THE PROPOSED GROOTPOORT PHOTOVOLTAIC SOLAR ENERGY FACILITY NEAR LUCKHOFF, FREE STATE PROVINCE

VISUAL IMPACT ASSESSMENT

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PELE GREEN ENERGY

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1. INTRODUCTION

1.1. EIA Inclusion

This visual impact assessment (VIA) forms part of the overall environmental impact assessment (EIA) process that's being undertaken for the proposed Grootpoort Photovoltaic Solar Energy Facility near Luckhoff in the Free State Province. The EIA process is being undertaken by Environamics Environmental Consultants, on behalf of Pele Green Energy (Pty) Ltd.

1.2. EIA Regulations

The EIA Regulations, 2014 (GN. R.982) published in terms of the National Environmental Management Act (Act No. 107 of 1998) determine that an environmental authorisation is required for certain listed activities, which might have detrimental impacts on the environment. The following activities have been identified with special reference to the proposed development and are listed in the EIA Regulations:

- **Activity 11 (GN.R. 983):** *"The development of facilities or infrastructure for the transmission and distribution of electricity- (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts."*
- **Activity 12 (GN.R. 983):** *"The development of- (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (a) within a watercourse or (c) ...within 32 metres of a watercourse, measured from the edge of a watercourse."*
- **Activity 19 (GN.R. 983):** *"The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- (i) a watercourse..."*
- **Activity 1 (GN.R. 984):** *"The development of facilities or infrastructure for the generation of electricity from a renewable resource where the electricity output is 20 megawatts or more..."*
- **Activity 15 (GN.R. 984):** *"The clearance of an area of 20 hectare or more of indigenous vegetation..."*

1.3. Project Background

Pele Green Energy (Pty) Ltd. is proposing to develop an 84MW photovoltaic (PV) solar energy near Luckhoff situated in the Letsemeng Local Municipality in the Free State Province. The project will be known as the proposed Grootpoort Photovoltaic Solar Energy Facility near Luckhof, Free State Province.

The purpose of the proposed PV energy facility will be to evacuate the generated power into the Eskom Holdings SOC Ltd (Eskom) electricity grid. If successful, Grootpoort Solar Power Plant will be remunerated on a per kilowatt hour generated basis by Eskom in terms of a 20 year Power Purchase Agreement. Grootpoort Solar Power Plant will be required to apply for a generation license from the National Energy Regulator of South Africa (NERSA). Depending on the economic conditions following the lapse of this period, the facility can either be decommissioned or the power purchase agreement may be renegotiated and extended.

1.4. Project Description and Location

Table 1: General site information

Description of affected farm portion	A portion of Portion 1 of the farm Grootpoort 168, Registration Division Fauresmith, Free State. Coordinates: 29°50'26.64"S 24°39'40.37"E
Type of technology	Photovoltaic solar facility.
Structure Height	Panels ~3.5m, buildings ~ 4m and power lines ~32m.
Surface area to be covered	Approximately 250 hectares.
Structure orientation	The panels will either be fixed to a single-axis horizontal tracking structure where the orientation of the panel varies according to the time of the day, as the sun moves from east to west or tilted at a fixed angle equivalent to the latitude at which the site is located in order to capture the most sun.
Laydown area dimensions	Approximately 250 hectares.
Generation capacity	100MW.
Expected production	130 – 160 GWh per annum.

The activity entails the development of a photovoltaic solar energy facility and associated infrastructure on Portion 1 of the farm Grootpoort 168, Registration Division Fauresmith RD, Free State. The proposed development is located in the Free State Province, in the northern central interior of South Africa. The site is located approximately 14km south west of Luckhoff, 23km east of Orania and 17km north west of Van Der Kloof (**Map 1: Locality Map**).

The project entails the generation of approximately 100MW electrical power through photovoltaic (PV) panels. The total footprint of the project will be approximately 250 hectares. The key components of the proposed project are described below:

- **PV Panel Array** - To produce 100MW. The proposed facility will require numerous linked cells placed behind a protective glass sheet to form a panel. Multiple panels will be required to form the solar PV arrays which will comprise the PV facility. The PV panels will be tilted at a northern angle in order to capture the most sun.
- **Wiring to Central Inverters** - Sections of the PV array will be wired to central inverters. The inverter is a pulse width mode inverter that converts direct current (DC) electricity to alternating current (AC) electricity at grid frequency.
- **Connection to the grid** - Connecting the array to the electrical grid requires transformation of the voltage from 480V to 33kV to 132kV. The normal components and dimensions of a distribution rated electrical substation will be required. Output voltage from the inverter is 480V and this is fed into step up transformers to 132kV. An onsite substation will be required on the site to step the voltage up to 132kV, after which the power will be evacuated into the national grid. It is expected that generation from the facility will tie in with the Canal Substation 6,7km south east from the proposed development.
- **Supporting Infrastructure** - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint of 400m². Other supporting infrastructure includes voltage and current regulators and protection circuitry.

- **Roads** – Ready access already exist from the (R48) Main Road, however an internal site road network to provide access to the solar field and associated infrastructure will be required. All site roads will require a width of approximately 4m.
- **Fencing** - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm.

1.5. The nature of Visual Impact

What is visual impact?

Something that is produced by an agency, cause, result, or consequence that is perceivable by the sense of sight. Visual impact:

- Is subjective to the visual receptors
- Can be beneficial to a certain geographical area
- Can be adverse to a certain geographical area

Sensitive Geographical Areas

Geographical areas can be sensitive properties that are evaluated for the potential for adverse visual impact. The sensitivity of a certain geographical area is the degree to which a particular area can accommodate change. An example of a sensitive geographical area would be when scenic quality was influential in its being. In other words, a geographical area is not sensitive to visual impact if visual aspects of its feeling and setting are not part of what makes it eligible.

When does a project have an adverse visual impact to a certain geographical area?

When the proximity of the proposed project impairs aesthetic features or attributes of that area in a substantially visual way such that features or attributes are considered important contributing elements to the value of the resource.

1.6. Guidelines

Various guidelines for visual impact assessments are available, but with a very common approach. This assessment will be undertaken in accordance with:

- Government of the Western Cape – Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (2005). This is the only local guideline which could be found during research.
- Texas Department of Transportation - Standard Operating Procedure for Visual Impact Assessments (2012).
- The Landscape Institute with the Institute of Environmental Management and Assessment – Guidelines for Landscape and Visual Impact Assessments, Second Edition (2002).

Together these documents provide a basis for the level of approach of a visual impact assessment.

1.7. Terms of Reference

The proposed TOR for this visual impact assessment is as follows:

- Conduct a desktop review of available information that can support and inform the specialist study;
- Describe the receiving environment and the visual absorption for the proposed project;
- Conduct a field survey to determine the actual or practical extent of potential visibility of the proposed development;
- Conduct a photographic survey of the landscape surrounding the development;
- Identify issues and potential visual impacts for the proposed project, to be considered in combination with any additional relevant issues that may be raised through the public consultation process;
- Identify possible cumulative impacts related to the visual aspects for the proposed project;
- Assess the potential impacts, both positive and negative, associated with the proposed project for the construction, operation and decommissioning phases;
- Identify management actions to avoid or reduce negative visual impacts; and to enhance positive benefits of the project; and

- Use mapping and photo-montage techniques as appropriate.

1.8. Assessment Methodology

Table 2 of this VIA report will be utilised as the rating system. This rating system is recommended by Environamics Environmental Consultants.

Table 2: Rating System

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for

		the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/ component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.

2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity. The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive high impact	The anticipated impact will have significant positive effects.
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated

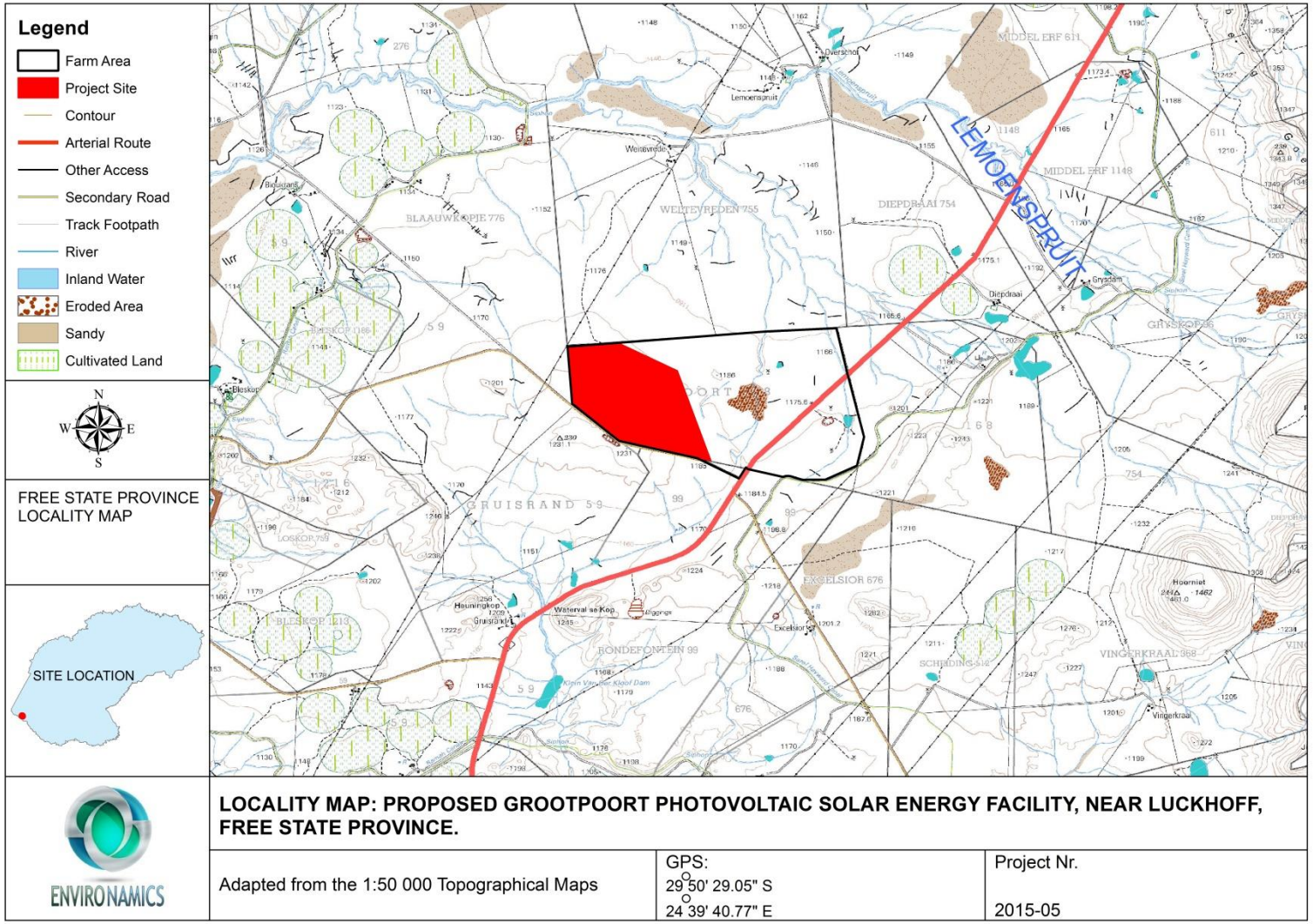
		adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

1.9. Project team and experience

The project team will consist of one individual, Johan Botha.

Johan Botha graduated with an Honours degree in 2010 from the North West University in the field of Environmental Sciences, specialising in Geography and Environmental Management. He also has a bachelor's degree in Education Sciences. He has been involved in various Eskom construction projects throughout the Northern Cape Province including expansions and construction of substations and power lines. He has acquired the necessary skills to compile a Visual Impact Assessment report with the associated maps.

Map 1: Locality Map



2. EXISTING LANDSCAPE

It is possible that landscape change due to the proposed development could impact the character of an important landscape area.

Importance can be derived from specific features that can relate to urban or rural settings. They might include key natural, historic or culturally significant elements. Importance might also relate to landscapes that are uncommon or under threat from development.

Generally the most significant natural areas are afforded a degree of legal protection such as National Parks and Reserves; however, they might also have local significance and not be protected.

This section describes the types of landscape that may be impacted, indicating the likely degree of sensitivity and describes how the landscape areas are likely to be impacted.

2.1. Landscape Character

Landscape character is a composite of a number of influencing factors including:

- Landform and drainage.
- Nature and density of development.
- Vegetation patterns.

2.1.1. Landform and drainage

The proposed development is located within the Middle Orange Basin, which forms part of the bigger Orange River basin. The Orange River basin is by far the most important river basin in South Africa and includes the Vaal River basin which is the largest and most important tributary of the Orange River. The Vanderkloof Dam, located approximately 16 km south east from the proposed development, is currently the last main storage structure on the Orange River and effectively controls the flow of water along the 1 400 km stretch of river between the dam and Alexander Bay on the Atlantic Ocean.

The proposed development is located in an area with a large significance in elevation features including ridgelines, koppies and drainage. The site's highest elevation is located at approximately 1233m above mean sea level (amsl) at the southern border and 1184m amsl at the north eastern border, with a difference of 48m amsl. The site is located approximately 6km north of the Orange River with the river's amsl of 1116m. The site is also located approximately 4km south of the Lemoenspruit river with the river's amsl at 1141m. The connection point for the 132kV power line at Canal Substation has an amsl of 1155m and is located 3,3km east from the Orange River. The nearest town, Luckhoff, is located approximately 14km north east from the proposed development behind a koppie the locals call Kalwerkop. The koppie has an approximate amsl of 1300m resulting in no line of site from town to the proposed development. See figures 1 & 2 for more information about the amsl.

2.1.2. Nature and density of development

Development within the study area can be divided into the following types:

- **Industrial development** includes existing Eskom power line infrastructure on the adjacent property, Weltevreden 755, and Canal Substation (**Figure 3: View of existing Eskom power line infrastructure**).
- **Urban development** includes the town of Luckhoff situated 14km north east of the proposed development, Orania situated 23km west, and Van Der Kloof situated 17km south east.
- **Agricultural development** is the main development type surrounding the proposed development. The site is located in an area mainly used for livestock farming and irrigation crop farming. The Ramah Branch Canal services the surrounding farmers mainly for irrigation purposes
- **Service development** includes the R48 provincial road situated 500m east from site, two unknown gravel roads leading to Van Der Kloof and Orania which runs adjacent to site and Canal Substation, and the Ramah Branch Canal which services the surrounding farmers mainly for irrigation purposes. (**Figure 4: View from the R48 provincial road)**.

- **Tourism development** includes the Van Der Kloof dam situated 17km south east from the proposed development. The dam provides a pleasant view for tourists and includes a number of resorts and accommodation. Tourists are also flocking to Orania during holidays to visit this famous town including the Die Oewer resort located next to the Orange River in Orania.
- **Recreational development** includes water sports and fishing at the Van Der Kloof dam and areas along the Orange River closer to Orania.

2.1.3. Vegetation patterns

The site is located within the Upper Karoo Bioregion which forms part of the bigger Nama Karoo biome. The dominant vegetation is grassy, dwarf shrubland. Grasses tend to be more common in depression and on sandy soils, and less abundant on clayey soils. Grazing rapidly increases the relative abundance of shrubs. Most of the grasses are of the C-4 type and, like the shrubs, are deciduous in response to rainfall events. The following vegetation is also obvious but nor extensive:

- Small plantations of alien trees associated with small community settlements and farmsteads. This includes Eucalyptus tree plantations which were mainly introduced as a mean of providing shade and barricading against wind.
- Occasional groups of ornamental vegetation associated with farmsteads.
- A variety of flora species growing on the banks of the Vaal River.

2.2. Landscape Character Assessment Summary

The industrial development is unlikely to be sensitive to the proposed development, although the existing Eskom power infrastructure and irrigation infrastructure will provide a certain level of absorption capacity.

The towns of Luckhoff, Orania and Van Der Kloof will not be sensitive to the proposed development largely due to distance and existing screening.

Regarding service development, the proposed development will be visible momentarily from the R48 provincial road and the gravel roads, and will have a low impact on the passing passengers of vehicles.

The majority of the affected area falls within the agricultural development area. A small amount of nearby farmsteads will be affected for the duration of the construction period and lifespan of the development.

Figure 1: Cross Section Profile taken from north to south

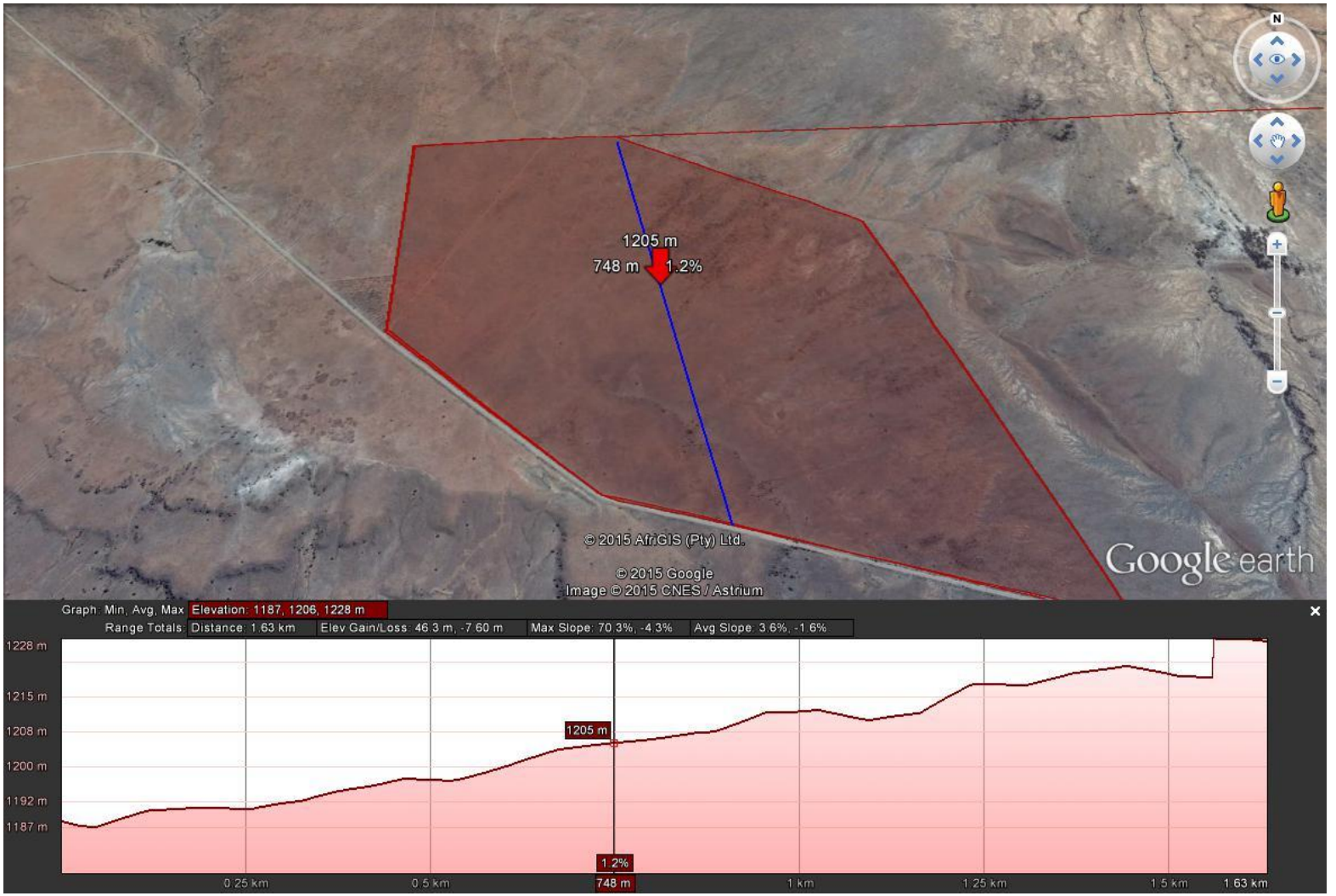


Figure 2: Cross Section Profile taken from east to west

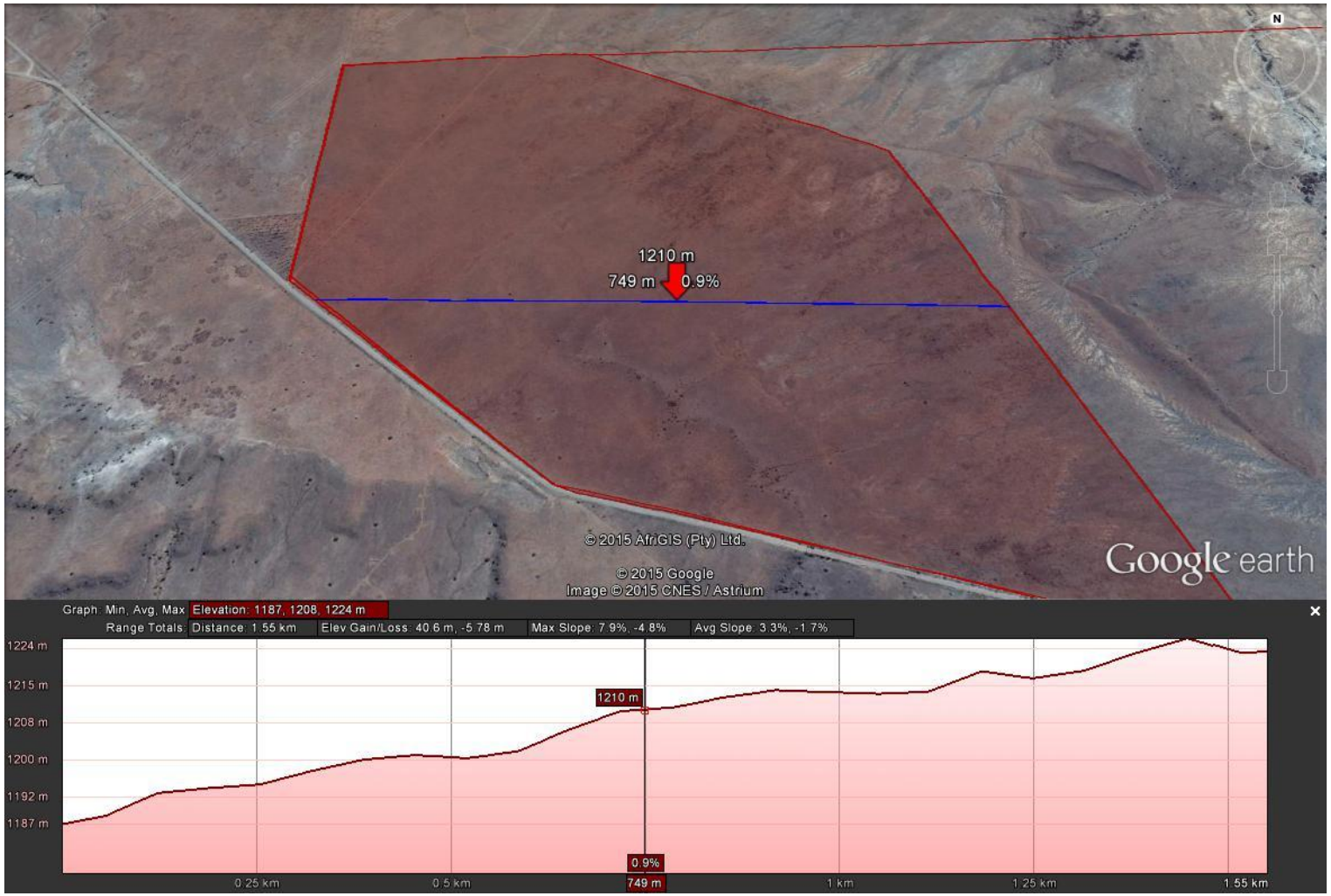


Figure 3: View of existing Eskom power line infrastructure

Figure 4: View from the R48 provincial road

Figure 5: View towards Luckhoff and Kalwerkop

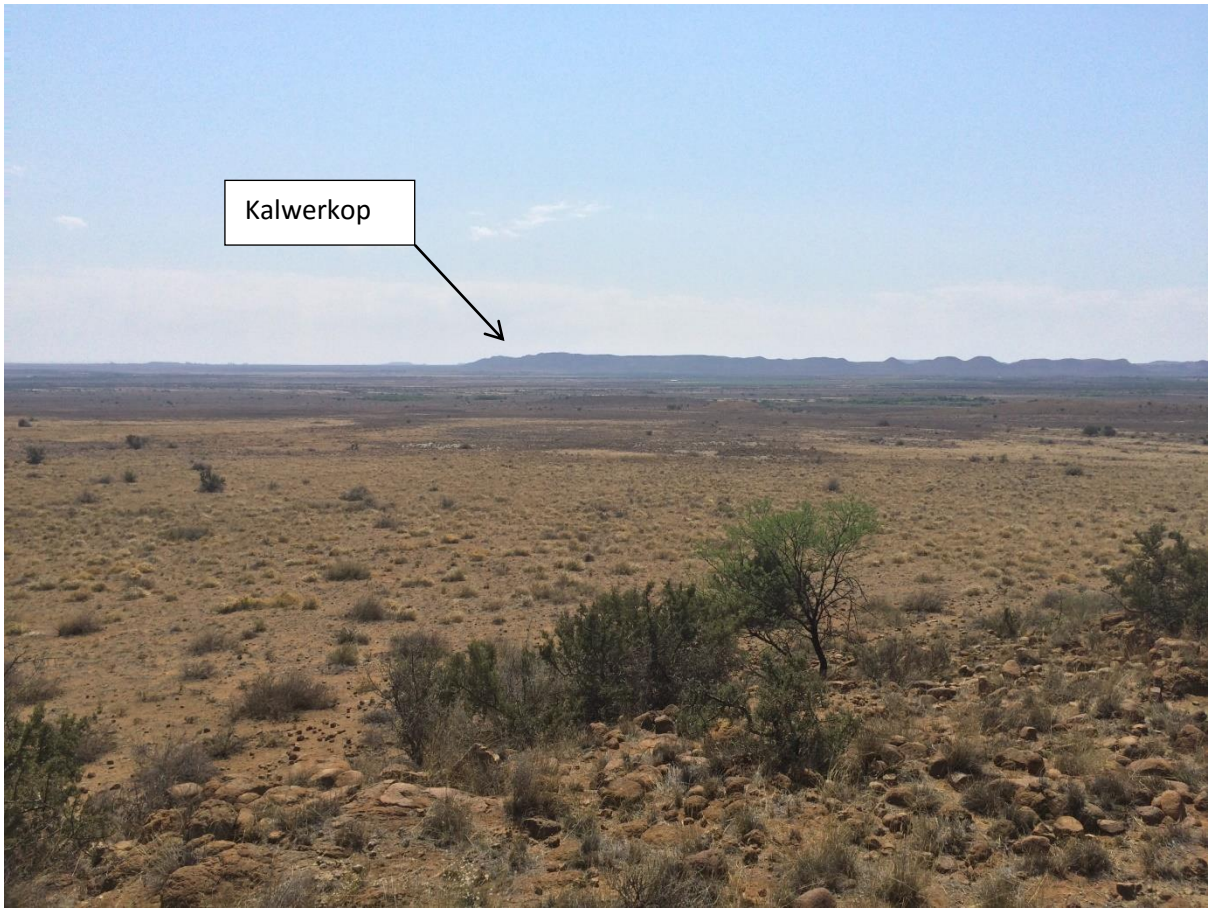


Figure 6: View towards the Orange River from the gravel road

3. VISUAL RECEPTORS

Visual Receptors can be defined as: “Individuals, groups or communities who are subject to the visual influence of a particular project.”

3.1. Identified Visual Receptors

This section is intended to highlight possible Receptors within the landscape which due to use could be sensitive to landscape change. They include:

- **Area Receptors** which include:
    - The town of Luckhoff 14km south west from the proposed development.
    - The town of Orania 23km west from the proposed development.
    - The town of Van Der Kloof 17km sout east from the proposed development.
- **Linear Receptors** which include the R48 provincial road, the two unknown gravel roads mainly used by the local communities and areas along the Orange River used for recreational purposes.
- **Point Receptors** that include small groups of farmsteads that are generally associated with and located within the agricultural landscape that surrounds the proposed development.

Refer to **Map 2: Zone of Theoretical Visibility (ZTV)**. This map indicates all areas that are in direct line of site of the proposed development up to a distance of 20km.

3.2. Likely significance of sensitive receptors

Uses such as guest houses or recreational areas are likely to rely on pleasant visual aspects as part of marketing campaigns and the overall positive client/tourist experience, thus important to maintain a pleasant visual attraction.

Table 3: Assessment Criteria referring to Map 2, ZTV map

Radius	Impact Magnitude
0-5km	High
5-10km	Medium-High
10-15km	Medium-Low
15-20km	Low

The assessment indicates;

- The town of Van Der Kloof. The town falls within the 15-20km ZTV radius and thus unlikely to be affected by the proposed development.

  Magnitude: Low
- The town of Luckhoff which falls within the 10-15km ZTV radius, thus unlikely to be impacted by the proposed development also considering the screening effect of Kalwerkop.

  Magnitude: Medium-Low
- The R48 provincial road and two gravel roads. These roads fall within the 0-5km ZTV radius and are likely to be impacted by the proposed development.

  Magnitude: High
- There are a number of nearby farmsteads identified which are likely to be impacted by the proposed development. Four of these farmsteads fall within the 0-5km ZTV radius.

  Magnitude: High

Map 2: Zone of Theoretical Visibility (ZTV)

4. SIGNIFICANCE OF IMPACTS ON VIEWERS

This section includes the assessment of the visual impact during the ***Construction Phase***, ***Operational Phase*** and ***Decommissioning Phase***. The rating system reflected in section 1.8 of this VIA report will be utilised to determine the significance of the impacts.

Viewers include:

- People on surrounding farmsteads
- People travelling on the R48 provincial road and the two gravel roads.
- Tourists visiting the surrounding areas.

4.1. Construction Phase

Table 4: Significance of visual impacts during construction phase

Visual intrusion	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Positive
Geographical Extent	Local (2)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Short term (1)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Low cumulative impact (2). The construction of the PV plant and 132kV evacuation line may increase the cumulative visual impact together with farming activities and people using the existing gravel roads adjacent to site. Dust will be the main factor to take into account.	
Formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.		
Significance	**Negative medium (36)**	**Negative medium (24)**
Can impacts be mitigated?	Yes, mitigation is possible. Dust generation	

	will be the main factor/problem during the construction phase. Due to elevation features, mitigation measures will only solve the problem to a certain extent. Measures include: • Dust suppression will play an important role to minimise the visibility of dust. • Contractors must avoid using roads not relevant to the project. • New road construction must be avoided if possible. • Good housekeeping should be implemented. • Proper rehabilitation of disturbed areas after construction. • Risk assessments relating to fire hazards, "No Smoking" signs and the implementation of smoking areas. • Proper fire fighting equipment should be available on site. Not only fire extinguishers but also equipment like a water truck which can store large amounts of water. • Partial screening is possible by adding indigenous flora.

4.2. Operational Phase

Table 5: Significance of visual impacts during operational phase

Visual intrusion	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Geographical Extent	Local (2)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Medium (2)
Reversibility	Barely reversible (3)	Barely reversible (3)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Low cumulative impact (2). The operation of the PV plant and 132kV evacuation line may increase the cumulative visual impact together with the existing Eskom power infrastructure and agricultural infrastructure.	

Formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.		
Significance	**Negative medium (30)**	**Negative medium (30)**
Can impacts be mitigated?	Yes, but due to elevation features and the height of the 132kV evacuation line, mitigation measures will only solve the problem to a certain extent. Measures include: • Dust suppression will play an important role to minimise the visibility of dust. • Operators must avoid using roads not relevant to the project. • Good housekeeping should be implemented. • Risk assessments relating to fire hazards, "No Smoking" signs and the implementation of smoking areas. • Proper fire fighting equipment should be available on site. Not only fire extinguishers but also equipment like a water truck which can store large amounts of water. • Partial screening is possible by adding indigenous flora.	

4.3. Decommissioning Phase

Table 6: Significance of visual impact during decommissioning phase

Visual intrusion	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Positive
Geographical Extent	Local (2)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Short term (1)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Low cumulative impact (2). The decommissioning of the PV plant and 132kV evacuation line may increase the cumulative visual impact together with farming activities and people using the existing gravel roads	

	adjacent to site. Dust and housekeeping will be the main factors to take into account.	
Formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.		
Significance	**Negative medium (36)**	**Negative medium (24)**
Can impacts be mitigated?	Yes, mitigation is possible. Dust generation and housekeeping will be the main factors/problems during the decommissioning phase. Due to the rather level terrain, mitigation measures will only solve the problem to a certain extent. Measures include: • Dust suppression will play an important role to minimise the visibility of dust. • Contractors must avoid using roads not relevant to the project. • New road construction must be avoided if possible. • Good housekeeping should be implemented. • Proper rehabilitation of disturbed areas after decommissioning. • Risk assessments relating to fire hazards, "No Smoking" signs and the implementation of smoking areas. • Proper fire fighting equipment should be available on site. Not only fire extinguishers but also equipment like a water truck which can store large amounts of water.	

5. CONCLUSION AND RECOMMENDATIONS

Referring to the assessment score in **Section 4** of this VIA report, the significance of the visual impact is a "*Negative Medium Impact".* The only receptors likely to be impacted by the proposed development are the nearby farmsteads, tourists visiting the surrounding areas, people travelling on the R48 provincial road and gravel roads.

The proposed development is located in a close proximity of existing Eskom power line infrastructure and agricultural infrastructure and might have a cumulative impact on viewers.

In terms of possible landscape degradation, the landscape does not appear to have any specific protection or importance although rural areas are clearly defined particularly from a distance and it is assumed that the majority of people would prefer rural views over views of heavy industrial development.

Taking into account all positive factors of such a development including economic factors, social factors and sustainability factors, the visual impact of this proposed development will be insignificant and is suggested that the development commence, from a visual impact point of view.

6. REFERENCES

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