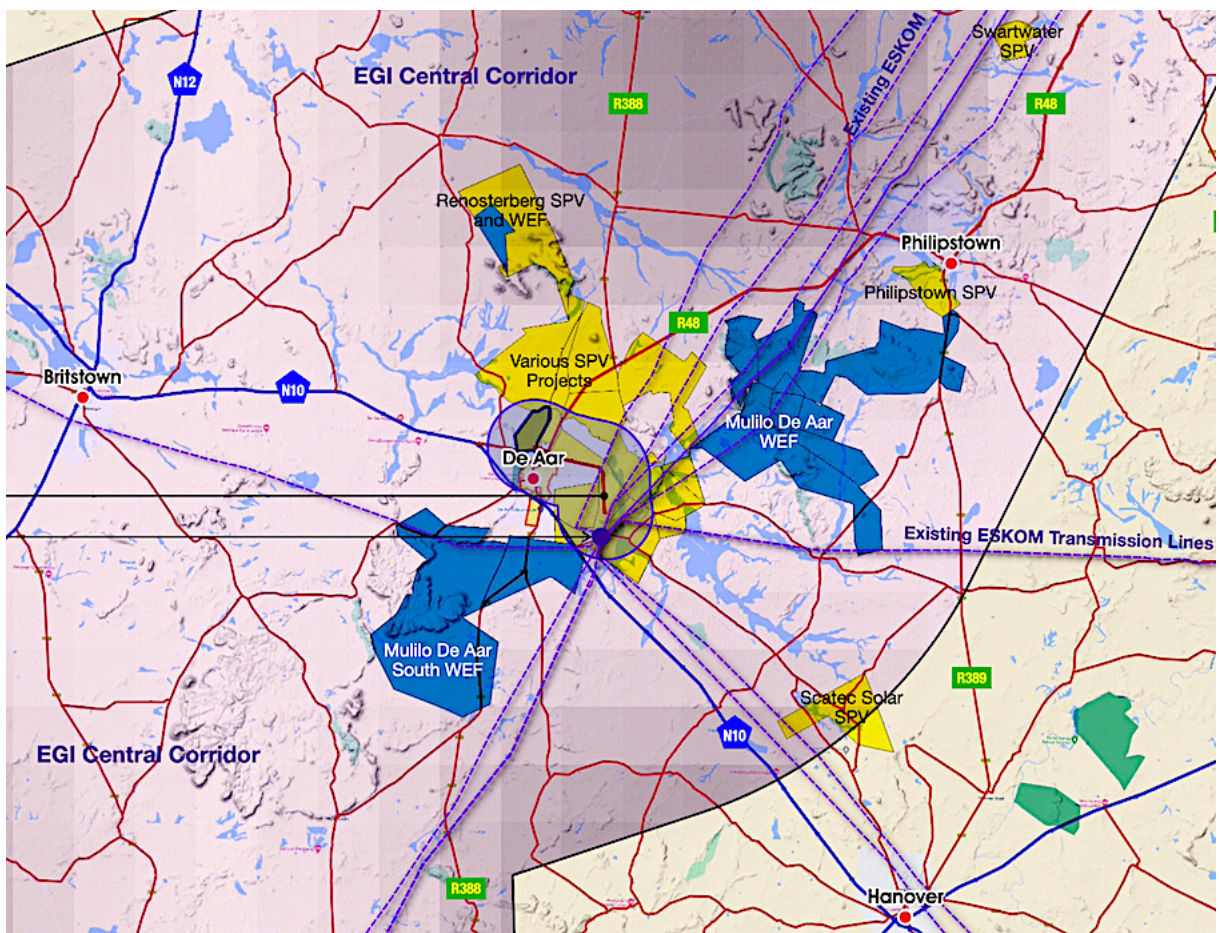


Proposed Paarde Valley PV2 Grid Connection to Vetlaagte Main Transmission Substation Near De Aar, Northern Cape Province

for Paarde Valley PV2 (Pty) Ltd

Visual Impact Assessment

15 June 2022



Prepared for
Holland & Associates Environmental Consultants

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Executive Summary

The visual impact assessment is based on the preferred layout of the proposed PV2 Grid connection corridor and switching station. The visual assessment of the authorised PV2 formed part of a separate visual specialist study, and an amendment statement is being submitted.

The area for the proposed grid corridor, switching station and associated servitude and access road has few scenic resources on, or in close proximity, to the site. The facilities have a limited viewshed, although a few farmsteads would potentially be within viewing distance.

Other visual receptors would be users of the R48 arterial road where the grid would cross the road. Residential areas of De Aar are about one kilometer from the proposed grid.

The overall visual impact significance for the proposed development has been rated as medium (negative) both before and after mitigation.

The cumulative visual impact significance of the grid connection corridor, seen in combination with the switching station and other existing and proposed solar PV facilities, has been rated as medium (negative), given the transformed character of the area around De Aar.

The layout of the grid connection corridor generally avoids any scenic resources or sensitive receptors, and micro-siting of the pylons should be relatively easy. A number of visual mitigations have been recommended to further reduce negative visual impacts.

The proposed grid connection and switching station would not present a potential fatal flaw in visual terms, particularly as the proposed project lies within the Central Strategic Electrical Grid Infrastructure (EGI) Corridor, where similar renewable energy and grid infrastructure is likely to occur.

NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND ENVIRONMENTAL IMPACT REGULATIONS, 2014 (AS AMENDED) - REQUIREMENTS FOR SPECIALIST REPORTS (APPENDIX 6)

Regulation GNR 326 of 4 December 2014, as amended 7 April 2017, Appendix 6	Section of Report
1. (1) A specialist report prepared in terms of these Regulations must contain-	Page vii
a) details of- <ul style="list-style-type: none"> i. the specialist who prepared the report; and ii. the expertise of that specialist to compile a specialist report including a curriculum vitae; 	
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Page v and vi
c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 2
an indication of the quality and age of base data used for the specialist report;	Section 4
a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 9
d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 4
e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 3
f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 9
g) an identification of any areas to be avoided, including buffers;	Sections 9 and 10
h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Map 6
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 5
j) a description of the findings and potential implications of such findings on the impact of the proposed activity, (including identified alternatives on the environment) or activities;	Section 13
k) any mitigation measures for inclusion in the EMPr;	Sections 11 and 12
l) any conditions for inclusion in the environmental authorisation;	Section 11
m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 12
n) a reasoned opinion- <ul style="list-style-type: none"> i. (as to) whether the proposed activity, activities or portions thereof should be authorised; <ul style="list-style-type: none"> (iA) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan; 	Section 13
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	N/A
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/A
q) any other information requested by the competent authority.	N/A
2) Where a government notice <i>gazetted</i> by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	Annexure 3

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Abbreviations and Glossary

List of Abbreviations

DFFE	Department of Forestry, Fisheries and Environment
DEM	Digital Elevation Model
EAP	Environmental assessment practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GN	Government Notice
GPS	Global Positioning System
MTS	Main transmission substation
NEMA	National Environmental Management Act
OHPL	Overhead powerline
REEA	Renewable Energy EIA Application Database
VIA	Visual Impact Assessment

Glossary

Definitions	
Receptor	Individuals, groups or communities who are subject to the visual influence of a particular project.
Viewpoint	A selected point in the landscape from which views of the project are ascertained.
Viewshed	The outer boundary defining a view catchment area, used to determine the zone of visual influence.
View shadow	An area within the view catchment visually obscured from the project, usually by topography.
Visual absorption capacity	The ability of an area to visually absorb development by means of screening topography, vegetation or buildings.

1 Introduction

The currently authorised 132kV/ 220kV grid connection for Paarde Valley PV2 is routed from the authorised Paarde Valley PV2 facility to the existing De Aar substation. Because of Eskom's grid capacity constraints, the Applicant wishes to amend the authorised grid connection (realignment and termination point) and create a separate Environmental Assessment for ESKOM's self-build components (i.e. switching station component of the authorised Paarde Valley PV2 on-site substation, and gridline). This would include the construction of a 132kV overhead powerline from the authorised on-site substation at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS), and associated infrastructure.

The visual specialists have been asked to prepare a Visual Impact Assessment (VIA) that will form part of the application for Environmental Authorisation (EA), through a Basic Assessment (BA) process, for the newly proposed grid connection.

The regional locality and local context of the proposed grid are indicated on **Maps 1 and 2**.

2 Terms of Reference

A Terms of Reference has been provided by Holland & Associates (March 2022, amended June 2022), which includes a detailed project description and an impact rating methodology, included here as **Annexure 1**.

A Site Sensitivity Verification Report for the landscape / visual theme, from the web-based screening tool, was provided by Holland & Associates, included here as **Annexure 1**. The Site Sensitivity Verification Report identifies a landscape / visual impact assessment protocol for inclusion in the assessment report. The Screening Report does not include a map of Relative Landscape Sensitivity for the Landscape/Visual Theme. Detailed visual sensitivity mapping at the project scale is however included in this Report.

3 Visual Assessment Methodology

The visual assessment methodology included the following steps:

- A 3D digital terrain model of the study area was prepared in order to determine the viewshed of the grid connection, based on the layout provided by Holland & Associates.
- Potential sensitive receptors, such as farmsteads along the route, were identified using the viewshed map and Google Earth.
- Landscape features and sensitive receptors were mapped together with recommended buffers for the grid.
- Field work was used to verify the existence and significance of landscape features and receptors in order to refine the visual mapping layers.
- A photographic record was made with the emphasis on views from potential sensitive receptors of the proposed project at varying distances.
- The panoramic photographs, which included their GPS positions, were then used to create the post-mitigation photomontages.
- Potential visual impacts relating to the grid for construction, operational and decommissioning phases of the project were assessed along with their relative significance.
- Mitigation measures to avoid or minimise potential negative visual impacts were formulated.
- Cumulative visual impacts in relation to other existing and proposed renewable energy facilities and grids in the area were assessed.
- Impact significance ratings were determined based on the methodology provided by Holland & Associates.

4 Site Investigation

A site visit of about 6 hours duration was carried out on 15 March 2022. The track used during the fieldwork is indicated on **Map 3**. The season was not a consideration for the visual survey, but clear visibility was required. The route taken during the field trip is indicated in green on **Map 3**.

5 Assumptions and Limitations

The actual pylons that may be used have not been determined at this stage, but a range of types is included in the project description (see Section 7). Assumptions were made regarding the footprint and height of the proposed switching station, as well as lighting and fencing relating to the proposed project.

6 Legislative Framework

Legal and policy documents relating to visual and scenic resources are described below. These tend to fall under the National Heritage legislation, the natural heritage being part of the 'national estate', and therefore the VIA Report needs to be read in conjunction with the HIA.

<i>National Environmental Management Act (NEMA) No. 107 of 1998, EIA Regulations (2014) as amended</i>	The Act includes listed activities requiring Environmental Authorisation.
<i>National Heritage Resources Act (Act 25 of 1999 NHRA)</i>	The Act includes protection of national and provincial heritage sites, as well as areas of environmental or cultural value, and proclaimed scenic routes. Natural heritage, including scenic resources, form part of the 'national estate'.
<i>Provincial Government of the Western Cape 2005: Guideline for Involving Visual and Aesthetic Specialists in EIA Processes. B. Oberholzer.</i>	A guideline document for specialist visual input with respect to determining potential visual impacts, along with criteria for rating the significance of impacts.

7 Project Description

Routing of the Corridor:

The proposed 132 kV double circuit overhead powerline (OHPL) grid connection will be routed from the authorised on-site substation and switching station at Paarde Valley PV2 to Vetlaagte Main Transmission Station (MTS) (which is currently undergoing its own EA application process). The OHPL is proposed to be approximately 12.7 km in length, and is located in the Strategic Transmission Central Corridor.

Switching Station:

The project will include the switching station component of the authorised Paarde Valley PV2 on-site substation, with an approximate footprint area of 100m x 100m, and a feeder bay at the Vetlaagte MTS with a capacity of 132kV. This needs to be handed over to Eskom with the grid connection self-build works once constructed.

132kV Line and Pylons:

A 200 m corridor (100 m of each side of the line) is being assessed, as indicated on **Map 3**. The final OHPL servitude will be registered as 31 m but a corridor of 200 meters is required to allow for minor tower position adjustments.

The exact pylon locations will be determined by the outcome of specialist and engineering considerations. On average there would be 4 to 5 towers per kilometre, so that the route will consist of approximately 40 towers.

The teams constructing the OHPL often use cranes and these will fit into an area with a maximum radius of approximately 30 m around the base of each tower, with the final footprint being relatively small.

The line will have a capacity of 132kV and would make use of either steel monopole or steel lattice structure in line with Eskom required specifications. Typical pylon tower designs are shown in Figures 1 and 2 below.

Technical details include the following:

- Height of pylons up to 32m
- Type of poles/ pylons either steel lattice or monopole structures, double circuit configuration.

- Transmission line capacity 132kV
- Switching station footprint approx. 50-100m x 100m adjacent to IPP Substation.
- Area occupied by buildings (Control building, relay room, generator, storage warehouse, water tanks, ablutions) +-1.0Hectares.
- Switching Station Access Road (separate access servitude from the nearest public road to the Switching Station yard), compacted gravel, +- 2,34km length and 8m width.
- Security fencing 2,4m height.
- Eskom palisade fencing + chainlink fencing for temporary works.
- Length of OHPL service road – twin-tracked service road following line route only. Width of service roads 6m.

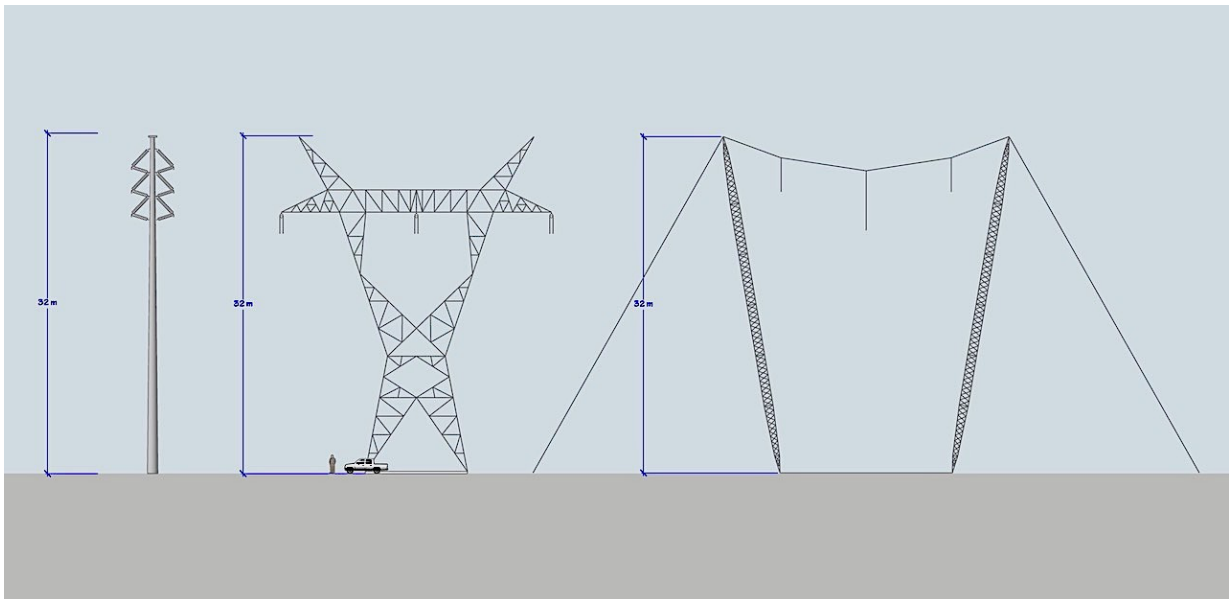


Figure 1: Typical 132kV monopole type, or lattice type pylons



Figure 2: Example of monopole where powerlines cross the R48 Route north of De Aar

Alternatives:

No alternatives to the preferred route of the grid were provided, as the route selected follows boundary lines and / or existing OHPL routes so as to limit disruption to current farming activities as much as possible. It is assumed that the routing will be refined based on the specialist studies. The route would then be assessed against the no-go option. Alternative types of pylons include steel lattice or monopole structures in line with Eskom required specifications.

8 Description of the Receiving Environment

A brief description of the landscape and scenic features of the study area are given below, and in the accompanying photographs (Figures 3 to 6).

The study area lies within an expansive flattish landscape, composed of Ecca Group shales, with a series of flat-topped dolerite koppies occurring to the north-east of the study area, as well as to the west of the authorised Paarde Valley Solar PV. The elevation ranges from 1000 to 1500m in the region.

The town of De Aar lies about 1 km to the south of the proposed grid connection, and a few scattered farmsteads occur to the north and west. The De Aar Nature Reserve lies to the west of the town.

The vegetation is Northern Upper Karroo type (Mucina and Rutherford, 2006), consisting of dwarf shrubland and grassland. The grassland was unusually lush after the good summer rains experienced this year in the region.

The main agricultural activity is open-range sheep and cattle farming with both merino and dorper sheep occurring. There are a number of existing Eskom powerlines within the study area corridor.

The integrity of the landscape and overall sense of place is no longer intact, as the surroundings to De Aar have been transformed by the growth of the town, the railway yards, and in more recent times by a number of high-tech solar energy facilities, along with related infrastructure of an industrial nature.

In addition, the large Eskom Hydra Substation is located only 3km south of the proposed Vetlaagte substation, with several Eskom powerlines traversing the study area.



Figure 3: General view of the proposed grid corridor landscape with existing powerlines



Figure 4: Industrial landscape north of De Aar near proposed site of switching station



Figure 5: Proposed site of switching station and grid corridor beyond rail and powerlines, viewed from De Aar



Figure 6: Existing pylon landscape near Eskom Hydra Substation.

9 Visual Sensitivity Mapping

Site Sensitivity Verification Report

A Site Sensitivity Screening Report using the DFFE Screening Tool is attached as Annexure 3. The Screening Report indicates that a VIA must be prepared, but as there is no landscape/visual map in the Report, no confirmation or dispute of the screening tool map is necessary. Instead, a detailed visual sensitivity map has been prepared by the Visual Specialists at the project study area scale.

Viewsheds and Viewpoints

A viewshed of the grid corridor is indicated on **Map 4** being the zone of visual influence of the proposed powerline, where white areas are in a view shadow and therefore not visually affected. (The viewshed is based on the maximum height of the pylons).

Viewpoints identified during the field trip are indicated on **Maps 3 and 4**. These are based on potentially sensitive receptors, mainly users of the R48 Route, residents of De Aar and surrounding farmsteads. These represent a range of distances from the proposed grid connection to give an idea of their relative visibility.

Viewpoints visited on the field trip are listed in Table 1 below, together with relative distances to the powerline route.

Table 1: Viewpoints and relative visibility

View-point		Latitude	Longitude	Distance to powerline	Potential Visibility
VP1	R68 Route	30.608777S	24.036920E	2.6 km	Low visibility.
VP2	Plessisdam	30.613773S	24.053968E	2.7 km	Low visibility.
VP3	De Aar North	30.631486S	24.026335E	70 m	High visibility.
VP4	De Aar NE corner	30.643383S	24.034956E	926 m	High visibility.
VP5	Near Lochinvar	30.659050S	24.046920E	2.3 km	Low visibility.
VP6	Merino	30.635874S	24.134207E	4.6 km	Low visibility.
VP7	Vetlaagte	30.671730S	24.102561E	1.1 km	Moderate visibility.
VP8	Wag-'n-Bietjie	30.711882S	24.115039E	3.0 km	Low visibility.
VP9	Badenhorstdam	30.698230S	24.049410E	4.2 km	Low visibility. View shadow
VP10	De Aar NW	30.640790S	24.005008E	1.7 km	Moderate visibility.
VP11	De Poort	30.604511S	24.972662E	4.4 km	Low visibility. View shadow

V. high visibility:	Prominent feature within the observer's viewframe 0-500m
High visibility:	Relatively prominent within observer's viewframe 500m-1km
Moderate visibility:	Only prominent with clear visibility as part of the wider landscape 1-2km
Low visibility:	Seen in very clear visibility as a minor element in the landscape >2km

Visual Sensitivity Mapping Criteria

Landscape features of visual or scenic value, along with potential sensitive receptors in the surroundings, are described in Table 2 below. **(See Map 5)**.

Table 2: Scenic Features and Sensitive Receptors

Landscape features within or adjacent to the grid corridor.	
Topographic features	The study area consists of relatively flat grassy plains.
Water Features	There are a few minor drainage courses in the study area, which are not of visual or scenic significance.
Cultural landscapes	Besides De Aar, the study area contains a few modest farmsteads with tree copses, grazing pasture and minimal cultivation.
Receptors adjacent to the grid corridor or in the local surroundings.	
Protected Areas	There is a Municipal Nature Reserve, known as the De Aar Nature Reserve immediately to the west of the town boundary.
Human settlements	The nearest settlement is De Aar about 1 km away.
Scenic and arterial routes	The proposed grid connection crosses a railway line and the R48 between De Aar and Philipstown.

Recommended buffers for scenic resources and sensitive receptors within the study area have been categorised into very high (no-go), high, medium and low visual sensitivity zones, listed in Table 3 below. The visual sensitivity mapping categories for the grid connection are indicated on **Map 6**.

Table 3: Visual Sensitivity Mapping Categories for 132kV Pylons

Scenic Resources	Very high sensitivity	High visual sensitivity	Medium visual sensitivity	Low visual sensitivity
Topographic features n/a	None	-	-	-
Steep slopes n/a	None	-	-	-
Drainage courses	Feature	Within 50m	-	-
Cultural landscapes n/a	within 100m	within 150m	Within 250m	
Protected Landscapes / Sensitive Receptors				
Municipal nature reserve	within 250m	within 500m	Within 1 km	-
Towns and settlements	within 250m	within 500m	Within 1 km	-
Farmsteads outside site	within 250m	within 500m	Within 1 km	-
Arterial / district routes ¹	within 100m	within 250m	-	-
Local airfields	Within 3 km	-	-	-

Note ¹: Except where powerlines cross roads at roughly right angles.

10 Visual Impact Assessment

Visual Exposure

The viewshed, or zone of visual influence of the proposed grid connection potentially extends for some 4 to 5km, but is restricted by low hills to the west, where the surrounding area is in a view shadow. The viewshed of the proposed switching station would be fairly localised.

Visibility

The scale of the lattice pylons and monopoles at a range of distances is indicated in Figures 7 and 8. Visibility of lights at night would not be significant because of the localised need for lighting and the distance of receptors. Visibility of the proposed grid connection would be greatest where it crosses the R48, and less so from the northern part of De Aar, because of railway infrastructure in the foreground. To the east a number of existing Eskom powerlines already impose visual clutter in the landscape.

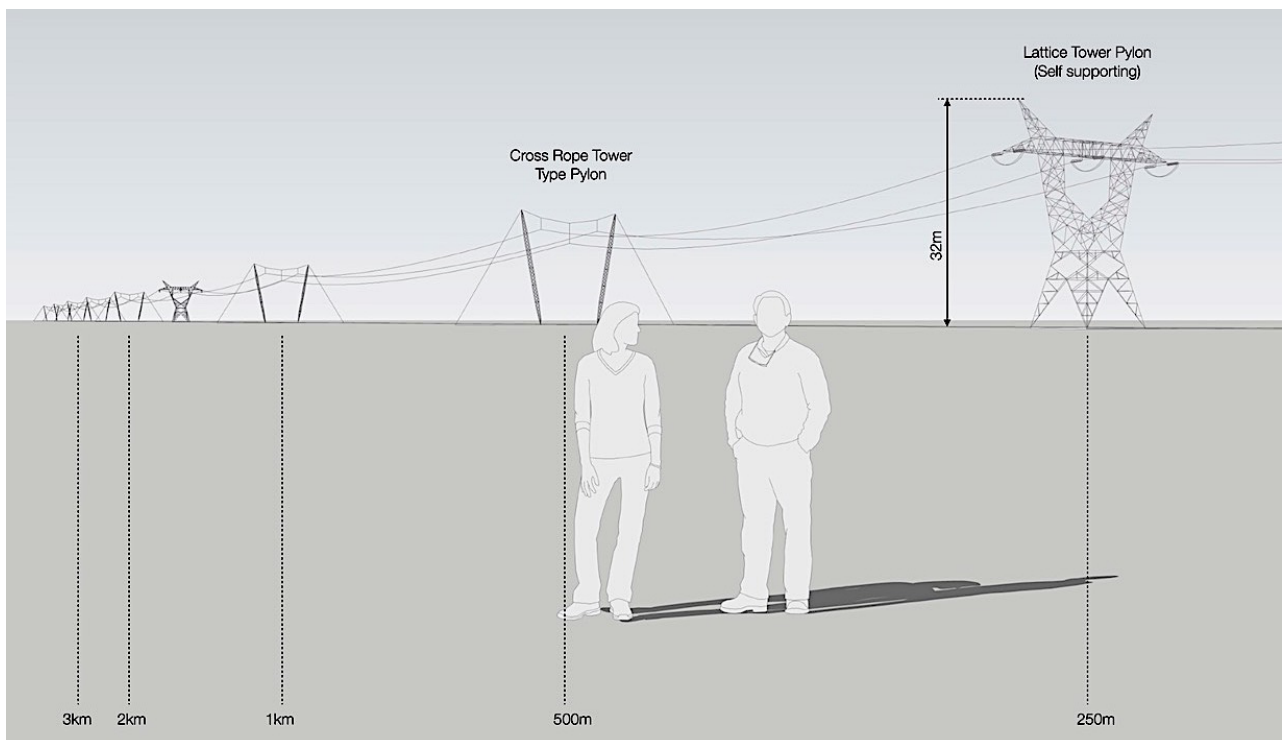
Visual Absorption Capacity (VAC)

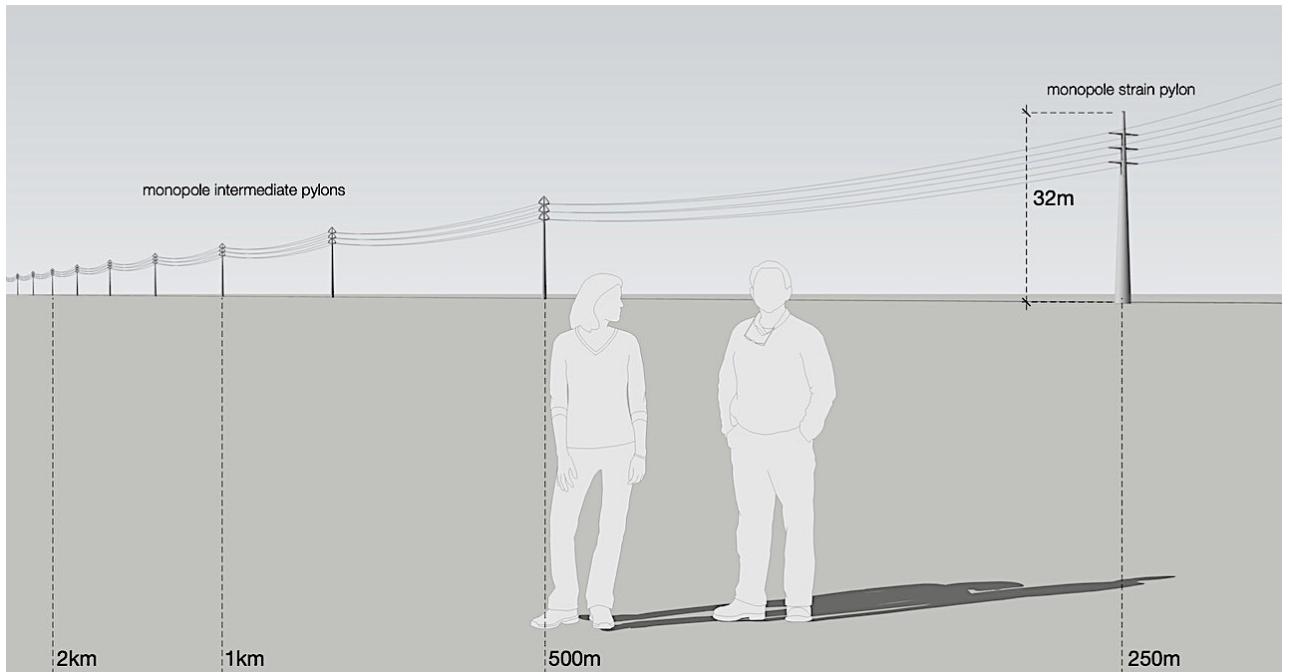
This relates to the potential of the landscape to screen the proposed grid connection from view. Pylons tend to be more exposed in the open plains and on ridgelines, particularly when seen in silhouette on the skyline. The sparse Karoo vegetation provides little screening effect.

Landscape Integrity

Landscape integrity tends to be enhanced by scenic or rural quality and intactness of the landscape, as well as absence of other visual intrusions. Natural or pristine landscapes tend to have higher visual quality and therefore higher value. Cultural landscapes, such as rural or farming scenes also have visual or scenic value. On the other hand, industrial activity and visual 'clutter', including substations and power lines, detract from these scenes.

Although the corridor for the proposed grid corridor is in a rural setting, much of the area has been transformed by urban development, existing solar PV facilities and Eskom powerlines.





Figures 7 and 8: Comparison of visibility of lattice and monopole pylons at a range of distances

Visually Sensitive Resources

Natural and cultural landscapes, or scenic resources, form part of the 'National Estate' and may have local, regional or even national significance. The proposed grid corridor has few significant features, most of the topographic or scenic features being on the periphery, further to the west, north and east of the site, as indicated on **Map 5**.

Visual Impact Intensity

The overall potential visual impact intensity is determined in Table 4 below by combining all the factors above, namely visual exposure, visibility, visual absorption capacity, landscape integrity and visually sensitive resources. Visual impact intensity is in turn used to assess visual impact consequence of the proposed powerline.

Table 4: Visual Impact Intensity

Visual Criteria	Comments	Grid corridor	Switching station
Visual exposure	Viewshed is related to the height of the pylons. Limited viewshed of switching station.	Medium	Low
Visibility	Visible mainly from the R48 Route, De Aar and nearby farmstead receptors.	Medium	Low
Visual absorption capacity (VAC)	Visually exposed plain, and therefore low VAC, but screened in places by other industrial activity.	Medium	Medium
Landscape integrity / intactness	Effect on landscape character / sense of place, which is partly transformed.	Medium	Medium
Landscape / scenic sensitivity	Effect on scenic resources, which tend to be 4 to 5 km away.	Low	Low
Impact intensity	Summary	Medium	Medium

The quantification of overall visual impact significance for the proposed grid connection corridor is based on the methodology provided by Holland & Associates (2022), as used in Tables 5 to 8 below. The assessment criteria are included in Annexure 1 of this report.

Table 5: Visual Impact Assessment of 132kV Powerline and Switching Station: Construction Phase

	Proposed project		“No go”	
	Without Mitigation	With mitigation	Without Mitigation	With mitigation
Nature	Negative	Negative	Neutral	Neutral
Extent	Local	Local	Local	Local
Magnitude / Intensity	Medium	Medium	Neutral	Neutral
Duration	Short term	Short term	n/a	n/a
Consequence	Slight	Slight	Neutral	Neutral
Significance	Low (-)	Low (-)	Neutral	Neutral
Probability	Definite	Definite	Neutral	Neutral
Confidence	High	High	Medium	Medium
Reversibility	High	High	Neutral	Neutral
Irreplaceable loss of resources	Low	Low	Neutral	Neutral
Cumulative Impact	Medium	Medium	Neutral	Neutral
Degree to which the impact can be avoided	Low		n/a	
Degree to which the impact can be managed	Medium		n/a	
Degree to which the impact can be mitigated	Low		n/a	

Table 6: Visual Impact Assessment of 132kV Powerline: Operation Phase

	Proposed project		“No go”	
	Without Mitigation	With mitigation	Without Mitigation	With mitigation
Nature	Negative	Negative	Neutral	Neutral
Extent	Local	Local	Local	Local
Magnitude / Intensity	Medium	Medium	Neutral	Neutral
Duration	Long term	Long term	n/a	n/a
Consequence	Moderate	Moderate	Neutral	Neutral
Significance	Medium (-)	Medium (-)	Neutral	Neutral
Probability	Definite	Definite	Neutral	Neutral
Confidence	High	High	Medium	Medium
Reversibility	High	High	Neutral	Neutral
Irreplaceable loss of resources	Low	Low	Neutral	Neutral
Cumulative Impact	Medium	Medium	Neutral	Neutral
Degree to which the impact can be avoided	Low		n/a	
Degree to which the impact can be managed	Medium		n/a	
Degree to which the impact can be mitigated	Low		n/a	

Table 7: Visual Impact Assessment of Switching Station: Operation Phase

	Proposed project		"No go"	
	Without Mitigation	With mitigation	Without Mitigation	With mitigation
Nature	Negative	Negative	Neutral	Neutral
Extent	Local	Local	Local	Local
Magnitude / Intensity	Medium	Medium	Neutral	Neutral
Duration	Long term	Long term	n/a	n/a
Consequence	Moderate	Moderate	Neutral	Neutral
Significance	Medium (-)	Medium (-)	Neutral	Neutral
Probability	Definite	Definite	Neutral	Neutral
Confidence	High	High	Medium	Medium
Reversibility	High	High	Neutral	Neutral
Irreplaceable loss of resources	Low	Low	Neutral	Neutral
Cumulative Impact	Medium	Medium	Neutral	Neutral
Degree to which the impact can be avoided	Low		n/a	
Degree to which the impact can be managed	Medium		n/a	
Degree to which the impact can be mitigated	Low		n/a	

Table 8: Visual Impact Assessment: Decommissioning Phase

	Proposed project		"No go"	
	Without Mitigation	With mitigation	Without Mitigation	With mitigation
Nature	Negative	Negative	Neutral	Neutral
Extent	Local	Local	Local	Local
Magnitude / Intensity	Medium	Low	Neutral	Neutral
Duration	Short term	Short term	n/a	n/a
Consequence	Slight	Slight	Neutral	Neutral
Significance	Low (-)	V. low (-)	Neutral	Neutral
Probability	Definite	Definite	Neutral	Neutral
Confidence	High	High	Medium	Medium
Reversibility	High	High	Neutral	Neutral
Irreplaceable loss of resources	Low	Low	Neutral	Neutral
Cumulative Impact	Medium	Medium	Neutral	Neutral
Degree to which the impact can be avoided	Low		n/a	
Degree to which the impact can be managed	Medium		n/a	
Degree to which the impact can be mitigated	Low		n/a	

Alternatives

Only the preferred alternative for the grid corridor has been assessed against the 'no-go' alternative. Micro-siting of pylons may be required based on the specialist studies and engineering considerations.

In terms of alternative pylons, these being the lattice steel and monopole structures, the monopole is the preferred option, as it results in a more minimalist and less visually cluttered element in the

landscape. However, the design of the connecting grid sometimes requires the use of a steel lattice in certain conditions and therefore the two types are not assessed separately.

The 'no-go' alternative is the option of not constructing the grid connection, where the status quo of the current farming activities on the site would prevail. The no-go alternative would mean that there would be no additional visual intrusion on the local area by overhead powerlines. The downside is that renewable energy cannot be fed into the grid.

The potential visual impact significance of the no-go alternative would be neutral as the status quo would likely continue and there would be no further visual impacts.

Cumulative Impacts

The cumulative visual impact would be the collective impact of the proposed grid and switching station, seen along with the existing Eskom powerlines in the area, which, if developed would result in a moderate change to the local area and its sense of place as indicated in the assessment tables above. The following factors were taken into account:

- There are a number of existing Eskom powerlines leading to the main Eskom Hydra Substation, and several other solar PV and wind energy projects, both existing and proposed, within 35km, as indicated on **Map 1**.
- The grid connection has a limited viewshed with few farmsteads nearby, within a radius of about 5km, as indicated on **Map 4**.
- The proposed grid connection falls within the Central Electricity Grid Infrastructure (EGI) Strategic Corridor, as indicated on **Map 1**, which has been earmarked for current and future grid infrastructure.

11 Mitigation Measures

Potential Construction Phase Impacts:

- Visual intrusion of cranes, heavy vehicles and construction activities resulting from the erection of pylons and switching stations;
- Visual intrusion of access / haul roads;
- Noise and dust from construction activity affecting sense of place.

Construction Phase Mitigation Measures:

- Temporary construction and stockpile areas to be located in visually unobtrusive locations, away from the R48, De Aar residential areas and farmsteads;
- Existing roads and tracks to be used where possible, and access roads kept as narrow as practical;
- Dust and noise control measures to conform with the EMPr;
- Disturbed areas to be rehabilitated / revegetated as soon as possible during and after the construction phase.
- Similar pylon types to be used for the length of the proposed grid where possible;
- Preference to be given to the use of monopoles, which have a cleaner visual silhouette.
- Switching station structures to have muted colours in the grey or green range, and reflective surfaces avoided.

Potential Operation Phase Impacts:

- Visual effect of pylons on the open, visually exposed landscape, and on skylines.
- Visual clutter created by switching station infrastructure.

Operation Phase Mitigation Measures:

- There is little or no scope for visual screening of pylons.
- Area along grid route to be maintained and stormwater gullies repaired where necessary.
- Consideration to be given to screening of switching station by means of berms and/or vegetation.

- Signage and lighting at the switching station to be controlled to avoid visual intrusion on the surroundings. Reflectors to be used on light fittings to avoid light spillage.

These mitigation measures must be included in the EMPr and adhered to, and can be included in the Environmental Authorisation.

12 Environmental Management Programme

Visual input into the Environmental Management Programme (EMPr) is discussed below.

Construction Phase Monitoring:

Ensure that visual management measures are included as part of the EMPr, monitored by an Environmental Control Officer (ECO), including siting of any construction camps and stockpiles (see mitigation measures above), dust suppression and litter control measures. Rehabilitation efforts to commence immediately after construction activities are completed.

Responsibility: ECO / Contractor.

Timeframe: Preparation of EMPr during the planning phase. Monitoring during the construction phase.

Operation Phase Monitoring:

Ensure that visual mitigation measures are monitored by management on an on-going basis, including the maintenance of rehabilitated areas, as well as control of any signage, lighting and wastes.

Responsibility: Eskom, once handed over.

Timeframe: During the operational life of the project.

Decommissioning Phase Monitoring:

The proposed switching stations and powerline infrastructure are likely to remain for the very long term, i.e. longer than 20 years. However, any electrical infrastructure no longer required should be subject to the normal decommissioning requirements.

Ensure that procedures for the removal of switching stations and powerlines / pylons are implemented, including recycling of materials and rehabilitation of the site to a visually acceptable standard, and signed off by the delegated authority.

It is assumed that some access roads would remain. Those that are not required should be ripped and the vegetation or grazing cover reinstated.

The revegetation measures are not described here as they would fall under the auspices of the vegetation/ biodiversity specialist.

Responsibility: ECO / Contractor / qualified rehabilitation ecologist or horticulturist.

Timeframe: During the decommissioning contract phase, as well as a prescribed maintenance period thereafter (usually one year).

13 Summary and Conclusion

Summary of Findings

The visual assessment is based on the preferred route for the grid corridor. Some micro-siting of pylons may be required depending on the specialist studies and engineering considerations.

The overall visual impact significance for the proposed grid connection, switching station and associated infrastructure, e.g. access and service roads, has been rated as medium, both before and after mitigation, as there would be some change in character to the area, with limited potential for visual mitigation.

The cumulative visual impact significance of the grid connection, switching station and related infrastructure, seen in combination with existing solar PV facilities in the area, along with existing Eskom powerlines has been rated as medium, given the transformed character of the area around De Aar.

Conclusion and Impact Statement

The currently proposed grid corridor route succeeds in largely avoiding visually sensitive areas, as indicated on the visual sensitivity map (**Map 6**).

The proposed switching station is generally located in a visually unobtrusive area with few visual constraints.

Other renewable energy facilities or grid connections, either planned or approved, would not significantly increase cumulative visual impacts, mainly because of distance.

It is the opinion of the Visual Specialists that the layouts of the grid corridor and switching station have largely avoided scenic resources and visual receptors of the area.

Provided the mitigation measures are implemented, the proposed project is therefore considered acceptable from a visual impact perspective and should be considered for authorisation .

References

DFFE, 13 June 2022. Screening Report for an Environmental Authorisation – Proposed Site Environmental Sensitivity: Paarde Valley PV2 to Vetlaagte MTS 132kV OHPL.

Holland & Associates Environmental Consultants, March and June 2022. Terms of Reference (TOR) for a Basic Assessment of the Proposed Paarde Valley Grid Connection Project, Near De Aar, Northern Cape.

Holland & Associates Environmental Consultants, 18 March 2022. Annexure 2: Assessment Methodology and Impact Assessment Format Table.

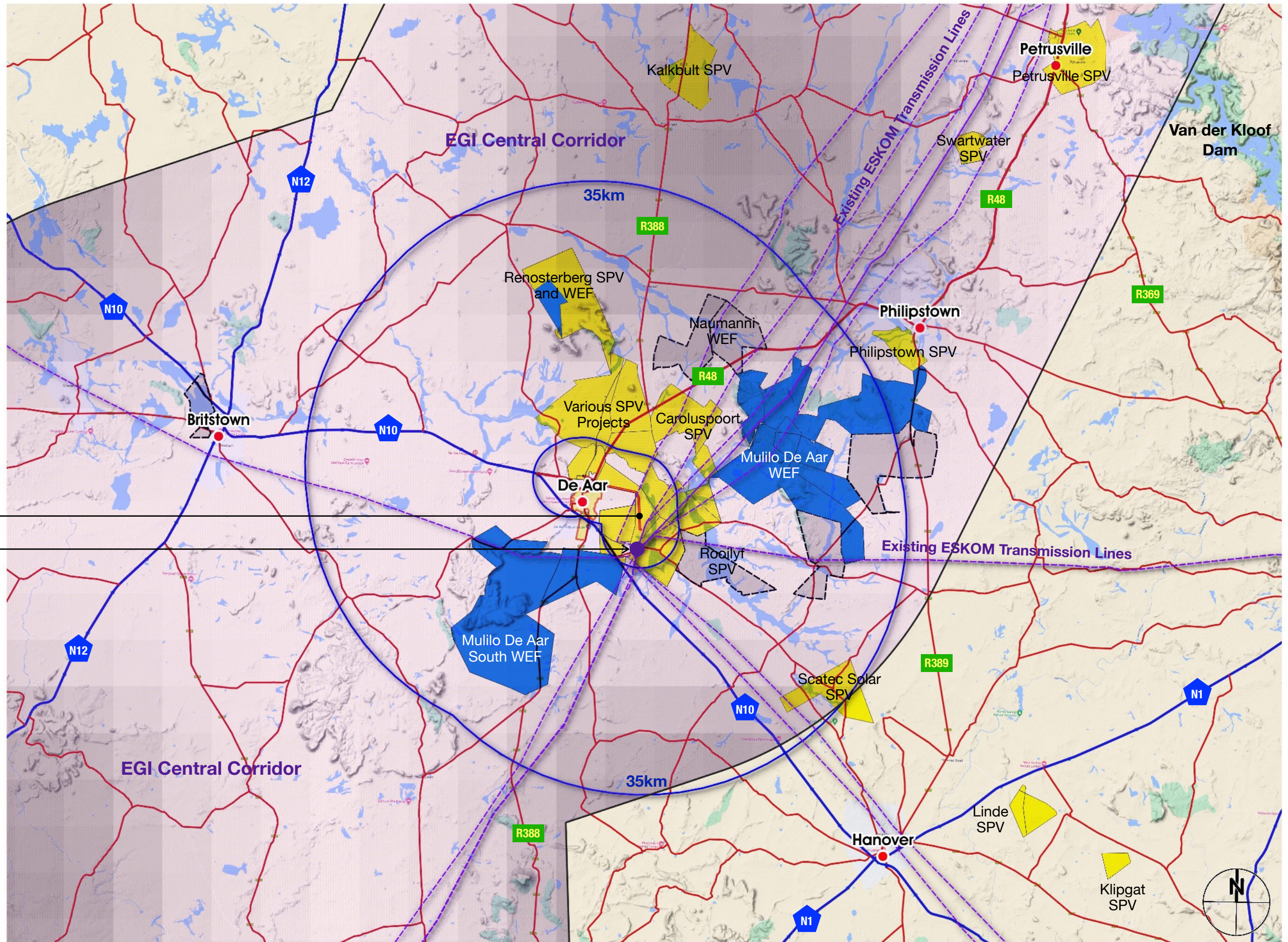
Mucina L. and Rutherford MC. 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19, SANBI, Pretoria.

REEA Projects Q4 2021

- Onshore Wind
- Solar PV
- Withdrawn/Lapsed Projects

Proposed PV2 Grid Connection within 5km buffer

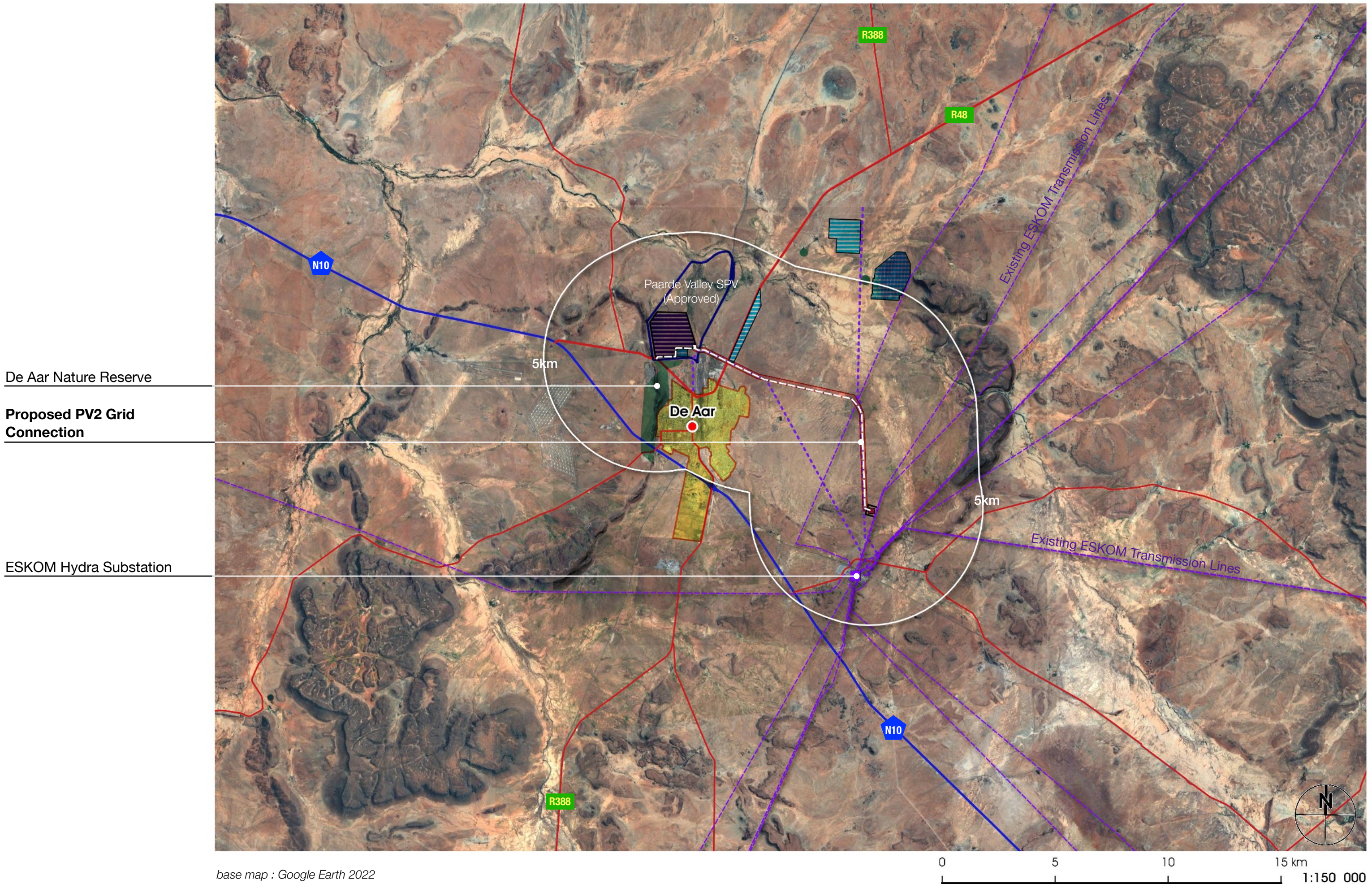
ESKOM Hydra Substation



base map : Google Maps Terrain 2022



map 1 : Paarde Valley PV2 Grid Connection : Regional Locality • REEA Projects Q4 2021



De Aar Nature Reserve

Proposed PV2 Grid Connection

ESKOM Hydra Substation

base map : Google Earth 2022

0 5 10 15 km
1:150 000

map 2 : Paarde Valley PV2 Grid Connection : Local Context

Legend :

-  Field Track
-  Viewpoints

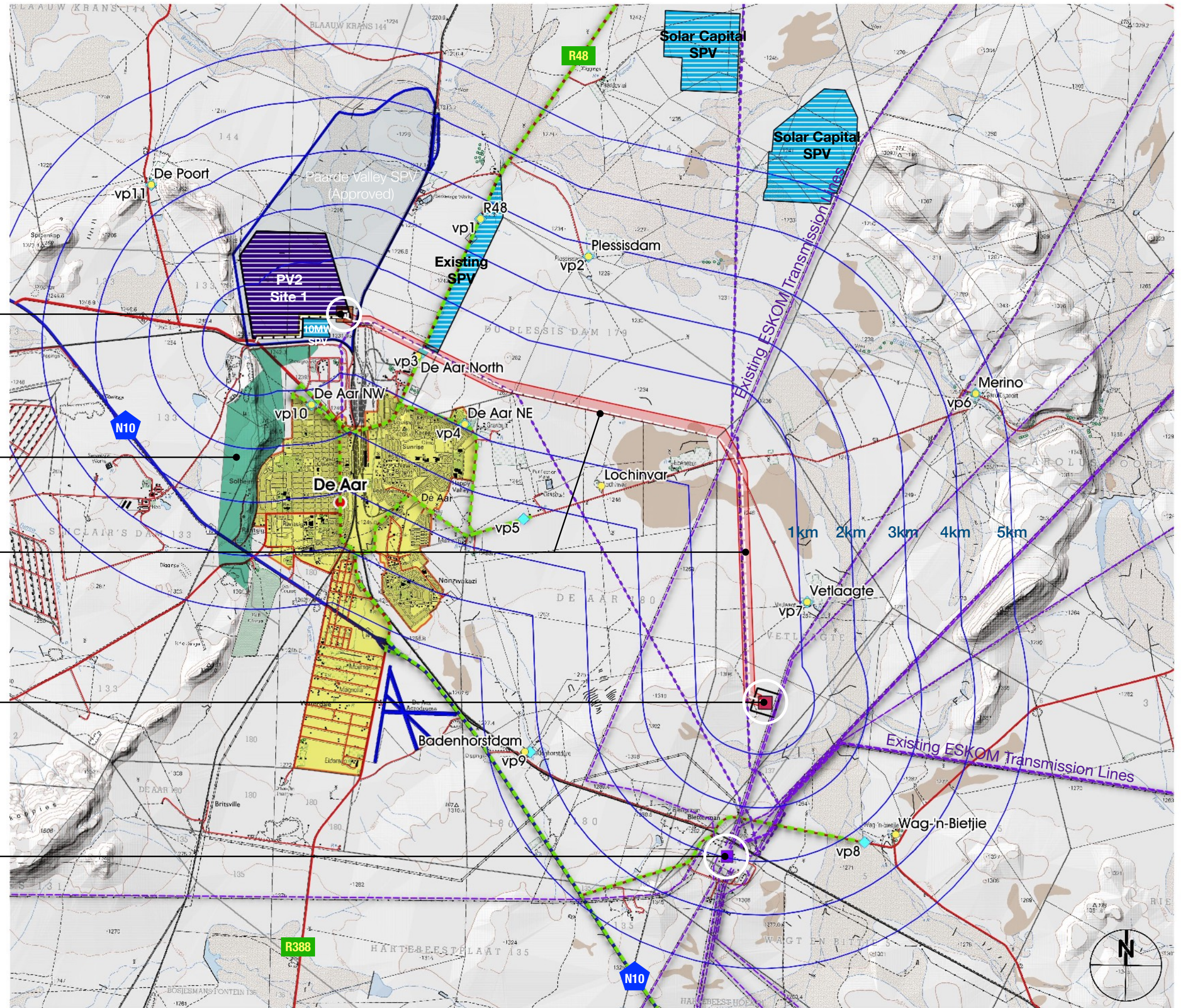
PV2 IPP Facility Substation

De Aar Nature Reserve

Proposed PV2 Grid Connection
In 200m wide corridor

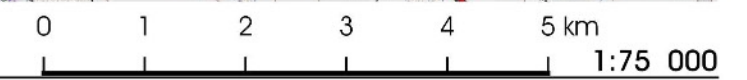
Vetlaagte Substation

ESKOM Hydra Substation

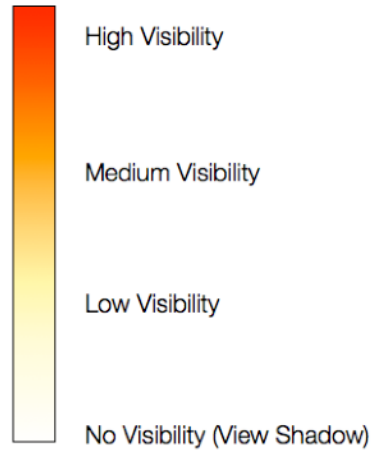


base map : NGI 50K Topographic Series : 3024 CA De Aar, 3024 DB Brand

map 3 : Paarde Valley PV2 Grid Connection : Layout and Fieldwork



Viewshed Legend :



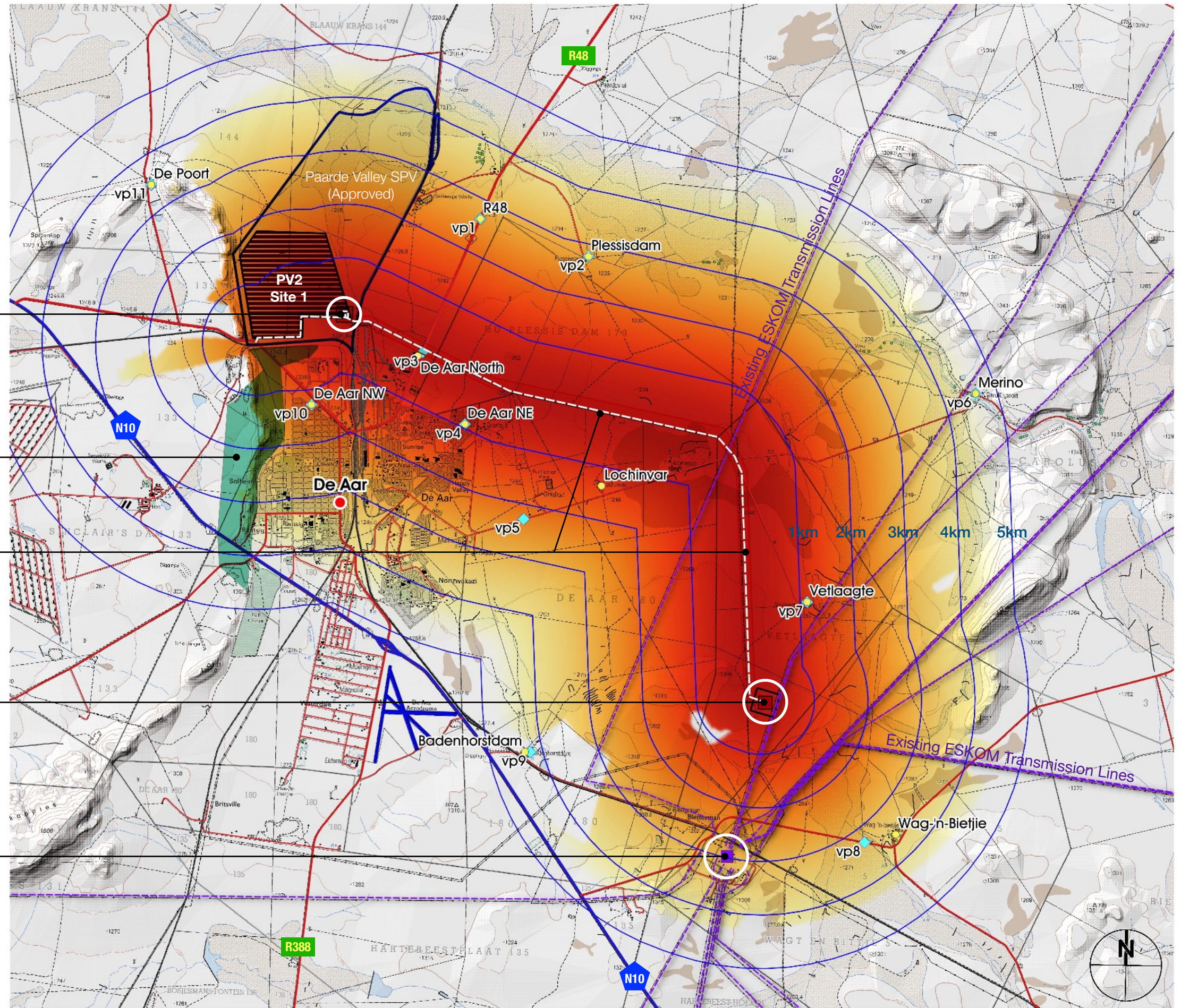
PV2 IPP Facility Substation

De Aar Nature Reserve

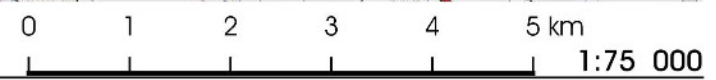
Proposed PV2 Grid Connection

Vetlaagte Substation

ESKOM Hydra Substation












base map : NGI 50K Topographic Series : 3024 CA De Aar, 3024 DB Brand



map 4 : Paarde Valley PV2 Grid Connection : Nominal Viewshed • Pylons 32m high

Legend :

-  Topographic Features
-  **YELLOW** <1:10 slopes
ORANGE 1:10 - 1:4 slopes,
RED >1:4 + slopes
-  Drainage Courses
-  De Aar Nature Reserve
-  Urban Area
-  Visual Receptors
-  National Road
-  District Roads
-  Airfield



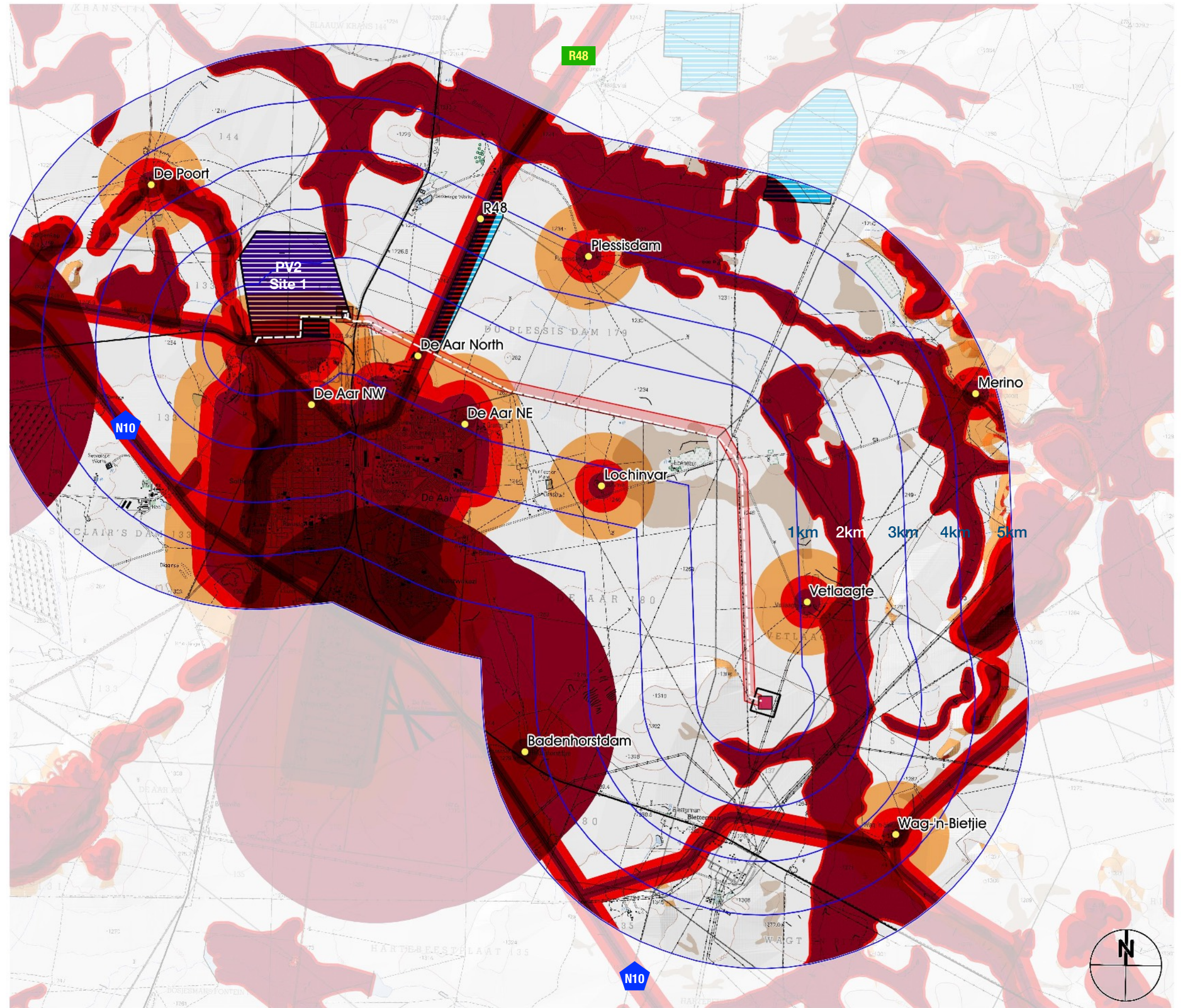
base map : NGI 50K Topographic Series : 3024 CA De Aar, 3024 DB Brand

map 5 : Paarde Valley PV2 Grid Connection : Visual Features

0 1 2 3 4 5 km
1:75 000

VISUAL SENSITIVITY

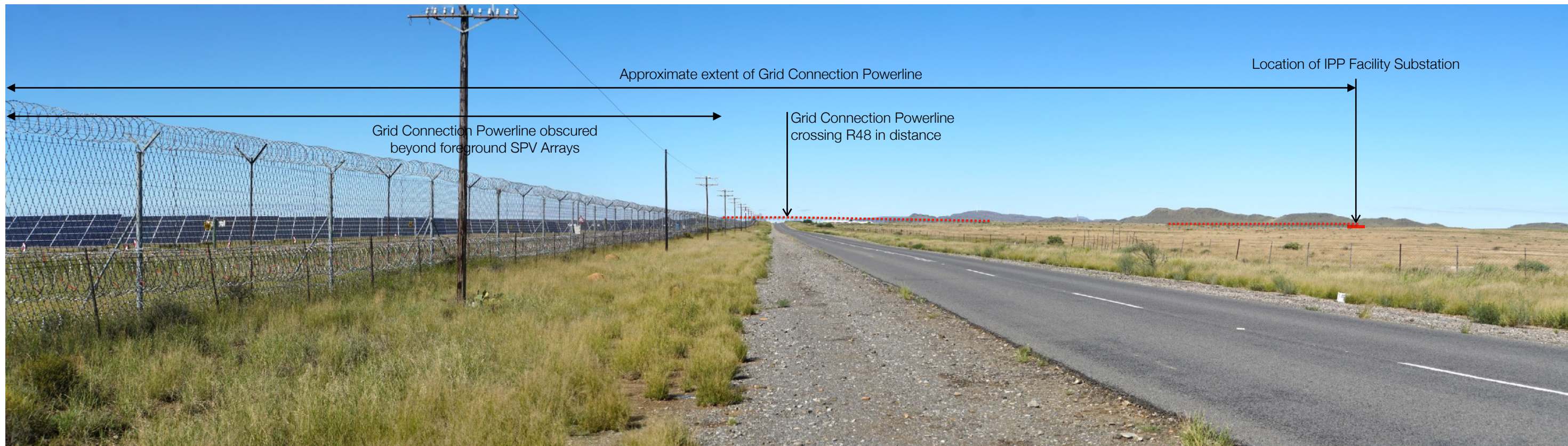
- Very High - NoGo
- High Visual Sensitivity
- Medium Visual Sensitivity
- Low Visual Sensitivity



base map : NGI 50K Topographic Series : 3024 CA De Aar, 3024 DB Brand

0 1 2 3 4 5 km
1:75 000

map 6 : Paarde Valley PV2 Grid Connection : Visual Sensitivity



vp1 : Looking South from R48 towards De Aar

30.608777S 24.036920E Distance 2.6km

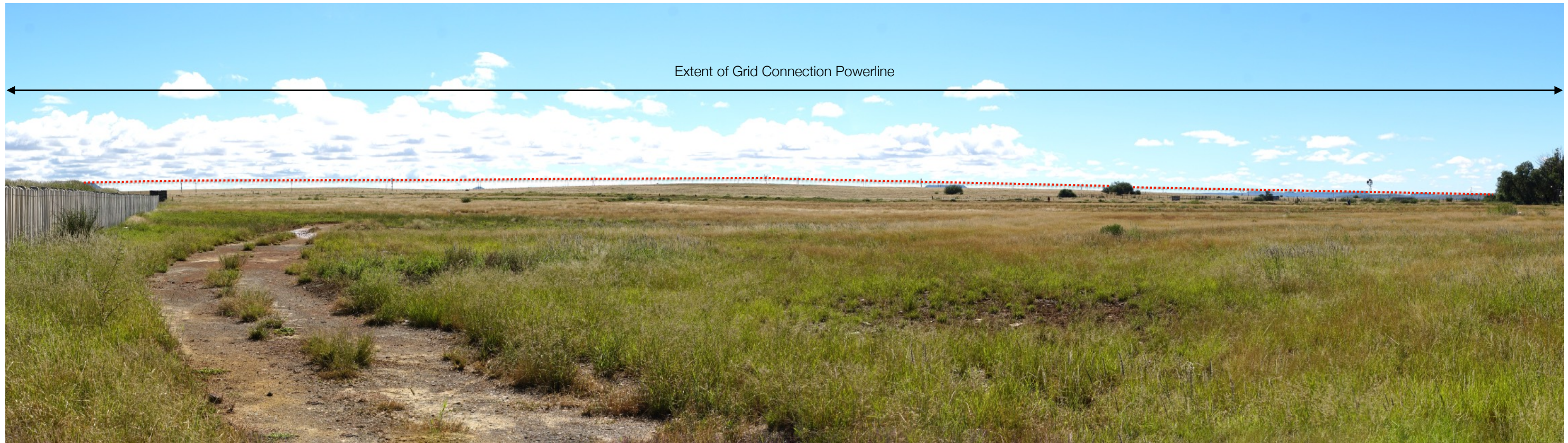


vp3 : Looking North-East from R48 at Grid Connection Crossing

30.631486S 24.026335E Distance 70m

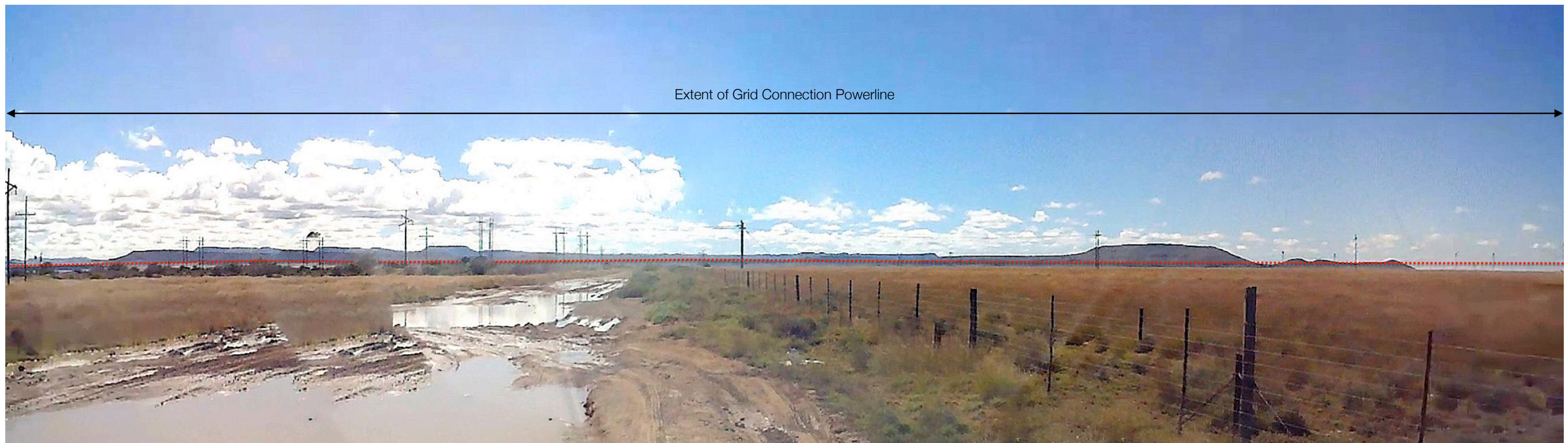
Paarde Valley Grid Connection : Viewpoint Photomontages

NOTE : Powerlines at long distance are indicated by dotted lines - rendered images are indistinguishable at these distances.



vp4 : Looking North-East from De Aar NE Outskirts

30.643383S 24.034956E Distance 926m

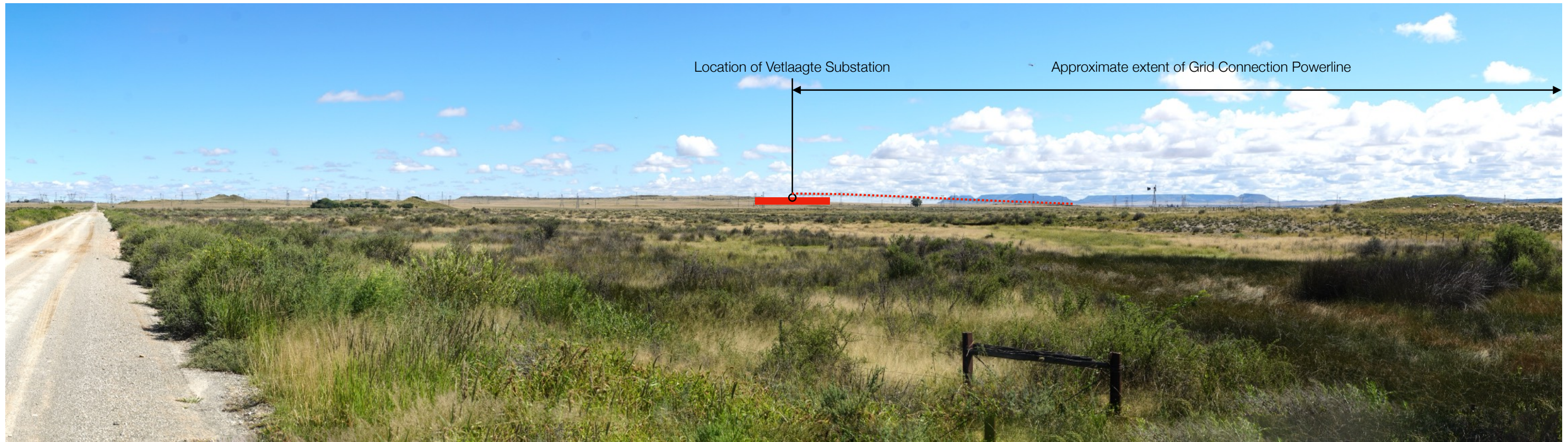


vp5 : Looking North-East from District Road near Lochinvar

30.659050S 24.046920E Distance 2.3km

Paarde Valley Grid Connection : Viewpoint Photomontages

NOTE : Powerlines at long distance are indicated by dotted lines - rendered images are indistinguishable at these distances.



vp8 : Looking West from District Road near Wag-'n-Bietjie

30.711882S 24.115039E Distance 3.0km



vp10 : Looking North from De Aar NW Outskirts

30.640790S 24.005008E Distance 1.7km

Paarde Valley Grid Connection : Viewpoint Photomontages

NOTE : Powerlines at long distance are indicated by dotted lines - rendered images are indistinguishable at these distances.

ANNEXURE 1: Assessment Methodology and Impact Assessment Format Table

For each impact, the **nature** (positive/negative), **extent** (spatial scale), **magnitude/intensity** (intensity scale), **duration** (time scale), **consequence** (calculated numerically) and **probability** of occurrence is ranked and described. These criteria would be used to ascertain the **significance** of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place.

The tables below show the rankings of these variables, and defines each of the rating categories.

Table 2: Assessment criteria for the evaluation of impacts

CRITERIA	RANK	DESCRIPTION
Nature	Positive (+)	The environment will be positively affected.
	Negative (-)	The environment will be negatively affected.
Extent or spatial influence of impact	National (4)	Beyond provincial boundaries, but within national boundaries.
	Regional (3)	Beyond a 10 km radius of the proposed activities, but within provincial boundaries.
	Local (2)	Within a 10 km radius of the proposed activities.
	Site specific (1)	On site or within 100 m of the proposed activities.
	Zero (0)	Zero extent.
Magnitude/ intensity of impact (at the indicated spatial scale)	High (3)	Natural and/ or social functions and/ or processes are <i>severely</i> altered.
	Medium (2)	Natural and/ or social functions and/ or processes are <i>notably</i> altered.
	Low (1)	Natural and/ or social functions and/ or processes are <i>slightly</i> altered.
	Zero (0)	Natural and/ or social functions and/ or processes remain <i>unaltered</i> .
Duration of impact	Long Term (3)	More than 10 years, but impact ceases after the operational phase.
	Medium Term (2)	Between 3 – 10 years.
	Short Term (1)	Construction period (up to 3 years).
	None (0)	Zero duration.
Consequence (Nature x (Extent + Magnitude/ Intensity + Duration))	Extremely beneficial/ detrimental (10 – 11) (+/-)	The impact is <i>extremely</i> beneficial/ detrimental.
	Highly beneficial/ detrimental (8 – 9) (+/-)	The impact is <i>highly</i> beneficial/ detrimental.
	Moderately beneficial/ detrimental (6 – 7) (+/-)	The impact is <i>moderately</i> beneficial/ detrimental.
	Slightly beneficial/ detrimental (4 – 5) (+/-)	The impact is <i>slightly</i> beneficial/ detrimental.
	Negligibly beneficial/ detrimental (1 – 3) (+/-)	The impact is <i>negligibly</i> beneficial/ detrimental.
	Zero consequence (0) (+/-)	The impact has zero consequence.
Probability of occurrence	Definite (4)	Estimated at a greater than 95% chance of the impact occurring.
	Probable (3)	Estimated 50 – 95% chance of the impact occurring.
	Possible (2)	Estimated 6 – 49% chance of the impact occurring.
	Unlikely (1)	Estimated less than 5% chance of the impact occurring.
	None (0)	Estimated no chance of impact occurring.

The **significance** of an impact is derived by taking into account the **consequence** (nature of the impact and its extent, magnitude/intensity and duration) of the impact and the **probability** of this impact occurring through the use of the following formula: **Significance Score = Consequence x Probability**

The means of arriving at a significance rating is explained in Table 3.

Table 3: Definition of significance ratings

SIGNIFICANCE SCORE	SIGNIFICANCE RATINGS	
32 – 40	High (+)	High (-)
25 – 31	Medium (+)	Medium (-)
19 – 24	Low (+)	Low (-)
10 – 18	Very-Low (+)	Very-Low (-)
1 – 9	Negligible	

Once the significance of an impact has been determined, the **confidence** in the assessment of the impact, as well as the degree of **reversibility** of the impact and **irreplaceable loss of resources** would be determined using the rating systems outlined in Table 4, 5 and 6 respectively. Lastly, the **cumulative impact** is ranked and described as outlined in Table 7.

Table 4: Definition of confidence ratings

CONFIDENCE RATINGS	CRITERIA
High	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Medium	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Low	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

Table 5: Degree of reversibility

REVERSABILITY OF IMPACT	CRITERIA
High	High potential for reversibility.
Medium	Medium potential for reversibility.
Low	Low potential for reversibility.
Zero	Zero potential for reversibility.

Table 6: Degree of irreplaceability

IRREPLACEABLE LOSS OF RESOURCES	CRITERIA
High	Definite loss of irreplaceable resources.
Medium	Medium potential for loss of irreplaceable resources.
Low	Low potential for loss of irreplaceable resources.
Zero	Zero potential for loss of irreplaceable resources.

Table 7: Cumulative Impact on the environment

CUMULATIVE IMPACTS	CRITERIA
High	The activity is one of <i>several</i> similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the geographical, physical, biological, social, economic and cultural aspects of the environment.
Medium	The activity is one of a <i>few</i> similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the geographical, physical, biological, social, economic and cultural aspects of the environment.
Low	The activity is localised and might have a negligible cumulative impact.
Zero	No cumulative impact on the environment.

Terms of Reference

Basic Assessment Report for the proposed Grid Connection to Vetlaagte MTS

- Undertake a site inspection to the study area and produce a Site Sensitivity Verification Report (which can be included within your report) that confirms or disputes the land use and sensitivity identified in the National Web-based Screening Tool (Annexure 1) for landscape / visual, in line with the Gazetted General Requirement Assessment protocol² which confirms or disputes the current use of the land.
- Conduct the necessary fieldwork and compile a specialist impact assessment report, in line with Appendix 6 of the EIA Regulations, 2014, as amended, which includes a checklist of the content requirements relevant to the specialist report, within your reports;

A specialist impact assessment report must address the following:

- A description of the direct, indirect, residual (if any), and cumulative impacts (both before and after mitigation) and an assessment of the significance of the impacts (for the proposed project and “No Go” alternative) (on a nominal scale of Neutral, Negligible, Very Low, Low, Medium, High) by evaluating: **(a) nature of the impacts** (positive/ negative), **(b) extent of the impacts** (zero/ site specific/local/ regional/ national), **(c) magnitude of the impacts** (Zero/ Very Low/ Low/ Medium/High), **(d) duration of the impacts** (none/ short/ medium/ long term) and **(e) probability of occurrence of the impacts** (none/ unlikely/ possible/ probable/ definite). In addition, **(f) the level of confidence in findings** relating to potential impacts, **(g) reversibility of potential impacts** (i.e. the degree to which the impact can be reversed (Zero/ Low/Medium/ High)); and **(h) the degree to which the impact may cause irreplaceable loss of resources** (Zero/ Low/ Medium/ High).
- An indication of the **degree to which the impacts can be mitigated** (Low/ Medium/ High), a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact, for the construction, operational and decommissioning (if relevant) phases of the project;
- An indication of the **degree to which the impact can be avoided** (Low/ Medium/ High) and the **degree to which the impact can be managed** (Low/ Medium/ High).
- The assessment must take into account and address public comments received during the Public Participation Process (PPP) relating to your area of expertise.
- The report must include an impact summary table outlining the findings of the assessment in terms of the above-mentioned assessment criteria using the Impact Assessment Methodology and Table Template provided in Annexure 2.
- If any specific environmental sensitivities relevant to your field of expertise are present on the site which require specific impact management outcomes, and impact management actions, not included in the ‘*Generic EMPr for the development and expansion of substation infrastructure for the transmission and distribution of electricity*’³, then the report must include those **impact management outcomes** and **impact management actions** presented in the format of the pre-approved generic EMPr template.

In relation to the Terms of Reference outlined above, the following deliverables are applicable for the Basic Assessment of the proposed Grid Connection:

- A Site Sensitivity Verification Report for the landscape / visual theme.
- A Landscape / Visual Specialist Assessment Report.

Annexure 2: CV of Visual Specialists

Bernard Oberholzer, Landscape Architect
PO Box 471, Stanford, Western Cape, 7210
Email: bernard.bola@gmail.com
SACLAP reg. no. 87018

Quinton Lawson, Architect
8 Blackwood Drive, Hout Bay 7806
Email: quinton@openmail.co.za
SACAP reg. No. 3686

Expertise

Bernard Oberholzer has a Bachelor of Architecture (UCT) and Master of Landscape Architecture (U. of Pennsylvania), and has more than 25 years' experience in undertaking visual impact assessments. He has presented papers on *Visual and Aesthetic Assessment Techniques*, and is the author of *Guideline for Involving Visual and Aesthetic Specialists in EIA Processes*, prepared in association with the CSIR for the Dept. of Environmental Affairs and Development Planning, Provincial Government of the Western Cape, 2005.

Quinton Lawson has a Bachelor of Architecture Degree (Natal) and has more than 15 years' experience in visual assessments, specializing in 3D modelling and visual simulations. He has previously lectured on visual simulation techniques in the Master of Landscape Architecture Programme at UCT.

The authors have been involved in visual assessments for a wide range of residential, industrial and renewable energy projects. They prepared the 'Landscape/Visual Assessment' chapter in the report for the *National Wind and Solar PV Strategic Environmental Assessment (SEA)*, as well as the *National Electricity Grid Infrastructure SEA* in association with the CSIR, for the Department of Environmental Affairs in 2014-2015

ANNEXURE 3
Screening Tool Report

**SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS
REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE
ENVIRONMENTAL SENSITIVITY**

EIA Reference number: TBA

Project name: Paarde Valley PV2 Vetlaafte MTS Grid Connection

Project title: Basic Assessment Process

Date screening report generated: 15/12/2021 09:49:22

Applicant: Mulilo

Compiler: Holland & Associates

Compiler signature:
.....

Application Category: Utilities Infrastructure | Electricity | Distribution and Transmission | Powerline

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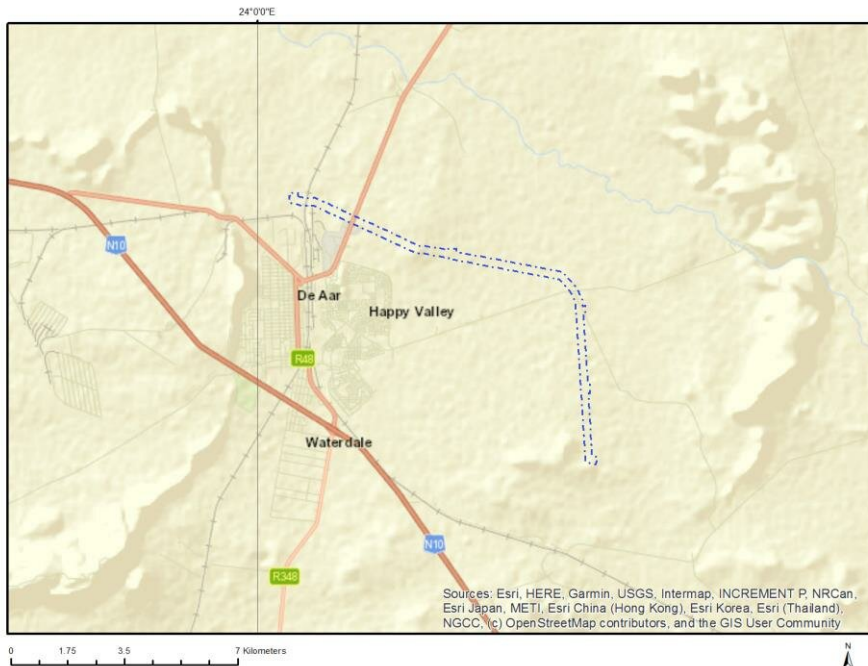
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	DE AAR	268	0	30°38'9.86S	24°0'56.72E	Erven
2	DE AAR	266	0	30°37'55.28S	24°0'45.59E	Erven
3	DE AAR	5114	0	30°37'28.63S	24°1'14.58E	Erven
4	DE AAR	5122	0	30°37'50.7S	24°1'14.97E	Erven
5	DE AAR	5113	0	30°37'28.1S	24°1'9.99E	Erven
6	DE AAR	5115	0	30°37'27.67S	24°1'19.57E	Erven
7	DE AAR	5123	0	30°37'50.46S	24°1'10.42E	Erven
8	DE AAR	5121	0	30°37'48.17S	24°1'20.5E	Erven
9	DE AAR	5316	0	30°37'28.3S	24°1'17.17E	Erven
10	DE AAR	5315	0	30°37'52.45S	24°1'16.92E	Erven
11	VETLAAGTE	4	0	30°40'33.21S	24°5'44.13E	Farm
12	DU PLESSIS DAM	179	0	30°37'54.18S	24°3'10.83E	Farm
13	PAARDE VALLEY	145	0	30°34'20.62S	24°3'25.91E	Farm
14	DE AAR	180	0	30°41'6.73S	24°3'37.54E	Farm
15	PAARDE VALLEY	145	30	30°37'55.44S	24°1'25.84E	Farm Portion
16	PAARDE VALLEY	145	2	30°36'37.16S	24°0'30.49E	Farm Portion
17	VETLAAGTE	4	0	30°40'25.97S	24°5'43.86E	Farm Portion
18	PAARDE VALLEY	145	6	30°32'45.56S	24°2'10.85E	Farm Portion
19	DU PLESSIS DAM	179	0	30°37'54.6S	24°3'15.84E	Farm Portion
20	PAARDE VALLEY	145	43	30°37'51.44S	24°1'43.7E	Farm Portion
21	DE AAR	180	5	30°39'1.28S	24°3'52.75E	Farm Portion
22	PAARDE VALLEY	145	29	30°36'50.79S	24°1'42.26E	Farm Portion
23	DE AAR	180	3	30°39'11.71S	24°2'27.4E	Farm Portion
24	PAARDE VALLEY	145	31	30°37'45.45S	24°1'30.22E	Farm Portion
25	DE AAR	180	10	30°38'52.22S	24°3'5.57E	Farm Portion
26	DE AAR	180	4	30°39'7.13S	24°4'35.19E	Farm Portion

Development footprint¹ vertices:
 No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	12/12/20/2048/3	Solar PV	Approved	2.8
2	12/12/20/2025/2/A	Solar PV	Approved	0
3	14/12/16/3/3/2/382/4	Solar PV	Approved	0
4	14/12/16/3/3/2/403	Solar PV	Approved	16.1
5	12/12/20/2177	Solar PV	Approved	0.5
6	14/12/16/3/3/2/382/2	Solar PV	Approved	0
7	12/12/20/2048/1	Solar PV	Approved	2.8
8	12/12/20/2498/AM3	Solar PV	Approved	0
9	12/12/20/2025	Solar CSP	Approved	0
10	14/12/16/3/3/2/382/3	Solar PV	Approved	0
11	14/12/16/3/3/2/382/5/AM3	Solar PV	Approved	0
12	12/12/20/2250/1	Solar PV	Approved	1.1
13	12/12/20/2500/AM3	Solar PV	Approved	0
14	14/12/16/3/3/2/403	Solar PV	Approved	16.1
15	12/12/20/2250/5	Solar PV	Approved	7.2
16	12/12/20/2250/3	Solar PV	Approved	5.8
17	12/12/20/2250/2	Solar PV	Approved	1.1
18	12/12/20/2250/4	Solar PV	Approved	4.6
19	12/12/20/2048/2	Solar PV	Approved	2.8
20	12/12/20/2250	Solar PV	Approved	1.1
21	12/12/20/2025/1	Solar CSP	Approved	0
22	14/12/16/3/3/2/382/6	Solar PV	Approved	0
23	14/12/16/3/3/2/382/1	Solar PV	Approved	0
24	12/12/20/1673	Solar PV	Approved	0
25	14/12/16/3/3/2/382/5	Solar PV	Approved	0
26	12/12/20/2500	Solar PV	Approved	0
27	12/12/20/2025/2	Solar PV	Approved	0
28	12/12/20/2048/4	Solar PV	Approved	2.8
29	14/12/16/3/3/2/382/7	Solar PV	Approved	0

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

¹ “development footprint”, means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

Utilities Infrastructure | Electricity | Distribution and Transmission | Powerline.

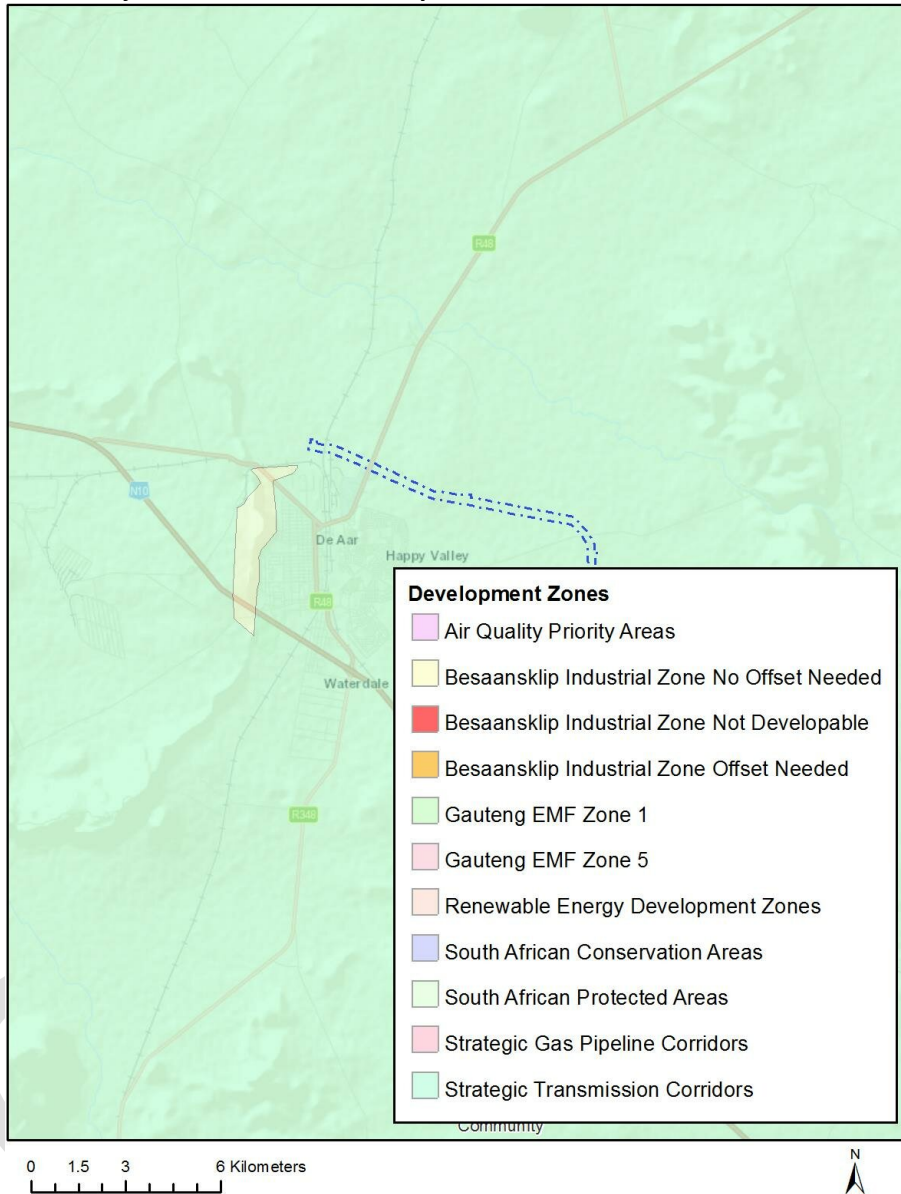
Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-Central corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

Project Location: Paarde Valley PV2 Vetlaafte MTS Grid Connection



Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme			X	
Animal Species Theme		X		

Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme	X			
Paleontology Theme	X			
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

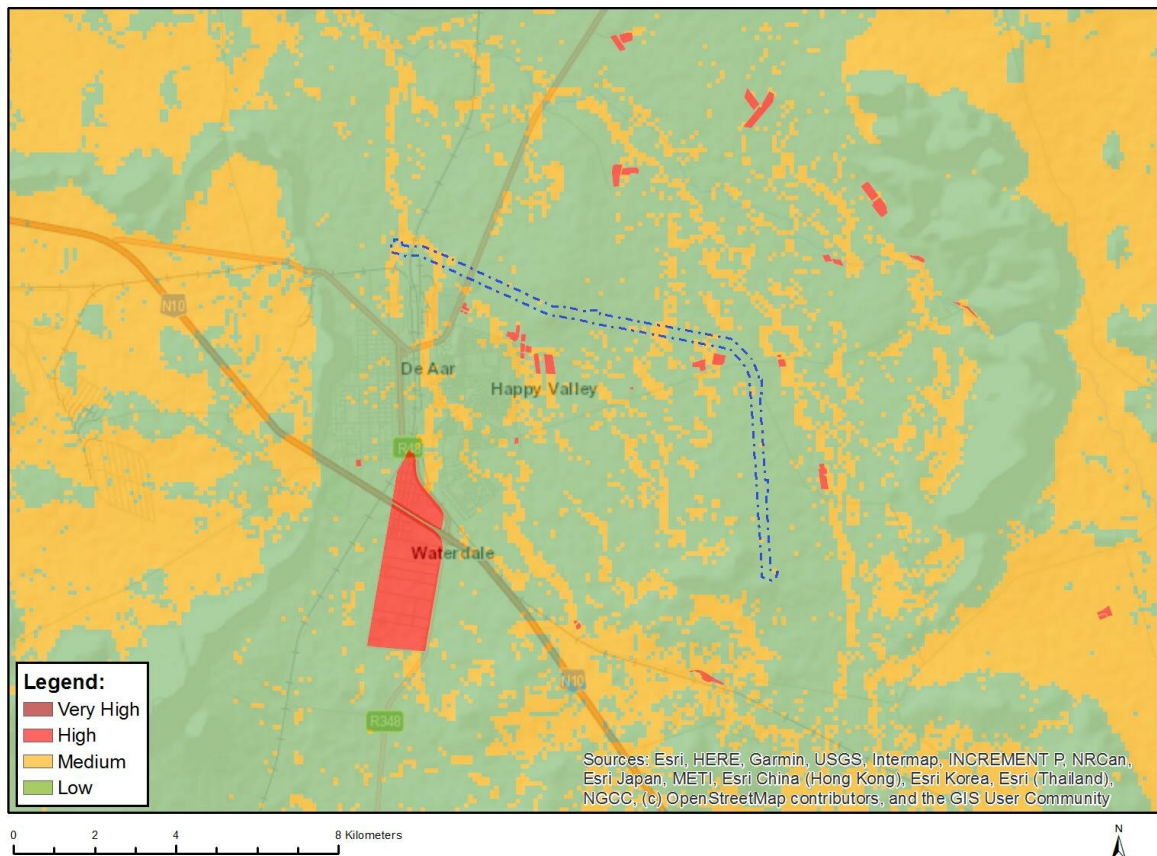
N o	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
5	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
6	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf

7	Avian Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Avifauna_Assessment_Protocols.pdf
8	Civil Aviation Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Civil_Aviation_Installations_Assessment_Protocols.pdf
9	RFI Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
10	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
11	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
12	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

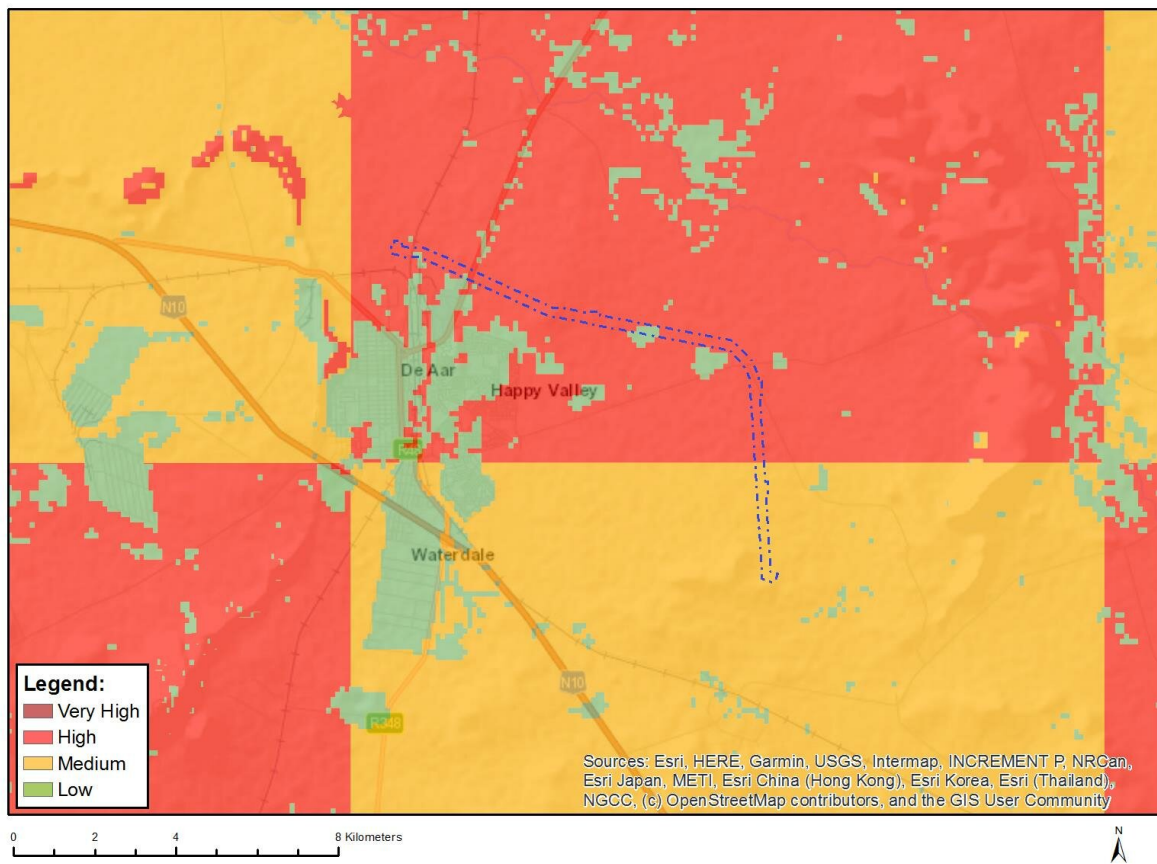


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



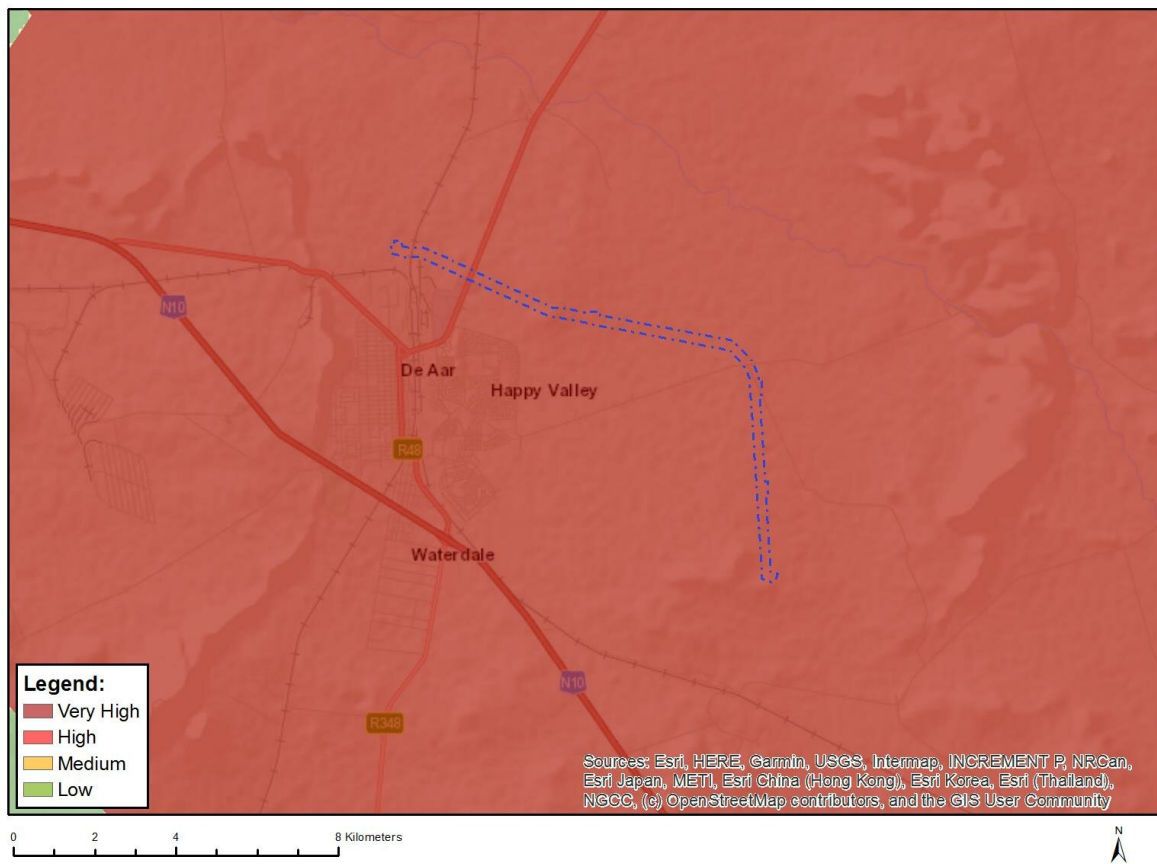
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Neotis ludwigii
Low	Low sensitivity
Medium	Aves-Neotis ludwigii

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

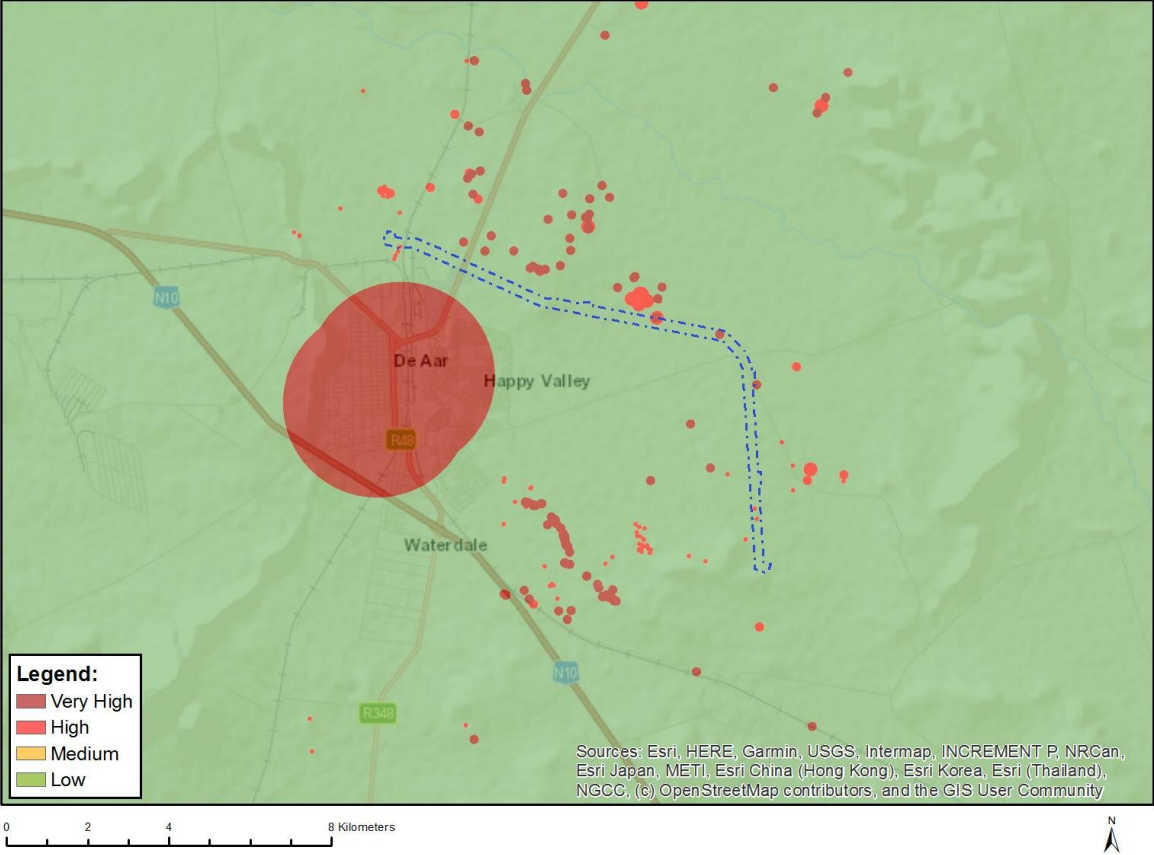


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Strategic water source area
Very High	Freshwater ecosystem priority area quinary catchments

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

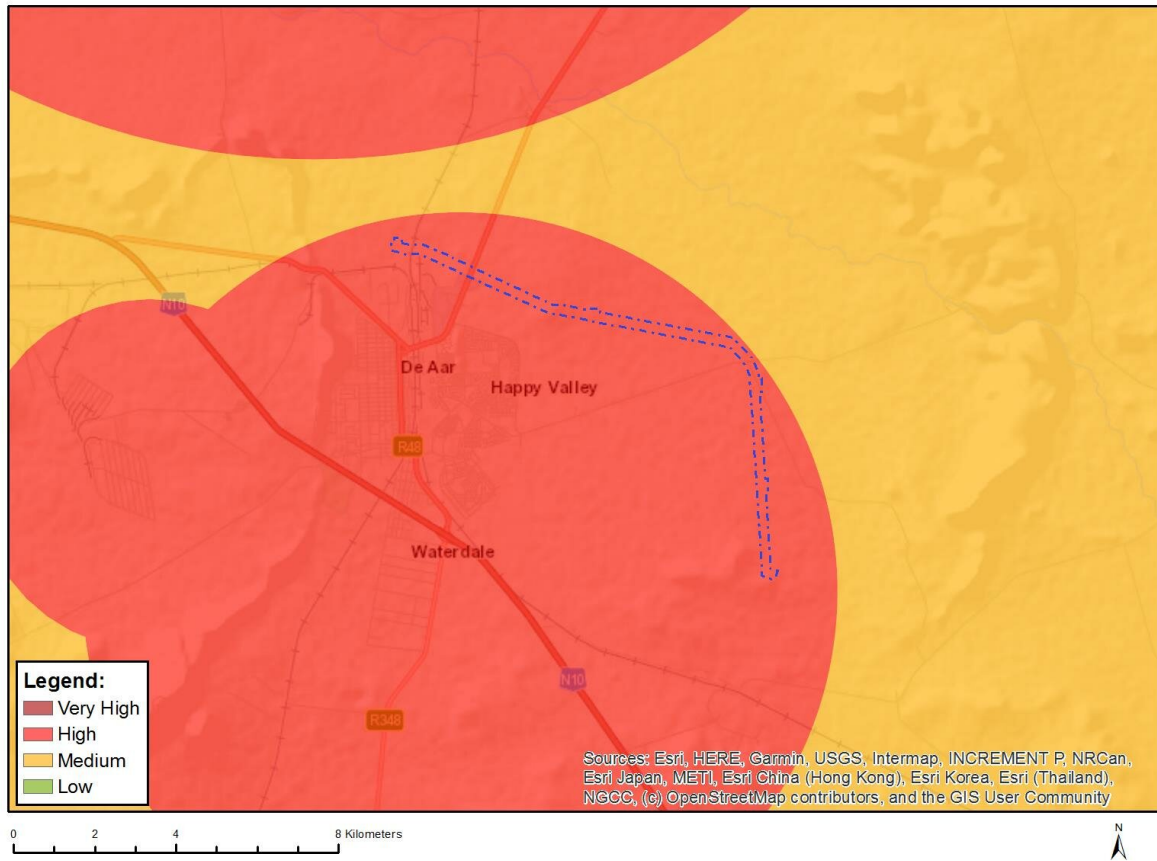


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 150m of a Grade IIIa Heritage site
High	Within 50m of a Grade IIIc Heritage site
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

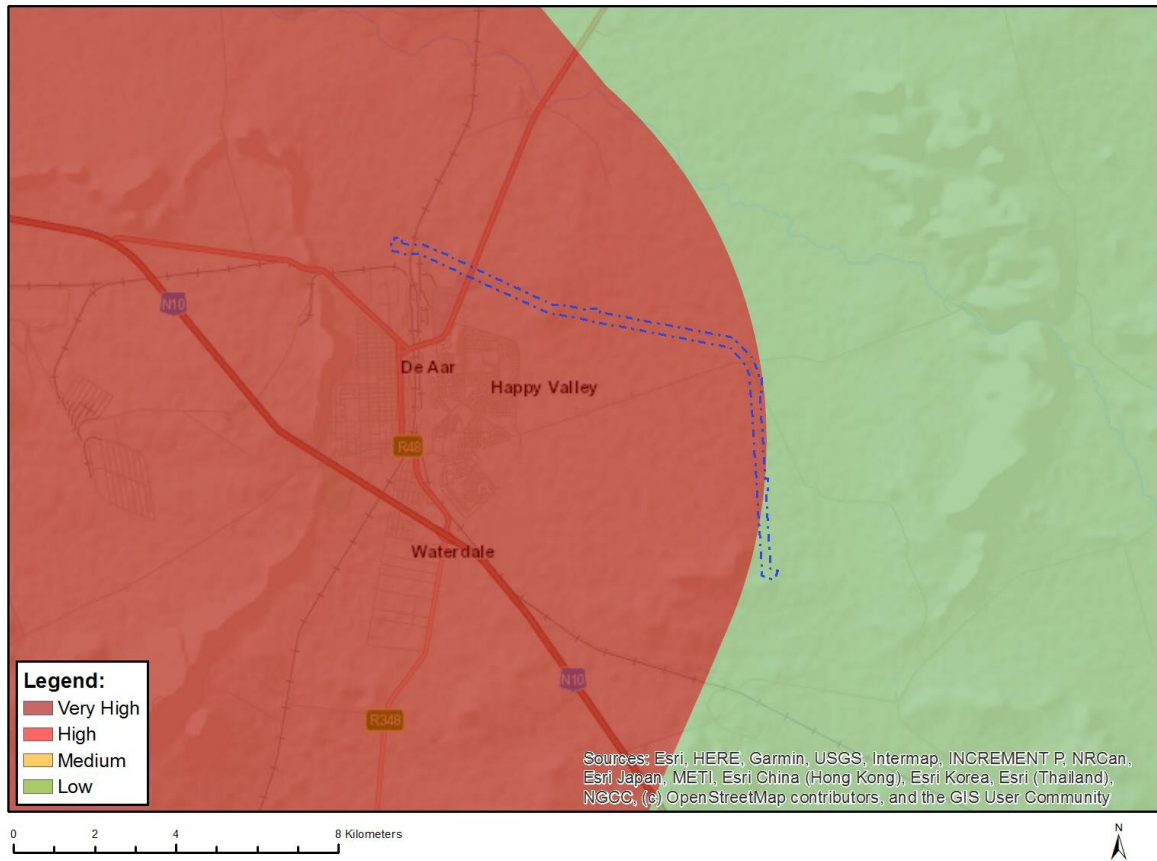


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome
Medium	Within 5 km of an air traffic control or navigation site
Medium	Between 15 and 35 km from a civil aviation radar

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

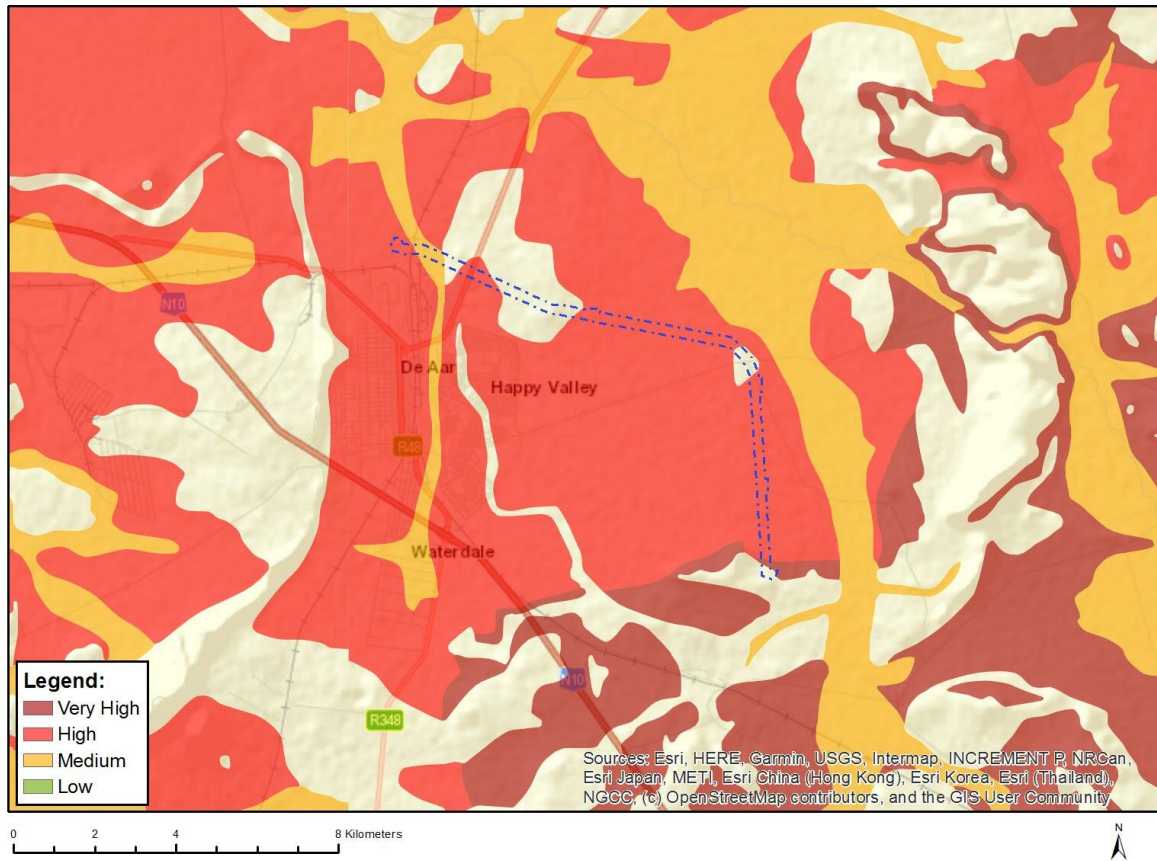


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Military and Defence Site
Very High	Military and Defence Site

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

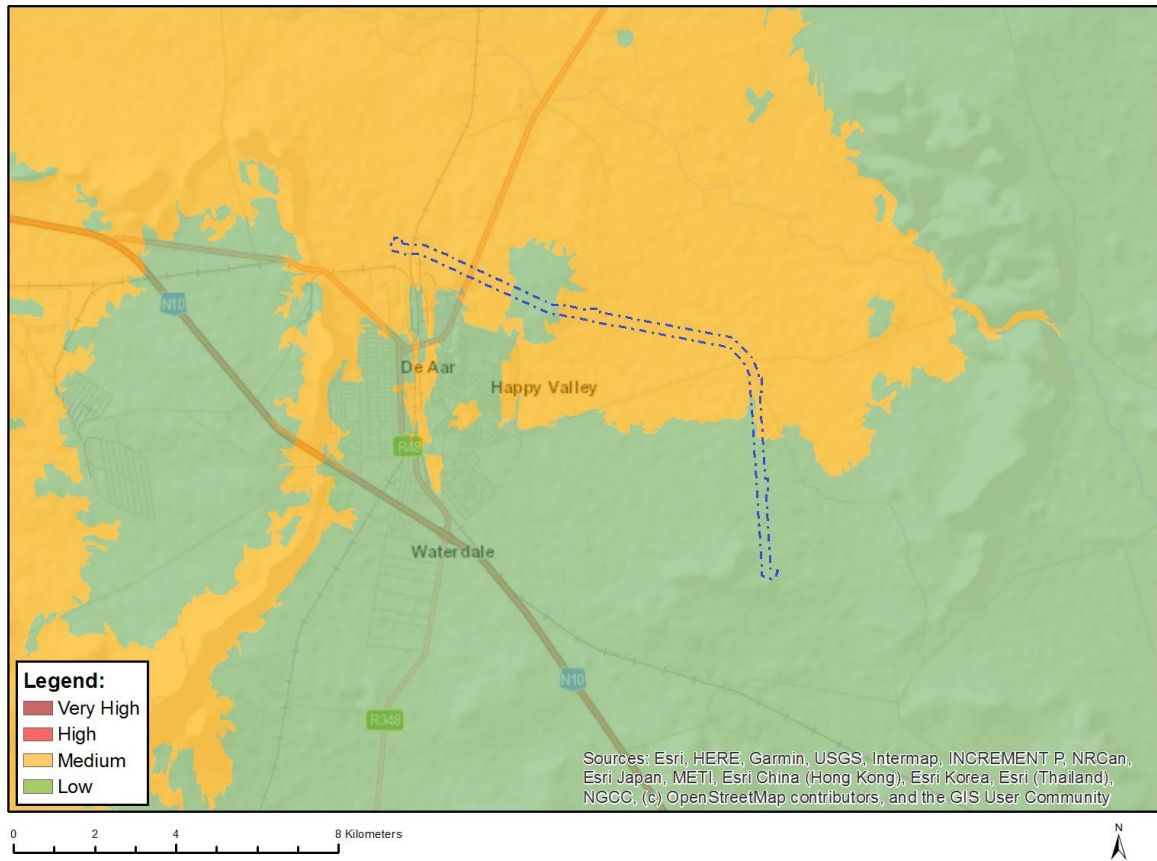


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

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

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



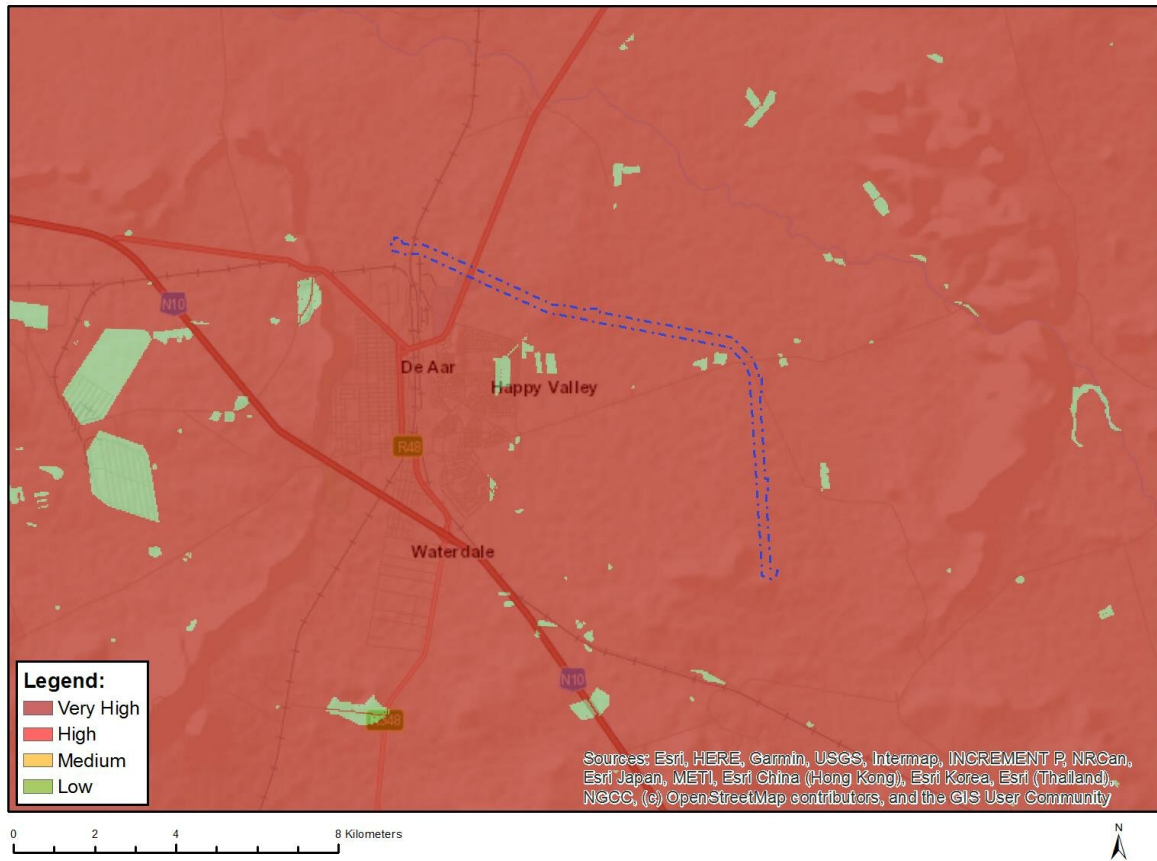
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Tridentea virescens

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Critical biodiversity area 2
Very High	Ecological support area
Very High	FEPA Subcatchments



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Proposed Paarde Valley PV2 Grid Connection Corridor

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

<p>Postal address: Department of Environmental Affairs Attention: Chief Director: Integrated Environmental Authorisations Private Bag X447 Pretoria 0001</p> <p>Physical address: Department of Environmental Affairs Attention: Chief Director: Integrated Environmental Authorisations Environment House 473 Steve Biko Road Arcadia</p> <p>Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at: Email: EIAAdmin@environment.gov.za</p>

1. SPECIALIST INFORMATION

Specialist Company Name:	qarc		
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition
			100%
Specialist name:	Quinton Lawson		
Specialist Qualifications:	BArch (Natal)		
Professional affiliation/ registration:	SACAP 3686		
Scientific Organisation Registration / Member Number	-		
Status of Registration / Membership	Current		
Physical address:	8 Blackwood Drive, Hout Bay, Cape Town		
Postal address:	As above		
Postal code:	7806	Cell:	083 309 3338
Telephone:	021 790 5119	Fax:	-
E-mail:	quinton@openmail.co.za		

2. DECLARATION BY THE SPECIALIST

I, **Quinton Lawson**, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Lawson

Signature of the Specialist

qarc

Name of Company:

15/06/2022

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Quinton Lawson**, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Lawson

Signature of the Specialist

qarc

Name of Company

15/06/2022

Date

[Signature]

Signature of the Commissioner of Oaths

15/06/2022

Date

I certify that the DEPONENT has acknowledged that he / she knows and understands the contents of this affidavit, that he / she does not have any objection to taking the oath, and that he / she considers it to be binding on his / her conscience, and which was sworn to and signed before me and that the administering oath complied with regulations contained in Government Gazette No. R 1258 of 21 July 1972, as amended.

SIGNATURE

Commissioner of Oaths

Designation: BRANCH MANAGER, ex officio Republic of South Africa

Date: 15 June 2022

Place: HOUTBAAI

Business Address: MAINSTREAM CENTRE HOUTBAAI

