrying capacity of 60ha per unit of cattle or 15ha per sheep, with a potential of stocking 32 cattle or 147 sheep on the entire 1 927ha. The proposed solar development footprint site however would only be able to carry approximately 4 units of cattle or 18 sheep. The economic benefits that the proposed solar development holds cannot be recovered from the current or potential agricultural activities.

It is clear that the proposed development will not have a negative impact on the property due to the low agricultural potential. The low agricultural potential of the site can be ascribed to a combination of the geology, climate and disturbed nature of the vegetation. The proposed site is not economically productive, mainly due to the extreme nature of the climate and the low potential of the soil. The general recommendation is that the site should not be used for agricultural production, but it should be made available for the development of the 75MW PV solar power facility.

vii) Cumulative Impacts

The cumulative impacts associated with this solar development are predominantly biophysical in nature and arise from the combined presence of several similar developments within an area which affect ecological

processes operating at broader scales or which each have a small impact which becomes significant when combined. There is another solar facility planned near to the ESKOM substation, and the Black Mountain Mine and the town of Aggeneys also represents a source of disturbance and habitat loss, which when combined with the current proposed development would result in some cumulative impact. However, when taken in context of the broader landscape, the cumulative impacts are not likely to be highly significant given the extensive intact nature of the landscape as a whole.

Cumulative impacts relating to alien plants and erosion would only occur if alien plants and erosion are not controlled (i.e. recommended mitigation measures are not implemented). The development would contribute to cumulative avifaunal impacts in the area resulting from electrocution and collisions. However, these would be minimised by the installation and maintenance of the birdflappers and insulation on the transmission. The solar facility will contribute a relatively small amount to the cumulative loss of habitat and a reduction in landscape connectivity in the area.

2. DESCRIPTION OF REQUESTED AMENDMENT

This section of the Motivation Report details the amendments considered within this report and by the specialist site verification investigations (refer to **Appendix A - G**). The amendment being applied for relates to an extension of the validity of the EA dated 16 July 2013 as well as other administrative amendments by an additional 10 years. Motivation for the amendment is included in Section 3 of this report.

2.1. Amendment 1: Extension of the validity of the Environmental Authorisation

The EA Amendment is being completed in terms of Regulation 30(1)(a) of the Environmental Impact Assessment (EIA) Regulations, 2014, as amended, including the additional studies and public participation required by the DFFE.

1. Extension of the validity of the EA

Boesmanland Solar Farm (Pty) Ltd is proposing to amend the Environmental Authorisation (EA) for the Boesmanland Solar Farm, by extending the EA validity by an additional ten (10) years. Extension of the validity of the EA will ensure that the EA remains valid for the undertaking of the authorised activities.

Condition 7 of the First Issue Environmental Authorisation, Issued on 16 July 2013, DEA Reference 14/12/16/3/3/2/222 (12/12/20/2602) states that:

"*This activity must commence within a period of three (3) years from the date of issue. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken*."

Consequent amendments to extend the validity of the authorisation have been made as follows:

» 14/12/16/3/3/2/222/AM1 – authorised on the 22 February 2016 extending the validity to 16 July 2018
» 14/12/16/3/3/2/222/AM2 – authorised on the 30 July 2018 extending the validity to 16 July 2020
» The most recent 14/12//16/3/2/2222/AM3 – 12 August 2020 extending the validity to 16 July 2023 which states the following.

"*This activity must commence within a period of ten (10) years from the date of issue of the authorisation (i.e. the authorisation lapses on 16 July 2023). If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken*."

The applicant, Boesmanland Solar Farm (Pty) Ltd thus requests that the Competent Authority amends Condition 7 of the original EA (Page 6) as amended (DFFE Reference: 14/12//16/3/2/2222/AM3; dated 12 August 2020) as follows:

"*This activity must commence within a period of twenty (20) years from the date of issue of the authorisation (i.e. the EA lapses on 16 July 2033). If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken*".

2. Amend the email address of the EA Holder

The email address of the holder of the environmental authorisation as authorised in EA Amendment 3 (14/12/16/3/3/2/222/AM3) for the requested consolidated EA (on the relevant pages) needs to be amended to reflect the new email contact details:

From: m.michalowska@redrocket.energy

To: m.logan@redrocket.energy

3. Include gridline infrastructure properties into the EA

The overhead power line transverses two properties. The two properties were assessed in the EIA but not include in the Environmental Authorisation.

Property details of Linear Activities		
Black Mountain Mine	Portion 1 of Farm Aggeneys 56 C05300000000056000001	Linear Activity consent not required
Aggeneis Eskom Substation	Portion 2 of Farm Aggeneys C05300000000056000002	Linear Activity consent not required

3. MOTIVATION FOR THE REQUESTED AMENDMENT

The section below describes the motivation for the requested amendment.

3.1. Extension of the validity of the Environmental Authorisation

1. Extension of the validity of the EA

The Applicant intends to bid the Boesmanland Solar Farm (Pty) Ltd ("the Project") in upcoming bidding windows of the South African Government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) or any other government tenders or private off-taker programmes, where applicable. The extension of the EA validity is requested in order to enable the holder of the EA to (a) bid the project in upcoming rounds of the REIPPPPP (the date of which is unknown) or any other government tenders or private off-taker programmes and b) commence with construction following Financial Close (should the project be selected as a preferred bidder) prior to the EA lapsing.

By maintaining the validity of the EA, the applicant can explore the option of tendering in private off-taker or other government programmes should the REIPPPP bid not occur. This will enable the applicant to generate and supply the green electricity produced and reduce reliance on external factors, such as delays in the REIPPPP program. It allows Boesmanland Solar Farm (Pty) Ltd the opportunity to contribute to sustainability goals independently and showcase their commitment to clean energy.

2. Amend the email address of the EA Holder

The email address for the Holder of the EA has changed and therefore is requested to be updated in the EA.

3. Include gridline infrastructure properties into the EA

Including all properties in an Environmental Authorisation (EA) is crucial to ensure a comprehensive understanding of the potential impacts on affected properties, as they were assessed in the Environmental Impact Assessment (EIA) but were mistakenly omitted from the property description.

4. CONSIDERATIONS IN TERMS OF THE REQUIREMENTS OF THE EIA REGULATIONS AND DFFE

In terms of Conditions 6 of the EA dated 16 July 2013 and Regulation 29 of the EIA Regulations 2014, as amended, it is possible for an applicant to apply, in writing, to the competent authority for an amendment of the environmental authorisation if the amendment will not change the scope of a valid environmental authorisation nor increase the level or nature of the impact. This proposed amendment to will not increase the level, nature or significance of impacts which were initially assessed, and the amendment will take place within the authorised development footprint therefore not impacting on any additional stakeholders. An application in this regard has been submitted to the DFFE who have confirmed that the application falls within the ambit of a Part 1 amendment process.

Further to the receipt of the application, the DFFE have requested additional information be provided in the way of a site verification and motivation report, and that a public participation process is required to be undertaken in support of the application.

The results of the review of all specialist studies undertaken in 2012/2013, and a current assessment, including a site verification evaluation providing an indication of the status of the receiving environment (by the relative specialists) is included in **Section 5**.

4.1. Details of Environmental Assessment Practitioner and Expertise to conduct the Amendment Process

In accordance with Regulation 12 of the 2014 EIA Regulations (GNR 326), the applicant, Boesmanland Solar Farm Pty) Ltd has appointed Savannah Environmental (Pty) Ltd as the independent environmental consultant responsible for managing the Application for Amendment; inclusive of the required independent specialist studies and public participation process.

Neither Savannah Environmental nor any of its specialists are subsidiaries or are affiliated to the applicant. Furthermore, Savannah Environmental does not have any interests in secondary developments that may arise out of the authorisation of the proposed facility.

Savannah Environmental is a specialist environmental consulting company providing a holistic environmental management service, including environmental assessment, and planning to ensure compliance and evaluate the risk of development, and the development and implementation of environmental management tools. Savannah Environmental benefits from the pooled resources, diverse skills and experience in the environmental field held by its team. The Savannah Environmental team for this project includes:

» **Jo-Anne Thomas**, the principal EAP on this Project, is a registered EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA - 2019/726). She provides technical input for projects in the environmental management field, specialising in Strategic Environmental Advice, Environmental Impact Assessment studies, environmental auditing and monitoring, environmental permitting, public participation, Environmental Management Plans and Programmes, environmental policy, strategy and guideline formulation, and integrated environmental management. Her key focus is on integration of the specialist environmental studies and findings into larger engineering-based projects, strategic

assessment, and providing practical and achievable environmental management solutions and mitigation measures. Responsibilities for environmental studies include project management (including client and authority liaison and management of specialist teams); review and manipulation of data; identification and assessment of potential negative environmental impacts and benefits; review of specialist studies; and the identification of mitigation measures.

Candy Mahlangu works as an Environmental Consultant at Savannah Environmental. Candy holds a Bachelor of Arts degree in Environmental Management and is experienced in executing professionally consulting services for various projects in the environmental management field. She specialises in conducting Environmental Impacts Assessments, public participation processes, compiling Environmental Management Programmes, for residential developments, commercial developments, industrial upgrades, bulk services, and renewable energy projects. Her main responsibilities include conducting public participation, overall compilation of the Basic Assessments and EIA report, specialists' engagements, reviewing specialists reports and incorporating specialist studies into the Environmental Impact Assessment reports and the associated Environmental Management Programmes. She has also been widely exposed to the associated project management in her trade and developed skills such as stakeholder engagement which includes but not limited to, site inspections, planning and liaising with clients, environmental specialists, built environment consultants, statutory bodies and competent authorities.

5. POTENTIAL FOR CHANGE IN THE SIGNIFICANCE OF IMPACTS AS ASSESSED IN THE EIA AS A RESULT OF THE REQUESTED AMENDMENT

The DFFE in reference to Regulation 30(1)(a) requires assessment of the impacts related to the proposed amendments. Understanding the nature of the proposed amendments and the impacts associated with the project (as assessed within the EIA), the following has been considered:

- Ecology (Fauna and Flora)
- Aquatic Ecology
- Avifauna
- Soil and Agricultural Potential
- Visual impacts
- Impacts on heritage, and archaeological resources
- Social impacts

The potential for change in the significance and/or nature of impacts based on the proposed amendment as described within the site verifications undertaken by the various specialists and this Motivation Report is discussed below and detailed in the specialist's assessment reports (conducted in 2023) contained in **Appendix A - G**[1]. This section of the Motivation Report must be read together with the specialist reports contained in **Appendix A - G** in order for the reader to obtain a complete understanding of the proposed amendments and the implications thereof.

5.1. Current State of the Environment

Table 1.2 summarises the current status of the project environment.

Table 1.2: Current status of the environment

Topography and site extent	The topography and extent of the site remains unchanged as assessed in the EIA process.
Environmental Considerations	The 450-hectare development area was assessed by specialists during the Scoping Phase to identify sensitive areas, and the preferred development footprint of approximately 265 hectares was chosen, taking into account and avoiding the site constraints. It is the opinion of the specialist that based on the observations made during the field survey (30th March to the 7 May 2023), that the ecological importance of the site has not decreased considerably, however mitigation measures provided in the 2023 report and previous reports must be adhered to.
Land use type	The site is currently zoned as Agricultural Zone 1, which is unchanged from that during the EIA process. The current (2023) soil and agricultural survey reports that the EIA (2012) soil and agricultural baseline findings for the Boesmanland Solar Farm are applicable and invariable, therefore the predicted impacts and provided mitigation measures still applies to the proposed land capability

[1] It must be noted that the original specialists who undertook the EIA studies and subsequent amendments have been used for these assessments as far as possible. However, where the original specialists were not available for whatever reason, suitably qualified and experienced specialists have been used to provide an assessment of the proposed amendments.

	of the assessment site. It should be noted that the current soil and agricultural potential were classified using the updated soil taxonomic "Soil Classification Working Group, 2018".
Heritage, Archaeology and Palaeontology	The area proposed for the PV development was surveyed by Smith in 2012, and again in 2023 by CTS Heritage. Based on the assessment completed, the area proposed for development has a low archaeological sensitivity and it is not foreseen that the proposed development will impact on significant archaeological heritage. The only archaeological observations identified during the field assessment of the area proposed for development in 2023 were determined to be not conservation-worthy.
Visual	The description of the affected environment, as described in the Environmental Impact Assessment report remains unchanged. There has been no change in land use for the proposed development site, no new developments have been constructed on or near the development site, and the land use zonation (agriculture) remains the same. The above conclusion was verified through consultation with the project proponent and the current landowner(s).
Industry and Economic Stimulus	The population of Khâi-Ma, a municipality in South Africa, has grown to an estimated 12,465 people since the last census in 2011. The growth rate was 0.83%, and the population has increased from 9,550 individuals in 1996. Most of the population is concentrated in the municipality's five towns and surrounding farms, with a sparse population density of about one person per square kilometer. The Northern Cape area has large tracts of land which are very dry and farmers do their best to earn a living from the land. The towns are small and operate on a survival socio-economic level. The need to improve the quality of life for all, and especially for the poor, is critical in South Africa. It is expected that the proposed project will contribute directly to the upliftment of the individuals and the societies in which they live. The development of the renewable energy facility will result in significant spending in South Africa having a positive impact on the national, regional and local economy to varying degrees. Direct impacts such as employment and procurement associated with the project will have the most significant impact when compared to indirect and induced impacts. However, overtime as the renewable sector develops additional benefits to the national economy may accrue as the supply chain to the renewable energy sector develops. The direct impacts will be most significant during the construction phase of the project, and are likely to have the largest influence on the local economy. There is no significant change to the affected social environment or the scope and nature of the proposed project.
Site access	Approved access to the site is as follows: Option 5: A-B-F-SO: Access off the Aggeneys tar road along a section of the existing road north-west of the airstrip, then aligning north-west via a new section of road (approx.1.7km) to link with a small existing track south of the Mine's activities at point F, then via a new road across the drainage line between the Mine and the Platjiesvlei & mine slimes dam, then onto the Zuurwater Farm north of and around the sensitive 'Platjiesvlei se Kop' koppie into the solar facility. The new sections of road proposed would be constructed according to the same standard of road as discussed above to accommodate the traffic through construction and operation. These roads would be laid out to avoid areas of high sensitivity, to ensure the minimum possible effect of the environment. Further, these roads would follow existing informal vehicle tracks as far as possible.

Other planned Projects in the area (during EIA Phase)	The project site is located within the Springbok REDZ, which was specifically defined as a REDZ for commercial wind and solar PV development. The area was considered favourable by DFFE through their SEA process of defining the REDZ areas. Several authorised renewable energy facilities exist in the area surrounding the site of the Boesmanland Solar Farm. The specific facilities are detailed on the Cumulative Map **Figure 5.1**.

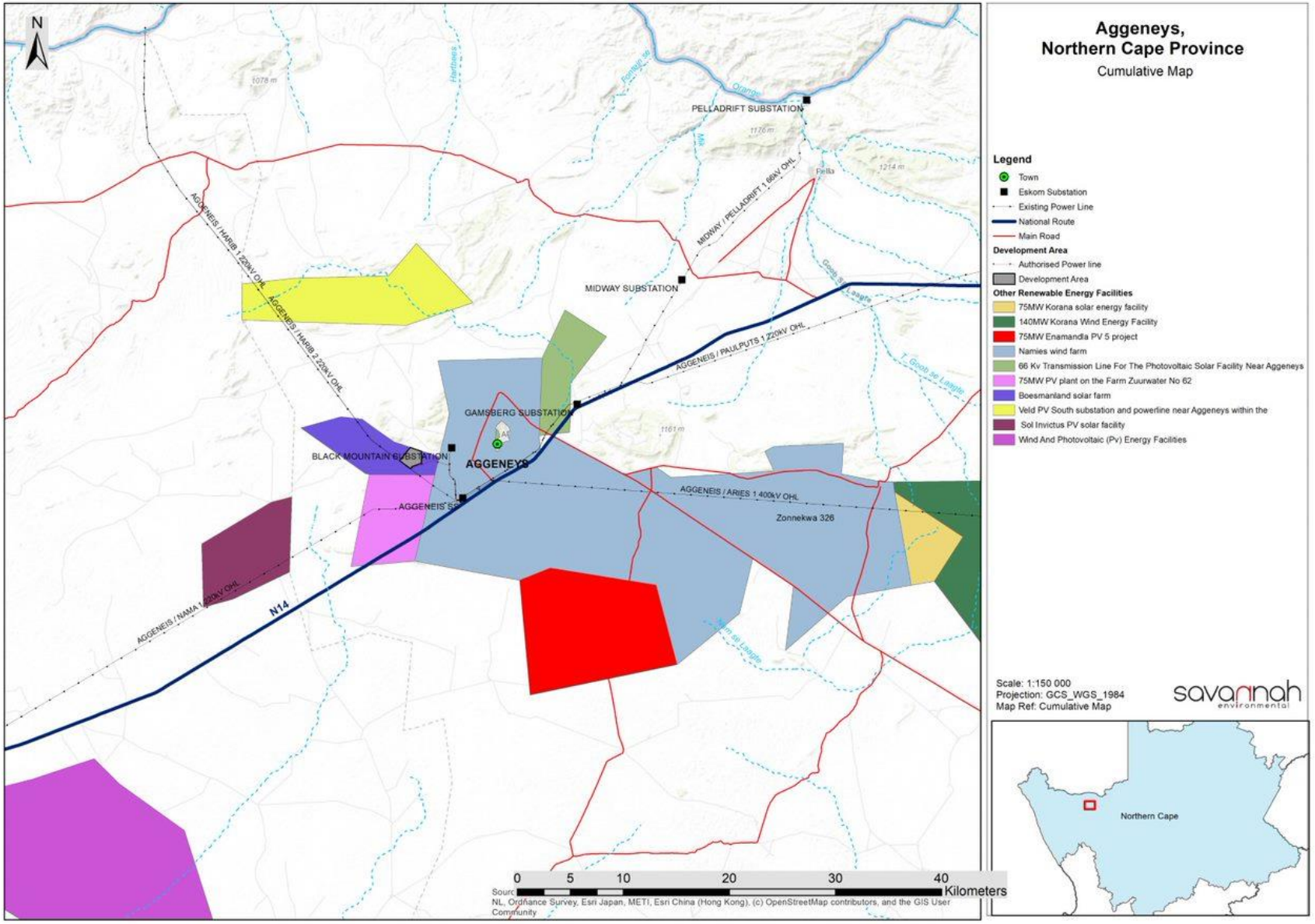

Figure 5.1: Cumulative map showing the authorised development footprint of the Boesmanland Solar Farm relative to other similar developments in the area.

5.2. Impacts on Terrestrial Ecology

The Biodiversity Company was appointed to provide specialist inputs for this Amendment Application. A single site visit to confirm the status of the environment compared to that at the time of the original assessment. This is required in order to make a statement as to whether the environment has changed since the original assessment supported by a site verification report. The following observations were made:

Vegetation:

- Few Species of Conservation Concern (SCC) were encountered during the reassessment site visit. The specialist did however encounter thirteen *Hoodia gordonii* within the proposed study area.
- The absence of other listed species as suggested by the initial report may be attributed to seasonal affects and the fact that the development area is more associated with sandy flats while the majority of protected or listed flora species (e.g. Mesembryanthemaceae) within the general area are associated/dependent on rockier substrate and raised topography (i.e., mountain slopes, inselbergs etc.)
- The key habitats within the development area are large expanses of gravel plains with low, open shrubby vegetation dominated by species such as *Eriocephalus spinescens, Zygophyllum retrofractum*, *Euphorbia spinea, Sarcocaulon crassicaule, Salsola rabieana, Hermannia stricta, H.spinosa and Ruschia spinosa*. Sandy areas also form a large portion of the development area (dissected by water ways or washes) which are primarily dominated by grass *(Poaceae)* species. Grass species observed include *Stipagrostis brevifolia, S. ciliata, S. anomala, S. obtusa and S. uniplumis, S. namaquensis* (primarily in waterways). Across sandy areas, shrubs included *Rhigozum trichotomum, Hermannia affinis*, *Lycium eenii* and *Calabota spinescens*. Within both the gravel plains and sandy habitat-types, *Hoodia gordonii* (at least 13 plants), a nationally protected species was detected. While we invested considerable time into our assessments it is possible that some *Hoodia gordonii* went undetected. A permit would be required to relocate or remove individuals of this species. To this end, measures recommended in the specialist report should be added to the EMPr.

Reptiles:

- The expected high levels of reptilian diversity are attributed to the composition and diversity of habitats within and surrounding the project area (gravel plains, sandy dunes, scree slopes, rocky outcrops etc.).
- Due to the location of the project area, species associated with gravel and sandy flats are likely to be most prevalent. High densities of spotted sand-lizard (Pedioplanis lineoocellata) were observed with the proposed project area, but few other reptile species were detected during the reassessment during May 2023. This unexpectedly low diversity was undoubtedly due to the cool weather conditions during the survey period, cryptic nature of many of the species that occur at the site and the limited time that we had to search for reptile species.

Mammals:

- The habitat types within and surrounding the project area sums 40 terrestrial species and four bat species were expected, with the possibility of Black-footed cat (*Felis nigripes*) (Vulnerable) and Leopard (*Panthera pardus*) (Near Threatened). Both listed species are notoriously shy and were unlikely to be detected. The nature of habitat and the human/agricultural activity within the project area is also unlikely support a population of *Panthera pardus* but is suitable for *Felis nigripes.*

Amphibians:

- Due to the aridity of the area, amphibian diversity is low with only four species being expected within the project area.
- Most amphibian species distributed in this area are normally associated with inselbergs and mountain slopes and not sandy/gravel plains which is characteristic of the project area.
- The specialist detected no amphibians during our surveys which may be attributed to the activity of species distributed in this region being highly seasonal and dependent on rainfall.

The conclusions of the Site Sensitivity Verification for the Suurwater 62 site is as follows:

- The Project Area was identified with the Environmental Screening Tool as possessing a Very High sensitivity within a Terrestrial Biodiversity Theme. This is due to overlap with Critical Biodiversity Areas, Ecological Support Areas and Protected Areas Expansion Strategy Focus Areas.
- The Project Area was identified with the Environmental Screening Tool as possessing a mosaic of High and Medium sensitivity within the Animal Theme. This is due to the presence of several listed avian species but no mammalian, reptilian or amphibian species were listed. The avian species of concern are detailed in the avifauna report of amendment 2 for the Suurwater 62 PAOI.
- The Project Area was identified with the Environmental Screening Tool as possessing a Medium sensitivity within Plant Species Theme. This is due to the presence of sensitive species 425, sensitive species 119, sensitive species 12, *Crotalaria pearsonii* and sensitive species 144.
- The Site Ecological Importance (SEI) as provided by the Species Environmental Assessment Guidelines (SANBI, 2020) was determined for the Project Area. This will provide the most appropriate and up to date sensitivity information. A multi-species approach was considered for the SEI determination.
- The Project Area was a mosaic of Very Low to Very High habitats. Habit congruent with the Screening Tool. The Very High SEI areas were due to the presence of SCC, as well as its Functional Integrity and very low Receptor Resilience.
- Based on the layout design, there is overlap of infrastructure with 'High' and 'Very High' SEI areas. Appropriate mitigation measures would be to minimise the footprints of these as much as possible and rehabilitation of degraded areas.
- The PV site is a combination of High and Medium SEI habitats.
- The proposed transmission lines cross an array of SEI areas some being Very High. Mitigation measures must be implemented to ensure that ecological disturbances are minimised while resilience is maximised.

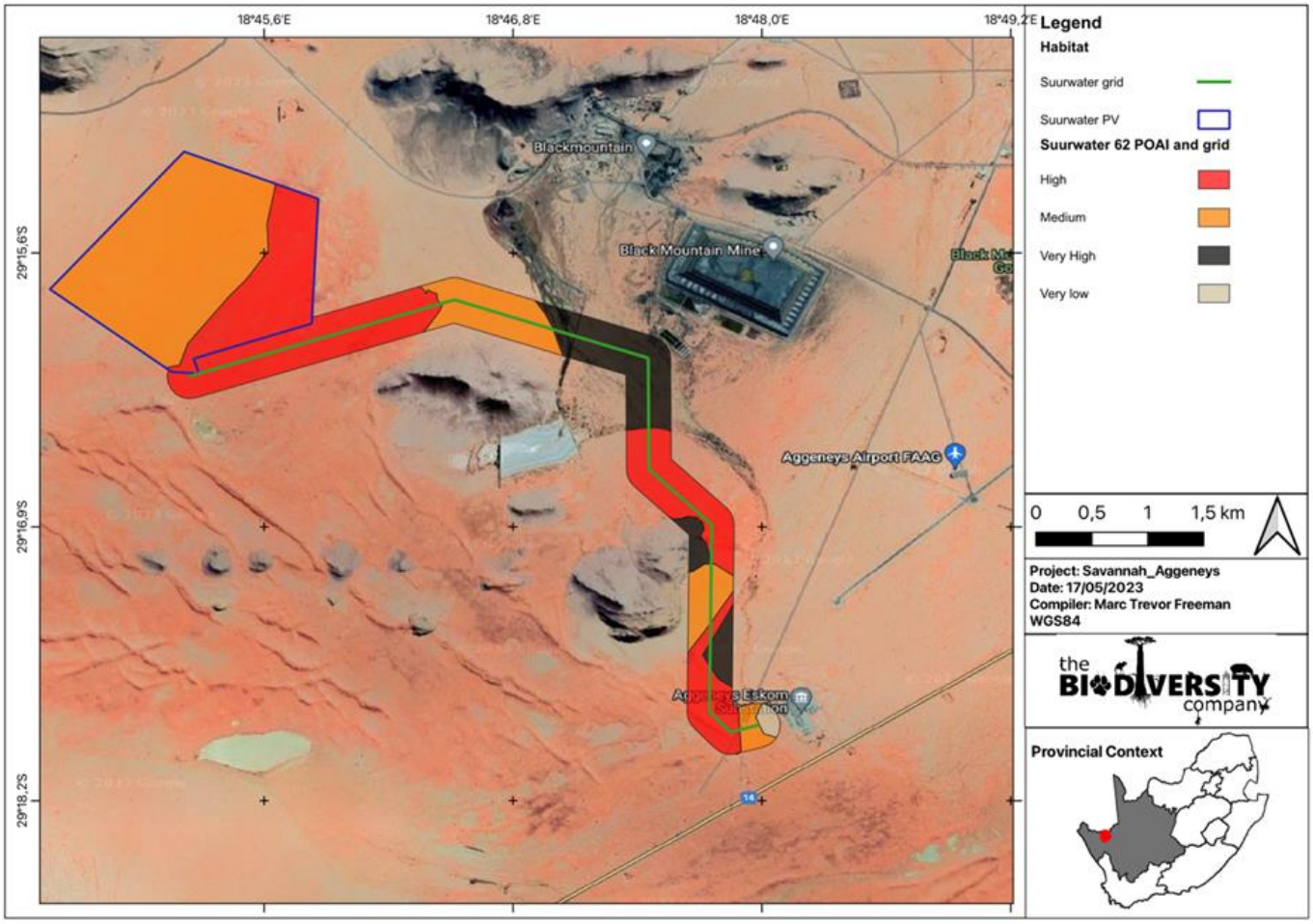

Figure 5.2: Site Ecological Importance

Cumulative impacts were not assessed as part of the initial studies however, they are assessed as part of the Sensitivity Verification Report. It was concluded that impacts of the proposed layout are expected to be low overall and high when considered cumulatively.

Mitigation measures prescribed by each of the reviewed specialist reports remain applicable and must be adhered to. All prescribed mitigation measures and supporting recommendations presented will help to achieve an acceptable residual impact. These measures and recommendations will remain applicable for the requested extension of the EA. In order to manage the impacts effectively, additional mitigation management are recommended and should be put into place for the general impacts associated with flora and fauna.

5.2.1. Conclusion

It is the opinion of the specialist that based on the observations made during the field survey, the ecological importance of the site has not decreased since the undertaking of the EIA studies. In consideration that the project has been previously authorised the proposed development may proceed, under the condition that all mitigation measures provided in this report and previous reports are adhered to.

5.3. Aquatic Ecology

No aquatic ecology assessment was completed as part of the Environmental Impact Assessment (EIA) that was undertaken for the proposed construction of the Zuurwater 62, Boesmanland 75mw Solar Farm, Aggeneys, and was therefore not available for review and consideration for this amendment. Watercourses are only mentioned in the fauna and flora assessment (Simon Todd Consulting, 2013) from a mitigation perspective but not assessed. Drainage systems were identified and delineated by Simon Todd Consulting (2013), with the ecological sensitivity of these systems determined to be very high. These systems will be avoided by the solar facility, but the alignment of the powerline does allow for encroachment into these systems.

The Biodiversity Company conducted a site assessment followed by a Sensitivity Verification in May 2023. For the site verification the watercourses which may potentially be affected by the proposed activity were assessed. This was done to adequately assess the current state of these systems which was done to gain a holistic image of the system and which habitat may be affected. The following provides a summary of the findings of this study:

- The National Web Based Environmental Screening Tool (NWBEST) has characterised the aquatic biodiversity theme sensitivity for the project area as "High". This was due to the presence of FEPA subcatchments and wetlands for the Bushmanland Bioregion. The subcatchments are delineated for planning purposes, and no wetlands were identified for the PV project area. A depression wetland is located south of the proposed PV project area, however due to the distance and climatic conditions, no risks/impacts to the depression are anticipated.
- Due to the ephemeral nature of the watercourses in the area, no assessments were conducted. This was due to the conditions experienced at the time of survey (May 2023) and therefore the ephemeral lotic systems contained insufficient water presence, depth or flow, multiple intended methods could not be applied and therefore the focus of this report was habitat preservation. This was not considered in the initial assessment and considered pertinent.
- Based on conditions observed in the field and satellite imagery, drainage areas and aquatic features were delineated in order to identify all sensitive areas considered relevant to the aquatic habitat of the project area. This is presented below in **Figure 5.3**. Based on recommendations from Norman, 1996, Peterjohn & Correl, 1984, Blanché, 2002 and Palone & Todd, 1997, a 50 m buffer was assigned to these regions as a 'No Go' area for all associated infrastructure of the proposed project.
- A risk assessment was completed as part of the Site Verification and concluded that all risks were found to be 'Low' with mitigation and therefore licencing can be completed under a General Authorisation.

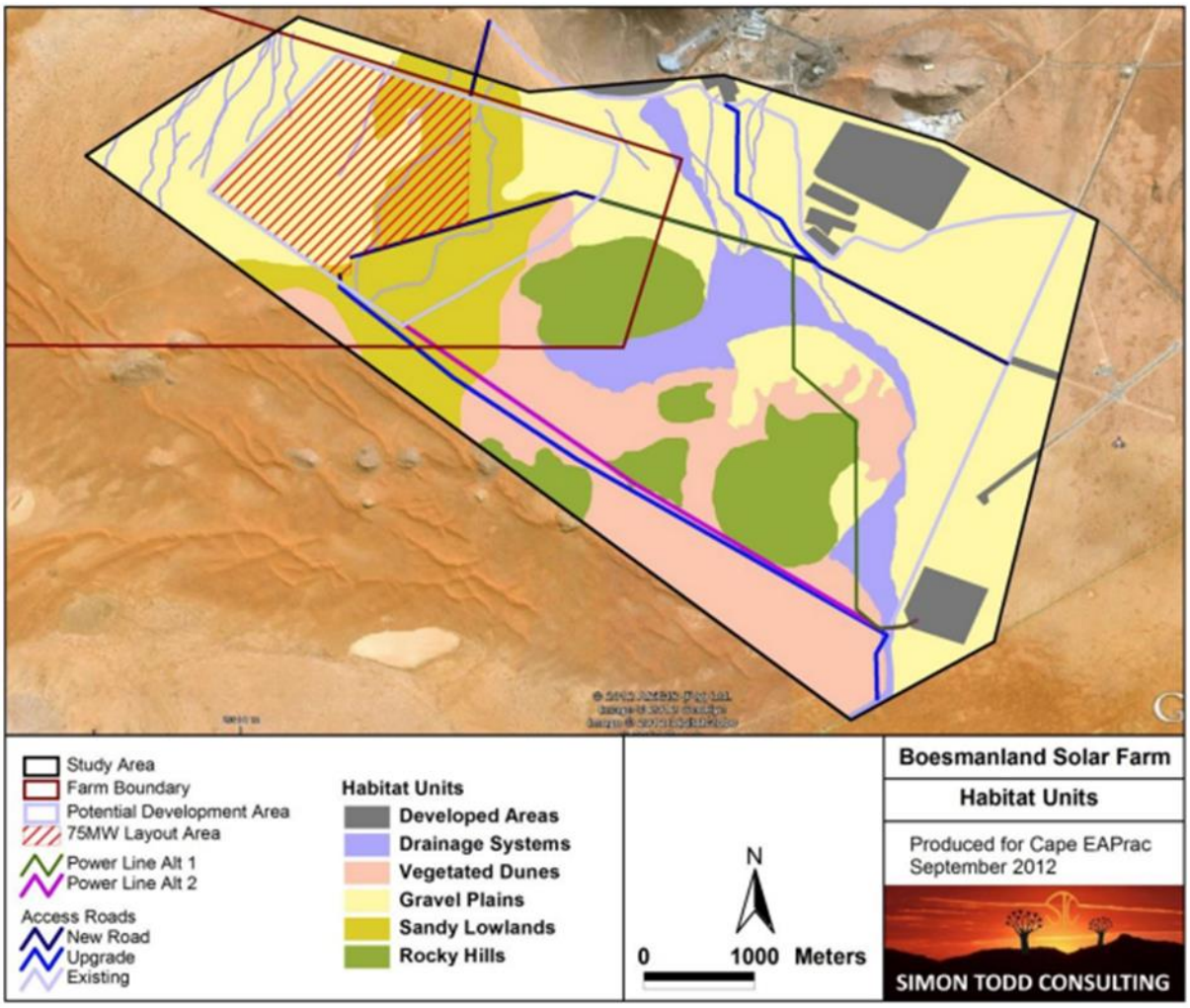

Figure 5.3: The habitat delineation for the project area (Simon Todd Consulting, 2013)

» A cumulative impact assessment was undertaken for the site assessed in context of the extent of the proposed project area; other developments in the area; and general habitat loss and transformation resulting from other activities in the area (all activities, as required for assessment of cumulative impacts including surrounding wind energy facilities, power lines and associated infrastructure in the region). A medium cumulative impact is expected.

5.3.1. Conclusion

In order to manage the impacts effectively, the following mitigation management should be put into place as part of the EMPr for the general impacts associated with watercourses. The current EMPr (Cape Environmental Assessment Practitioners (Pty) Ltd, 2013) did not include impacts related to the watercourses (specifically wetlands) and are not considered comprehensive enough. The specialist input for this amendment presents mitigation measures to be implemented for the power line in particular.

All prescribed mitigation measures and supporting recommendations presented will help to achieve an acceptable residual impact. These measures and recommendations will remain applicable for the requested amendment to the EA. To this end, these measures should be added to the EMPr.
As such, should the measures described in this report be implemented, it is the reasoned opinion of the specialist that the proposed layout as well as requested extension of the current EA be approved.

5.4. Impacts on Avifauna

The Biodiversity Company was appointed to provide specialist inputs regarding avifauna for this Amendment Application. The field surveys for this assessment were undertaken during the 30th of March 2023 to the 7th May 2023 which constitutes a late austral late summer season survey. The assessed avifauna was within and around the previously approved project area. Nevertheless, based on the previous reports and considering the structure of the habitats and dominant avifauna species, there is a high level of confidence in the understanding of the present ecological condition and avifauna community structures. The following provides a summary of the findings of this study:

- The project area was identified with the Environmental Screening Tool as possessing a mosaic of High and Medium sensitivity within the Animal Theme. This is due to the presence of several listed avian species – namely Lanner Falcon Falco biarmicus, Red Lark *Calendulauda burra*, Burchell's Courser *Cursorius rufus*, Ludwig's Bustard *Neotis ludwigii* and Secretarybird *Sagittarius serpentarius*.
- The project area was identified with the Environmental Screening Tool as possessing a Very High sensitivity within the Avian Sensitivity Theme. This is due to project area being within 2Km of a powerline ≥ 132kV, falling with the probable core of the Red Lark *Calendulauda burra* distribution, being within 1km of an IBA and falling within 2km of a known Martial Eagle *Polemaetus bellicosus* nest site.
- The Site Ecological Importance (SEI), as provided by the Species Environmental Assessment Guidelines (SANBI, 2020), was determined for the project area. This will provide the most appropriate and up-to-date sensitivity information. A single-taxon approach was considered for the SEI determination.
- The Project Area was a mosaic of Very Low to Very High habitats. Habit congruent with the Screening Tool. The Very High SEI areas were due to the presence of SCC, as well as its Functional Integrity and very low Receptor Resilience (refer to **Figure 5.4**).
- Based on the layout design, there is overlap of infrastructure with 'High' and 'Very High' SEI areas. Appropriate mitigation measures would be to minimise the footprints of these as much as possible and rehabilitation of degraded areas.
- The PV site is a combination of High and Medium SEI habitats.
- The proposed transmission lines cross an array of SEI areas some being Very High. Mitigation measures must be implemented to ensure that ecological disturbances are minimised while resilience is maximised.

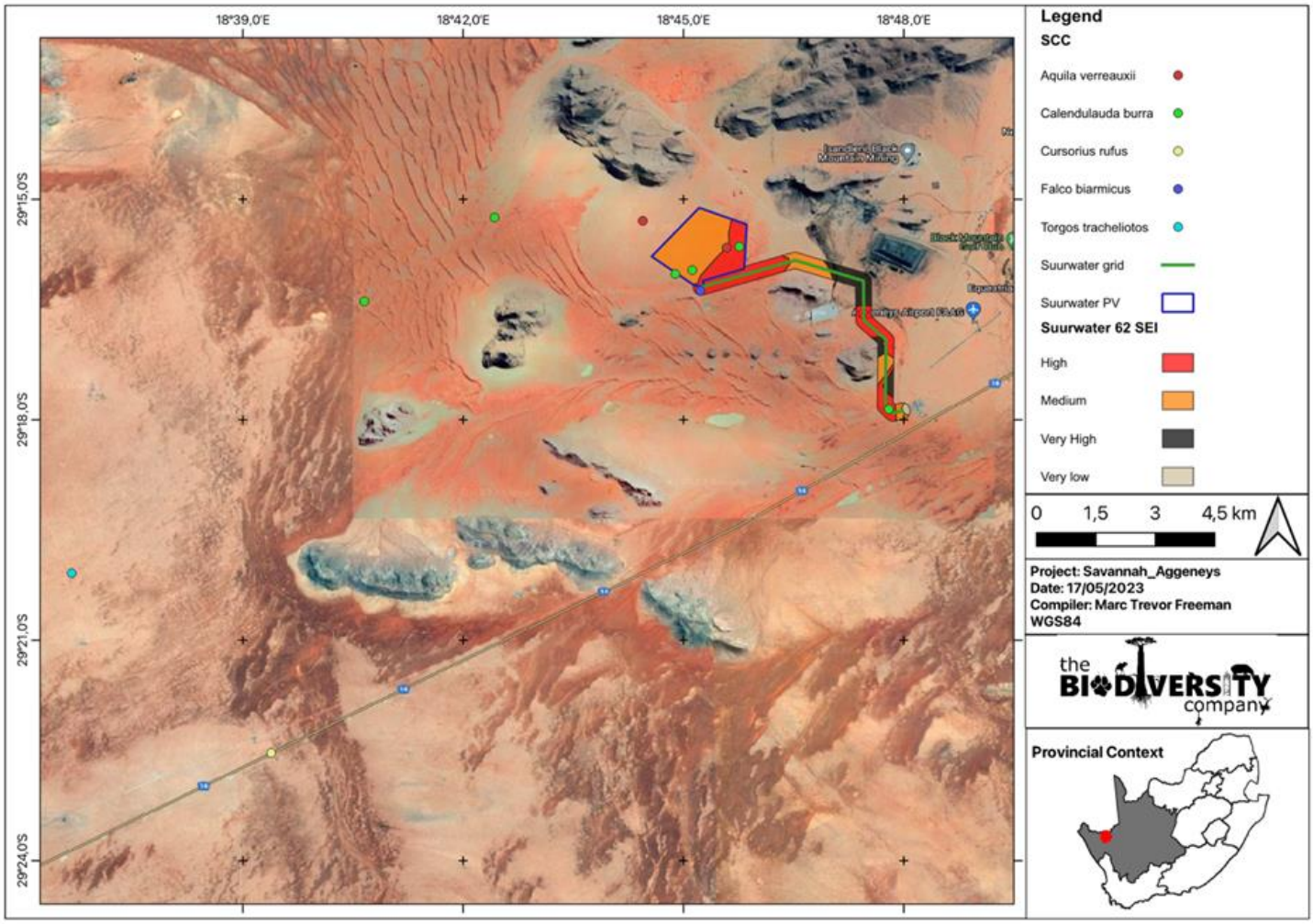

Figure 5.4: Site Ecological Importance and location of identified sensitive avifauna

Cumulative impacts were not assessed as part of the initial studies however, they are assessed as part of the Sensitivity Verification Report. Impacts of the proposed layout are expected to be low overall and high when considered cumulatively.

Mitigation measures prescribed by each of the reviewed specialist reports remain applicable and must be adhered to. All prescribed mitigation measures and supporting recommendations presented will help to achieve an acceptable residual impact. These measures and recommendations will remain applicable for the requested extension of the EA. In order to manage the impacts effectively, additional mitigation management are recommended and should be put into place for the general impacts associated with flora and fauna.

5.4.1. Conclusion

It is the opinion of the specialist that based on the observations made during the field survey, the avifauna community structure of the site has not decreased since the completion of the EIA studies. In consideration that the project has been previously authorised the proposed development may proceed, under the condition that all mitigation measures provided in the 2023 report and previous reports are adhered to.

5.5. Impacts on Soils and Agricultural Potential

The Biodiversity Company was appointed to provide specialist inputs regarding soils and agricultural potential for this Amendment Application.

According to the DEA Screening tool (2023), the proposed project area mainly falls within the "Very Low to Low" land capability sensitivity. However, there is a small portion of the area that has a very high land capability sensitivity with crop fields. It is specialist advice to avoid such high land capability areas. However, in case relocation is not feasible, stakeholders should negotiate with landowners in terms of compensation.

The soil forms identified within the proposed project area include Mispah, Glenrosa and Ermelo soil forms. Mispah soil form consists of an orthic topsoil on top of a hard rock. Glenrosa soil form consists of a lithic horizon on top of a hard rock. Lastly, Ermelo soil form consists of an orthic topsoil on top of a deep yellow-brown apedal soil. The dominant soil forms including Mispah and Glenrosa are characterized with low land capability and low land potential, resulting in a non-arable land. Furthermore, the available climate conditions of the proposed project area are not favorable for intensive agricultural production.

The current (2023) soil and agricultural survey reports that the EIA (2012) soil and agricultural baseline findings for the Boesmanland Solar Farm are applicable and invariable, therefore the predicted impacts and provided mitigation measures still applies to the proposed land capability of the assessment site. It should be noted that the current soil and agricultural potential were classified using the updated soil taxonomic "Soil Classification Working Group, 2018".

5.5.1. Conclusion

The specialist confirms that the proposed project activities will not result in any additional impacts and will not increase the level or nature of the impact on the available land resources, which was initially assessed and considered when application was made for an EA and subsequent amendments. The significance ratings will remain unchanged, and the proposed mitigation and management measures proposed as part of the EIA process will still suffice.

5.6. Visual Impacts

LOGIS was appointed to provide a statement on the visual impact that the Boesmanland Solar Farm will in pose to the surrounding area. It was confirmed that the description of the affected environment, as described in the final Environmental Impact Assessment (EIA) report remains unchanged. There has been no change in land use for the proposed development site, no new developments have been constructed on or near the development site, and the land use zonation (agriculture) remains the same. This conclusion was verified through consultation with the project proponent and the current landowner(s).

The proposed extension of the validity of the EA by an additional ten years is not expected to alter the influence of the project infrastructure on *areas of higher viewer incidence* (observers traveling along the roads within the region) or *potential sensitive visual receptors* (residents of homesteads in closer proximity to the infrastructure).

The proposed amendment to the validity of the EA is consequently not expected to influence the anticipated visual impact, as stated in the original EIA report (i.e. the proposed development site would be

set back from the N14 National road by at least 5km and would not be visible from any main roads or other important public vantage points).

Additional to this, the proposed development would not materially alter existing views from the N14 or any other known area or site considered to be of moderate to high local, provincial or national aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value cultural significance.

From a visual perspective, the proposed amendment will therefore require no (zero) changes to the significance rating within the original visual assessment that was used to inform the approved EIA. In addition to this, no new mitigation measures are required.

There are no new assessment guidelines which are now relevant to the authorised development which were not undertaken as part of the initial visual assessment. Additional to this, and as stated above, there have been no changes to the environment of the proposed development site or the surrounding environment.

It is worth noting that the proposed Boesmanland Solar Farm is located within the Springbok Renewable Energy Development Zone No. 8 (REDZ8) as determined by the *Strategic Environmental Assessment for Wind and Solar Photovoltaic Energy in South Africa* (2015 – CSIR/DEA) and within the Northern Corridor of the Strategic Transmission Corridors.

The consolidation and concentration of renewable energy facilities (and associated grid connection infrastructure) within these zones are therefore preferred and the cumulative visual impact is deemed to be of an acceptable level i.e. the amendment is not expected to alter the potential cumulative visual impact rating as stated in the original EIA report:

"In context of the broader landscape, the cumulative impacts are not likely to be highly significant given the extensive intact nature of the landscape as a whole".

5.6.1. Conclusion

The proposed amendment will require no changes to the impact significance ratings as stated within the original VIA report which was used to inform the approved EIA. In addition to this, no new mitigation measures are required.

It is suggested that the amendment to the project infrastructure be supported, subject to the conditions and recommendations as stipulated in the original EA, and according to the Environmental Management Programme (EMPr) and suggested mitigation measures, as provided in the original VIA report.

5.7. Heritage Impacts

CTS Heritage was appointed to provide specialist inputs regarding heritage aspects for this Amendment Application. An archaeologist conducted an assessment of archaeological resources likely to be disturbed by the proposed development. The archaeologist conducted his site visit on 9 May 2023.

According to the DFFE Screening Tool analysis, the development area has LOW levels of sensitivity for impacts to palaeontological heritage and LOW levels of sensitivity for impacts to archaeological and cultural heritage resources. The results of this assessment in terms of site sensitivity are summarised below:

» The cultural value of the broader area has some significance in terms of its history associated with the Gamsberg Massacre sites (MODERATE)
» Some significant archaeological resources were identified within the broader area, especially on the Koppies (MODERATE)
» No highly significant palaeontological resources were identified within the development area, and the geology underlying the development area is not sensitive for impacts to significant fossils (LOW)

As per the findings of this assessment, and its supporting documentation, the outcome of the sensitivity verification confirms the results of the DFFE Screening Tool for Palaeontology and disputes the results of the screening tool for archaeology and cultural heritage - this should be considered to be MODERATE.

Archaeological and palaeontological heritage resources reflect the environments of the deeper past and are unlikely to change significantly in as short a geological time span as 10 years. Some changes to heritage resources may result from processes of erosion and deflation but, in this particular ecological setting, would likely represent heavily disturbed contexts and consequently would be of limited scientific/heritage value.

Based on the assessment completed, the area proposed for development has a low archaeological sensitivity and it is not foreseen that the proposed development will impact on significant archaeological heritage. The only archaeological observations identified during the field assessment of the area proposed for development in 2023 were determined to be not conservation-worthy.

Almond (2012) concludes that most of the study area is underlain by unfossiliferous metamorphic basement rocks or mantled by superficial sediments of low palaeontological sensitivity and extensive deep excavations are unlikely to be involved in this sort of solar park project." As such, it is not anticipated that the proposed development will negatively impact on any significant palaeontological resources.

Significant massacre sites are located in the broader area of the proposed development - the Gamsberg and Namiesberg Massacre sites. These significant sites of massacre have very high local or even Provincial significance and should be graded IIIA or even Grade II. However, due to continued mining of the Gamsberg for Iron Ore since the opening of Black Mountain Mine in 2014, the context of these significant massacre sites is all but completely eroded. As the proposed BESS is located within the footprint of an approved PV facility, no additional impact on the sense of place associated with the Gamsberg and Namiesberg Massacre sites is anticipated.
Cumulative impact in terms of heritage was assessed by reviewing the renewable energy facilities that are proposed within 20km of the proposed development area and includes the previously assessed and authorised renewable energy facilities that fall within the development area assessed in this HIA. Furthermore, the area immediately adjacent to Aggeneys has been severely compromised through extensive ongoing mining activities which have come to characterise this landscape. At this stage, there is the potential for the cumulative impact of numerous proposed solar energy facilities and their associated infrastructure to negatively impact the cultural landscape due to a change in the landscape character from natural wilderness to semi-industrial, however, due to the remoteness of the area the impact on the experience of the cultural landscape is not foreseen to be significant. In addition, it is preferable to have renewable energy facility development focussed in an area such as a REDZ.

5.7.1. Conclusion

The area proposed for development has a low overall heritage sensitivity and it is not foreseen that the proposed development will impact on significant heritage resources.

In addition, the proposed development is located within an identified REDZ and Strategic Transmission Corridor. Due to the REDZ, there are a number of similar existing and/or proposed PV facilities in the area and as such, there is the potential for the cumulative impact of proposed solar energy facilities to negatively impact the cultural landscape due to a change in the landscape character from natural wilderness to semi-industrial, however, due to the remoteness of the area the impact on the experience of the cultural landscape is not foreseen to be significant.

No significant heritage resources were identified during this or the previous assessment (2012). Therefore, there is no heritage objection to granting the extension to the validity to develop the Boesmanland PV Facility and grid connection based on the current site conditions on condition that the recommendations made in the original HIA completed for this project (De Kock et al, 2012) are adhered to..

5.8. Social Impacts

The Namakwa DM had a total GDP of R10.7 billion and in terms of total contribution towards Northern Cape Province the Namakwa DM ranked lowest relative to all the regional economies to total Northern Cape Province GDP. This ranking in terms of size compared to other regions of Namakwa remained the same since 2010. In terms of its share, in 2020 (10.6%) it was significantly smaller compared to what it was in 2010 (12.3%). For the period 2010 to 2020, the average annual growth rate of -0.4% of Namakwa was the lowest relative to its peers in terms of growth in constant 2010 prices. Khâi-Ma LM similarly showed a decrease of -0.38% over the same period.

The mining sector remains the main driver of the economy for the municipality. The highest contribution to GVA is from the mining sector at 56%, followed by community services at 12%. Khâi-Ma 's mining and quarrying sector averaged a positive annual growth rate of 3.8% which is more significant than the Provincial and District average (-1.2% and -4.3% respectively). Khâi-Ma LM is rich in mineral deposits. South Africa's main source of lead production is Aggeneys. The main zinc deposits in the Northern Cape Province can be found at Gamsberg near Aggeneys.

In 2020 the mining sector contributed R 3.94 billion or 40.4% of the total GVA in the DMs economy. This was followed by contributions from community services at 16.7%, and agriculture at 10.2%.

In terms of the percentage of people living in poverty for each of the regions within the Namakwa DM, in 2020 Khâi-Ma LM had the highest percentage of people living in poverty, using the upper poverty line definition, with a total of 44.8%. In terms of the poverty gap rate for each of the regions within the Namakwa DM, Khâi-Ma LM again had the highest poverty gap rate, with a rand value of 28.0%.

When looking at the regions within the Namakwa DM it is expected that from 2020 to 2025 the Khâi-Ma LM will achieve the highest average annual growth rate of 3.3%. Richterveld LM is expected to have the second-

highest average annual growth rate of 2.69%. The Namakwa DM overall was expected to have an average of 2.65% growth over the same period, with South Africa averaging close to 2.69% growth expected.

Based on the understanding of the proposed amendment and extended timeframes, it is the specialist's opinion that the social environment within the study area has not changed. The construction cost of the facility is expected to have increased which will have a small impact on production, GDP, employment, and household standards of living.

5.8.1. Conclusion

The specialist assessed the proposed amendments and confirms that there is no significant change to the affected social environment or the scope and nature of the proposed project. Therefore, from a socio-economic perspective, there is no reason why the proposed amendment should not be authorised.

6. CONCLUSION AND MOTIVATION FOR APPROVAL OF THE REQUESTED AMENDMENTS

The Boesmanland Solar Farm ("the Project") (DFFE Reference: 14/12/16/3/3/2/222) received EA on the 16 July 2013. The extension of the EA validity is requested in order to enable the holder of the EA to (a) bid the project in upcoming rounds of the REIPPPPP (the date of which is unknown) or any other government tenders or private off-taker programmes and b) commence with construction following Financial Close (should the project be selected as a preferred bidder) prior to the EA lapsing.

By maintaining the validity of the EA, the applicant can explore the option of tendering in private off-taker or other government programmes should the REIPPPP bid not occur. This will enable the applicant to generate and supply the green electricity produced and reduce reliance on external factors, such as delays in the REIPPPP program. It provides Boesmanland Solar Farm (Pty) Ltd the opportunity to contribute to sustainability goals independently and showcase their commitment to clean energy.

The following are the key motivating factors which indicate the advantages to granting the requested amendments:

1. Impacts identified within the original report are still applicable for the proposed project. **No additional impacts or changes in impact significance will result because of the amendments as the environment has not changed**. Following specialist inputs for the proposed amendment, provided that mitigation measures as documented in the EMPr and as required in the specialist reports are implemented, the recommendation is that the amendment be approved.
2. There is no objection to the proposed amendments by any of the specialist consultants who have completed a verification assessment.
3. The development has the ability to create employment, opportunities for contractors in the region, ownership opportunities for local communities, skills, supplier and enterprise development spend and the implementation of socioeconomic development initiatives.
4. All the potential cumulative impacts associated with the project planned within the area (30km radius) are considered to be low to moderate and will not change as a result of the proposed amendment.
5. The proposed Project is located within the Springbok Renewable Energy Development Zone No. 8 (REDZ8) as determined by the Strategic Environmental Assessment for Wind and Solar Photovoltaic Energy in South Africa (2015 –CSIR/DEA). The consolidation and concentration of renewable energy facilities within this zone is therefore preferred.

Based on the nature of the requested amendment for the Boesmanland Solar Farm and Associated Infrastructure, the specialist findings confirmed that the environment has not materially changed since the undertaking of the EIA in 2013, the impact ratings as provided in the initial assessment remain valid, and the mitigation measures provided in the initial assessment are still applicable. In some instances additional mitigation measures have been provided to ensure best practice management of impacts. These are based on new information available on developments of this nature and not as a result of the requested amendments.

Therefore, taking into consideration the conclusions from the specialist site verification and motivation reports (**Appendix A - G**) and the findings of this report, it is concluded that the proposed amendment to

the validity of the EA is not expected to result in an increase to the significance ratings for the identified potential impacts, and should accordingly be approved.

7. PUBLIC PARTICIPATION

A public participation process is being conducted in support of the Application to amend the Environmental Authorisation (Ref: 14/12/16/3/3/2/222) issued for the proposed development of the Boesmanland Solar Farm and associated infrastructure. The Public Participation has been undertaken in accordance with the requirement of Chapter 6 of the EIA Regulations of December 2014, as amended. The following key public participation tasks have been undertaken:

- The database/register of I&APs has been updated and maintained.
- Placement of site notices at the site during **June 2023** (refer to **Appendix H**).
- Written notifications to registered I&APs as well as Organs of State regarding the availability of the Motivation Report were distributed on **7 July 2023** (refer to **Appendix H** and **Appendix H**).
- Placement of an advertisement in the **Die Plattelander** newspaper on **Friday 7 July 2023** announcing the availability of the Motivation Report for a 30-day review and comment period.
- The Motivation Report has been made available for the 30-day review and comment period from **Friday 13 July 2023 to Monday 7 August 2023**. The report is available for download on the Savannah Environmental website: https://savannahsa.com/public-documents/.

Comments received during the 30-day review and comment period will be included as **Appendix H** in the final submission of the Motivation Report to the DFFE for consideration in the decision-making process. Comments will be included and responded to in a Comments and Responses Report, to be included as **Appendix H** of the Final Motivation Report. Proof of attempts made to obtain comments from relevant Organs of State and key stakeholders will also be included in **Appendix H** of the Final Motivation Report.