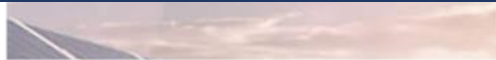


SITE VERIFICATION REPORT

15 February 2023

**THE PROPOSED VARKENSLAAGTE SOLAR
PHOTOVOLTAIC SOLAR ENERGY FACILITY
AND GRID CONNECTION INFRASTRUCTURE
NEAR CARLETONVILLE, GAUTENG PROVINCE**



ENVIRONAMICS

PROJECT DETAIL

| | | |
|-----------------------------|---|---|
| DFFE Reference No's. | : | To be confirmed |
| Project Title | : | Proposed Varkenslaagte Solar Photovoltaic Solar Energy Facility and Grid Connection Infrastructure Near Carletonville, Gauteng Province |
| Authors | : | Ms. Bianca Gilfillan |
| Reviewed | : | Roschel Maharaj |
| Client | : | Varkenslaagte Solar (Pty) Ltd |
| Report Status | : | Site Verification Report |
| Submission date | : | February 2023 |

When used as a reference this report should be cited as: Environamics (2023). Site verification Report: Proposed Varkenslaagte Solar Photovoltaic Solar Energy Facility and Grid Connection Infrastructure Near Carletonville, Gauteng Province.

COPYRIGHT RESERVED

This technical report has been produced for Varkenslaagte Solar (Pty) Ltd. The intellectual property contained in this report remains vested in Environamics and Varkenslaagte Solar (Pty) Ltd. No part of this report may be reproduced in any manner without written permission from Environamics or Varkenslaagte Solar (Pty) Ltd.

TABLE OF CONTENTS

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION | 5 |
| 1.1 | Specialist Assessments identified by the Screening Report | 5 |
| 1.2 | Sensitivities of the studies not conducted | 11 |
| 1.3 | Current/ Verified Land Use..... | 15 |
| 2 | SITE VERIFICATION..... | 20 |
| 2.1 | Civil Aviation Theme | 20 |
| 2.2 | Defence Theme | 21 |
| 2.3 | Radio Frequency Interference (RFI) Theme | 22 |
| 3 | CONCLUSION..... | 24 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1.1: Civil aviation sensitivity as indicated by the DFFE Screening Tool Report for the PV facility category | 12 |
| Figure 1.2: Civil aviation sensitivity as indicated by the DFFE Screening Tool Report for the powerline category..... | 13 |
| Figure 1.3: Defence theme sensitivity as indicated by the DFFE Screening Tool Report..... | 14 |
| Figure 1.4: RFI theme sensitivity as indicated by the DFFE Screening Tool Report | 15 |
| Figure 1.5: The site (taken towards the north) | 16 |
| Figure 1.6: The site (taken towards the north east) | 17 |
| Figure 1.7: The site (taken towards the east) | 18 |
| Figure 1.8: The site (taken towards the south) | 18 |
| Figure 1.9: The site (taken towards the west) | 19 |

LIST OF TABLES

| | |
|--|----|
| Table 1.1: Specialist Studies Identified by the DFFE Screening Tool for the PV Facility and Specialist Studies Conducted..... | 6 |
| Table 1.2: Specialist Studies Identified by the DFFE Screening Tool for the Powerline and Specialist Studies Conducted..... | 9 |
| Table 2.1: Verification of DFFE Screening Report Sensitivity Ratings for the Civil Aviation Theme Related to the PV Facility | 20 |
| Table 2.2: Verification of DFFE Screening Report Sensitivity Ratings for the Civil Aviation Theme Related to the Powerline Category | 21 |
| Table 2.3: Verification of DFFE Screening Report Sensitivity Ratings for the Defence Theme | 21 |
| Table 2.4: Verification of the DFFE Screening Tool Report Sensitivity Ratings for the Radio Frequency Interference (RFI) Theme..... | 22 |

1 INTRODUCTION

This Site Verification Report is compiled in compliance with Government Notice No. 320, dated 20 March 2020, which includes the requirement for an Initial Site Sensitivity Verification Report to be produced for a development footprint. The outcome of the Initial Site Verification must be recorded in the form of a report that-

- a) Confirms or disputes the current use of the land and environmental sensitivity as identified by the national web based environmental screening tool;
- b) Contains a motivation and evidence of either the verified or different use of the land and environmental sensitivity;
- c) Is submitted together with the relevant reports prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

1.1 Specialist Assessments identified by the Screening Report

The DFFE Screening Tool Reports (Appendix B of the Scoping Report) identified the following specialist assessments to be included in the S&EIR processes:

- 1. Agricultural Impact Assessment
- 2. Animal Species Assessment
- 3. Aquatic Biodiversity Impact Assessment
- 4. Archaeological and Cultural Heritage Impact Assessment
- 5. Avian Impact Assessment
- 6. Civil Aviation Assessment
- 7. Defense Assessment
- 8. Landscape/Visual Impact Assessment
- 9. Paleontology Impact Assessment
- 10. Plant Species Assessment
- 11. RFI Assessment
- 12. Terrestrial Biodiversity Impact Assessment

The tables included below provides an indication of the specialist studies identified by the DFFE Screening Tool Report, as well as an indication of whether the studies were undertaken or not and a motivation or confirmation of the studies being included or not.

Table 1.1: Specialist Studies Identified by the DFFE Screening Tool for the PV Facility and Specialist Studies Conducted

| Study identified in the DFFE Screening Tool and sensitivity | Study included? | Appendix |
|--|-----------------|---|
| Agricultural Impact Assessment Sensitivity: High | Yes | An Agricultural Compliance Statement is included in Appendix E5 of the Scoping Report. |
| Animal Species Assessment Sensitivity: Medium | Yes | An Animal Species Compliance Statement is included in Appendix E2 of the Scoping Report. |
| Aquatic Biodiversity Impact Assessment Sensitivity: Very High | Yes | An Aquatic Ecological Impact Assessment is included in Appendix E1. This assessment has been undertaken in terms of the Protocols of GNR320 – refer to the content of the report. |
| Archaeological and Cultural Heritage Impact Assessment Sensitivity: Low | Yes | A Heritage Impact Assessment is included in Appendix E6 of the Scoping Report, as per the requirements of the National Heritage Resources Act. |
| Avian Impact Assessment Sensitivity: Low | Yes | An Avifaunal scoping report is included in Appendix E3. |
| Civil Aviation Assessment Sensitivity: Low | No | The identification of the site as low sensitivity considering civil aviation is agreed to by the EAP. This is based on the current land use of the site being used for agricultural purposes. The Civil Aviation Authority has been consulted regarding the development of the project since the commencement of the S&EIR Process. No specific negative |

| | | |
|--|-----|---|
| | | impacts or issues have been raised to date by the CAA regarding the project. The project is also not located within an area considered to be of a high sensitivity. |
| Defence Theme Sensitivity: Low | No | <p>The affected property is confirmed to be used for agricultural purposes and therefore the development will not have any impact on defence installations.</p> <p>The sensitivity for the entire extent of the site is low and therefore no assessment has been included.</p> <p>The South African National Defence Force has been consulted regarding the development of the project since the commencement of the S&EIR Process. No specific negative impacts or issues have been raised to date regarding the project. The project is also not located within an area considered to be of a high sensitivity.</p> |
| Landscape / Visual Impact Assessment Sensitivity: Very High | Yes | A Visual Impact Assessment is included in Appendix E4 of the Scoping Report. |
| Palaeontological Impact Assessment Sensitivity: Very High | Yes | A Palaeontological Impact Assessment is included in Appendix E7 of the Scoping Report, as per the requirements of the National Heritage Resources Act. |
| Plant species Assessment Sensitivity: Medium | Yes | A Plant Species Compliance Statement is included in Appendix E2 of the Scoping Report. |

| | | |
|--|-----|---|
| RFI Assessment Sensitivity: Medium | No | The RFI theme sensitivity is medium for the entire extent of the project. The South African Radio Astronomy Observatory (SARAO) has been consulted regarding the development of the project since the commencement of the S&EIR Process. No specific negative impacts or issues have been raised to date by the SARAO regarding the project. The project is also not located within an area considered to be of a high sensitivity. |
| Terrestrial Biodiversity Impact Assessment Sensitivity: Very High | Yes | A Terrestrial Biodiversity Impact Assessment is included in Appendix E2. This assessment has been undertaken in terms of the Protocols of GNR320 – refer to the content of the report. |
| Geotechnical Assessment Sensitivity: Not indicated | Yes | The detailed Geotechnical Assessment will be conducted before construction begins as part of the micro-siting of the facility layout. The consideration of geotechnical aspects is considered to be of a technical concern rather than an environmental concern. A Desktop Geotechnical Assessment is included in Appendix E10. |
| Socio-Economic Assessment Sensitivity: Not indicated | Yes | A Social Impact Assessment is included in Appendix E8. |

Table 1.2: Specialist Studies Identified by the DFFE Screening Tool for the Powerline and Specialist Studies Conducted

| Study identified in the DFFE Screening Tool and sensitivity | Study included? | Appendix |
|--|-----------------|---|
| Agricultural Impact Assessment Sensitivity: High | Yes | An Agricultural Compliance Statement is included in Appendix E5 of the Scoping Report. |
| Animal Species Assessment Sensitivity: Medium | Yes | An Animal Species Compliance Statement is included in Appendix E2 of the Scoping Report. |
| Aquatic Biodiversity Impact Assessment Sensitivity: Very High | Yes | An Aquatic Ecological Impact Assessment is included in Appendix E1. This assessment has been undertaken in terms of the Protocols of GNR320 – refer to the content of the report. |
| Archaeological and Cultural Heritage Impact Assessment Sensitivity: Low | Yes | A Heritage Impact Assessment is included in Appendix E6 of the Scoping Report, as per the requirements of the National Heritage Resources Act. |
| Civil Aviation Assessment Sensitivity: High | No | The proposed length of the grid corridor lies between medium and high sensitivity with on a very small portion within high sensitivity. The proposed activity is approximately 8 and 15 km from other civil aviation aerodrome. The grid corridor length is relatively short i.e., 3.7 km from the proposed PV facility which was identified as low sensitivity. The proposed pylons are anticipated to only reach a height of up to 32m from the ground. It is not anticipated that the proposed |

| | | |
|---|-----|---|
| | | <p>activities will cause any interference with civil aviation aerodromes located at a fair distance away.</p> <p>The Civil Aviation Authority has been consulted regarding the development of the project since the commencement of the S&EIR Process. No specific negative impacts or issues have been raised to date by the CAA regarding the project. The project is also not located within an area considered to be of a high sensitivity.</p> |
| <p>Defence Theme</p> <p>Sensitivity: Low</p> | No | <p>The affected property is confirmed to be used for agricultural purposes and therefore the development will not have any impact on defence installations.</p> <p>The sensitivity for the entire extent of the site is low and therefore no assessment has been included.</p> <p>The South African National Defence Force has been consulted regarding the development of the project since the commencement of the S&EIR Process. No specific negative impacts or issues have been raised to date regarding the project. The project is also not located within an area considered to be of a high sensitivity.</p> |
| <p>Palaeontological Impact Assessment</p> <p>Sensitivity: Very High</p> | Yes | <p>A Palaeontological Impact Assessment is included in Appendix E7 of the Scoping Report, as per the requirements of the National Heritage Resources</p> |

| | | |
|--|-----|---|
| | | Act. |
| Plant species Assessment Sensitivity: Medium | Yes | A Plant Species Compliance Statement is included in Appendix E2 of the Scoping Report. |
| Terrestrial Biodiversity Impact Assessment Sensitivity: Very High | Yes | A Terrestrial Biodiversity Impact Assessment is included in Appendix E2. This assessment has been undertaken in terms of the Protocols of GNR320 – refer to the content of the report. |

1.2 Sensitivities of the studies not conducted

This report has been produced specifically to consider the Civil Aviation, Defence and RFI theme and addresses the content requirements of (a) and (b) above.

The remaining required specialist studies have been undertaken as part of the Scoping and Environmental Impact Reporting (S&EIR) process as listed in the DFFE Screening Tool Reports. The only study not considered as relevant is the Geotechnical Assessment which will only be undertaken before construction begins as part of the micro-siting of the facility layout. The consideration of geotechnical aspects is considered to be of a technical concern rather than an environmental concern. However, a desktop geotechnical study has been included as a part of the Draft Scoping Report (DSR).

The sensitivities for the Civil Aviation, Defence and RFI themes associated with Varkenslaagte Solar PV facility are as follows:

1.2.1 Civil Aviation Theme

The site sensitivity is classified as low for the PV facility as no major or other types of civil aviation aerodromes are present. Refer to Figure 1.1.

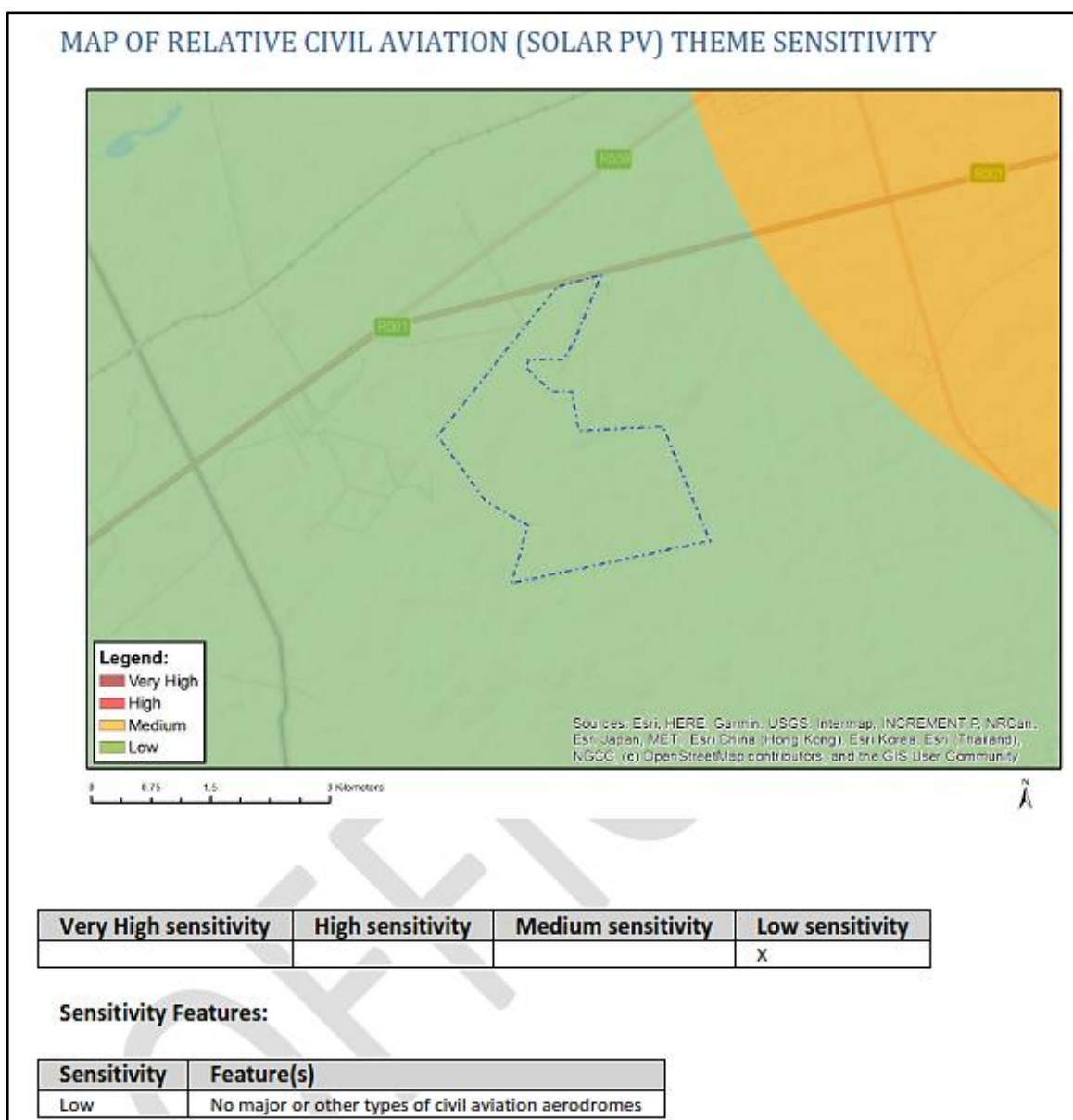


Figure 1.1: Civil aviation sensitivity as indicated by the DFFE Screening Tool Report for the PV facility category

The site sensitivity is classified as high for the powerline category as other civil aviation aerodromes have been identified between 8km and 15km. Refer to Figure 1.2.

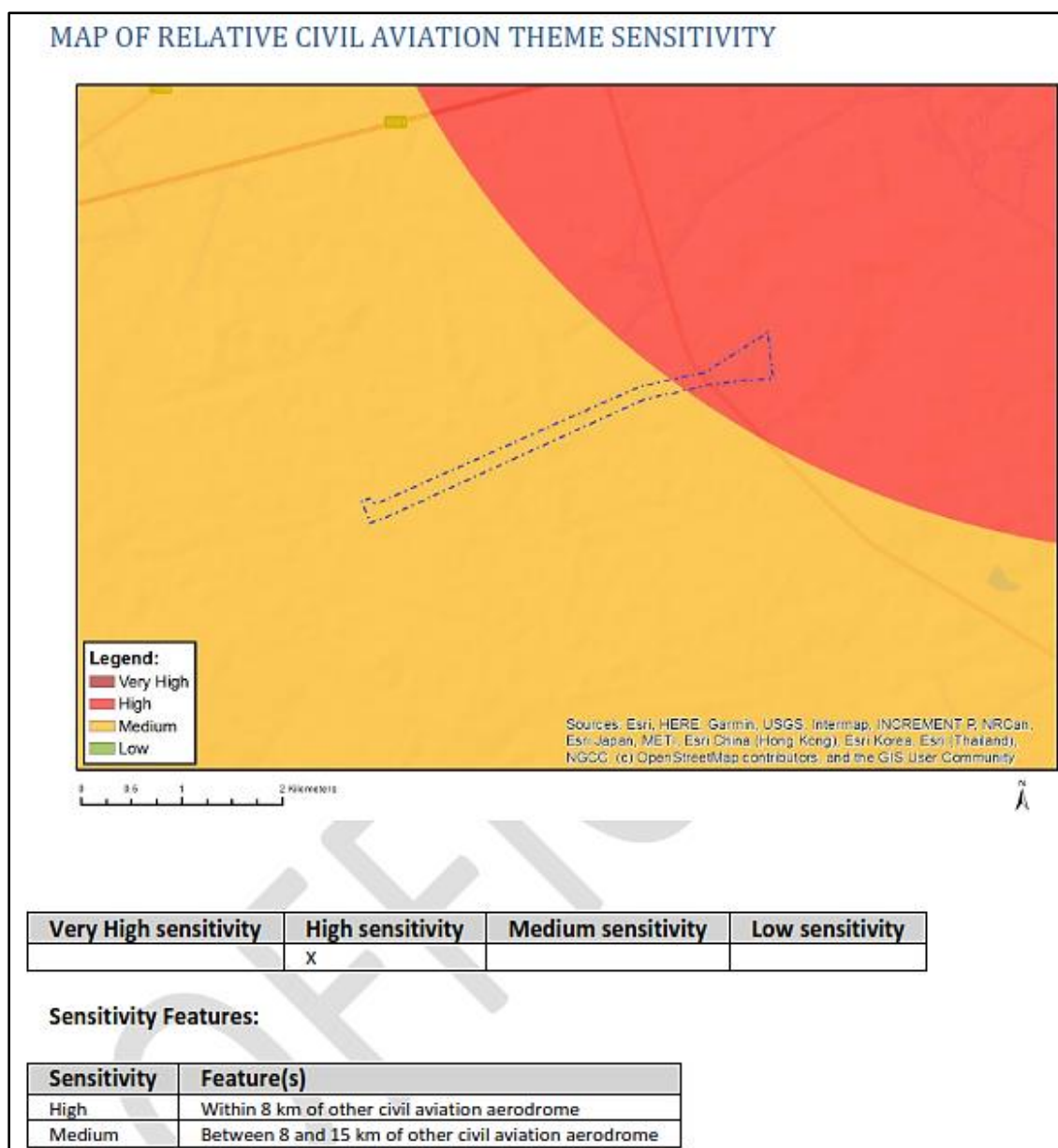


Figure 1.2: Civil aviation sensitivity as indicated by the DFFE Screening Tool Report for the powerline category

1.2.2 Defence theme

The defence theme is considered to be low for the PV facility and powerline categories. The presence of a defence site has not been indicated in close proximity of the site. Refer to Figure 1.3 below.

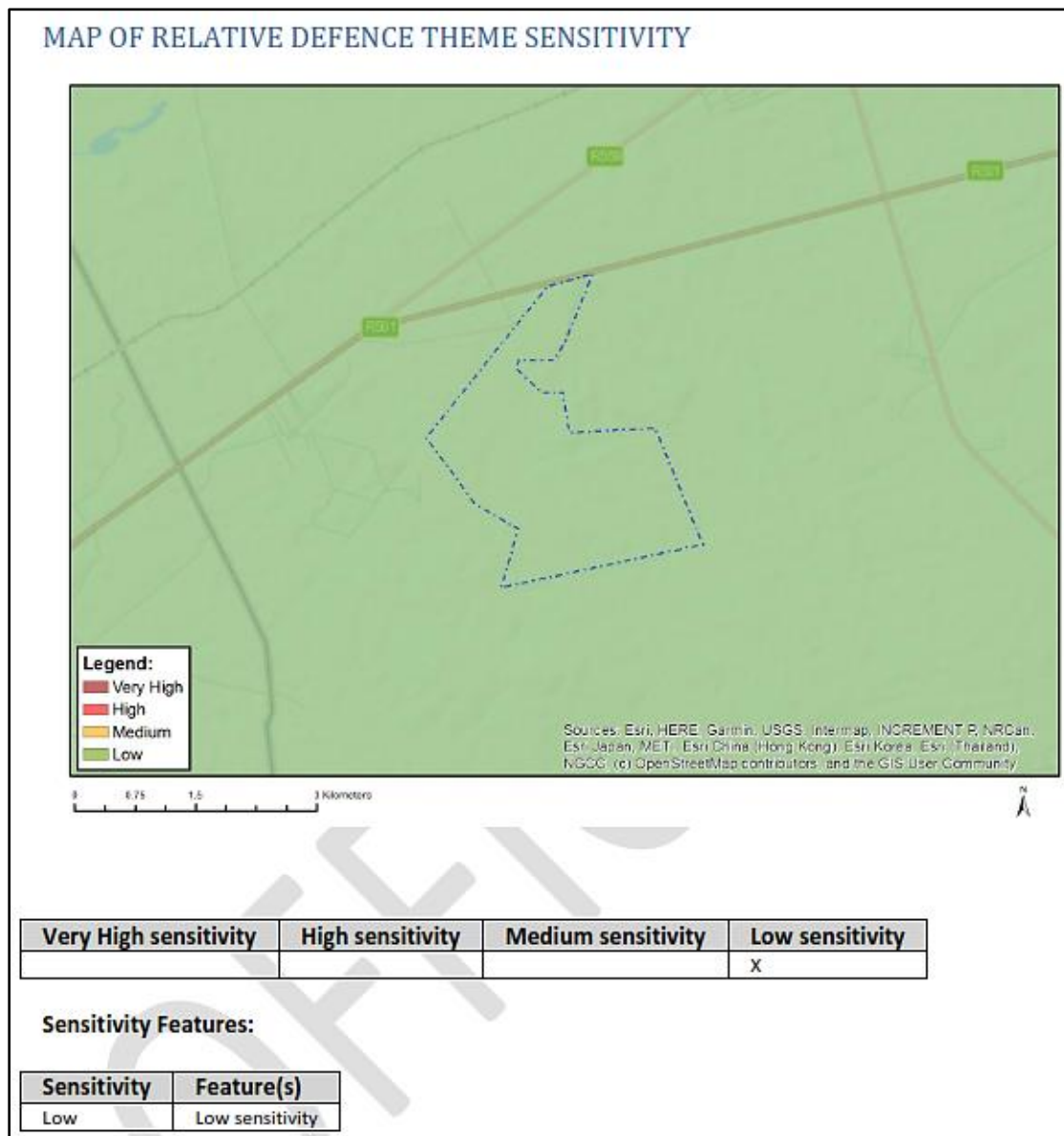


Figure 1.3: Defence theme sensitivity as indicated by the DFFE Screening Tool Report

1.2.3 RFI Theme

The sensitivity of the RFI theme for the project is medium. Refer to Figure 1.4 below.

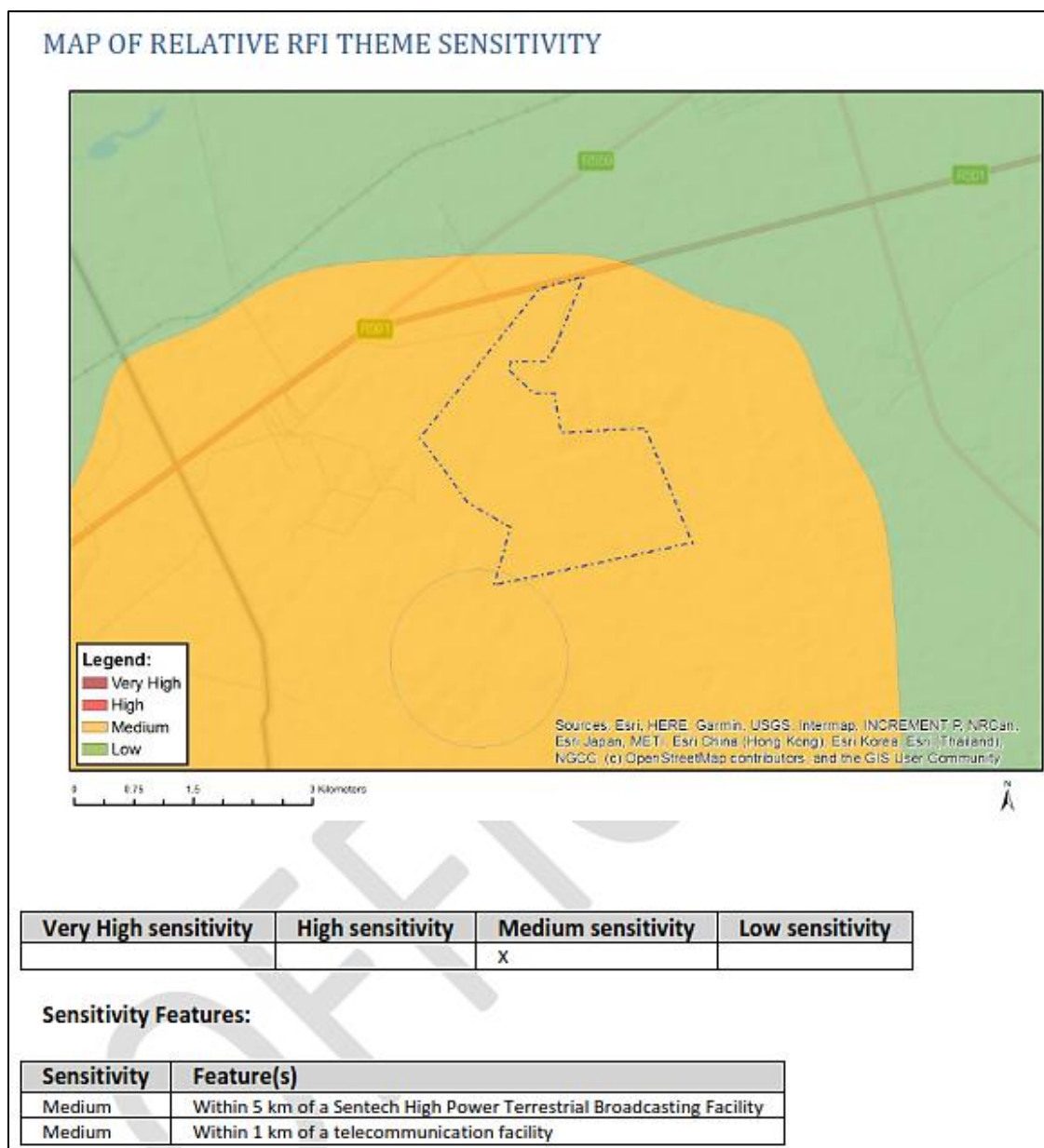


Figure 1.4: RFI theme sensitivity as indicated by the DFFE Screening Tool Report

1.3 Current/ Verified Land Use

The current land use of the properties is mainly used for cattle grazing. The town of Carletonville is located approximately 8 km northeast of the proposed development.

Most of the surrounding area has a low number of farmsteads/buildings that are sparsely populated. The area is located within an agricultural region, and the immediate area is presently used for cattle grazing.

Refer to Figures 1.5 – 1.9 for photographs of the site under assessment.



Figure 1.5: The site (taken towards the north)



Figure 1.6: The site (taken towards the north east)



Figure 1.7: The site (taken towards the east)



Figure 1.8: The site (taken towards the south)



Figure 1.9: The site (taken towards the west)

2 SITE VERIFICATION

This section will evaluate and verify the sensitivity ratings provided by the DFFE Screening Tool Report and provide feedback from the EAP.

2.1 Civil Aviation Theme

The site sensitivity for the PV facility category is classified as low with no civil aviation infrastructure located in proximity to the proposed development that will be affected.

Table 2.1: Verification of DFFE Screening Report Sensitivity Ratings for the Civil Aviation Theme Related to the PV Facility

| Identified Sensitivity | | Comment |
|---|----------------------------|--|
| <u>DFFE Screening Report</u> | <u>EAP Feedback</u> | |
| Low | Low | |
| As no specific assessment protocol has been prescribed, the required level of assessment must be based on the findings of the Initial Site Sensitivity Verification and must comply with Appendix 6 of the Environmental Impact Assessment Regulations promulgated under sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (The Act), where a specialist assessment is required. | | <p>The identification of the site as low sensitivity considering civil aviation is agreed to by the EAP. This is based on the current land use of the site being used for agricultural purposes.</p> <p>The Civil Aviation Authority (CAA) has been identified as an I&AP, and has received the Draft Scoping report for review and commenting. No comments from the CAA have been received as part of the public participation process.</p> |

Table 2.2: Verification of DFFE Screening Report Sensitivity Ratings for the Civil Aviation Theme Related to the Powerline Category

| Identified Sensitivity | | Comment |
|--|--|---|
| <u>DFFE Screening Report</u> High As per the DFFE protocol, a Civil Aviation Compliance Statement is required for a High sensitivity | <u>EAP Feedback</u> Low | <p>The identification of the site as high sensitivity due to the distance of other civil aviation aerodrome is acknowledged by the EAP. It is important to note that the proposed grid connection lies within a strategic transmission corridor. The current land use of the site includes mainly cattle grazing and the proposed powerline connects to the existing Carmel Transmission Station.</p> <p>The Civil Aviation Authority (CAA) has been identified as an I&AP, and has received the Draft Scoping report for review and commenting. No comments from the CAA have been received as part of the public participation process.</p> |

The proposed development is not expected to have an unacceptable negative impact on civil aviation installations based on the findings of the site visit and the lack of civil aviation infrastructure within the general area of the proposed project.

Based on the above, the EAP is of the opinion that no further assessments are required in terms of the civil aviation theme. This assessment is considered sufficient for the civil aviation theme. There is no reason for the development not to proceed based on the results of the assessment and no objections are made.

2.2 Defence Theme

Table 2.3: Verification of DFFE Screening Report Sensitivity Ratings for the Defence Theme

| Identified Sensitivity | | Comment |
|--|--|--|
| <u>DFFE Screening Report</u> Low As no specific assessment protocol has been prescribed, the required level of assessment must be based on the findings of the Initial Site Sensitivity Verification | <u>EAP Feedback</u> Low | <p>The affected property is confirmed to be used for agricultural purposes and therefore the development will not have any impact on defence installations.</p> <p>The sensitivity for the entire extent of the site is low and therefore no assessment has been included.</p> <p>The South African National Defence Force (SANDF) has been identified as an I&AP, and has received the Draft Scoping report for review and commenting. No comments have been received</p> |

| | | |
|---|--|--|
| and must comply with Appendix 6 of the Environmental Impact Assessment Regulations promulgated under sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (The Act), where a specialist assessment is required. | | as part of the public participation process. |
|---|--|--|

The proposed development will not have an unacceptable negative impact on defence installations. Considering the site under assessment and the surrounding defence aspects the sensitivity is confirmed as low.

This assessment is considered sufficient for the defence theme. There is no reason for the development not to proceed based on the results of the assessment and no objections are made.

2.3 Radio Frequency Interference (RFI) Theme

Table 2.4: Verification of the DFFE Screening Tool Report Sensitivity Ratings for the Radio Frequency Interference (RFI) Theme

| Identified Sensitivity | | Comment |
|--|--|---|
| <u>DFFE Screening Report</u> Medium As no specific assessment protocol has been prescribed, the required level of assessment must be based on the findings of the Initial Site Sensitivity Verification and must comply with Appendix 6 of the Environmental Impact Assessment Regulations promulgated under | <u>EAP Feedback</u> Low | The site verification screening report indicates that a Sentech High Power Terrestrial Broadcasting Facility lies within 5km of the proposed development. Sentech and the South African Radio Astronomy Observatory (SARAO) have been consulted regarding the development of the project and the Scoping Report has been circulated to SARAO for review and commenting. No comment has been received from SARAO to date. |

| | | |
|--|--|--|
| sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (The Act), where a specialist assessment is required. | | |
|--|--|--|

As the theme is of a medium sensitivity, no unacceptable impact is expected to occur. I&APs that may be impacted in this regard will be consulted during the process and all comments will be considered.

3 CONCLUSION

The DFFE Screening Tool Report identified thirteen (13) specialists' studies to be conducted, which includes Agricultural Impact Assessment, Landscape/Visual Impact Assessment, Archaeological and Cultural Heritage Impact Assessment, Palaeontology Impact Assessment, Terrestrial Biodiversity Impact Assessment, Aquatic Biodiversity Impact Assessment, Avian Impact Assessment, Civil Aviation Assessment, RFI Assessment, Geotechnical Assessment, Socio-Economic Impact Assessment, Plant Species Assessment and Animal Species Assessment.

The sensitivity ratings for the Civil Aviation and Defence theme are confirmed by the site verification. Although the RFI and civil aviation was rated with medium sensitivity, no unacceptable impact is expected to occur. The relevant stakeholders will be consulted as part of the S&EIR process to obtain comment on the proposed development.