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## **BASIC ASSESSMENT REPORT**

for

### **RE CAPITAL 2 SOLAR FACILITY – EXPANSION AREA**

on

### **Portion 15 of the Farm Kameeldoring, 271**

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014  
Environmental Impact Regulations



Prepared for Applicant: RE Capital 2 (Pty) Ltd

By: Cape EAPrac

Report Reference: ZEE434/03

Department Reference: to be allocated

Case Officer: to be allocated

Date: 24 June 2016

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**PURPOSE OF THIS REPORT:**

Stakeholder review and comment

**APPLICANT:**

RE Capital 2 (Pty) Ltd

**CAPE EAPRAC REFERENCE NO:**

ZEE434.03

**DEPARTMENT REFERENCE:**

To Be Allocated

**SUBMISSION DATE**

24 June 2016

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National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended &  
Environmental Impact Regulations 2014

## RE Capital 2 Solar Facility – Expansion Area

### Portion 15 of the Farm Kameeldoring, 271

Submitted for:

#### Stakeholder Review & Comment

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# BASIC ASSESSMENT REPORT

## 1 INTRODUCTION

Cape EAPrac was appointed by RE Capital 2 (PTY) LTD, as independent environmental practitioner (EAP), to facilitate the Basic Assessment (BA) process required in terms of the National Environmental Management Act (NEMA, Act 107 of 1998) for the proposed expansion of the RE Capital 2 Solar Development on portion 15 of the Farm Kameeldoorn 271.

The purpose of this **Basic Assessment Report** is to describe the environment to be affected, the proposed expansion, the process to be followed, to present specialist findings and recommendations to avoid or minimise impacts, and provide a description of how the development concept has been adjusted to consider the above.

**NOTE:** This expansion is proposed to a facility (RE Capital 2 Solar Development) that has already been authorised (14/12/16/3/3/2/538 – 11 August 2014 and which has been selected as a preferred bidder under the Department of Energy's Renewable Energy Independent Power Producers Procurement Programme (REIPPP)<sup>1</sup>

The Pre Application - Draft Basic Assessment Report was made available for a **30 day review and comment** period extending from **14 May 2016 to 14 June 2016**. All comments received during this period have been included in this formal Basic Assessment report that will be submitted to the competent authority for decision making after the comment period.<sup>2</sup>

An **application has been submitted** to the competent authority and this **Basic Assessment Report is available** for review and comment for a further **30 day period** extending from **24 June 2016 – 24 July 2016**. All I&AP's are requested to review and provide comment on this document by no later than 24 July 2016.

### 1.1 OVERVIEW OF PROJECT PROPOSAL

The following components form part of this project proposal. These are discussed in more detail in section 2 below.

- Construction of approximately 19ha of horizontally mounted single axis PV trackers on the expansion area.

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<sup>1</sup> The letter from the DOE confirming the status of the RE Capital 2 Solar Development is included in Annexure J3.

<sup>2</sup> During the stakeholder engagement process for the environmental process for the RE Capital 2 Grid connection, the SIP coordinator of SIP10 confirmed this project to be a Strategic Infrastructure Project in terms of the National Infrastructure Plan, 2012.

- Generation of approximately 10 Megawatts (MW) of electricity from the expansion area. Total Generation capacity of the entire facility (The approved RE Capital 2 development along with the proposed expansion) will not exceed 75MW.
- Construction of road crossing the non-perennial drainage line
- Construction of internal road network;
- Construction of Inverter Stations;
- Construction of perimeter fencing

## **1.2 LOCATION OF PROJECT COMPONENTS.**

The table below provides the approximate co-ordinates of the various project components as described above.

**Table 1:** Approximate location of project components

| <b>Component</b>   | <b>Latitude</b> | <b>Longitude</b> |
|--|-----------------|------------------|
| Expansion Area North Western Corner                                  | 25° 34' 04.39"  | 26° 03' 45.62"   |
| Expansion Area North Eastern Corner                                  | 25° 34' 06.34"  | 25° 03' 52.64"   |
| Expansion Area South Western Corner                                  | 25° 34' 38.83"  | 26° 03' 29.08"   |
| Expansion Area South Eastern Corner                                  | 25° 34' 39.22"  | 26° 03'30.13"    |
| Access Road beginning (i.e. where it exits the authorised footprint) | 25° 34' 26.97"  | 26° 03' 45.61"   |
| Access Road middle   | 25° 34' 25.81"  | 26° 03' 41.87"   |
| Access Road end (i.e. where it enters the expansion area)            | 25° 34' 24.59"  | 26° 03' 39.22"   |

## **2 LEGISLATIVE AND POLICY FRAMEWORK**

The legislation that is relevant to this study is briefly outlined below. These environmental requirements are not intended to be definitive or exhaustive, but serve to highlight key environmental legislation and responsibilities only.

### **2.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA**

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measure are applied to protect the environment. This includes preventing pollution and promoting conservation and

environmentally sustainable development, while promoting justifiable social and economic development.

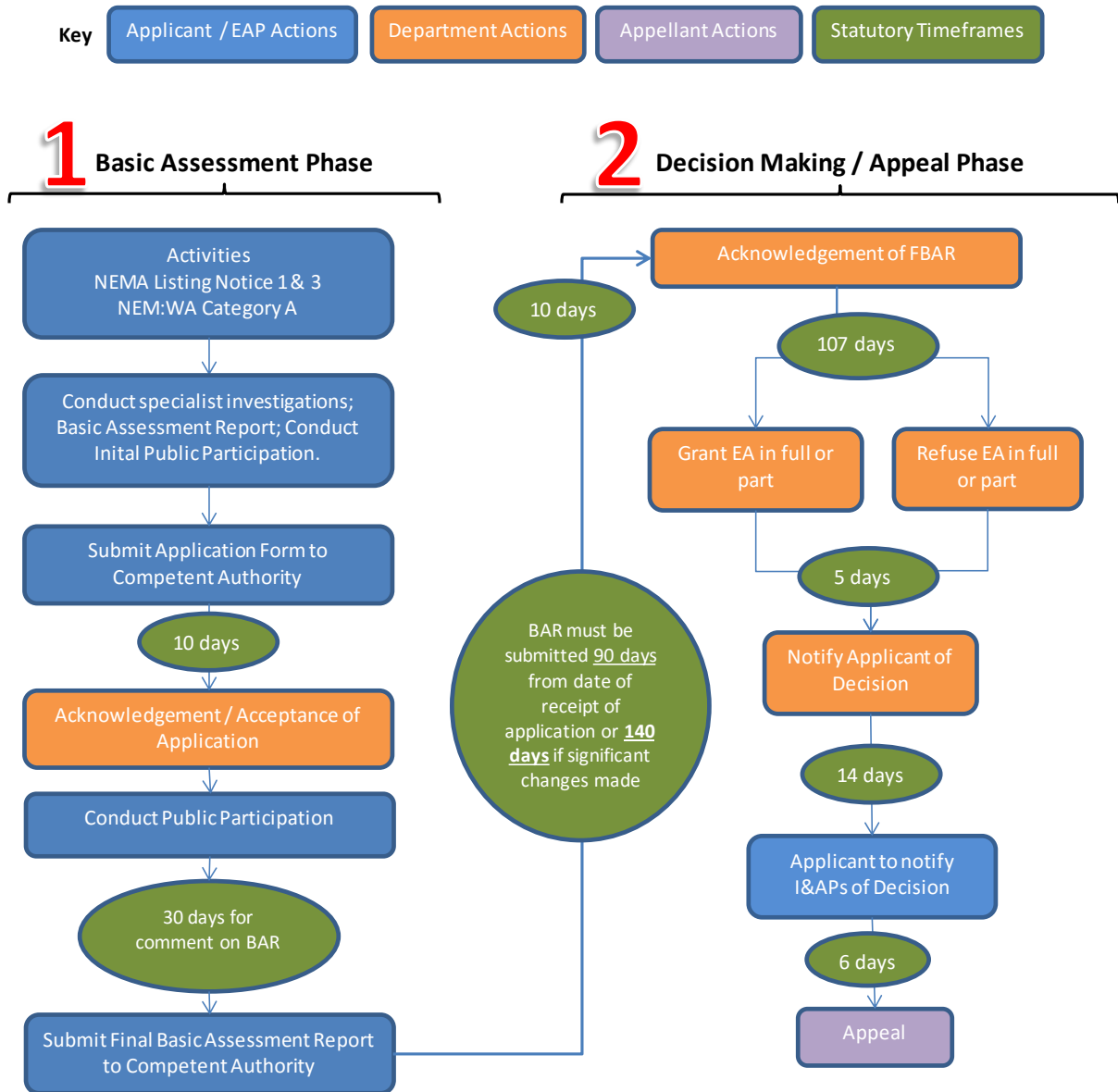
## **2.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA)**

The current assessment is being undertaken in terms of the **National Environmental Management Act** (NEMA, Act 107 of 1998)<sup>3</sup>. This Act makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority (in this case, the national Department of Environmental Affairs, DEA) based on the findings of an Environmental Assessment.

The proposed development entails a number of listed activities, which require a **Basic Assessment (BA) process**, which must be conducted by an independent environmental assessment practitioner (EAP). Cape EAPrac has been appointed to undertake this process. The figure below depicts a summary of the BA process.

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<sup>3</sup> On 18 June 2010 the Minister of Water and Environmental Affairs promulgated new regulations in terms of Chapter 5 of the National Environmental Management Act (NEMA, Act 107 of 1998), viz, the Environmental Impact Assessment (EIA) Regulations 2014. These regulations came into effect on 08 December 2014 and replace the EIA regulations promulgated in 2006 and 2010.



**Figure 1:** Summary of Basic Assessment Process in terms of the NEMA 2014 Regulations.

The listed activities associated with the proposed development, as stipulation under 2014 Regulations **983, 984 and 985** are as follows:

**Table 2:** NEMA 2014 listed activities for the proposed RE Capital 2 expansion area<sup>4</sup>.

| Listed activity as described in GN R.983, 984 and 985 | Description of project activity that triggers listed activity |
|---|---|
| <b>Regulation 983 – Basic Assessment</b>              |   |

<sup>4</sup> The DEA are herewith requested to advise on the applicability of the “Development” vs “Expansion” activities, as the RE Capital 2 Solar development, although authorised has not yet been constructed. For the purposes of this Basic Assessment Report, both the Development and Expansion activities have been applied for.

| <b>Listed activity as described in GN R.983, 984 and 985</b>  | <b>Description of project activity that triggers listed activity</b>   |
|---|--|
| <p><b>Activity 1</b> - <i>The development of facilities or infrastructure for the generation of electricity from a renewable resource where-</i></p> <p><i>(i) the electricity output is more than 10 megawatts but less than 20 megawatts; or</i></p> <p><i>(ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare;</i></p> <p><i>excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area</i></p> | <p>This activity is deemed to be relevant to the proposed RE Capital 2 expansion, as the electricity generated on this expansion area will be approximately 10 megawatts and the extent of the facility will be approximately 19ha.</p>  |
| <p><b>Activity 12</b> - <i>The development of-</i></p> <p><i>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</i></p> <p><i>where such development occurs-</i></p> <p><i>(a) within a watercourse;</i></p> <p><i>(b) in front of a development setback; or</i></p> <p><i>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</i></p>  | <p>The proposed RE Capital 2 Expansion area includes the construction of a road and culvert within 32m of a non-perennial watercourse. Please refer to the Freshwater Impact Assessment attached in Appendix D2 for an assessment of impacts associated with this watercourse.</p> |
| <p><b>Activity 19</b> - <i>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></p>  | <p>The proposed RE Capital 2 Expansion area includes the construction of a road and culvert within 32m of a non-perennial watercourse. Please refer to the Freshwater Impact Assessment attached in Appendix D2 for an assessment of impacts associated</p>                        |



| <b>Listed activity as described in GN R.983, 984 and 985</b>  | <b>Description of project activity that triggers listed activity</b>   |
|---|--|
| <i>(i) a watercourse;</i>   | with this watercourse.   |
| <b>Activity 27</b> - <i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation</i>  | The expansion of the RE Capital 2 solar development will require the removal of approximately 19ha of vegetation   |
| <p><b>Activity 36</b> - <i>The expansion of facilities or structures for the generation of electricity from a renewable resource where-</i></p> <p><i>(i) the electricity output will be increased by 10 megawatts or more, excluding where such expansion takes place on the original development footprint; or</i></p> <p><i>(ii) regardless the increased output of the facility, the development footprint will be expanded by 1 hectare or more;</i></p> | The generation capacity of the RE Capital 2 Solar Development will remain unchanged (i.e. a maximum of 75 megawatts) from what was authorised. The development footprint will however be expanded by approximately 19ha. |
| <b>Regulation 984 – Scoping and Environmental Impact Reporting</b>  |  |
| None Applicable   |  |
| <b>Regulation 985 – Basic Assessment</b>  |  |
| <p><b>Activity 4</b> - The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>i. Outside urban areas, in:</p> <p>(ee) Critical biodiversity areas (Terrestrial Type 1 and 2) as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p>   | The road between the authorised footprint and the proposed expansion area will have a width of approximately 4.5m  |
| <b>Activity 12</b> - The clearance of an area of 300 square metres or more of indigenous  | Approximately 19 hectares will be cleared for the purposes of this expansion   |

| <b>Listed activity as described in GN R.983, 984 and 985</b>   | <b>Description of project activity that triggers listed activity</b>  |
|--|---|
| <p>vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>(a) In Eastern Cape, Free State, Gauteng, Limpopo, North West and Western Cape provinces:</p> <p>ii. Within critical biodiversity areas identified in bioregional plans;</p>   |   |
| <p><b>Activity 14</b> - The development of-</p> <p>(xii) infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>Where such development occurs –</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>(e) In North West:</p> <p>i. Outside urban areas, in:</p> <p>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> | <p>The road crossing and culvert between the exiting authorised footprint and the expansion area will cross the watercourse and the total footprint of this infrastructure within 32m of the watercourse will exceed the 10 square metre threshold considered in this activity.</p> |

**NOTE:** That only Basic Assessment activities are being triggered by the proposed development and as such, the Environmental Process Basic Assessment Process.

As mentioned in the footprint above, the DEA are herewith requested to advise on the applicability of the “Development” vs “Expansion” activities as described in the table above, as the RE Capital 2 Solar development, although authorised has not yet been constructed. For the purposes of this Basic Assessment Report, both the Development and Expansion activities have been applied for and assessed.

### **2.3 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY (ACT 10 OF 2004)**

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA) provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The Draft National List of Threatened Ecosystems (Notice 1477 of 2009, Government Gazette No 32689, 6 November 2009) has been gazetted for public comment.

The list of threatened terrestrial ecosystems supersedes the information regarding terrestrial ecosystem status in the NSBA 2004. In terms of the EIA regulations, a basic assessment report is required for the transformation or removal of indigenous vegetation in a critically endangered or endangered ecosystem regardless of the extent of transformation that will occur.

According to Mucina & Rutherford (2006) (in Bredenkamp, 2013) the conservation status of Zeerust Thornveld is Least Threatened. This is because although only about 4% is statutorily conserved, much of the area is natural vegetation. This is in contrast with the Moot Plains Bushveld with a conservation status of Vulnerable, although about 13% is statutorily protected. The reason for this conservation status is that almost 30% of Moot Plains Bushveld has been transformed, but this is mainly in the Pretoria-Hartebeespoort Dam-Rustenburg area, with considerable pressure for more development. The western part of Moot Plains Bushveld is, in contrast, quite natural, with very little transformed by development, and here it could be regarded as Least Threatened.

NEMBA also deals with endangered, threatened and otherwise controlled species. The Act provides for listing of species as threatened or protected, under one of the following categories:

- **Critically Endangered:** any indigenous species facing an extremely high risk of extinction in the wild in the immediate future.
- **Endangered:** any indigenous species facing a high risk of extinction in the wild in the near future, although it is not a critically endangered species.
- **Vulnerable:** any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future; although it is not a critically endangered species or an endangered species.

- **Protected species:** any species which is of such high conservation value or national importance that it requires national protection. Species listed in this category include, among others, species listed in terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Certain activities, known as Restricted Activities, are regulated by a set of permit regulations published under the Act. These activities may not proceed without environmental authorization.

Professor George Bredenkamp of Eco Agent has confirmed that there will be no protected species affected by the proposed development.

#### **2.4 NATIONAL PROTECTED AREA EXPANSION STRATEGY (NPAES) FOR S.A. 2008 (2010)**

Considering that South Africa's protected area network currently falls far short of sustaining biodiversity and ecological processes, the NPEAS aims to achieve cost-effective protected area expansion for ecological sustainability and increased resilience to Climate Change. Protected areas, recognised by the National Environmental Management: Protected Areas Act (Act 57 of 2003), are considered formal protected areas in the NPAES. The NPAES sets targets for expansion of these protected areas, provides maps of the most important protected area expansion, and makes recommendations on mechanisms for protected area expansion.

The NPAES identifies 42 focus areas for land-based protected area expansion in South Africa. These are large intact and un-fragmented areas suitable for the creation or expansion of large protected areas. There are no NPAES focus areas in the vicinity of the proposed Zeerust Expansion.

The proposed **Zeerust Expansion** will **not effect** on any **NPAES** focus area.

#### **2.5 NATIONAL FORESTS ACT (NO. 84 OF 1998):**

The National Forests Act provides for the protection of forests as well as specific tree species, quoting directly from the Act: "*no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated*".

The ecological specialist, Dr George Bredenkamp, has confirmed that although there are protected *Acacia erioloba* on the property these are restricted to a very small area that has been excluded from both the authorised facility as well as this proposed expansion area.

#### **2.6 CONSERVATION OF AGRICULTURAL RESOURCES ACT – CARA (ACT 43 OF 1983):**

CARA provides for the regulation of control over the utilisation of the natural agricultural resources in order to promote the conservation of soil, water and vegetation and provides for combating weeds and invader plant species. The Conservation of Agricultural Resources Act defines different categories of alien plants:

- Category 1 - prohibited and must be controlled;
- Category 2 – must be grown within a demarcated area under permit; and
- Category 3 - ornamental plants that may no longer be planted, but existing plants may remain provided that all reasonable steps are taken to prevent the spreading thereof, except within the flood lines of water courses and wetlands.

The abundance of alien plant species on the proposed expansion site is very low, which can be ascribed mainly to the aridity of the site as well as the current agricultural practices.

The Department of Agriculture, Land Reform and Rural Development is guided by Act 43 of 1983.

In order to comply with their mandate in terms of this legislation, the developer must take care of the following:

**Article 7.(3)b of Regulation 9238: CONSERVATION OF AGRICULTURE RESOURCES, 1983 (Act 43 of 1983)**

Utilisation and protection of vleis, marshes, water sponges and water courses

- 7.(1) “no land user shall utilize the vegetation in a vlei, marsh or water sponge or within the flood area of a water course or within 10 meters horizontally outside such flood area in a manner that causes or may cause the deterioration of or damage to the natural agriculture resources.”
- (3)(b) “cultivate any land on his farm unit within the flood area of a water course or within 10 meters horizontally outside the flood area of a water course”

As can be seen in the site development plan that is attached in appendix C, the proposed expansion area has been specifically developed to fall outside of the 1:100yr floodline, with only a single access track that will cross the watercourse.

**2.7 CRITICAL BIODIVERSITY AREAS.**

According the South African National Biodiversity Institute Biodiversity Geographic Information System (SANBI BGIS) the entire property falls within a Critical Biodiversity Area (CBA).

The ecological specialist, Dr George Bredenkamp, has however confirmed that the GIS derived, coarse scale CBA map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. But from the results of his study it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened and should not be applied to the western parts from Rustenburg to Zeerust.

## **2.8 NATIONAL HERITAGE RESOURCES ACT**

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). South African National Heritage Resources Agency (SAHRA) is the enforcing authority in the Northern Cape, and is registered as a Stakeholder for this environmental process.

In terms of Section 38 of the National Heritage Resources Act, SAHRA will comment on the detailed Heritage Impact Assessment (HIA) where certain categories of development are proposed. Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activities are relevant:

- *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- *any development or other activity which will change the character of a site exceeding 5 000 m<sup>2</sup> in extent;*
- *the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent.*

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the responsible resources authority.

Nor may anyone destroy, damage, alter, exhume or remove from its original position, or otherwise disturb, any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority, without a permit issued by the SAHRA, or a provincial heritage authority, in terms of Section 36 (3).

In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the responsible resources authority.

Considering the above requirements, Mr Anton has undertaken a Heritage Impact Assessment of the proposed development, which is attached in Appendix D3

## **2.9 NATIONAL WATER ACT, NO 36 OF 1998**

Section 21c & i of the National Water Act (NWA) requires the Applicant to apply for authorisation from the Department of Water and Sanitation for an activity in, or in proximity to any watercourse. Such an application would be required for any access road or PV infrastructure that crosses any watercourse. The proposed RE Capital 2 expansion has been developed in such a way that all PV infrastructure falls outside of the 1:100 year

floodline. Only a single access road will cross this drainage line. The applicant will submit an application in terms of the NWA for this.

A Freshwater ecologist, Dr Brian Colloty has been appointed to determine the impact of the proposed facility on the watercourse. A copy of this assessment is attached in Appendix D2.

The Department of Water and Sanitation have been registered as a key stakeholder in this environmental process and have been requested to provide comment.

## **2.10 ASTRONOMY GEOGRAPHIC ADVANTAGE ACT, 2007 (ACT NO 21 OF 2007)**

The purpose of the Act is to preserve the geographic advantage areas that attract investment in astronomy. The entire Northern Cape Province, excluding the Tsantsabane Municipality, has been declared an astronomy advantage area and as such, the proposed RE Capital 2 Expansion falls outside of the designated Geographic Advantage Area..

Notwithstanding the above, **The South African Square Kilometre Array (SKA)** Project Office have been registered as a key stakeholder on this environmental process and have been requested to provide comment on the proposed expansion.

## **2.11 ENVIRONMENTAL IMPACT ASSESSMENT GUIDELINE FOR RENEWABLE ENERGY PROJECTS**

The Minister of Environmental Affairs published the Environmental Impact Assessment Guideline for Renewable Energy in terms of section 24J of the National Environmental Management Act, 1998 (Act No. 107 of 1998) on 16 October 2016.

In pursuit of promoting the country's Renewable Energy development imperatives, the Government has been actively encouraging the role of Independent Power Producers (IPPs) to feed into the national grid. Through its Renewable Energy IPPs Procurement Programme, the DoE has been engaging with the sector in order to strengthen the role of IPPs in renewable energy development. Launched during 2011, the IPPs Procurement Programme is designed so as to contribute towards a target of 3 725MW, and towards socio-economic and environmentally sustainable development, as well as to further stimulate the renewable industry in South Africa.

In order to facilitate the development of first phase IPPs procurement programme in South Africa, these guidelines have been written to assist project planning, financing, permitting, and implementation for both developers and regulators. The guideline is principally intended for use by the following stakeholder groups:

- Public Sector Authorities (as regulator and/or competent authority);
- Joint public sector authorities and project funders, e.g., Eskom, IDC, etc.
- Private Sector Entities (as project funder/developer/consultant);

- Other interested and affected parties (as determined by the project location and/or scope).

This guideline aims to ensure that all potential environmental issues pertaining to renewable energy projects are adequately and timeously assessed and addressed as necessary so as to ensure sustainable roll-out of these technologies by creating a better understanding of the environmental approval process for renewable energy projects.

The guidelines list the following possible environmental impacts associated with the development of solar energy facilities.

**Table 3:** Potential environmental impacts of solar energy projects (Adapted from DEA, 2015)

| Impact Description  | Relevant Legislation     |
|---|--------------------------|
| Visual Impact – Done, see Appendix D1   | NEMA                     |
| Noise Impact (CSP) – Not Applicable   | NEMA                     |
| Land Use Transformation (fuel growth and production) – Assessed to be of a low significance. The business zoning of the entire property supports this notion.                           | NEMA, NEMPAA, NHRA       |
| Impacts on Cultural Heritage – Done, see Appendix D3  | NEMA, NHRA               |
| Impacts on Biodiversity – Done, see appendix D2, as well as detailed Fauna, Flora and Avifaunal impact assessments that were undertaken as part of the previous environmental process.  | NEMA, NEMBA, NEMPAA, NFA |
| Impacts on Water Resources – Done, See appendix D2  | NEMA, NEMICMA, NWA, WSA  |
| Hazardous Waste Generation (CSP and PV) – The facility will not generate hazardous waste, defunct or damaged PV panels will be returned to the supplier for recovery and recycling.     | NEMA, NEMWA, HAS         |
| Electromagnetic Interference – SKA are registered as a stakeholder to provide comment in this regard.   | NEMA                     |
| Aircraft Interference – CAA are registered as a key stakeholder in this regard.   | NEMA, MSA                |
| Loss of Agricultural Land – An agricultural Impact Assessment was undertaken for the property, and this formed part of the EIA for the main facility (is summarised for this expansion) | SALA                     |



| Impact Description   | Relevant Legislation |
|--|----------------------|
| Sterilisation of mineral resources – <b>The DMR are registered as a key stakeholder to provide comment in this regard.</b> | MPRDA                |

Assuming an IPP project triggers the need for Basic Assessment (BA) or scoping environmental Impact Assessment (S&EIA) under the EIA regulations, included in the assessment process is the preparation of an environmental management programme (EMPr). Project-specific measures designed to mitigate negative impacts and enhance positive impacts should be informed by good industry practice and are to be included in the EMP. Potential mitigation measures for solar energy projects include but are not limited to:

- Conduct pre-disturbance surveys as appropriate to assess the presence of sensitive areas, fauna, flora and sensitive habitats;
- Plan visual impact reduction measures such as natural (vegetation and topography) and engineered (berms, fences, and shades, etc.) screens and buffers;
- Utilise existing roads and servitudes as much as possible to minimise project footprint;
- Site projects to avoid construction too near pristine natural areas and communities;
- Locate developments away from important habitat for faunal species, particularly species which are threatened or have restricted ranges, and are collision-prone or vulnerable to disturbance, displacement and/or habitat loss;
- Fence sites as appropriate to ensure safe restricted access;
- Ensure dust abatement measures are in place during and post construction;
- Develop and implement a storm water management plan;
- Develop and implement waste management plan; and
- Re-vegetation with appropriate indigenous species to prevent dust and erosion, as well as establishment of alien species.

The recommendations of these guidelines have been used to draft this Basic Assessment Report and the Environmental Management Programme.

## **2.12 SUSTAINABILITY IMPERATIVE**

Sustainable energy can be defined as energy which provides affordable, accessible and reliable energy services that meet economic, social and environmental needs within the overall developmental context of society, while recognising equitable distribution in meeting those needs. Sustainable energy is an element of sustainable development which is defined as development that meets the present needs and goals of the population without compromising the ability of future generations to meet theirs. On the overall sustainable

development is underpinned by economic development (growth efficiency), social development (culture, heritage, poverty, and empowerment) and environmental development (pollution and natural resources).

The government of South Africa considers the use of renewable energy as a contribution to sustainable development. Most renewable energy sources are indigenous and naturally available, and the use of renewables therefore strengthens energy security because it is not subject to disruption by international crisis. Fuel wood, charcoal, coal and kerosene (paraffin) in the rural and peri-urban South Africa is the primary source of energy for cooking and heating. Sustainable development implies replacing firewood and charcoal with more modern energy sources, while at the same time introducing technological innovations to improve the efficiency and environmental problems associated with coal and kerosene. Sustainable development also implies the provision of electricity and other modern fuels to the commercial and industrial sectors to promote their economic competitiveness and future prosperity.

The norm implicit to our environmental law is the notion of sustainable development (“SD”). SD and sustainable use and exploitation of natural resources are at the core of the protection of the environment. SD is generally accepted to mean development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. The evolving elements of the concept of SD *inter alia* include the right to develop; the pursuit of equity in the use and allocation of natural resources (the principle of intra-generational equity) and the need to preserve natural resources for the benefit of present and future generations. Economic development, social development and the protection of the environment are considered the pillars of SD (the triple bottom line).

*“Man-land relationships require a holistic perspective, an ability to appreciate the many aspects that make up the real problems. Sustainable planning has to confront the physical, social, environmental and economic challenges and conflicting aspirations of local communities. The imperative of sustainable planning translates into notions of striking a balance between the many competing interests in the ecological, economic and social fields in a planned manner. The ‘triple bottom line’ objectives of sustainable planning and development should be understood in terms of economic efficiency (employment and economic growth), social equity (human needs) and ecological integrity (ecological capital).”*

As was pointed out by the Constitutional Court, SD does not require the cessation of socio-economic development but seeks to regulate the manner in which it takes place. The idea that developmental and environmental protection must be reconciled is central to the concept of SD - it implies the accommodation, reconciliation and (in some instances) integration

between economic development, social development and environmental protection. It is regarded as providing a “conceptual bridge” between the right to social and economic development, and the need to protect the environment.

Our Constitutional Court has pointed out that the requirement that environmental authorities must place people and their needs at the forefront of their concern so that environmental management can serve their developmental, cultural and social interests, can be achieved if a development is sustainable. *“The very idea of sustainability implies continuity. It reflects the concern for social and developmental equity between generations, a concern that must logically be extended to equity within each generation. This concern is reflected in the principles of inter-generational and intra-generational equity which are embodied in both section 24 of the Constitution and the principles of environmental management contained in NEMA.”* [Emphasis added.]

In terms of NEMA sustainable development requires the integration of the relevant factors, the purpose of which is *to ensure that development serves present and future generations.*<sup>5</sup>

It is believed that the proposed RE Capital 2 solar development, including this proposed expansion supports the notion of sustainable development by presenting a reasonable and feasible alternative to the existing vacant land use type, which has limited agricultural potential due the lack of water and infrastructure.

Furthermore the proposed alternative energy project (reliant on a natural renewable resource – solar energy) is in line with the national and global goal of reducing reliance on fossil fuels, thereby providing long-term benefits to future generations in a sustainable manner.

### **3 DESCRIPTION OF ACTIVITY AND NEED FOR EXPANSION**

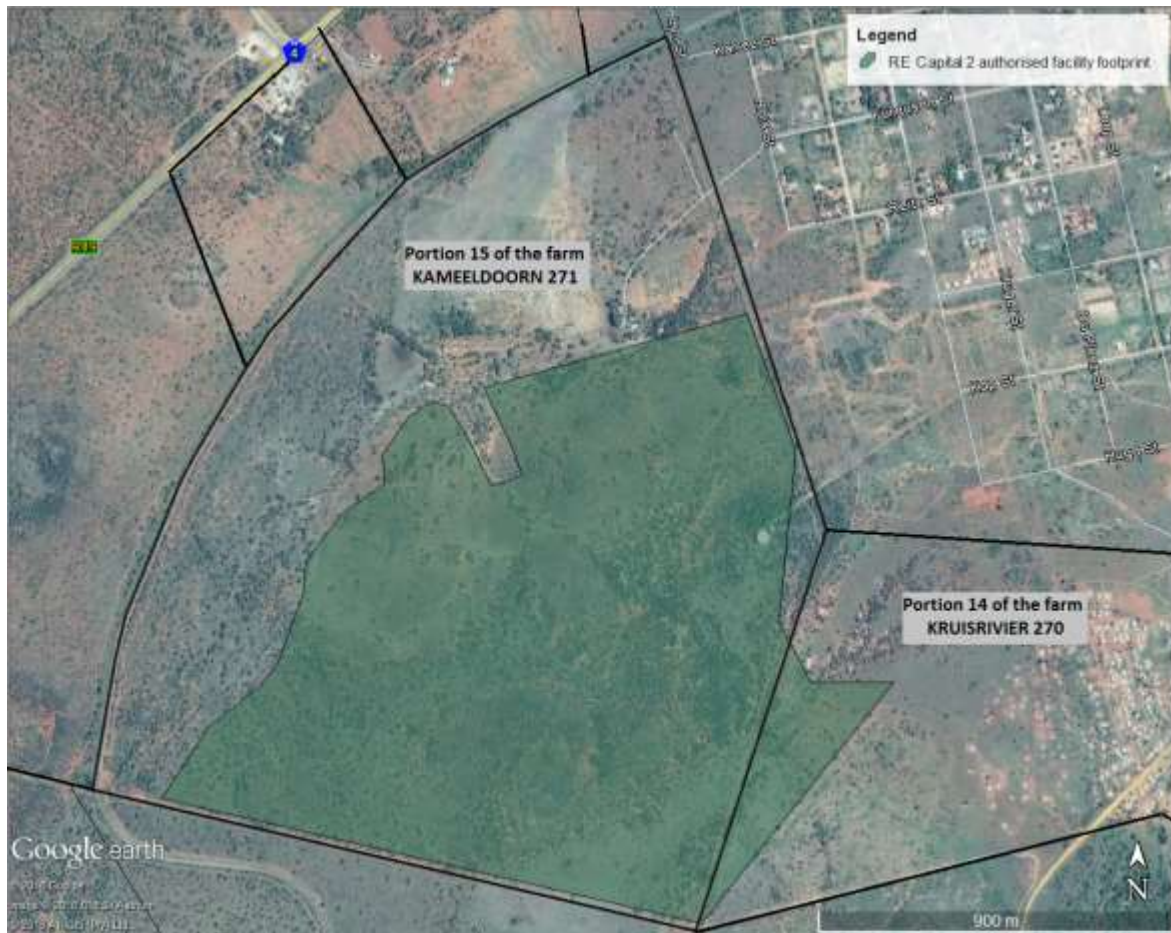
RE Capital 2 (Pty) Ltd was selected as a preferred bidder in Round 4 of the Department of Energy’s Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) to build, own, and operate a 75 MW AC photovoltaic solar energy facility near Zeerust in the North West Province. RE Capital 2 (Pty) Ltd is proposing the establishment of a commercial solar photovoltaic energy facility (SEF) on the farms Portion 15 of the Farm KRUISRIVIER 270, Ramotshere Moiloa Local Municipality, JP Registration Division, North West Province, and Portion 15 of the farm KAMEELDOORN 271, Zeerust Municipality, JP Registration Division, North West Province.

The proposed photovoltaic (PV) SEF will have a net generating capacity of 75 MWAC with an estimated maximum footprint of ± 220 ha. The PV panels will be Single-Axis Tracking PV with an approximate maximum height of 6m.

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<sup>5</sup> See definition of “sustainable development” in section 1 of NEMA.

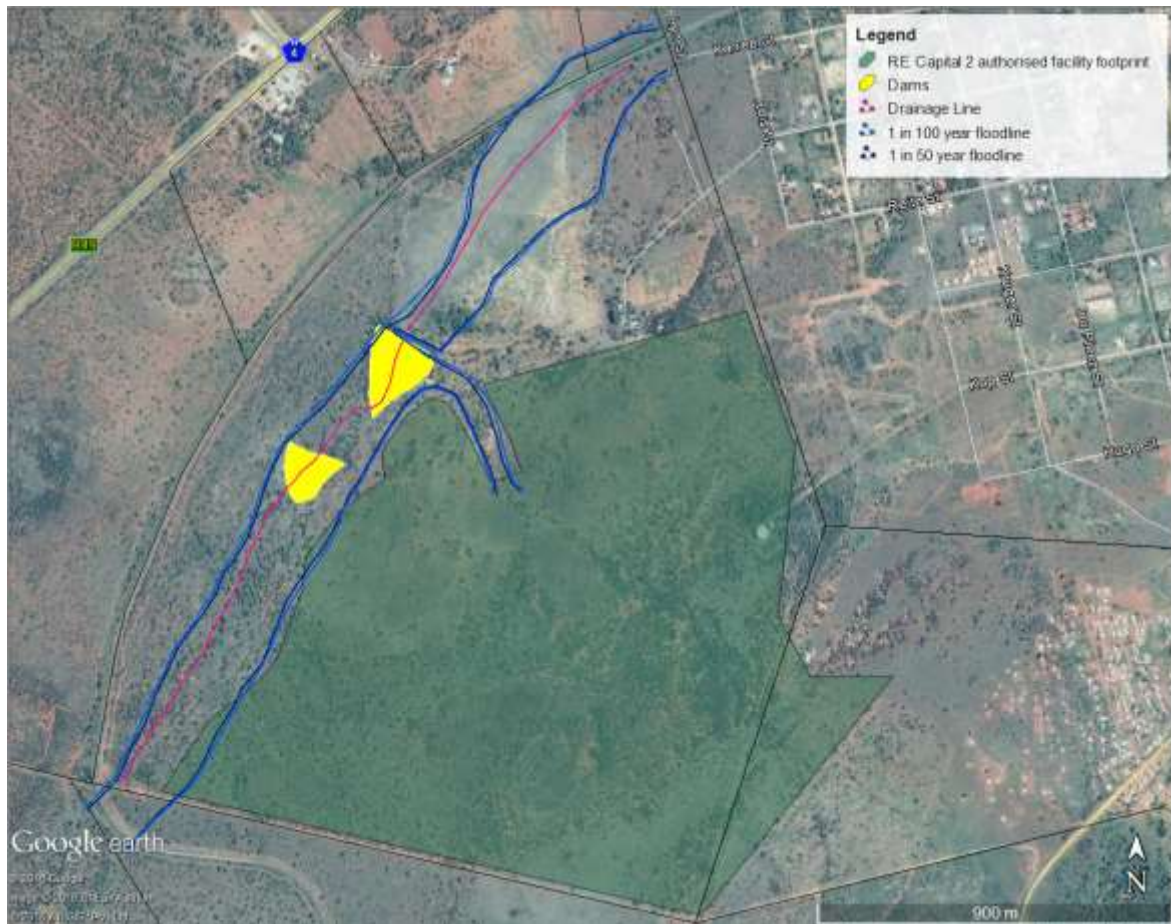
The project received environmental authorisation (DEA ref 14/12/16/3/3/2/586) for the facility footprint shown in green in the figure below.



**Figure 2:** Google Earth view of the farm portions and authorised facility footprint of the RE Capital 2 proposed development.

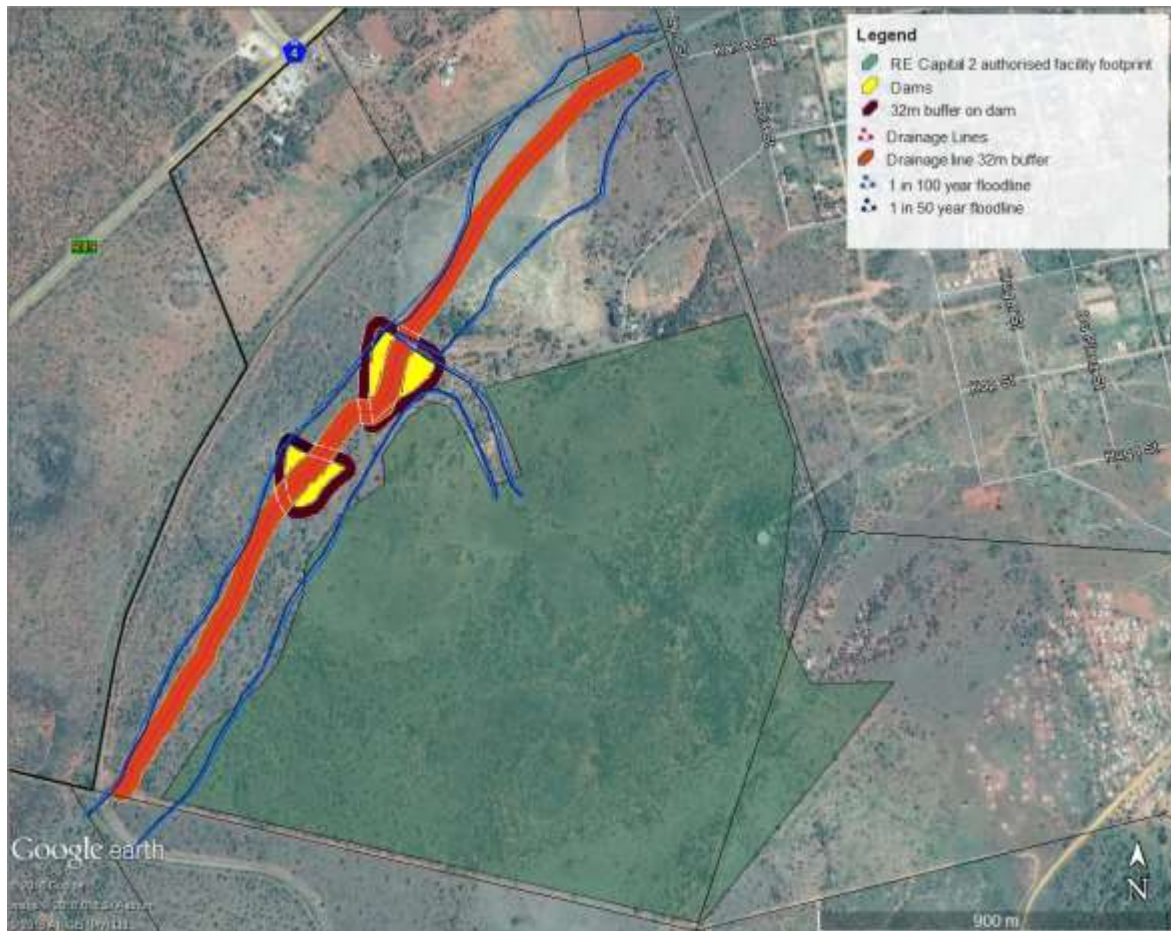
Preliminary engineering is underway and the project developers have concluded that a portion of the authorised footprint has unsuitable topography/slope for some of the PV panels and thus are proposing an expansion area to the west of the existing footprint within the same property, Portion 15 of the farm KAMEELDOORN 271, in order to accommodate the panels that will not be able to fit in the existing authorised footprint. The expansion area will only be used for panels and the corresponding infrastructure such as inverter stations, cabling, and minor roads. There will not be any laydown areas or a substation as these will be within the main facility footprint.

A floodline determination has been done and the proposed expansion areas for consideration have been determined taking into consideration the existing dams on site, the drainage line, and the 1 in 50 and 1 in 100 year floodlines, shown in the figure below.



**Figure 3:** Google Earth view of the farm portions and authorised facility footprint of the RE Capital 2 proposed development, showing the floodlines, the drainage line to the west of the site and the two dams

Furthermore, as a precautionary measure a 32m buffer is provided around the dams and over the drainage line, as shown the figure below. It can be seen in this figure that the 1:100 year floodline generally also encompasses the 32m buffer from the watercourse.



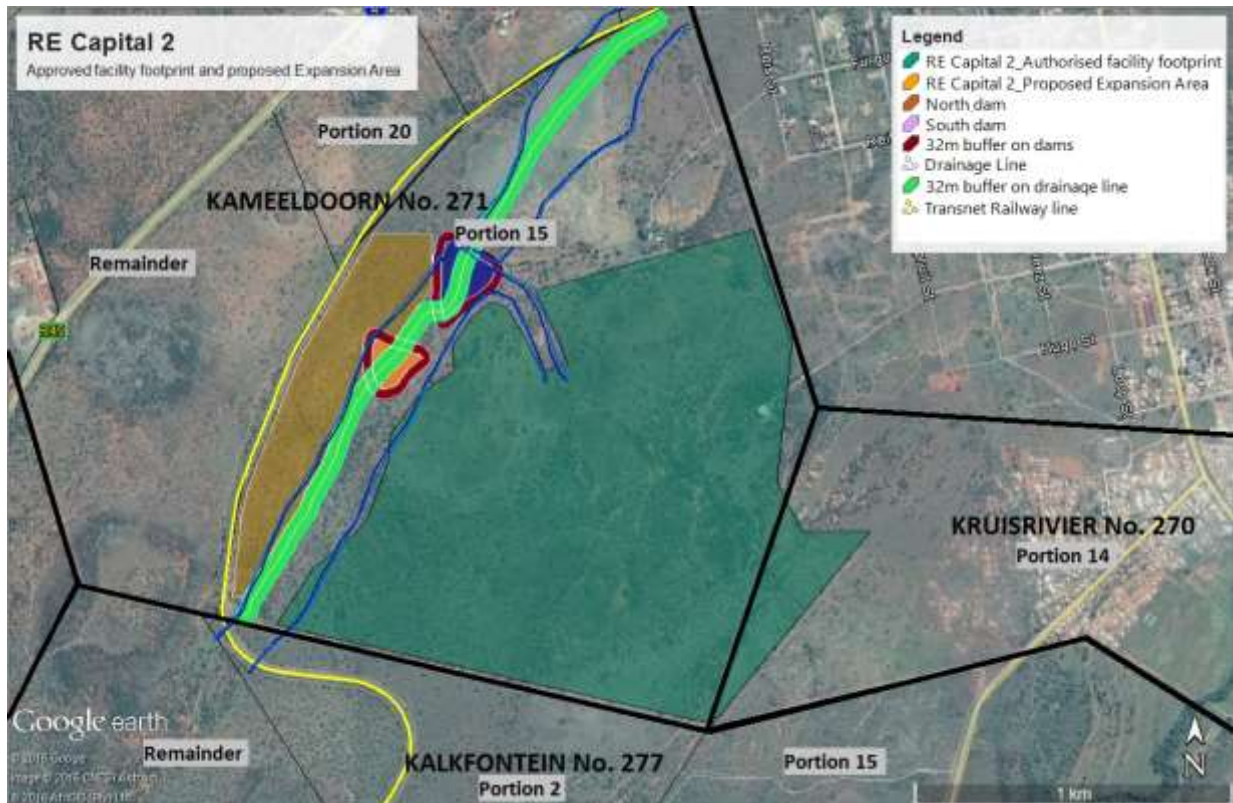
**Figure 4:** Google Earth view of the farm portions and authorised facility footprint of the RE Capital 2 proposed development, showing the floodlines, the drainage line to the west of the site and the two dams with their respective buffers.

### 3.1 SITE SELECTION

Please refer to the site selection motivation in Appendix J1 from which the following was drawn.

As mentioned above, the existing footprint of the Project received an environmental authorisation from the Department of Environmental Affairs on 11 August 2014. Detailed engineering is underway and the project developers have concluded that a portion of the authorised footprint has unsuitable topography/slope for some of the PV panels and thus are proposing an expansion area to the west of the existing footprint within the Kameeldoorn Property in order to accommodate the panels that will not be able to fit in the existing authorised footprint. The Project Company wishes to expand the authorised footprint of the Project by approximately 19 hectares (the “**RE Capital 2 Expansion Area**”).

The proposed site for the expansion was identified to the west of the existing footprint within the Kameeldoorn Property as shown in the Figure below.



**Figure 5:** Selected area for the proposed expansion

This site was selected for the proposed Expansion Area based on the developers extensive investigation of prospective areas adjacent to the authorised footprint, backed by the following findings:

### 1. Same landowner

Over ninety percent of the authorised footprint is on the Kameeldoorn Property. The Project Company has an existing relationship and lease agreement in place with this landowner and thus negotiating to expand the development on this land is easier than trying to negotiate an agreement with a new landowner.

### 2. Permits in place

The entire Kameeldoorn Property has already been entirely rezoned for business use, in order to allow for the PV facility. Thus selecting an Expansion Area on this property prevents the issue of having to rezone another piece of land. Other permits and approvals have also already been obtained for the entire Kameeldoorn Property, including but not limited to:

- Section 53 Approval from the Department of Mineral Resources,
- Approval from the Civil Aviation Authority,
- Confirmation of no land claims from the Regional Land Claims Commission

### 3. Topography

The topography to the west of the authorised facility footprint is flat and most suitable for the placement of PV panels in a North-South orientation (tracking East-West). There are also no drainage lines on the expansion area. Access to the expansion area will be gained via a single 4.5m road over the drainage line.

#### **4. Community land is inhabited/ occupied**

The land to the east, where approximately 9 hectares of the facility is located, is community land owned by a trust. The footprint cannot be expanded on this land as the community has expanded and inhabited/occupied the area surrounding the approved footprint. A significant number of homesteads would consequently need to be relocated should this area be utilised.

#### **5. Proximity to current footprint**

The most suitable location for the RE Capital 2 Expansion Area will be in close proximity to the already authorised footprint. This minimises the need for long cable runs and additional infrastructure. North of the existing authorised footprint is the landowner's residence and wetlands and thus the facility cannot be expanded to the north.

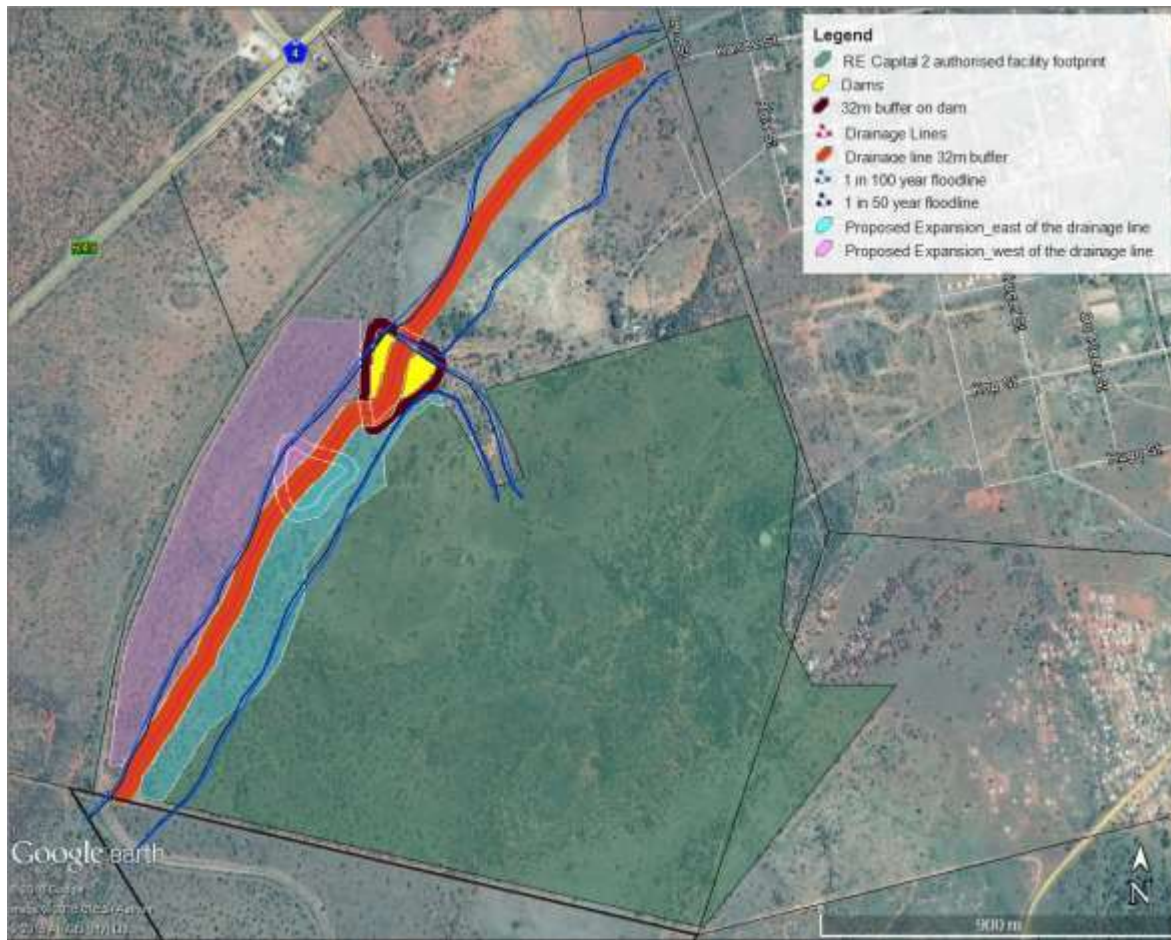
#### **6. Drainage lines**

The drainage line that runs up the site to the west of the authorised footprint splits the available area to the west of the site into two pieces. Instead of trying to fit part of the 19 hectares between the existing footprint and the drainage line, and then the remaining hectares between the drainage line and the property boundary/railway line, it was decided to have the entire Expansion Area on the west of the drainage line. This proposal also upholds the buffer imposed to the east of the drainage line, as prescribed under the EA.

## **4 CONSIDERATION OF ALTERNATIVES**

Two alternative expansion areas have been considered and assessed as part of this environmental process. The figure below shows the proposed expansion area alternatives that were considered.





**Figure 6:** Google Earth view of the proposed expansion area options

As can be seen in the image above, both alternatives extend over the lower dam. This dam is no longer operational (dam wall broken) and the freshwater ecologist has suggested that this area can be considered for development as it has little to no ecological value. In certain places the proposed area extend slightly into the 1 in 50 and 1 in 100 year floodline but has completely avoids the 32m buffer from the watercourse. The Department of Water and Sanitation (DWS) will be given an opportunity to comment on this as part of both the Environmental Process as well as the Water Use Licence (WUL) Process. Preliminary consultation with both DWS and the WUL specialist have raised very little concern with the proposed encroachment into the 1:100 year floodline.

Alternative 1 and Alternative 2 in the figure below, show the two different expansion options and how they would be used to integrate the area with the main facility. Alternative 1 utilises both the expansion East of the drainage line and West of the drainage line while Alternative 2 utilises the area west of the drainage line only.



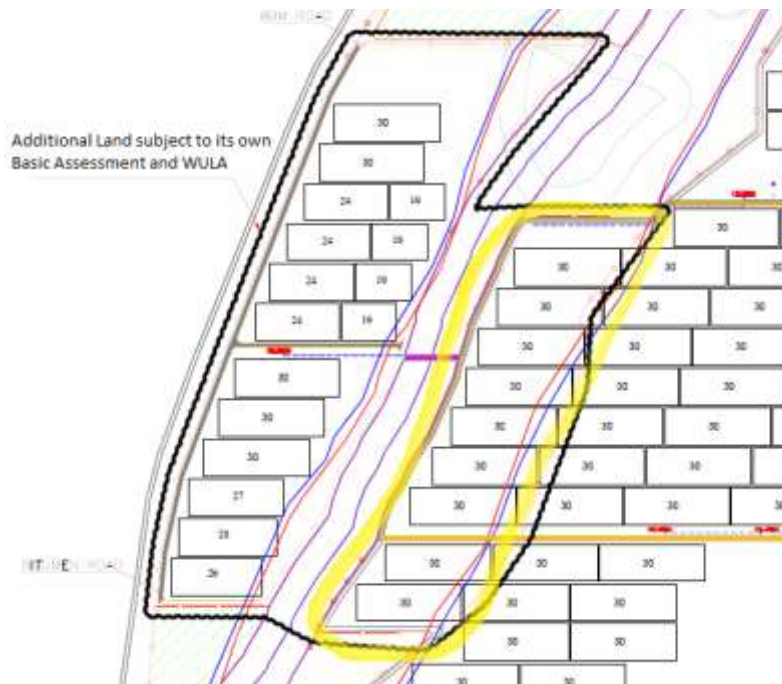
**Figure 7:** General Site Plan utilising both sides of the drainage line (Alternative 1)



**Figure 8:** General Site Plan utilising only the area west of the drainage and line (Alternative 2)

The preferred layout is Alternative 2, for the following reasons:

- Preliminary consultation with DWS has indicated little objection to the development within the floodline area. In order to reduce risk and eliminate the requirement for significant mitigation, it is better to avoid the floodlines as far as possible.
- A condition in the main facilities EA requires there to be a 40m buffer between the approved site's western boundary and the drainage line. This impacts the area encircled in yellow below and as such, the development of alternative one would be in contradiction of a condition of the main facilities EA.



**Figure 9:** Portion of Alternative 2 that will extend in to the 40m buffer of the Watercourse as defined in the parent facilities EA.

- The floodline is significantly wider on the Eastern side of the watercourse than it is on the Western Side; and
- Participating Specialists have also confirmed a preference to alternative 2.

Considering the above, this Basic Assessment Process concludes that **Alternative 2** is preferred from an environmental point of view and should be considered for authorisation.

## 5 SITE DESCRIPTION AND ATTRIBUTES

The proposed expansion area is situated outside of Zeerust, a town situated in Ngaka Modiri Molema district in the North West Province, South Africa. It lies in the Marico valley, approximately 240 kilometres northwest of Johannesburg along the main road link between South Africa and Botswana. The site is located in the Ngaka Modiri Molema District Municipality and in the Ramotshere Moiloa Local Municipality.

Please refer to the location plan in Appendix A, showing the proposed expansion area in relation to the town of Zeerust.

## **5.1 REGIONAL SETTING**

The approved solar site is located adjacent to the southern edge of the town of Zeerust in North West Province. It is also south and east of the N4 Pretoria-Skilpadshek motorway and the Pretoria-Mahikeng railway line. The particular study site addressed in this report is however relatively small, comprising of three alternative small sites on the eastern boundary of the solar site, for the construction of a substation, and the associated power line from the nearest reserves to the site of avifaunal importance are the internationally-recognised Important Bird Areas (IBAs) of Pilansberg Game Reserve (SA023) to the east, Botsalano Nature Reserve (S024) to the west and Barbers- and Leeupans (SA026) to the south. Topologically, the Dwarsberg-Swartruggens ranges north of Zeerust, and their foothills where the site resides, are also linked to the Magalies- and Witwatersberg IBA (SA025) to the east. Closer by to the east is the Marico Nature Reserve near Groot Marico, and further north the Madikwe Game Reserve near Dwaalboom (Barnes 1998).

## **5.2 REGIONAL CLIMATE**

Summer rainfall has a mean annual precipitation of about 550 mm and very dry winters with fairly frequent frost. For the last 2-3 years the annual rainfall around the site has been <400 mm. Mean monthly temperatures range from -0.4°C in June to 36.7°C in January.

## **5.3 GEOLOGY AND SOILS**

Mainly shale and sediments on the site, presumably of the Pretoria Group within the Transvaal Supergroup, but with some dolerite boulders indicative of intrusive rocks from the Rustenburg Layered Suite of the Bushveld Igneous Complex in the northeast. The soils are mostly deep sandy loam, but shallow rocky soils also occur on the site.

## **5.4 TOPOGRAPHY AND DRAINAGE**

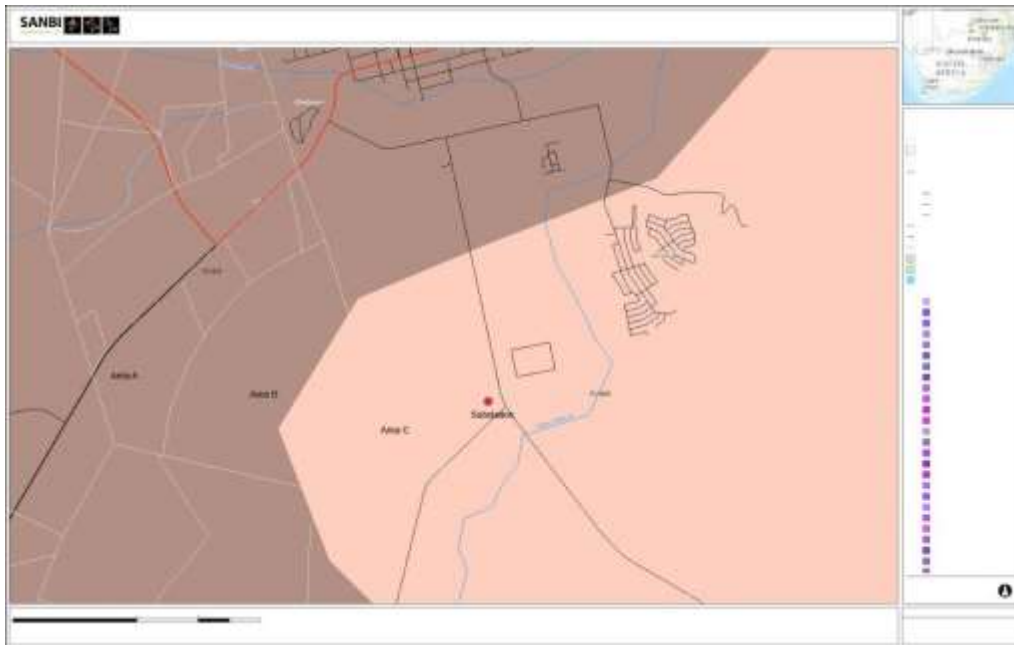
The site is on undulating plains, at an altitude of 1200-1250 m a.s.l. The highest point close to the site is marked by a large concrete water reservoir and cell phone tower on the peak, but the majority of the site has gentle slopes.

## **5.5 LAND USE**

The area was evidently been used historically for farming, mainly as grazing of livestock, especially cattle. Developments from the town now extend to the northern edge of the site, such as recently laid water, drainage, sewage and power lines, and informal settlements extend onto the approved solar site around the northeast corner.

## **5.6 VEGETATION TYPES**

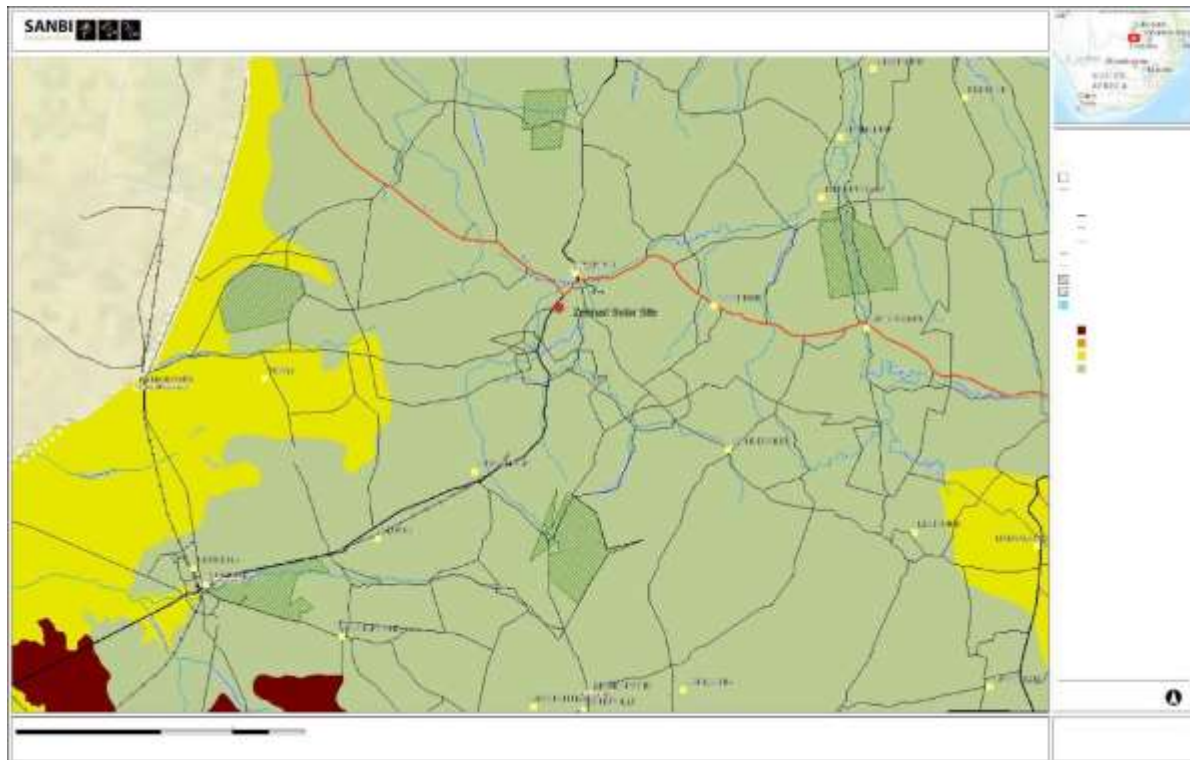
The site is in the Sourish Mixed Bushveld veld type, as described by Acocks (1988). According to Low & Rebelo (1996) the site is within Mixed Bushveld. According to the vegetation map and descriptions of Mucina and Rutherford (2006) the site is located in the Moot Plains Bushveld (SVcb8). The woody plant composition of the site is typical Moot Plains Bushveld (SVcb8).



**Figure 10:** According to the vegetation map and descriptions of Mucina and Rutherford (2006) the site is located in the Moot Plains Bushveld (SVcb8).

## 5.7 CONSERVATION STATUS

Moot Plains Bushveld is classified as a Vulnerable vegetation unit, best preserved within the Magalies/Witwatersberg Nature Reserves (Mucina & Rutherford 2006) though the Ecosystem status is Least Concern (SANBI & DEAT 2009). The vegetation is often largely transformed from Pretoria to the Hartebeespoort Dam-Rustenburg area, though is largely primary bushveld towards the west. The primary land use on the site was livestock grazing, which means that the veld and the surrounding areas still support extensive tracts of bushveld. Extensive power lines already occur on the site, and most of the site is quite disturbed. Some of the habitats on site show evidence of overgrazing and neglect, exacerbated by the pressures of wood collection, burning, grazing and use from the adjacent settlements.



**Figure 11:** The ecosystem status is least concern (light green) (The yellow areas is vulnerable)

## 6 ASSESSMENT OF ECOLOGICAL IMPACTS

Professor George Bredenkamp of ECO agent CC undertook an ecological assessment of the entire portion 15 of Kameeldoorn 271 as well as an additional study associated with the Powerline for the RE Capital 2 development. The following are the key findings of this study.

The vegetation and flora study of the site revealed the presence of seven plant communities as representative ecosystems. The study showed that almost the entire site should be classified under the **Moot Plains Bushveld (Mucina & Rutherford 2006)**, while the Zeerust Thornveld is limited to a single, very small area on the site (This area will not be affected by the main facility, nor this proposed expansion area). Due to the presence of *Acacia erioloba* (Camel Thorn), a nationally protected tree (The National Forest Act of 1998 (Act 84 Of 1998, amended in 2006), this small Plant Community 6 is considered to have a high sensitivity, and this small area should be excluded from development. It is confirmed that the proposed Zeerust Expansion area completely avoids plant community 6.

According to Mucina & Rutherford (2006) the conservation status of Zeerust Thornveld is **Least Threatened**. This is because although only about 4% is statutorily conserved, much of the area is natural vegetation. This is in contrast with the Moot Plains Bushveld with a conservation status of **Vulnerable**, although about 13% is statutorily protected. The reason for this conservation status is that almost 30% of Moot Plains Bushveld has been transformed, but this is mainly in the Pretoria-Hartebeespoort Dam-Rustenburg area, with

considerable pressure for more development. **The western part of Moot Plains Bushveld is, in contrast, quite natural, with very little transformed by development, and here it could be regarded as Least Threatened.**

It seems that the GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust.

According to the SANBI Plants of South Africa database only a single red data plant species, *Cineraria alchemilloides* DC. subsp. *Alchemilloides*, was ever collected within the 2526CA grid. The current survey did not confirm the presence of this species on the site.

**There are no TOPS plant species present on the site.**

From the results of this study it can be concluded that sensitive ecosystems that should be excluded from the development include Plant Community 6 (Sandy Bushveld with *Acacia erioloba*, Plant Community 3 (Dense Bushveld on reservoir hill) and Plant Community 7 (Water Course). Plant Communities 3 and 6 occupy very limited area. The buffer zone between the outer edge of the Water Course and the development should be 32 m.

**It is confirmed that the proposed RE Capital 2 Expansion area falls outside of all these sensitive ecosystems as identified by the Ecologist and that it is also situated further than 32m from the edge of the watercourse as delineated by the freshwater specialist.**

Although the general vegetation of the area will be destroyed, the impact on the regional vegetation, on threatened or rare plant species or on protected plant species should be minimal.

It is therefore suggested that, from a vegetation and flora point of view, the proposed development of a photovoltaic (PV) solar farm, can be supported on the largest part of the proposed site.

## **7 ASSESSMENT OF VISUAL IMPACTS**

Mr Stephen Stead of VRMA undertook a level 3 Visual Impact Assessment (VIA) of the proposed RE Capital 2 Expansion area. A copy of the full VIA is attached in Appendix D1 and the key aspects and findings of this study are summarised below.

### **7.1 SCOPE OF STUDY**

The scope of the study is to cover the entire proposed project area, and the terms of reference for the study are as follows:

- Collate and analyse all available secondary data relevant to the affected proposed project area. This includes a site visit of the full site extent, as well as of areas where potential impacts may occur beyond the site boundaries.
- Consider all cumulative effects in all impact reports.
- Specific attention is to be given to the following:
  - Quantifying and assessing existing scenic resources/visual characteristics on, and around, the proposed site.
  - Evaluation and classification of the landscape in terms of sensitivity to a changing land use.
  - Determining viewsheds, view corridors and important viewpoints in order to assess the visual impacts of the proposed project.
  - Determining visual issues, including those identified in the public participation process.
  - Reviewing the legal framework that may have implications for visual/scenic resources.
  - Assessing the significance of potential visual impacts resulting from the proposed project for the construction, operation and decommissioning phases of the proposed project.
  - Assessing the potential cumulative impacts associated with the visual impact.
  - Identifying possible mitigation measures to reduce negative visual impacts for inclusion into the proposed project design, including input into the Environmental Management Plan (EMP).

## **7.2 LEGISLATIVE CONTEXT**

In order to comply with the Visual Resource Management requirements, it is necessary to clarify which planning policies govern the proposed property area to ensure that the scale, density and nature of activities or developments are harmonious and in keeping with the sense of place and character of the area. The proposed landscape modifications must be viewed in the context of the planning policies from the following organization guidelines:

### **7.2.1 The Draft Strategic Environmental Assessment Department of Environmental Affairs Guidelines for Solar and Wind Energy Negative Mapping Document**

According to the draft negative mapping undertaken for the Solar and Wind Energy SEA conducted by the CSIR for the Department of Environment Affairs, the following distance criteria were recommended as road buffers for proposed wind and solar projects. (Department of Environment Affairs, 2013).



**Roads**

| Attributes                                   | Wind Buffer | Solar Buffer |
|--|-------------|--------------|
| Major Roads<br>(national, arterial,<br>main) | 500m        | 500m         |
| Secondary Roads<br>(secondary)               | 500m        | 500m         |
| Tourist Routes<br>(WC)                       | 2km         | 2km          |

Source: DRDLR 50k Topo, 2006

**Figure 12:** Wind and solar buffer requirements on roads (DEA, 2013)

## 7.2.2 DEA&DP Guideline for involving Visual and Aesthetic Specialists in EIA Processes

As specific Visual Guidelines are not provided for the area we propose to refer to the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) Guideline for involving visual and aesthetic specialists in EIA processes. This states that the Best Practicable Environmental Option (BPEO) should address the following:

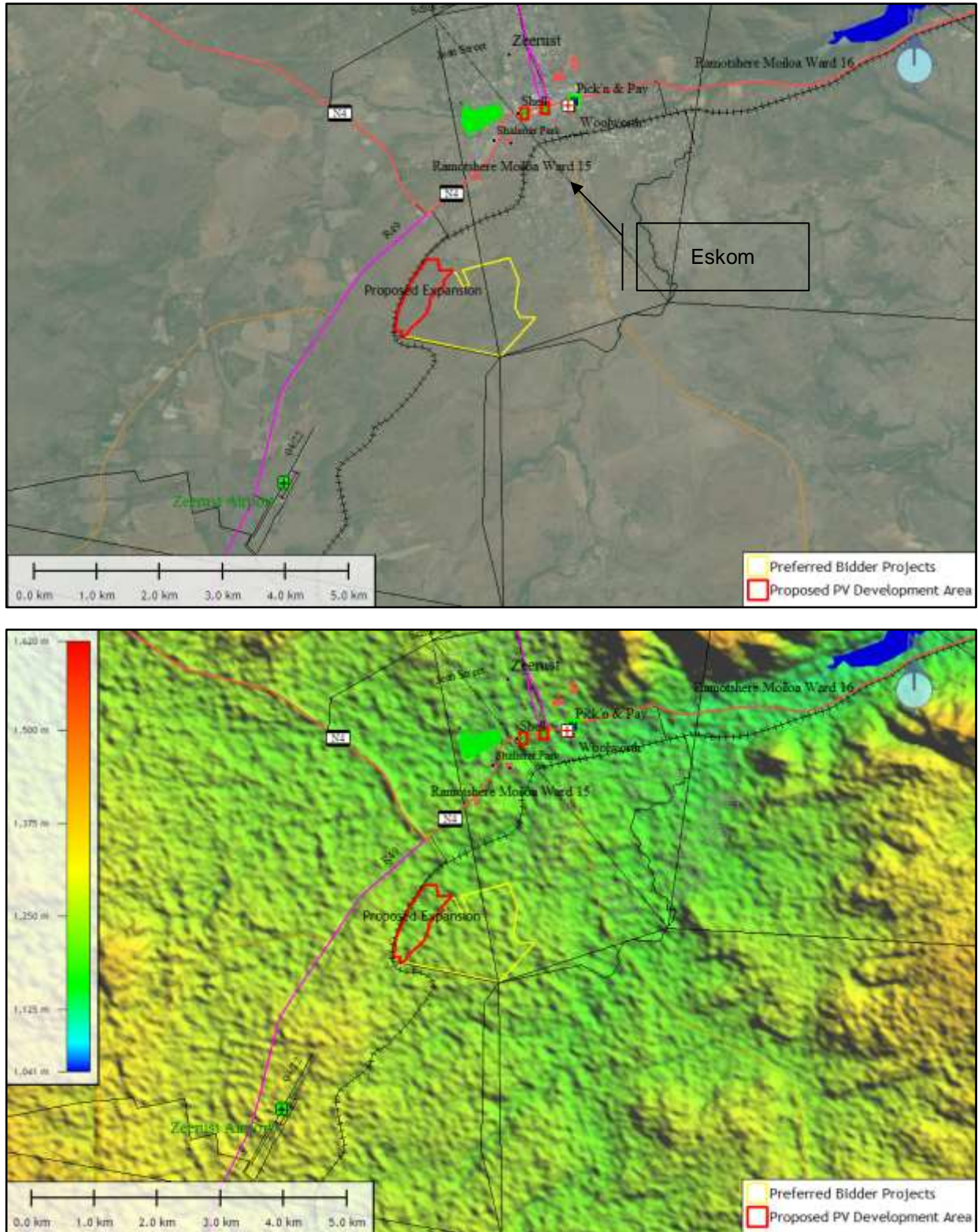
- Ensure that the scale, density and nature of activities or developments are harmonious and in keeping with the sense of place and character of the area. The BPEO must also ensure that development must be located to prevent structures from being a visual intrusion (i.e. to retain open views and vistas).
- “Long term protection of important scenic resources and heritage sites.
- Minimisation of visual intrusion in scenic areas.
- Retention of wilderness or special areas intact as far as possible.
- Responsiveness to the area's uniqueness, or sense of place.” (Oberholzer, 2005)

## 7.3 BASELINE ASSESSMENT

The baseline section serves to provide understanding to the extent of the influence of the proposed landscape change, the degree of the change that will take place to the landscape, and the expected intensity by which the proposed landscape change is likely to be experienced by people around the site making use of the common landscape.

The visible extent, or viewshed, is ‘the outer boundary defining a view catchment area, usually along crests and ridgelines’ (Oberholzer, 2005). In order to define the extent of the possible influence of the proposed project, a viewshed analysis is undertaken from the proposed sites at a specified height above ground level as indicated in the below table making use of open source NASA ASTER Digital Elevation Model data (NASA, 2009). The extent of the viewshed analysis was restricted to a defined distance that represents the approximate zone of visual influence (ZVI) of the proposed activities, which takes the scale, and size of the proposed projects into consideration in relation to the natural visual

absorption capacity of the receiving environment. The maps are informative only as visibility tends to diminish exponentially with distance, which is well recognised in visual analysis literature (Hull & Bishop, 1988).



**Figure 13:** Comparative mapping of regional Open Source topographic and terrain maps

### 7.3.1 Project Visibility and Exposure

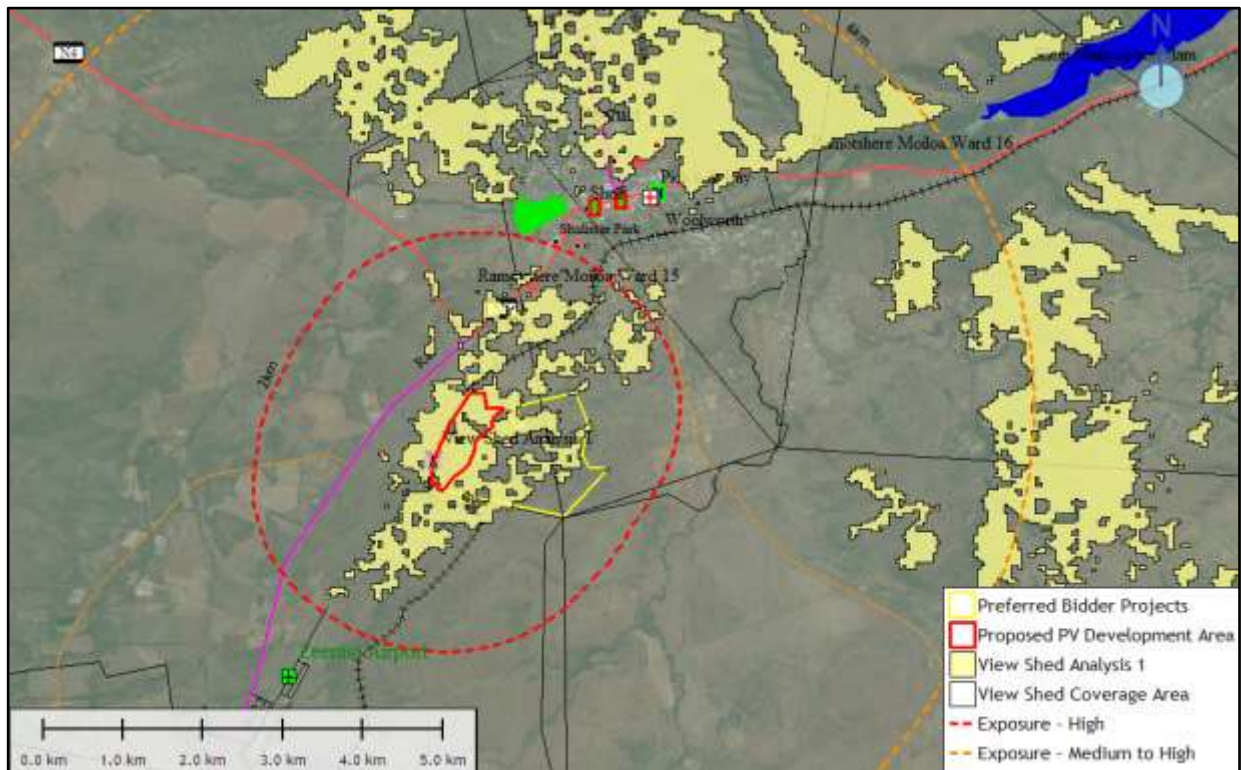
The ZVI for the proposed 4 to 6 metre height PV expansion is expected to extend into the foreground / middle ground areas. This is due to the larger massing effect of the black PV panels, which will be contained by the undulation of the terrain and the higher visual absorption capacity of the built environment of the town of Zeerust located to the north of the proposed site.

The ZVI for the proposed power line component of the PV expansion is expected to be approximately 2km, as the visual footprint of a monopole is small, and although relatively tall in relation to the surrounding landscape, effectively dissipates in visual intensity outside of the foreground distance areas.

**Table 4:** Proposed Project Heights and Viewshed Constraints Table

| Project Phase | Proposed Activity | Approx. Max. Height (m) | Approx. ZVI (km) |
|---------------|-------------------|-------------------------|------------------|
| Construction  | PV                | 6                       | 6                |
| Operation     | Monopoles         | 25 - 30                 | 2                |

As depicted in the figure below, the viewsheds generated from the highest point in the proposed project area (1258 mamsl) is defined as **local** in extent. The valley within which the proposed site is located limits the visibility of the PV expansion to within the immediate extents of the valley within the high exposure areas. The viewshed expands to the north in the direction that the valley opens outwards, and there is some partial visibility to the east on the high ground along the 6km distance buffer areas.



**Figure 14:** Viewshed for the PV structures at the high points generated from a 6m offset overlaid onto OS Satellite Image.

Receptors and key landmarks located within the viewshed include:

#### High Exposure

- R49 Regional Road southbound;
- Railway line.

#### Medium Exposure

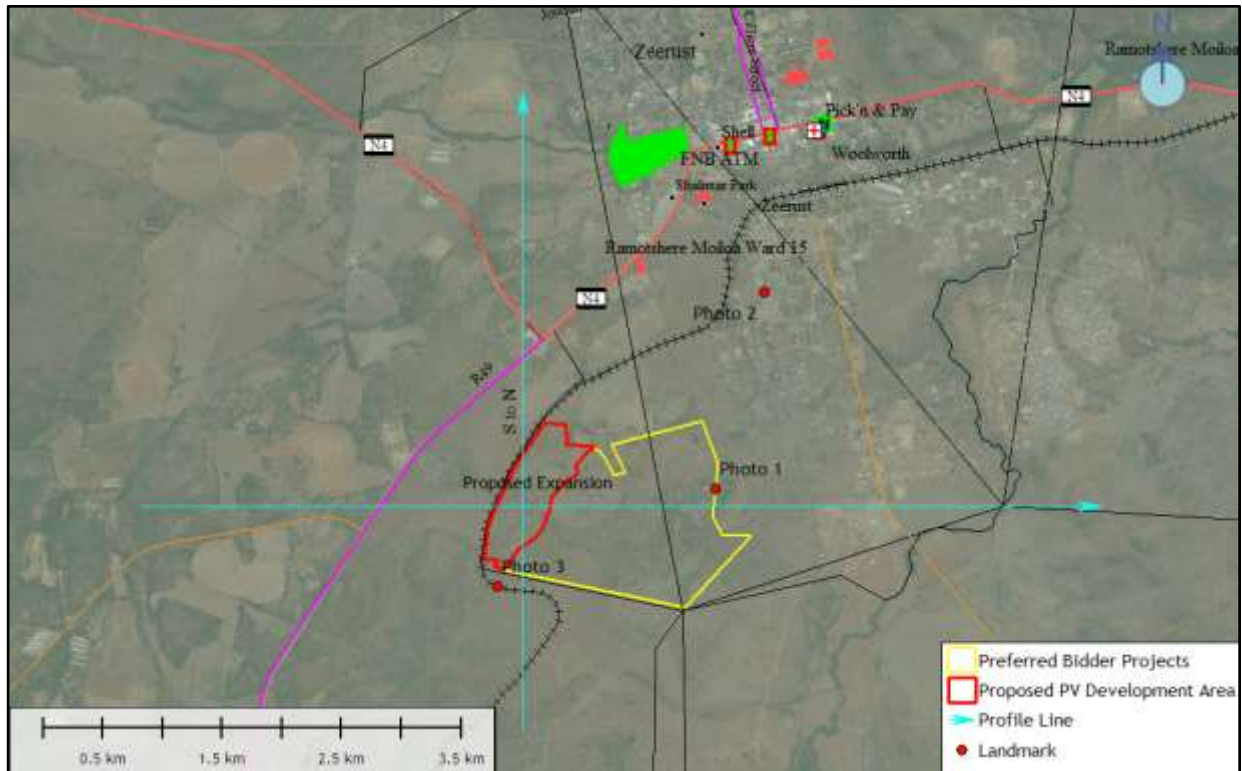
- Zeerust town centre;
- Zeerust north residential areas.

Due to the higher VAC levels of the town's built environment, and the northern residential treescapes, only the high exposure receptors will experience views of the proposed landscape modification. As the R49 is located in closer proximity to the proposed development site, the visual exposure to the proposed landscape modification is defined as **high**.

### **7.3.2 Regional Landscape Character**

Landscape character is defined by the U.K. Institute of Environmental Management and Assessment (IEMA) as the 'distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human

settlement’. It creates the specific sense of place or essential character and ‘spirit of the place’. (IEMA, 2002)



**Figure 15:** Surrounding landmark photograph location point and profile lines map.



**Figure 16:** Photograph 1 looking east towards the Zeerust Reservoir and cell phone tower on the low hill surrounded by bushveld vegetation.



**Figure 17:** Photograph 2 looking north of adjacent Zeerust south residential area as seen from the reservoir area.

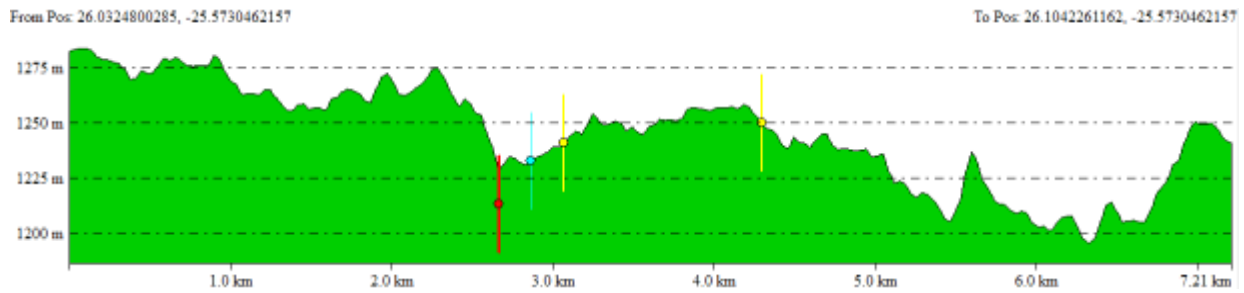


**Figure 18:** Photograph 3 of the railway line located on the southern (and western) border of the proposed site.

### - Topography

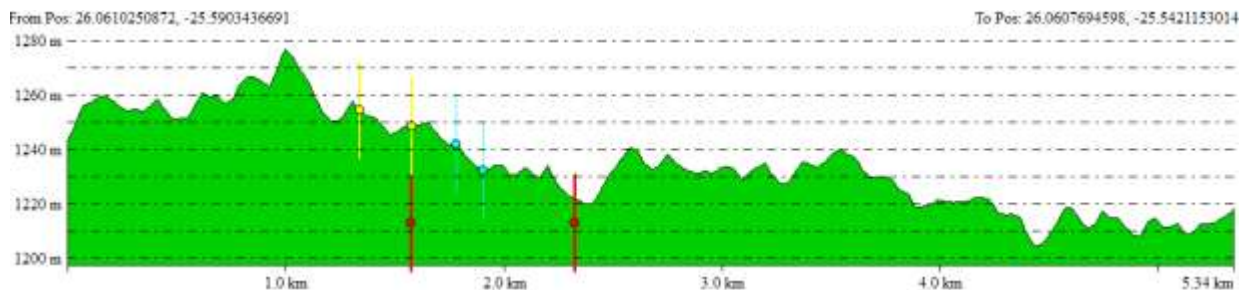
The greater region is drained to the north-east by the Klein Marico river which is located approx. 1km to the east of the proposed site, and its tributary, the Kareespruit River located 3 km to the north.

The west to east terrain profile depicts the proposed site located on a west-facing slope located within a narrow valley. High ground to the west and east would significantly contain the visual extent of a PV type landscape modification.



**Figure 19:** West to East regional terrain profile, (the proposed site lies between the red and yellow markers).

The south to north terrain profile below depicts the proposed site located on a gradual slope that drains to the north. High ground to the south topographically restricts any views from the south, with the effective zone of visual influence only expanding to the north down the valley.

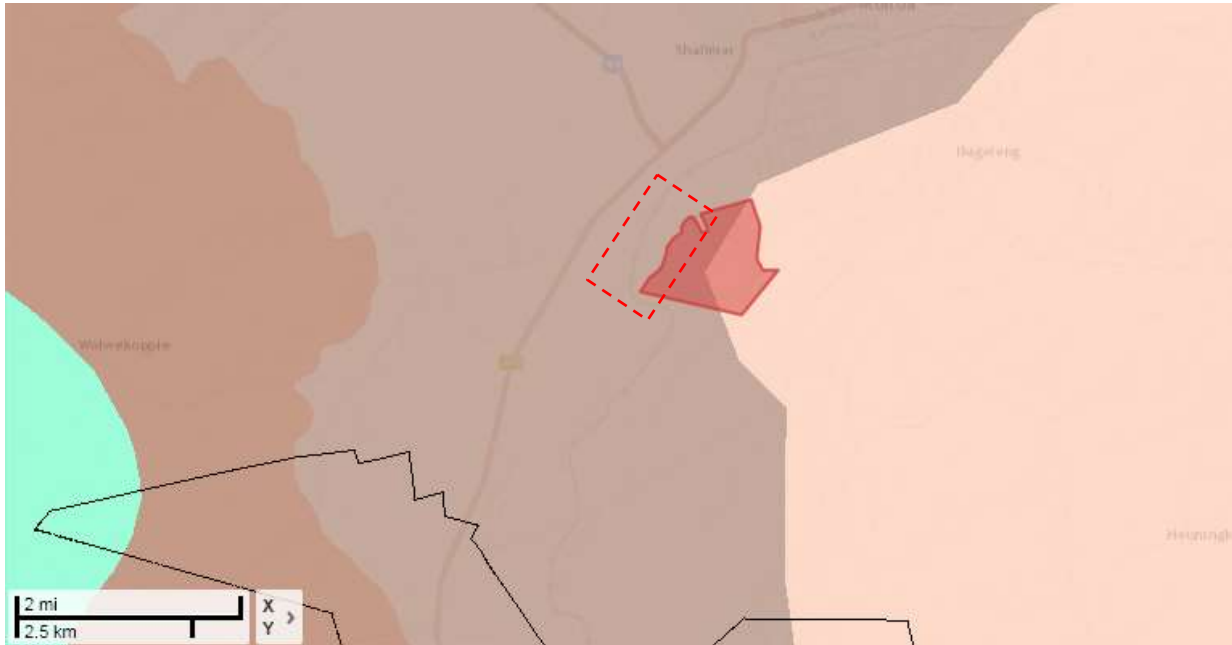


**Figure 20:** South to north regional terrain profile that is located between the red markers.

### - **Vegetation and Geology**

Mucina and Rutherford define the geology of the site as a combination of clastic sediments and minor carbonates and volcanics of the Pretoria Group. Soils are often stony with colluvial clay-loam but varied, including red-yellow apedal freely drained, dystrophic and eutrophic plinthic catenas, vertic and melanic clays. (Macina & Rutherford, 2006)

One main vegetation type is displayed on the SANBI National Vegetation Map. This is Moot Plains Bushveld, which forms part of the Central Bushveld Bioregion (SANBI, 2014). The vegetation is described as 'open to closed, low, often thorny savannah dominated by various species of Acacia in the bottomlands and plains as well as woodlands of varying height and density on the lower hillsides. Grasses dominate the herbaceous layer. Bushveld is characterised by small trees as well as small to tall shrubs. (Macina & Rutherford, 2006)



**Figure 21:** SANBI National Vegetation Map with the approximate location of the project depicted. (SANBI, 2014)

#### - Infrastructure

Infrastructure in the surrounding area includes the Zeerust street layout, the R49 Regional Road, the N4 National Road, a railway line, a large reservoir, Eskom Pylons as well as a red and white coloured lattice telecommunication mast.

#### - Landuses

The predominant land use in the area is agriculture, with all properties zoned agricultural. To the north, land use is associated with the town of Zeerust, which is mainly residential with a central business district.

#### - Tourism

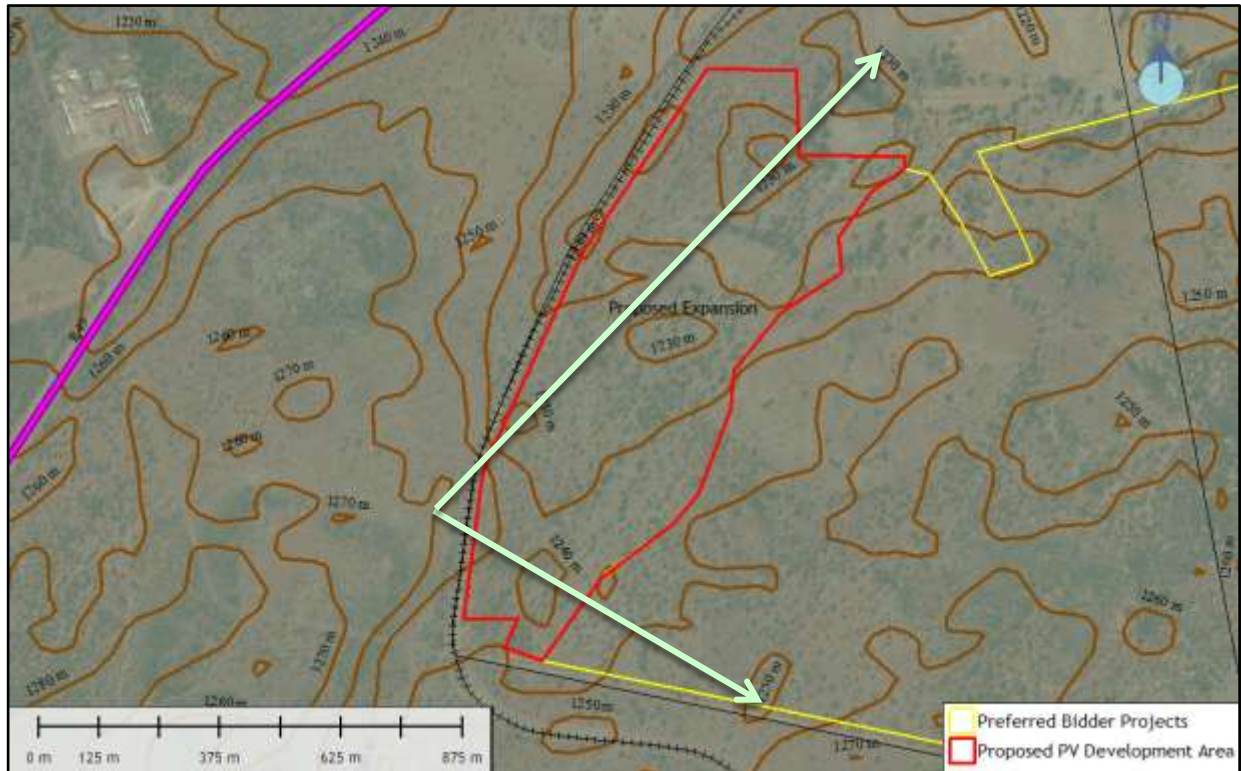
Along the N4 and R49, tourist accommodation centres were apparent, catering for movement of tourists along these main transport corridors.

### 7.3.3 Site Landscape Character

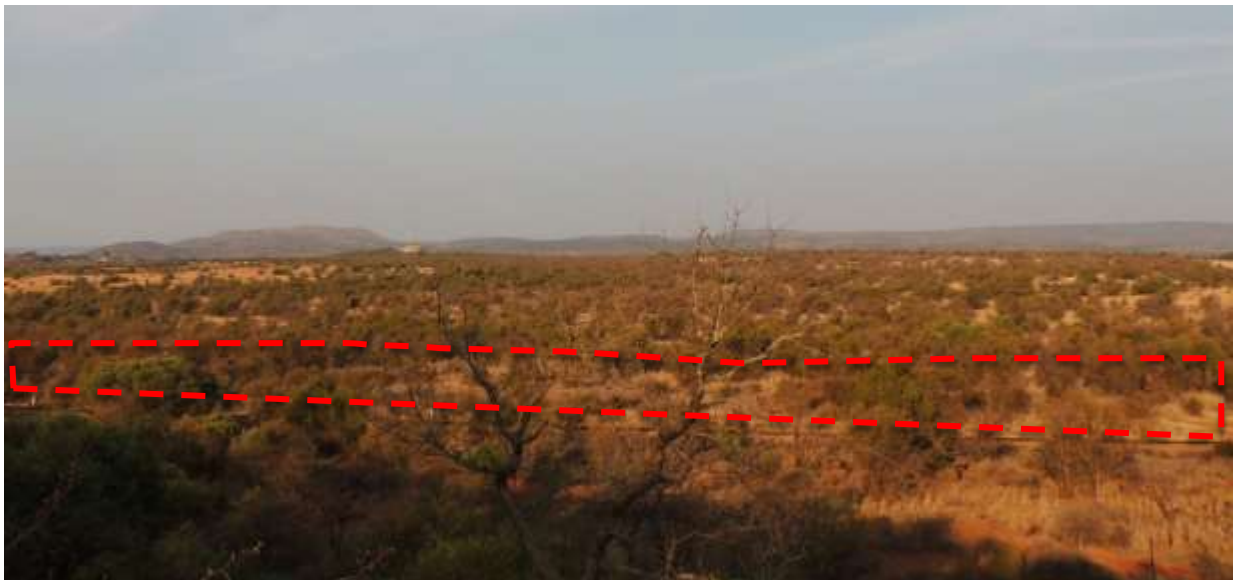
Site topographic statistics indicated the site perimeter to be 3.313km in length and enclosing an area of 0.4 sq. km. The minimum elevation is 1213mamsl and the maximum elevation is 1258mamsl. The maximum slope percentage indicated 28 percent, this is however unlikely as during the site visit, no large areas of steep ground were identified. The average slope is a gradual 5 degrees. The dominant aspect is to the north. Following the north-south extent of the site is a drainage line that drains to the north. Based on the uniformity of the site topography and the single broad vegetation type, only two main landscapes were identified,



that being Zeerust Thornveld dominated areas, and secondly the small drainage line that drains through the site. However, as drainage lines and associated wetlands areas are protected areas under environmental legislation, this landscape area is assigned as Class I VRM status and is not to be assessed in terms of scenic quality and receptor.



**Figure 22:** Site photograph locality and direction (arrow) and satellite image overlay map.



**Figure 23:** Photograph from raised ground to the west of the site towards the east with reservoir in the background, indicating the approximate proposed area of PV expansion.

### 7.3.4 Visual Resource Management (VRM) Classes

In terms of the VRM methodology, landscape character is derived from a combination of scenic quality, receptor sensitivity to landscape change, and distance of the proposed landscape modification from key receptor points. These three criteria are rated in terms of the VRM scenic quality and receptor sensitivity questionnaires that are appended to the addendum. The Classes are not prescriptive and are utilised as a guideline to determine the carrying capacity of a visually preferred landscape that is utilised to assess the suitability of the landscape change associated with the proposed project.

#### - **Scenic Quality**

The scenic quality is determined making use of the VRM scenic quality questionnaire (refer to addendum). Seven scenic quality criteria are scored on a 1 (low) to 5 (high) scale. The scores are totalled and assigned A (High), B (Moderate) or C (low) based on the following split:

- *A= scenic quality rating of  $\geq 19$ ;*
- *B = rating of 12 – 18,*
- *C= rating of  $\leq 11$*

**Table 5:** Landscape scenic quality rating table

| <b>Landscape</b>              | <b>Bushveld</b> |
|-------------------------------|-----------------|
| <b>Landform</b>               | 2               |
| <b>Vegetation</b>             | 3               |
| <b>Water</b>                  | 0               |
| <b>Colour</b>                 | 3               |
| <b>Adjacent scenery</b>       | 3               |
| <b>Scarcity</b>               | 1               |
| <b>Cultural modifications</b> | 0               |
| <b>Score</b>                  | 13              |
| <b>Category</b>               | B               |

*(A= scenic quality rating of  $\geq 19$ ; B = rating of 12 – 18, C= rating of  $\leq 11$ )*

#### - **Receptor Sensitivity**

Sensitivity levels are a measure of public concern for scenic quality. Receptor sensitivity to landscape change is determined by rating the following factors in terms of Low to High:

**Table 6:** Landscape receptor sensitivity rating table

| Landscape           | Bushveld |
|---------------------|----------|
| Type of user        | L        |
| Amount of use       | L        |
| Public interest     | L        |
| Adjacent land users | M        |
| Special areas       | L        |
| Score               | L        |

(H = High, M = Moderate, L = Low sensitivity)

**- VRM Class Objectives**

The BLM has defined four Classes that represent the relative value of the visual resources of an area and are defined making use of the VRM Matrix below:

- i. **Classes I and II** are the most valued
- ii. **Class III** represent a moderate value
- iii. **Class IV** is of least value

**Table 7:** VRM Class Matrix Table

|                |               | VISUAL SENSITIVITY LEVELS |            |             |                    |            |             |                    |            |             |
|----------------|---------------|---------------------------|------------|-------------|--------------------|------------|-------------|--------------------|------------|-------------|
|                |               | High                      |            |             | Medium             |            |             | Low                |            |             |
| SCENIC QUALITY | A<br>(High)   | II                        | II         | II          | II                 | II         | II          | II                 | II         | II          |
|                | B<br>(Medium) | II                        | III        | III/ IV *   | III                | IV         | IV          | IV                 | IV         | IV          |
|                | C<br>(Low)    | III                       | IV         | IV          | IV                 | IV         | IV          | IV                 | IV         | IV          |
| DISTANCE ZONES |               | fore/middle ground        | Background | seldom seen | fore/middle ground | background | seldom seen | fore/middle ground | background | seldom seen |

\* If adjacent areas are **Class III** or lower, assign **Class III**, if higher, assign **Class IV**

**Table 8:** VRM Class Summary Table

| Landscape Area   | ZVI   | Scenic Quality | Receptor sensitivity | Visual Inventory | Visual Resource Management |
|------------------|-------|----------------|----------------------|------------------|----------------------------|
| Drainage Lines   | NA    |                |                      |                  | Class I                    |
| Zeerust Bushveld | FG/MG | B              | Low                  | Class IV         | Class III                  |

(Key: FG = Foreground, MG = Middle ground, BG = Background)

### **Class I**

Class I is assigned when legislation restricts development in certain areas. The visual objective is to preserve the existing character of the landscape, the level of change to the characteristic landscape should be very low, and must not attract attention. A Class I visual objective was assigned to the following features within the proposed development area due to their protected status within the South African legislation:

- Any river / streams and associated flood lines buffers identified as significant in terms of the WULA process.
- Any wetlands identified as significant in terms of the WULA process.
- Any ecological areas identified as having a high significance.

### **Class II**

Class II visual objectives were assigned to the following features:

- NA (No Class II landscape were defined)

### **Class III**

Class III visual objectives were assigned to the following landscapes:

- Zeerust Bushveld areas

Based on the VRM matrix, the Zeerust Bushveld areas were rated Class IV due to the medium scenic quality and the low receptor sensitivity. However, due to the current agricultural surrounding the site, the inventory class was changed to Class III to protect the surrounding agricultural sense of place. The Class III visual objective is to partially retain the existing character of these rural landscapes, where the level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer, and changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

### **Class IV**

Class IV visual objectives were assigned to the following features:

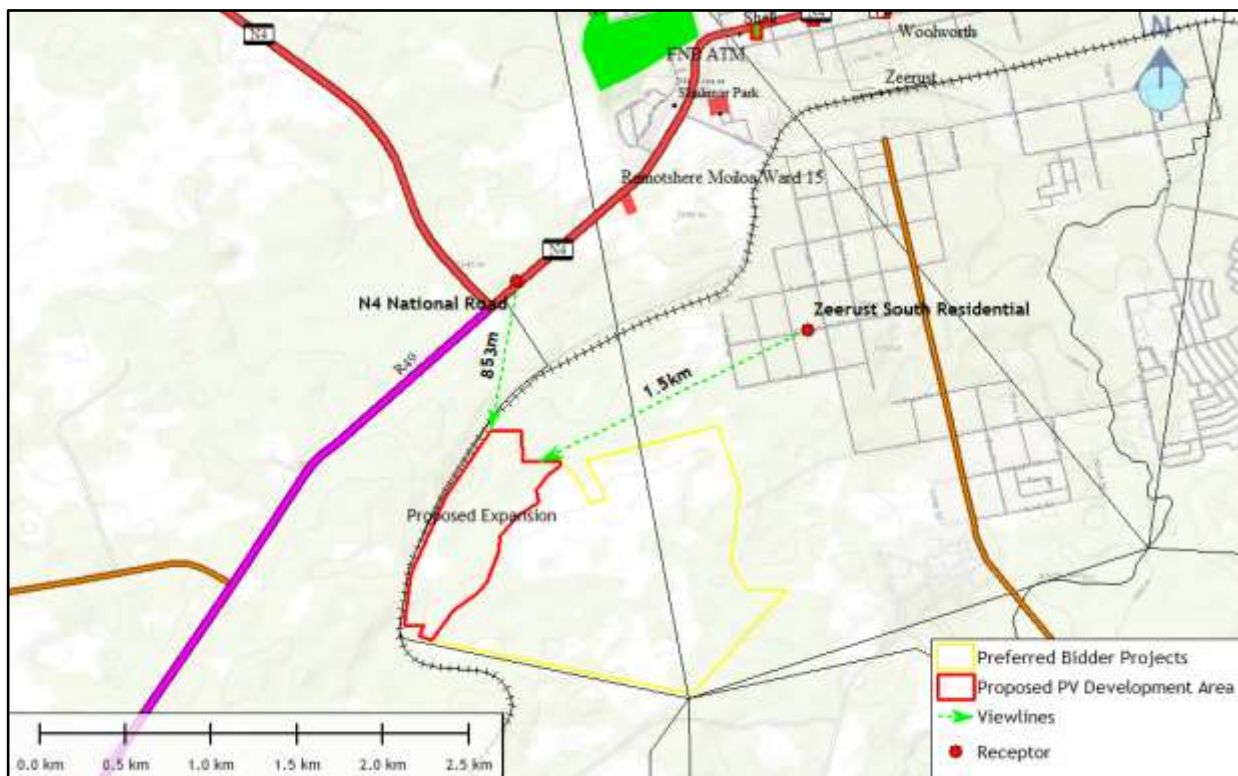
- NA (No Class IV landscape were defined)

### 7.3.5 Key Observation Points

Key Observation Points (KOPs) are defined by the Bureau of Land Management as the people (receptors) located in strategic locations surrounding the property that make consistent use of the views associated with the site where the landscape modifications are proposed. These locations are important in terms of the VRM methodology, which requires that the degree of contrast that the proposed landscape modifications will make to the existing landscape be measured from these most critical locations, or receptors, surrounding the property.

The main receptors for this site, where clear views of the proposed project could result in a change to local visual resources, are:

- Zeerust South residential
- N4 National Road southbound



**Figure 24:** Map depicting the main receptor locations associated with the proposed study area.

However, a site visit to the possible two receptor areas found that due to the Bushveld vegetation and the build structure nature of the areas, **no clear visibility** from receptors would take place.

## 7.4 FINDINGS

### 7.4.1 Visual Absorption Capacity

The VAC of the site is rates **medium**. Although the site is uniform in terms of slope and vegetation cover, it is in close proximity to the railway line and railway line service road, as well and is in visual proximity to the southern sections of the town of Zeerust. The built environment of the areas to the north of the site, with the surrounding bushveld trees does increase the VAC to some degree.

#### 7.4.2 Project Visibility

The viewshed generated from the highest point of the proposed project area (1258 mamsl) is defined as **local** in extent. The valley within which the proposed site is located, limits the visibility of the PV expansion to within the immediate extent of the valley. The viewshed expands to the north in the direction that the valley opens outwards, and there is some partial visibility to the east on the high ground along the 6km distance buffer areas.

#### 7.4.3 Project Exposure

Due to the valley topography, the exposure to adjacent receptors is rated as **medium to low**. The nearest receptor is the N4 National Highway that is located 0.5km to the north-west of the site. The other receptor is the Zeerust South residential area located 1.5km to the northeast. However, both these receptor locations have higher VAC levels, and vegetation or the built environment obscures views of the proposed site.

#### 7.4.4 Scenic Quality

The Scenic Quality rating for the Bushveld landscape is rated **Medium to Low**. Landform is rated medium to low due to the presence of the valley topography. Colour is rated medium, as the colours of the green bushveld trees and shrubs contrast with the light browns of the grasses. Adjacent Scenery is rated medium as the dome of the reservoir surrounded by bushveld vegetation does add to the landscape appeal to some degree. The bushveld landscape is very prevalent in the surrounding areas and is rated low for Scarcity. Cultural Modifications are zero rated as no dominant cultural modifications were identified on the site.

#### 7.4.5 Receptor Sensitivity

Receptor Sensitivity to landscape change was rated **Low**. The types of users are mainly residential in nature and already are exposed to higher contrast generating landscapes associated with the Zeerust town and power line. The valley context shields the site from outside views and the amount of use is rated low. Adjacent landusers are agriculturally related. Due to the close proximity of the site to the town, there are no scenic resources used for landscape based tourism. As the no special zoning is applicable to the site, Public Interest is likely to be low.

## 7.5 IMPACT ASSESSMENT

Visual significance impacts were defined making use of the DEA&DP Guideline for involving Visual and Aesthetic Specialists in EIA processes. (*Oberholzer. 2005*).

**Table 9:** Ratings schedule for visually significant impacts.

|                     |   |
|---------------------|---|
| <b>Extent</b>       | <p style="text-align: center;"><b>Geographical area of influence.</b></p> <p><b>Site Related (S):</b> <i>extending only as far as the activity</i></p> <p><b>Local (L):</b> <i>limited to immediate surroundings.</i></p> <p><b>Regional (R):</b> <i>affecting a larger metropolitan or regional area</i></p> <p><b>National (N):</b> <i>affecting large parts of the country</i></p> <p><b>International (I):</b> <i>affecting areas across international boundaries</i></p> |
| <b>Duration</b>     | <p style="text-align: center;"><b>Predicted lifespan</b></p> <p><b>Short term (S):</b> <i>duration of the construction phase.</i></p> <p><b>Medium term (M):</b> <i>duration for screening vegetation to mature.</i></p> <p><b>Long term (L):</b> <i>lifespan of the project.</i></p> <p><b>Permanent (P):</b> <i>where time will not mitigate the visual impact.</i></p>   |
| <b>Magnitude</b>    | <p style="text-align: center;"><b>Magnitude of impact on views, scenic or cultural resources</b></p> <p><b>Low (L):</b> <i>where visual and scenic resources are not affected.</i></p> <p><b>Moderate (M):</b> <i>where visual and scenic resources are affected</i></p> <p><b>High (H):</b> <i>where scenic and cultural resources are significantly affected.</i></p>   |
| <b>Probability</b>  | <p style="text-align: center;"><b>Degree of possible visual impact:</b></p> <p><b>Improbable (Im):</b> <i>possibility of the impact occurring is very low.</i></p> <p><b>Probable (P):</b> <i>distinct possibility that the impact will occur.</i></p> <p><b>Highly probable (HP):</b> <i>most likely that the impact will occur.</i></p> <p><b>Definite (D):</b> <i>impact will occur regardless of any prevention measures.</i></p>   |
| <b>Significance</b> | <p style="text-align: center;"><b>A synthesis of nature, duration, intensity, extent and probability</b></p> <p><b>Low (L):</b> <i>will not have an influence on the decision.</i></p> <p><b>Moderate (M):</b> <i>should have an influence on the decision unless it is mitigated.</i></p> <p><b>High (H):</b> <i>would influence the decision regardless of any possible mitigation.</i></p>   |
| <b>Confidence</b>   | <p>Key uncertainties and risks in the VIA process, which may influence the accuracy of, and confidence in, the VIA process.</p>   |

In the VRM methodology, the magnitude is defined by means of a contrast rating. The assessment of the Degree of Contrast (DoC) is a systematic process undertaken from Key Observation Points (KOPs) surrounding the project site, and is used to evaluate the potential

visual impacts associated with the proposed landscape modifications. The degree of contrast generated by the proposed landscape modifications are measured against the existing landscape context in terms of the elements of form, line, colour and texture. Each alternative activity is then assessed in terms of whether it meets the objectives of the established class category, and whether mitigation is possible (*USA Bureau of Land Management, 2004*).

### 7.5.1 Impact Assessment Tables

From a visual perspective, due to the small size and scale and similar geographic shape and locality, the visual impacts for both of the alternatives are essential the same. For this reason the impacts will be rated together.

**Table 10:** Alternative 1 & 2 PV Impacts Table

| Impact Activity | Phase | Mitigation | Nature | Extent | Duration | Magnitude | Probability | Significance without | Significance with |
|-----------------|-------|------------|--------|--------|----------|-----------|-------------|----------------------|-------------------|
| PV Alt 1 & 2    | Cons. | W/Out      | -ve    | L      | ST       | L         | P           | L                    |                   |
|                 |       | With       | -ve    | L      | LT       | VL        | P           |                      | VL                |
|                 | Ops.  | W/Out      | -ve    | L      | LT       | L         | P           | L                    |                   |
|                 |       | With       | -ve    | L      | LT       | VL        | P           |                      | VL                |
|                 | Close | W/Out      | -ve    | L      | ST       | L         | P           | L                    |                   |
|                 |       | With       | -ve    | L      | ST       | VL        | P           |                      | VL                |
|                 | Cuml. | W/Out      | -ve    | L      | LT       | L         | Im          | L                    |                   |
|                 |       | With       | -ve    | L      | LT       | N         | Im          |                      | N                 |

### 7.5.2 Alternative 1 & 2 PV Impacts

Without mitigation, the Visual Significance for all phases of development is likely to be **low**. With mitigation, the VS for all phases is likely to be **very low**. This is primarily due to the small size and scale of the expansion area and the similar geographic shape and locality of the proposed project alternatives. Layout Option 1 has the advantage of being more compact and would be viewed in conjunction with the authorised PV to the east. The disadvantage of this layout is that it places the PV panels (outside) but in close proximity to the drainage line buffer area. In Layout Option 2, the PV panels are all located to the west of the drainage line. A visual disadvantage is that the panels are less visually associated with



the approved PV area to the east. The advantage of this is that the location to the west of the drainage line, opens up a wider area along the drainage line. This area can then be fenced as an isolated area without the fences crossing over the drainage line, allowing the wider drainage line to be retained as an ecological corridor. In both layouts, a single road crossing of the drainage line is proposed. Based on the advantages of the wider ecological corridor, a weak preference is given for Layout Option 2.

#### - **Construction Phase**

During the construction phase heavy vehicles, components, equipment and construction crews will frequent the area and may cause, at the very least, a cumulative visual nuisance to landowners and residents in the area as well as road users. The proposed project is semi-industrial in nature and would be located in an agricultural area with limited man made infrastructure. Views as seen from the northern receptors are currently obscured by local vegetation and structures, and visual impacts would be limited to dust from the movement of vehicles or from wind.

#### Mitigations

- The laydown area should be sited away from any drainage lines and not located on a prominent position on the adjacent hill.
- If very dry conditions prevail and dust becomes a nuisance, dust suppression measures need to be implemented.
- Topsoil from the footprints of the road and structures should be dealt with in accordance with the EMP.
- Construction should not take place at night-time.
- The buildings and structures should be painted a grey-brown colour.
- Fencing should be simple, diamond shaped (to catch wind-blown litter) and appear transparent from a distance. The fences should be checked on a monthly basis for the collection of litter caught on the fence.
- Implementation of erosion prevention measures to manage the run-off from the cleared site and the roadways.

#### - **Operation Phase**

During the operation phase, vehicles will frequent the area and may cause a cumulative visual nuisance to landowners and residents in the area, as well as to road users. The proposed project is semi-industrial and would be located in an agricultural area with limited existing man made infrastructure.

#### Mitigations

- If very dry conditions prevail and dust becomes a nuisance, dust suppression measures need to be implemented.
- On-going maintenance to manage any on-going soil erosion.
- Pro-active management of lights at night so as to ensure security without significantly extending the existing Zeerust lights at night context (refer to appendix for generic lights at night recommendations).

### - **Closure Phase**

Closure phase would involve the movements of heavy vehicles, components, equipment and construction crews to disassemble the PV structures, and rehabilitate the area.

#### Mitigations

- If very dry conditions prevail and dust becomes a nuisance, dust suppression measures need to be implemented.
- On-going maintenance to manage any on-going soil erosion.
- All structures associated with the development need to be dismantled and removed.
- All compacted areas should be rehabilitated according to the rehabilitation specialists' recommendations.

### - **Cumulative Effects**

Cumulative Effects are unlikely due to the small size and scale of the expansion area and the fact that the area is well topographically screened. Effects that could occur are more related to soil erosion impacting the drainage lines that could then have an effect on down-stream users.

#### Mitigations

- Erosion and litter control during construction;
- Erosion monitoring during operation;
- Removal and rehabilitation for deconstruction.

## **7.6 CONCLUSION**

It is the recommendation of this visual assessment that the proposed Zeerust expansion area should be authorised. Without mitigation the Visual Significance for all phases of development is likely to be **low**. With mitigation, the Visual Significance for all phases is likely to be **very low**. This is primarily due to the small size and scale of the expansion area and the similar geographic shape and locality of the proposed project alternatives. The proposed project is of a semi-industrial nature and would be located in an existing agricultural area with limited man made infrastructure. However, views as seen from the northern receptors are currently obscured by local vegetation and structures. Visual impacts would be limited to wind blown, or vehicle movement dust, which can be effectively mitigated. Based on the advantages of the wider ecological corridor, a weak preference is given for Layout Option 2.

## **8 ASSESSMENT OF HERITAGE RELATED IMPACTS**

Mr Anton Pelsler from APelsler Archaeological Consulting (APAC) undertook a Heritage Impact Assessment of the Proposed RE Capital 2 Expansion Area from which the following section was drawn. Please refer to Appendix D3 for a full copy of the Heritage Impact Assessment.

## **8.1 TERMS OF REFERENCE**

The Terms of Reference for the heritage study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portions of land near Zeerust that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements from a heritage perspective;

## **8.2 METHODOLOGY**

### **8.2.1 Survey of literature**

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context, while previous studies done in the larger geographical area were also consulted. The sources utilized in this regard are indicated in the bibliography.

### **8.2.2 Field Assessment**

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of archaeological significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detailed photographs are also taken where needed.

### **8.2.3 Oral histories**

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

### **8.2.4 Documentation**

All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual

localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

### **8.3 DISCUSSION**

In a band stretching roughly from Brits in the east to Zeerust in the west there are many known Iron Age sites (Bergh 1999: 7-8). These all belong to the Later Iron Age (Bergh 1999:8-9). No EIA sites are known to occur in the area (Bergh 1999: 6). By the end of the 18th century the BaHurutshe stone walled sites (capitals) were located at Kaditshwene and Tshwenyane north of Zeerust (Bergh 1999: 106). Prof. J.Boeyens of UNISA did extensive archaeological research on this and other sites in the region (Boeyens 2003). A number of Late Iron Age stone walled sites and features were located during the assessments (both the 2012 & 2013 surveys) of the area and will be discussed in more detail later on in the report.

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. Early travelers (including missionaries, hunters and adventurers) moved through this part of the Northwest Province. This included Cambell I 1820, Robert Schoon and William McLuckie in 1829, David Hume in 1830, Dr.Andrew Smith in 1835 and Cornwallis Harris in 1836 (Bergh 1999: 12, 13). They were closely followed by the Voortrekkers after that.

### **8.4 RESULTS OF THE FIELDWORK**

A number of Late Iron Age stone walled sites and features were identified during the various assessments in the area. The sites are located around rocky outcrops and close to the existing Water Reservoir in the area, and fairly close to the preferred and Alternative Substation locations. The sites probably form part of a large LIA settlement complex, representing individual settlement units or homesteads with features such as cattle kraals (livestock enclosures), hut bays and other related features. It possibly dates to the same time period as the Hurutshe settlement complexes at Kaditshwene and other sites close to Zeerust, and around the late 18<sup>th</sup> to early 19<sup>th</sup> century. Very little cultural material was observed, and only fragments of undecorated pottery were identified during the field assessment.

Sites 12 & 13 were identified during the 2013 survey, while Sites A & B (Google Map) were identified and recorded during the recent studies. These sites are most likely related to a single settlement complex in the area.



**Figure 25:** Aerial view of Expansion Area and current Plant Area showing all sites identified in 2012, 2013 & 2015 (Google Earth 2016).

As can be seen in the image above the proposed RE Capital 2 Expansion area does not impact any of the identified heritage sites.

Notwithstanding this, a Cultural Heritage Management Plan has been developed for the entire site, including, the parent facility, grid connection and expansion area. A copy of this management plan is attached in G1.

## **8.5 CONCLUSIONS AND RECOMMENDATIONS**

***No sites are situated within the new Expansion Area of less than 20 ha.***

The following is recommended by the Heritage Specialist

- *All the stone walled sites in the areas should be demarcated and fenced-in to avoid accidental damage and to ensure preservation. A Cultural Heritage Management Plan for these sites has been commissioned by the developer and will be drafted and implemented in due course. If the sites cannot be avoided then detailed mapping and archaeological excavations need to be conducted prior to demolition being applied for.*
- *If Site 15 is indeed graves then the recommended action would be the fencing-in and avoiding of the site at all costs.*

The Heritage specialist concluded that from a cultural heritage point of view the development should be allowed to continue taking heed of the above. The subterranean presence of archaeological or historical sites, features or objects is always a possibility. This could include unknown and unmarked burial pits. Should any be uncovered during the development process, an archaeologist should be called in to investigate and recommend on the best way forward.

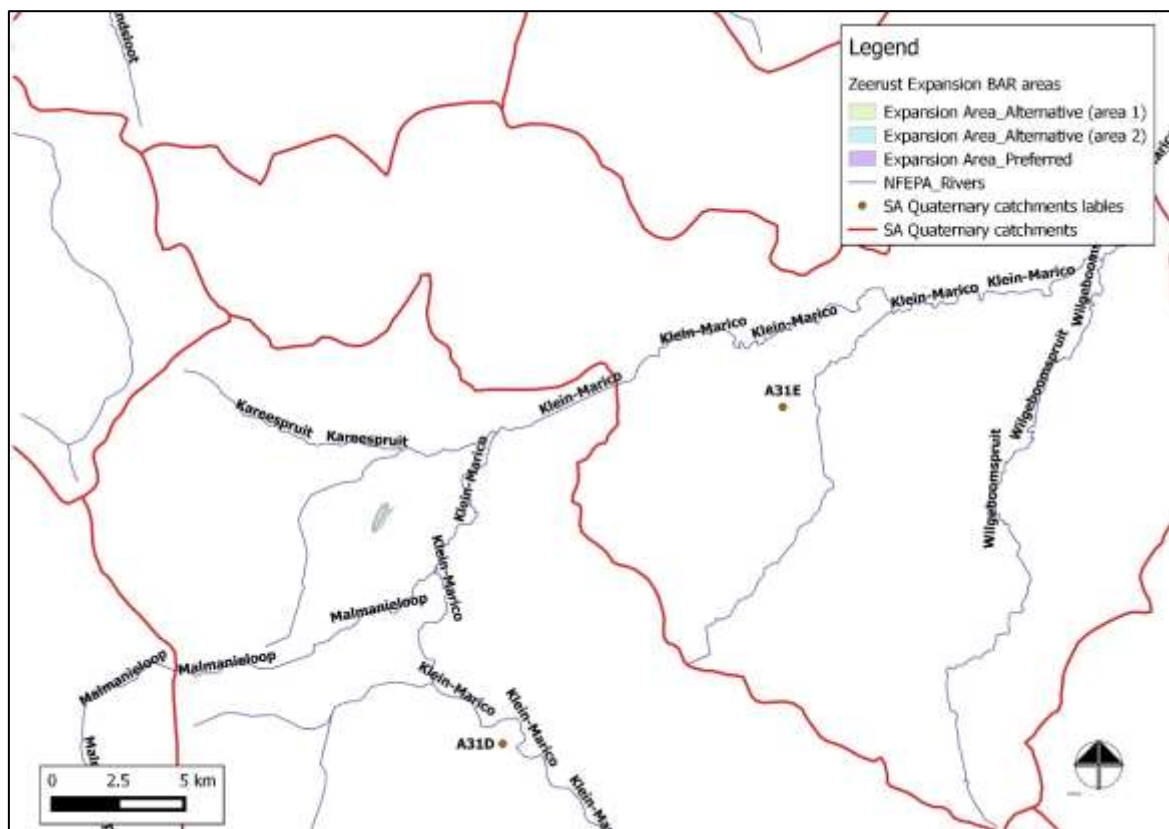
## 9 ASSESSMENT OF FRESHWATER IMPACTS

Scherman Colloty & Associates cc (SC&A) undertook a Freshwater Impact Assessment of the proposed expansion areas.

The main objective of this report was to provide comment on the potential impact of the proposed development areas based on any constraints as a result of the presence of any sensitive aquatic habitats.

### 9.1 PROJECT LOCALITY

The project is located within A31D quaternary catchment which contains the mainstem rivers such as the Klein Marico, Kareespruit and Malmanielloop systems.



**Figure 26:** The respective quaternary catchments within the study region indicated by the red line together with the main stem river systems

## **9.2 ON SITE AQUATIC ENVIRONMENT – WATER COURSES AND DRAINAGE LINES**

There were a number of perennial drainage lines within the study area. These are mostly associated with an unknown tributary of the Karreespruit. The systems within the site boundary showed no signs of any aquatic plants or biota, and only signs of surface water run-off and a narrow band (tree wide either side) of riparian trees (*Vachellia* and *Searsia* species).

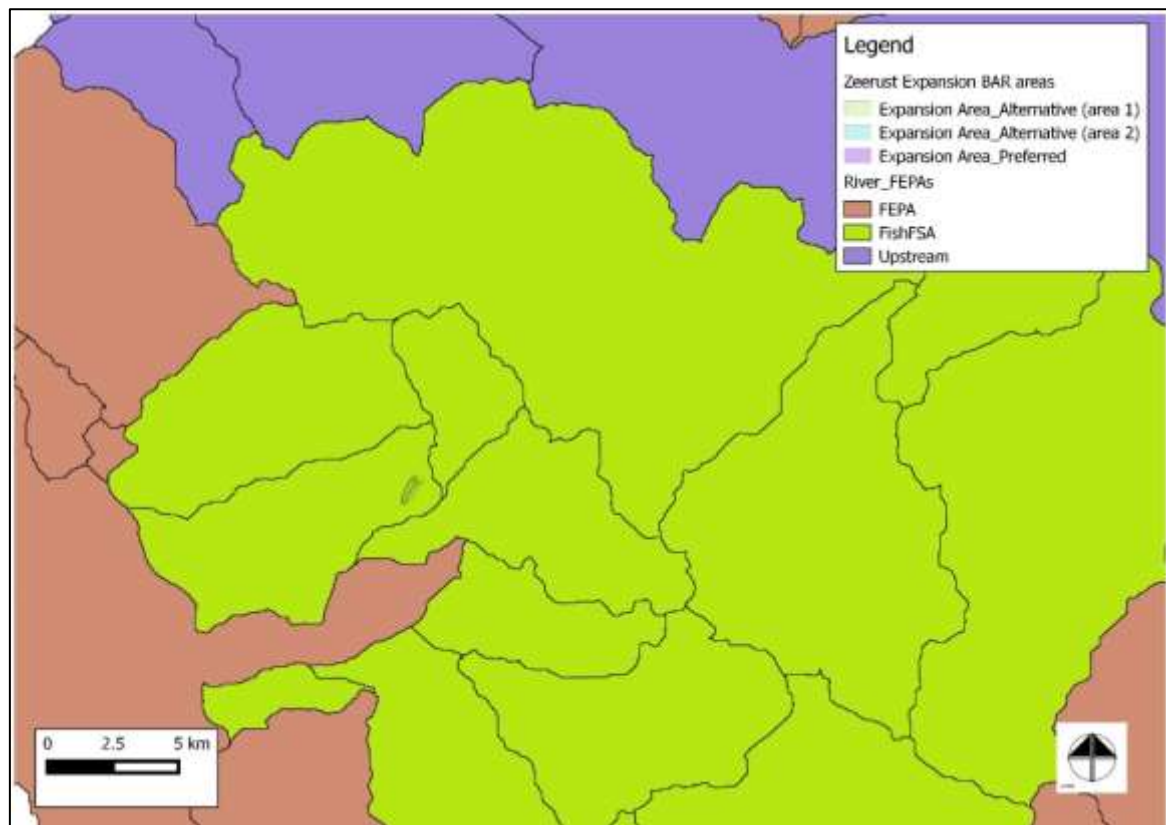
Due to the dry conditions and a past fire, little of the forbs or grasses could be identified, but based on the conditions of similar systems adjacent to the site, these would mostly be terrestrial in nature. The figure below indicates the observed drainage lines within and adjacent to the study area.

The revised Present Ecological State (PES) and Ecological Importance and Ecological Sensitivity Assessment (EI/ES) assessment published by the Department of Water and Sanitation (DWS, 2014) included all aspects such as water quality, riparian vegetation, invertebrates, fish and hydrology at a subquaternary catchment level (SQ catchments 968 & 983). Based then on the available information and confirmed during the site visit, the drainage lines within the study area, when considering the remainder of the downstream catchments were rated as **Largely Modified** PES = D). While the ES and EI scores were both **LOW**. These low ratings are due to the overall lack of any obligate aquatic biota, instream habitat and coupled with the fact that the site is disconnected from any functioning aquatic systems (flowing rivers), due to habitat fragmentation as a result of the dams, rail and road networks to the north west.

The National Freshwater Ecosystem Priority Areas (Nel, *et al.* 2011) however indicates that the study area is located within a Fish Support Area. It is unlikely that any significant flows due to the fragmentation and state of the systems observed would actually reach the downstream rivers that contain important / unique fish populations.



**Figure 27:**The study area in relation to the various water courses based on the 1:50 000 topo-cadastral data and the actual drainage lines observed within the site.





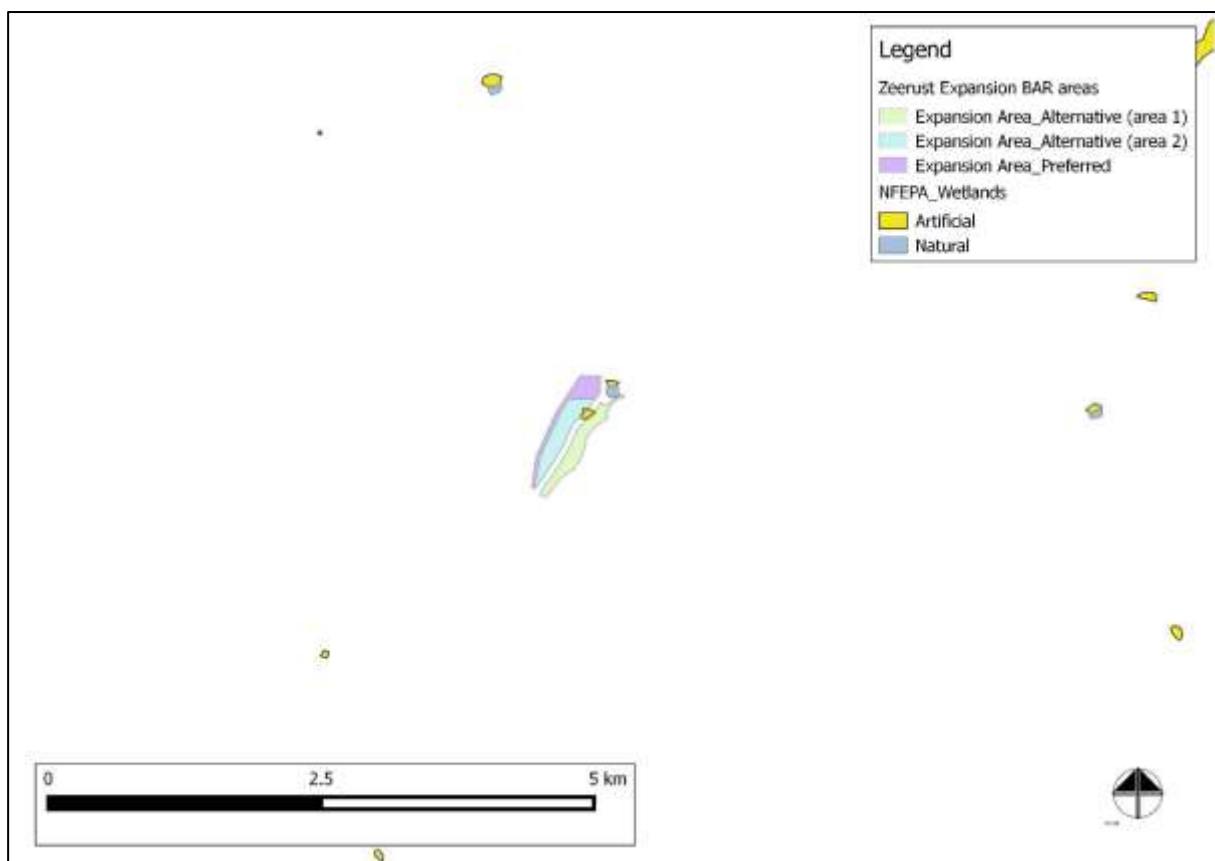
**Figure 28:** Results of the National Freshwater Ecosystem Priority Assessment for the study area (Nel *et al.*, 2011)

### 9.3 WETLAND DELINEATION

The National Wetland Inventory (SANBI) version 4 (2014), spatial database, indicated that the study area could contain wetlands.

These particular wetlands were confirmed to be **artificial impoundments or dams** during the field surveys. None of these had any extensive wetland habitat that could support any number of aquatic species. Thus **no natural wetlands** were observed within or adjacent to the study area.

Certain portions of the footprint would cover one of the dams, but as this is artificial no new or additional impacts could occur should this dam be removed.



**Figure 29:** Wetland types and distribution within the study area according to the National Wetland Inventory

### 9.4 ECOLOGICAL SENSITIVITY ASSESSMENT

Based on the findings of the aquatic study, the various habitats (rivers) could be ranked in terms of their sensitivity to development, using the following criteria, listed in order of importance, i.e. the habitat or Present Ecological State score:

- Contained Species of Special Concern (SSC)

- Habitat was protected under a form of legislation
- Exhibited a high degree of biodiversity
- Exhibited a limited degree of degradation
- A unique habitat that is not well represented within the region
- Provided an important ecosystem role or support system, e.g. ecological corridor

Based then on these criteria and the findings of the assessment, the study area systems (drainage lines & man-made dams) would be considered as having a **LOW** sensitivity.

**9.5 ASSESSMENT OF IMPACTS AND IDENTIFICATION OF MANAGEMENT ACTIONS**

It has been determined that the impacts would largely occur during the **construction phase** (habitat disturbance) which increases the potential for erosion and sedimentation (bare soils), while the operation phase could present hydrological impacts that could result in downstream erosion and sedimentation within the minor drainage lines observed. However, no hydrological links between the construction footprint and the downstream rivers (e.g. Karreespruit) were observed. The potential impacts of the expansion from a freshwater perspective are summarised in the tables below.

**Table 11:** Freshwater Impact 1: Changes to the hydrological regime and increased potential for erosion

| <b>Environmental Impact:</b>  | <b>Activity/Aspect &amp; Impact Source:</b>  |                          |                              | <b>Proposed Mitigation:</b>  |                                   |                                |
|---|--|--------------------------|------------------------------|--|-----------------------------------|--------------------------------|
| Loss of vegetation near any of the water courses could result in changes in the hydrology resulting in erosion: | Due to the nature of the proposed project this would start at the onset of the construction phase, but persist in the long term in the operational phase impact. However, the proposed structures would probably not interfere with natural run-off patterns, either diverting or increasing the velocity of surface water flows due to the nature of the systems observed coupled to the high degree of habitat fragmentation noted. This is also coupled to the fact that the project boundaries (including the alternatives) have largely avoided any water course and the proposed 32m buffer. |                          |                              | <ul style="list-style-type: none"> <li>• Stormwater and any runoff generated by the hard surfaces should be discharged into retention swales.</li> <li>• Additional energy dissipation structures should be placed in a manner that flows are managed prior to being discharged back into the natural water courses, thus not only preventing erosion, but would support the maintenance of natural base flows within these systems, i.e. hydrological regime (water quantity and quality) is maintained.</li> <li>• Any crossings must be designed in such a manner so as not to impede or divert any baseflows or increase upstream flood inundation. It is however recommended that box culverts be selected over pipe culverts as they are less restrictive in terms of flow and also aid in reducing habitat fragmentation.</li> </ul> <p><b>Reference to EMP section:</b><br/>EMP to be completed after review of draft basic assessment report.</p> |                                   |                                |
| <b>Impact Significance</b>  |  |                          |                              |  |                                   |                                |
| <b>Without Mitigation:</b>  | Duration:<br>Long term   | Frequency:<br>Occasional | Extent/Scale:<br>Site Impact | Probability:<br>Probable   | Impact Status:<br><b>NEGATIVE</b> | Significance:<br><b>MEDIUM</b> |

|  |                          |                          |                              |                                       |                                   |                             |
|--|--------------------------|--------------------------|------------------------------|---------------------------------------|-----------------------------------|-----------------------------|
| <b>With Mitigation:</b>  | Duration:<br>Medium term | Frequency:<br>Occasional | Extent/Scale:<br>Site Impact | Probability:<br>Probable              | Impact Status:<br><b>NEGATIVE</b> | Significance:<br><b>LOW</b> |
| <b>Potential to Mitigate:</b><br>High potential / easy to mitigate |                          |                          |                              | <b>Assessment Confidence:</b><br>High |                                   |                             |

Table 12: Freshwater Impact 2: Increased velocity of surface water flows – reduction in permeable surfaces

| <b>Environmental Impact:</b>  | <b>Activity/Aspect &amp; Impact Source:</b>   |                          |                              | <b>Proposed Mitigation:</b>   |                                   |                                |
|---|---|--------------------------|------------------------------|---|-----------------------------------|--------------------------------|
| Loss of vegetation near any of the water course crossings could result in changes in the hydrology resulting due to changes in permeable surfaces | Loss of vegetation and the replacement of the areas with hard engineered surfaces, and the disturbance of soils. This is also coupled to the fact that the project boundaries (including the alternatives) have largely avoided any water course and the proposed 32m buffer. |                          |                              | <ul style="list-style-type: none"> <li>Stormwater and any runoff generated by the large hard surfaces (e.g. PV panels) should be discharged into retention swales.</li> <li>Additional energy dissipation structures should be placed in a manner that flows are managed prior to being discharged back into the natural water courses, thus not only preventing erosion, but would support the maintenance of natural base flows within these systems, i.e. hydrological regime (water quantity and quality) is maintained.</li> <li>Any crossings must be designed in such a manner so as not to impede or divert any baseflows or increase upstream flood inundation. It is however recommended that box culverts be selected over pipe culverts as they are less restrictive in terms of flow and also aid in reducing habitat fragmentation.</li> </ul> <p><b>Reference to EMP section:</b><br/>EMP to be completed after review of draft basic assessment report.</p> |                                   |                                |
| <b>Impact Significance</b>  |   |                          |                              |   |                                   |                                |
| <b>Without Mitigation:</b>  | Duration:<br>Long term  | Frequency:<br>Occasional | Extent/Scale:<br>Site Impact | Probability:<br>Probable  | Impact Status:<br><b>NEGATIVE</b> | Significance:<br><b>MEDIUM</b> |
| <b>With Mitigation:</b>   | Duration:<br>Medium term  | Frequency:<br>Occasional | Extent/Scale:<br>Site Impact | Probability:<br>Probable  | Impact Status:<br><b>NEGATIVE</b> | Significance:<br><b>LOW</b>    |
| <b>Potential to Mitigate:</b><br>High potential / easy to mitigate  |   |                          |                              | <b>Assessment Confidence:</b><br>High   |                                   |                                |

Table 13: Freshwater Impact 3: Impact of changes to water quality

| <b>Environmental Impact:</b>                             | <b>Activity/Aspect &amp; Impact Source:</b> | <b>Proposed Mitigation:</b> |
|--|---|-----------------------------|
| Presently little is known about the water quality of the | During construction various                 | Construction Phase          |

| <b>Environmental Impact:</b>   |                          | <b>Activity/Aspect &amp; Impact Source:</b>   |                              |                                       | <b>Proposed Mitigation:</b>   |                                |
|--|--------------------------|---|------------------------------|---------------------------------------|---|--------------------------------|
| <p>water courses directly in the study area, but it is assumed due the nature of the systems, i.e. infrequent flows, which will contain suspended sediments.</p> |                          | <p>materials, such as sediments, diesel, oils and cement, could pose a threat to the continued functioning downstream areas, if by chance it is dispersed via surface run-off. The possible negative changes to water quality during the operational phase would be limited to sedimentation and erosion related issues assessed in Section 6.1. These negative impacts would persist into the medium term.</p> |                              |                                       | <ul style="list-style-type: none"> <li>• Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.</li> <li>• Littering and contamination of water sources during construction must be prevented by effective construction camp management.</li> <li>• Emergency plans must be in place in case of spillages onto road surfaces and water courses.</li> <li>• No stockpiling should take place within a water course.</li> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>• Stockpiles must be located away from river channels.</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas.</li> <li>• The construction camp and necessary ablation facilities meant for construction workers must be beyond the 32m buffer described previously.</li> </ul> <p><b>Reference to EMP section:</b><br/>EMP to be completed after review of draft basic assessment report.</p> |                                |
| <b>Impact Significance</b>   |                          |   |                              |                                       |   |                                |
| <b>Without Mitigation:</b>   | Duration:<br>Long term   | Frequency:<br>Seldom  | Extent/Scale:<br>Site Impact | Probability:<br>Probable              | Impact Status:<br><b>NEGATIVE</b>   | Significance:<br><b>MEDIUM</b> |
| <b>With Mitigation:</b>  | Duration:<br>Medium term | Frequency:<br>Often   | Extent/Scale:<br>Site Impact | Probability:<br>Probable              | Impact Status:<br><b>NEGATIVE</b>   | Significance:<br><b>LOW</b>    |
| <b>Potential to Mitigate:</b><br>High potential / easy to mitigate   |                          |   |                              | <b>Assessment Confidence:</b><br>High |   |                                |

**9.6 CONCLUSION AND RECOMMENDATIONS OF FRESHWATER STUDY**

Several water courses were highlighted in this study, which could be impacted upon by the proposed project. Based on observations in the field it was found that with mitigation all the impacts would be rated as **LOW**. Furthermore, the proposed project will have **no impact on any wetland areas** as none were observed within or adjacent to the study area (incl. 500m).

This is based on the following assumptions:

1. The final development layout with the exception of the required access road crossings, would avoid the delineated water courses / drainage lines (incl 32m) as far as possible. In this regard the Preferred Alternative should be selected as this will require fewer crossings, i.e. all project components are located on one side of the water course.
2. The transmission line towers will span the water courses.
3. The dam, which has low ecological value is suitable for development.

## **10 PLANNING CONTEXT**

The entire property is zoned for business use, which is considered to be consistent with the development of this facility. A town planner will be appointed to submit building plans to the local authority and to comply with any other specific planning requirements that may be applicable to the RE Capital 2 expansion area.

The Ramotshere Moiloa Municipality planning department has been registered as a key stakeholder on this environmental process in order to provide any further recommendations or comments in terms of town planning.

## **11 SOCIO-ECONOMIC CONSIDERATIONS**

The 2011 Census data on Statistics South Africa states that the population of the Ramotshere Moiloa Local Municipality (formerly the Zeerust Local Municipality) is 842 699, with a population growth rate of 1% per annum. This Municipality has a very high unemployment rate of 33.7%. The main languages of Zeerust are Tswana (28.2%) and Afrikaans (55.1%). There are large cattle ranches in the area, as well as wheat, maize, tobacco and citrus fruit farms. There are also fluorite and chromite mines in the vicinity. Tourism is also a developing industry.

According to the Ngaka Modiri Molema District Municipality IDP (2010 / 2011) the district municipality has a total of 554,668 people living under the minimum living income, which is equivalent to 29% of the total number of minimum living income earners in the North-West province, thus, making it the district with the most underprivileged people in the NW Province.

33% of the minimum level income earners are in the Mafikeng Local Municipality, thus making it the Local Municipality with the largest underprivileged population. In comparison, 9% of below minimum living income earners are found in the Ratlou Local Municipality, making it the region with the least underprivileged population segment both in percentage and numbers. The biggest housing backlog is in the Ditsobotla Local Municipality. The Ngaka Modiri Molema District Municipality has a total of 157,036 unemployed people, which is equivalent to 23% of the total number of unemployed people in the North-West province. The Mafikeng Local Municipality and the Ditsobotla Local Municipality are the regions with the highest number of people that have access to basic services. The Mafikeng Local Municipality has an unemployment figure of 38%. Making it the area with the largest

unemployment figure in the district. 11% of the unemployed people is located in the Tswaing Local Municipality, making it the region with the lowest unemployment figure.

A further characteristic is that less than 2.5% of the total population in the NMMDM has not received any form of tertiary education. According to the 2007 household survey a large number of people in the NMMDM area have not received any form of post-matric training or qualification. The highest levels of illiteracy are prevalent in the Ratlou Local Municipality where more than 31% of the population older than 5 years of age has not received any form of schooling. The comparative figure of the Ramotshere Moiloa and Tswaing Local Municipalities is approximately 27%, in the case of Ditsobotla, 24% and in Mafikeng roughly 20%. According to StatsSA (2005) this trend is further emphasized by the fact that the Ratlou and Tswaing Local Municipalities are the areas with the highest concentration of population who have only completed some primary education (approximately 30% of the total population is older than 5 years). The highest spatial concentration of education and skills levels is clearly in the Mafikeng Local Municipality area. It has the highest concentration of people who have completed their school education (approximately 10%) as well as those with some form of high education (approximately 3%). The proportion of population in the Ratlou Local Municipality with higher education is less than 1%.

## 12 PUBLIC PARTICIPATION

Section 41 in Chapter 6 of regulation 982 details the public participation process that has to take place as part of an environmental process. The table below provides a quick reference to show how this environmental process has and will comply with these legislated requirements relating to public participation. **Appendix E** of this report contains all the information on the public participation process.

**Table 14:** Compliance of Public Participation with Legislated Requirements

| Regulated Requirement   | Description  |
|---|--|
| (1) If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake | Proof of landowner notification is attached in the application form that is submitted to the Department at the same time as the Basic Assessment Report <sup>6</sup> . |

<sup>6</sup> The landowners associated with this activity is Mr. Johannes H Keulder of FSJ EIENDOMME CC and is the same landowner where the authorised facility is situated.

| Regulated Requirement   | Description   |
|---|---|
| <p>such activity on that land.</p> <p>(2) Subregulation (1) does not apply in respect of-</p> <p>(a) linear activities;</p>   |   |
| <p>The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by -</p> |   |
| <p>(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -</p> <p>(i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and</p> <p>(ii) any alternative site;</p>                                       | <p>A site notice has been placed at the entrance to portion 15 of the Farm Kameeldoring 271.</p> <p>Photographic evidence of these notices is attached in <b>Appendix E1</b>.</p> |
| <p>(b) giving written notice, in any of the manners provided for in section 47D of the Act, to -</p>  |   |
| <p>(i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;</p>                         | <p>The owner is the only current occupier of the site. Landowner notification letters are attached in the application form.</p>   |
| <p>(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be</p>   | <p>Owners of adjacent properties have been notified of this environmental process. Such owners have been requested to inform the occupiers of the land of this environmental</p>  |

| Regulated Requirement  | Description   |
|--|---|
| undertaken;  | process. Please refer to <b>Appendix E2</b> for copies of these notifications   |
| (iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;  | The ward councillor has been notified of this environmental process.<br>Please refer to <b>Appendix E2</b> for copies of these notifications  |
| (iv) the municipality which has jurisdiction in the area;  | The Ramotshere Moiloa municipality has been notified of this environmental process.<br>Please refer to <b>Appendix E6</b> for copies of these notifications.  |
| (v) any organ of state having jurisdiction in respect of any aspect of the activity; and   | Please refer to the section below showing the list of organs of state that were notified as part of this environmental process.<br>Please refer to <b>Appendix E4</b> for copies of these notifications.  |
| (vi) any other party as required by the competent authority;   | The competent authority has not identified any additional parties that need to be notified in light of this Basic Assessment Process.   |
| (c) placing an advertisement in -<br>(i) one local newspaper; or<br>(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations; | A notice of the public participation process has been placed in “Die Zeerust Nuus”.<br>Please refer to <b>Appendix E1</b> for a copy of this advertisement.<br>There is currently no official Gazette that has been published specifically for the purpose of providing public notice of applications |
| (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the   | Adverts were not placed in provincial or national newspapers, as the potential impacts will not extend beyond the borders of the municipal area.  |



| Regulated Requirement  | Description  |
|--|--|
| <p>metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph (c)(ii);and</p>  |  |
| <p>(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to -</p> <ul style="list-style-type: none"> <li>(i) illiteracy;</li> <li>(ii) disability; or</li> <li>(iii) any other disadvantage.</li> </ul>   | <p>Notifications have included provision for alternative engagement in the event of illiteracy, disability or any other disadvantage. In such instances, Cape EAPrac will engage with such individuals in such a manner as agreed on with the competent authority.</p> |
| <p>(3) A notice, notice board or advertisement referred to in subregulation (2) must -</p> <ul style="list-style-type: none"> <li>(a) give details of the application or proposed application which is subjected to public participation; and</li> <li>(b) state - <ul style="list-style-type: none"> <li>(i) whether basic assessment or S&amp;EIR procedures are being applied to the application;</li> <li>(ii) the nature and location of the activity to which the application relates;</li> <li>(iii) where further information on the application or proposed application can be obtained; and</li> <li>(iv) the manner in which and the person to whom representations in respect of the application or proposed application may be</li> </ul> </li> </ul> | <p>A site notice has been placed at the entrance to Portion 15 of the Farm Kameeldoorn 270.</p> <p>Photographic evidence of these notices is attached in <b>Appendix E1</b>.</p>   |

| Regulated Requirement   | Description   |
|---|---|
| made.   |   |
| <p>(4) A notice board referred to in subregulation (2) must -</p> <p>(a) be of a size at least 60cm by 42cm; and</p> <p>(b) display the required information in lettering and in a format as may be determined by the competent authority.</p>  | <p>The site notices placed comply with these minimum requirements. Please refer to <b>Appendix E1</b> for details of these</p>  |
| <p>(5) Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d), on condition that -</p> <p>(a) such process has been preceded by a public participation process which included compliance with subregulation (2)(a), (b), (c) and (d); and</p> <p>(b) written notice is given to registered interested and affected parties regarding where the -</p> <p>(i) revised basic assessment report or, EMPr or closure plan, as contemplated in regulation 19(1)(b);</p> <p>(ii) revised environmental impact report or EMPr as contemplated in regulation 23(1)(b);or</p> <p>(iii) environmental impact report and EMPr as contemplated in regulation 21(2)(d);</p> | <p>Due to the fact that stakeholders or specialists have not raised significant concerns on this environmental process, it is not envisioned that this project will be required to compile a revised Basic Assessment Report.</p> |

| Regulated Requirement   | Description  |
|---|--|
| <p>may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due.</p>  |  |
| <p>(6) When complying with this regulation, the person conducting the public participation process must ensure that -</p> <p>(a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and</p> <p>(b) participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.</p> <p>(7) Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.</p> | <p>All reports that are submitted to the competent authority have been subjected to a public participation process. These include:</p> <ul style="list-style-type: none"> <li>- Basic Assessment Report;</li> <li>- All specialist reports</li> <li>- All technical and design reports</li> <li>- Environmental Management Plan</li> </ul> |

### **12.1 REGISTRATION OF KEY STAKEHOLDERS**

A number of key stakeholders were automatically registered and will be given an opportunity to comment on the Basic Assessment Report. Copies and proof of these notifications are

included in **Appendix E**. A list of the key stakeholders registered for this process included in the table below.

**Table 15:** Key Stakeholders automatically registered as part of the Environmental Process

| Stakeholders Registered   |   |  |
|---|---|--|
| Neighbouring property owners  | Department of Environmental Affairs and Nature Conservation                                     | Department of Water Affairs                        |
| Ramothere Moiloa Municipality: Municipal Manager  | South African National Parks  | Department of Science and Technology               |
| Ramotshere Moiloa Municipality: Ward Councillors  | South African National Roads Agency Limited   | The Council for Scientific and Industrial Research |
| South African Heritage Resources Agency   | Department of Transport and Public Works  | The South African Square Kilometre Array           |
| North West Heritage Resources Authority   | Department of Health  | The South African Civil Aviation Authority         |
| Department of Agriculture, Forestry and Fisheries   | Department of Minerals and Energy   | Department of Science and Technology               |
| Provincial Department of Agriculture  | Eskom   | Department of Communications                       |
| SIP Co-ordinator (SIP 10)   | Department of Mineral Resources   | SENTECH  |
| Department of Environmental Affairs, Biodiversity Directorate.                                    | Birdlife Africa.  | Endangered Wildlife Trust.                         |
| All I&AP;s that participated in the Environmental Process for the RE Capital 2 Solar Development. | All I&AP's that participated in the Environmental Process for the RE Capital 2 Grid connection. |  |

## **12.2 AVAILABILITY OF PRE APPLICATION DRAFT BASIC ASSESSMENT REPORT**

Automatically registered I&AP's were notified of the availability of the Basic Assessment Report for review and comment. Copies of the report were made available at the Zeerust library as well as the Ramotshere Moiloa municipal offices. A digital copy of the report was also placed on the Cape EAPrac website.

In order to facilitate effective comment, all State Departments and key stakeholders were provided with their own digital copies of the report on CD.

The Pre Application Draft Basic Assessment Report was made available for a 30 day review and comment period extending from 14 May 2016 – 14 June 2016.

Proof of notifications and availability of this report is included in **Appendix E**.

### **12.3 COMMENTS AND RESPONSES ON PRE APPLICATION DRAFT BASIC ASSESSMENT REPORT**

No comments were received on the Pre Application Draft Basic Assessment Report. The formal Basic Assessment Report is however made available for a further 30 day review and comment period.

### **12.4 NOTIFICATION OF AVAILABILITY OF BASIC ASSESSMENT REPORT**

A formal application has been submitted to the National Department of Environmental Affairs and a formal Basic Assessment Report submitted and made available for a further 30 Day Review and comment period extending from 24 June 2016 – 24 July 2016.

## **13 CONCLUSION**

*Cape EAPrac* is of the opinion that the information contained in the Basic Assessment Report and the documentation attached is sufficient to allow the general public and key stakeholders to apply their minds to the potential negative and positive impacts associated with the expansion of the RE Capital 2 Solar Development.

This Final Basic Assessment Report will contain the details of the Public Participation process undertaken and includes all comments received during this process.

All participating specialists have confirmed the proposed expansion will generally result in a Low impact.

Aside from potential negative impacts, it is submitted that the proposed RE Capital 2 Solar development along with its expansion has **notable positive impacts**, in that it aligns with, and is in furtherance of, international, national, regional and local strategies to support alternative / renewable energy projects. These include the distribution of much-needed 'clean' electricity into the national grid, provision of local electrical infrastructure for use in long-term, and the provision of employment opportunities during the construction and operation phases for members of local communities.

Sufficient mitigation has been recommended to reduce potential negative impacts to an acceptable level. It is submitted that the proposed expansion of the authorised RE Capital 2 Solar Development will be sustainable in the long term and the **preferred alternative** can be

considered to be the most feasible / viable option, from environmental and practical perspectives.

**It is herewith submitted that Alternative 2 be considered for authorisation**

Based on the outcome of the specialist investigations, the following mitigation measures are suggested to ensure that the impacts are reduced, while at the same time the notable positive impacts are enhanced.

### **13.1 RECOMMENDED MITIGATION MEASURES**

- Stormwater and any runoff generated by the hard surfaces should be discharged into retention swales.
- Additional energy dissipation structures should be placed in a manner that flows are managed prior to being discharged back into the natural water courses, thus not only preventing erosion, but would support the maintenance of natural base flows within these systems, i.e. hydrological regime (water quantity and quality) is maintained.
- Any crossings must be designed in such a manner so as not to impede or divert any baseflows or increase upstream flood inundation. It is however recommended that box culverts be selected over pipe culverts as they are less restrictive in terms of flow and also aid in reducing habitat fragmentation.
- Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.
- Littering and contamination of water sources during construction must be prevented by effective construction camp management.
- Emergency plans must be in place in case of spillages onto road surfaces and water courses.
- No stockpiling should take place within a water course.
- All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.
- Stockpiles must be located away from river channels.
- Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed areas.
- The construction camp and necessary ablution facilities meant for construction workers must be beyond the 32m buffer of the watercourse.
- The laydown area should be sited away from any drainage lines and not located on a prominent position on the adjacent hill.

- If very dry conditions prevail and dust becomes a nuisance, dust suppression measures need to be implemented.
- Topsoil from the footprints of the road and structures should be dealt with in accordance with the EMP.
- Construction should not take place at night-time.
- The buildings and structures should be painted a grey-brown colour.
- Fencing should be simple, diamond shaped (to catch wind-blown litter) and appear transparent from a distance. The fences should be checked on a monthly basis for the collection of litter caught on the fence.
- Implementation of erosion prevention measures to manage the run-off from the cleared site and the roadways.
- During the operation phase, vehicles will frequent the area and may cause a cumulative visual nuisance to landowners and residents in the area, as well as to road users. The proposed project is semi-industrial and would be located in an agricultural area with limited existing man made infrastructure.
- On-going maintenance to manage any on-going soil erosion.
- Pro-active management of lights at night so as to ensure security without significantly extending the existing Zeerust lights at night context (refer to appendix for generic lights at night recommendations).

## ABBREVIATIONS

|             |  |
|-------------|--|
| AIA         | Archaeological Impact Assessment                                       |
| BGIS        | Biodiversity Geographic Information System                             |
| BID         | Background Information Document  |
| CBD         | Central Business District  |
| ACMP        | Archaeological Conservation Management Plan                            |
| CDSM        | Chief Directorate Surveys and Mapping                                  |
| CEMP        | Construction Environmental Management Plan                             |
| dBA         | Decibel (measurement of sound)   |
| DEA         | Department of Environmental Affairs                                    |
| DEA&DP      | Department of Environmental Affairs and Development Planning           |
| DEIR        | Draft Environmental Impact Report                                      |
| DME         | Department of Minerals and Energy                                      |
| DSR         | Draft Scoping Report   |
| FEIR        | Final Environmental Impact Report                                      |
| EAP         | Environmental Impact Practitioner                                      |
| EHS         | Environmental, Health & Safety   |
| EIA         | Environmental Impact Assessment  |
| EIR         | Environmental Impact Report  |
| EMP         | Environmental Management Programme                                     |
| GPS         | Global Positioning System  |
| GWh         | Giga Watt hour   |
| HIA         | Heritage Impact Assessment   |
| HWC         | Heritage Western Cape  |
| I&APs       | Interested and Affected Parties  |
| IDP         | Integrated Development Plan  |
| IFC         | International Finance Corporation                                      |
| IPP         | Independent Power Producer   |
| KNP         | Karoo National Park  |
| KOP         | Key Observation Point  |
| kV          | Kilo Volt  |
| $L_{Aeq,T}$ | Time interval to which an equivalent continuous A-weighted sound level |
| LLRC        | Low Level River Crossing   |
| LUDS        | Land Use Decision Support  |
| LUPO        | Land Use Planning Ordinance  |
| MW          | Mega Watt  |
| NEMA        | National Environmental Management Act                                  |
| NEMAA       | National Environmental Management Amendment Act                        |
| NEMBA       | National Environmental Management: Biodiversity Act                    |
| NERSA       | National Energy Regulator of South Africa                              |
| NHRA        | National Heritage Resources Act  |
| NID         | Notice of Intent to Develop  |
| NSBA        | National Spatial Biodiversity Assessment                               |
| NWA         | National Water Act   |
| PIA         | Paleontological Impact Assessment                                      |



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|       |  |
|-------|--|
| PM    | Post Meridiem; “Afternoon”                       |
| SACAA | South African Civil Aviation Authority           |
| SAHRA | South African National Heritage Resources Agency |
| SANBI | South Africa National Biodiversity Institute     |
| SANS  | South Africa National Standards                  |
| SDF   | Spatial Development Framework                    |
| SMME  | Small, Medium and Micro Enterprise               |
| SAPD  | South Africa Police Department                   |
| TIA   | Traffic Impact Assessment                        |
| VIA   | Visual Impact Assessment                         |

**SECTION 1:  
BASIC ASSESSMENT  
REPORT**



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

(For official use only)

**File Reference Number:**

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**Application Number:**

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**Date Received:**

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Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

✓NO

If YES, please complete the form entitled “Details of specialist and declaration of interest” for the specialist appointed and attach in Appendix I.

### 1 PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The authorised RE Capital 2 Solar Development wishes to expand the existing authorised Solar PV Energy Facility by approximately 19ha.

The following components form part of this project proposal. These are discussed in more detail in section 2 above.

- Construction of approximately 19ha of horizontally mounted single axis PV trackers on the expansion area.
- Generation of approximately 10 Megawatts (MW) of electricity from the expansion area. Total Generation capacity of the entire facility (The approved RE Capital 2 development along with the proposed expansion) will not exceed 75MW.
- Construction of road crossing the non-perennial drainage line
- Construction of internal road network;
- Construction of Inverter Stations;
- Construction of perimeter fencing

b) Provide a detailed description of the listed activities associated with the project as applied for

| Listed activity as described in GN R.983, 984 and 985  | Description of project activity that triggers listed activity   |
|--|---|
| <b>Regulation 983 – Basic Assessment</b>   |   |
| <b>Activity 1 - The development of facilities or infrastructure for the generation of electricity from a renewable resource where-</b> | This activity is deemed to be relevant to the proposed RE Capital 2 expansion, as the electricity generated on this expansion area will be approximately 10 megawatts and the |

|  |  |
|--|--|
| <p><i>(i) the electricity output is more than 10 megawatts but less than 20 megawatts; or</i></p> <p><i>(ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare;</i></p> <p><i>excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area</i></p>   | <p>extent of the facility will be approximately 19ha.</p>  |
| <p><b>Activity 12</b> - <i>The development of-</i></p> <p><i>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</i></p> <p><i>where such development occurs-</i></p> <p><i>(a) within a watercourse;</i></p> <p><i>(b) in front of a development setback; or</i></p> <p><i>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</i></p> | <p>The proposed RE Capital 2 Expansion area includes the construction of a road and culvert within 32m of a non-perennial watercourse. Please refer to the Freshwater Impact Assessment attached in Appendix D2 for an assessment of impacts associated with this watercourse.</p> |
| <p><b>Activity 19</b> - <i>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></p> <p><i>(i) a watercourse;</i></p>  | <p>The proposed RE Capital 2 Expansion area includes the construction of a road and culvert within 32m of a non-perennial watercourse. Please refer to the Freshwater Impact Assessment attached in Appendix D2 for an assessment of impacts associated with this watercourse.</p> |
| <p><b>Activity 27</b> - <i>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation</i></p>  | <p>The expansion of the RE Capital 2 solar development will require the removal of approximately 19ha of vegetation</p>  |
| <p><b>Activity 36</b> - <i>The expansion of facilities or</i></p>  | <p>The generation capacity of the RE Capital 2</p>   |

|   |   |
|---|---|
| <p><i>structures for the generation of electricity from a renewable resource where-</i></p> <p><i>(i) the electricity output will be increased by 10 megawatts or more, excluding where such expansion takes place on the original development footprint; or</i></p> <p><i>(ii) regardless the increased output of the facility, the development footprint will be expanded by 1 hectare or more;</i></p> | <p>Solar Development will remain unchanged (i.e. a maximum of 75 megawatts) from what was authorised. The development footprint will however be expanded by approximately 19ha.</p> |
| <p><b>Regulation 984 – Scoping and Environmental Impact Reporting</b></p>   |   |
| <p>None Applicable</p>  |   |
| <p><b>Regulation 985 – Basic Assessment</b></p>   |   |
| <p><b>Activity 4</b> - The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>i. Outside urban areas, in:</p> <p>(ee) Critical biodiversity areas (Terrestrial Type 1 and 2) as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p>   | <p>The road between the authorised footprint and the proposed expansion area will have a width of approximately 4.5m</p>  |
| <p><b>Activity 12</b> - The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>(a) In Eastern Cape, Free State, Gauteng, Limpopo, North West and Western Cape provinces:</p>  | <p>Approximately 19 hectares will be cleared for the purposes of this expansion</p>   |

|  |   |
|--|---|
| <p>ii. Within critical biodiversity areas identified in bioregional plans;</p>   |   |
| <p><b>Activity 14</b> - The development of-</p> <p>(xii) infrastructure or structures with a physical footprint of 10 square metres or more;</p> <p>Where such development occurs –</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>(e) In North West:</p> <p>i. Outside urban areas, in:</p> <p>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> | <p>The road crossing and culvert between the exiting authorised footprint and the expansion area will cross the watercourse and the total footprint of this infrastructure within 32m of the watercourse will exceed the 10 square metre threshold considered in this activity.</p> |

**IDENTIFY IMPACTS ASSOCIATED WITH THE LISTED ACTIVITY ABOVE**

The main impacts associated with the above activities as identified during this environmental process are as follows:

- Impacts associated with the removal of an additional 19ha of vegetation.
- Impacts associated with the construction of an access road over the drainage line.
- Impacts on Heritage resources.
- Additional Visual Impacts.

**2 FEASIBLE AND REASONABLE ALTERNATIVES**

**PLEASE REFER TO SECTION 4 OF THE BASIC ASSESSMENT MAIN REPORT ABOVE FOR A DETAILED DESCRIPTION OF ALTERNATIVES.**

“*alternatives*”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;



- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**a) Site alternatives**

**The alternatives under consideration are deemed to be layout alternatives rather than site alternatives, as they are both situated on the same property, albeit different portions. These are therefore reflected in section B – below.**

| <b>Alternative 1 (preferred alternative)</b> |              |               |
|--|--------------|---------------|
| Description                                  | Lat (DDMMSS) | Long (DDMMSS) |
|  |              |               |
| <b>Alternative 2</b>                         |              |               |
| Description                                  | Lat (DDMMSS) | Long (DDMMSS) |
|  |              |               |
| <b>Alternative 3</b>                         |              |               |
| Description                                  | Lat (DDMMSS) | Long (DDMMSS) |
|  |              |               |

In the case of linear activities:

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

**b) Lay-out alternatives**

| <b>Alternative 1 (expansion on both sides of the drainage feature)</b>   |                |                |
|--|----------------|----------------|
| Description  | Lat (DDMMSS)   | Long (DDMMSS)  |
| Expansion of the RE Capital 2 Solar Development on both sides of the drainage feature . This alternative extends into the 1:100 year floodlines of the drainage feature traversing the site. | 25° 34' 24.64" | 26° 03' 40.30" |
| <b>Alternative 2 (Preferred – expansion only on one side of the drainage feature)</b>  |                |                |
| Description  | Lat (DDMMSS)   | Long (DDMMSS)  |
| Expansion of the authorised RE Capital2 Solar Development on the West of the drainage feature only. This is the preferred alternative and has been   | 25° 34' 20.56" | 26° 03' 36.53" |

|  |              |               |
|--|--------------|---------------|
| specifically designed in such a manner that all PV infrastructure is situated outside of the 1:100 year floodline. |              |               |
| <b>Alternative 3</b>   |              |               |
| Description  | Lat (DDMMSS) | Long (DDMMSS) |
|  |              |               |

**c) Technology alternatives**

|  |
|--|
| <b>Alternative 1 (preferred alternative)</b>   |
| <p>Generation of electricity by means of PV.</p> <ul style="list-style-type: none"> <li>• Construction of approximately 19ha of horizontally mounted single axis PV trackers on the expansion area.</li> <li>• Generation of approximately 10 Megawatts (MW) of electricity from the expansion area. Total Generation capacity of the entire facility (The approved RE Capital 2 development along with the proposed expansion) will not exceed 75MW.</li> <li>• Construction of road crossing the non-perennial drainage line</li> <li>• Construction of internal road network;</li> <li>• Construction of Inverter Stations;</li> <li>• Construction of perimeter fencing</li> </ul> |
| <b>Alternative 2</b>   |
|  |
| <b>Alternative 3</b>   |
|  |

**d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

|  |
|--|
| <b>Alternative 1 (preferred alternative)</b> |
|  |
| <b>Alternative 2</b>                         |
|  |

|                      |
|----------------------|
| <b>Alternative 3</b> |
|                      |

**e) No-go alternative**

The no go alternative in this case would entail the development of the RE Capital 2 solar development without including this proposed expansion area. In such a case, the portion of land between the existing RE Capital 2 Solar Development and the Railway line will remain undeveloped.

Paragraphs 3 – 13 below should be completed for each alternative.

**3 PHYSICAL SIZE OF THE ACTIVITY**

**a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):**

| <b>Alternative:</b>         | <b>Size of the activity:</b> |
|-----------------------------|------------------------------|
| Alternative A1 <sup>7</sup> | ± 190000m <sup>2</sup>       |
| Alternative A2 (preferred)  | ± 190000m <sup>2</sup>       |
| Alternative A3 (if any)     | m <sup>2</sup>               |

or, for linear activities:

| <b>Alternative:</b>                             | <b>Length of the activity:</b> |
|---|--------------------------------|
| Alternative A1 (preferred activity alternative) | m                              |
| Alternative A2 (if any)                         | m                              |
| Alternative A3 (if any)                         | m                              |

**b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):**

| <b>Alternative:</b> | <b>Size of the site/servitude:</b> |
|---------------------|------------------------------------|
|                     |                                    |

<sup>7</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

|   |                        |
|---|------------------------|
| Alternative A1 (preferred activity alternative) | ± 190000m <sup>2</sup> |
| Alternative A2 (if any)                         | ± 190000m <sup>2</sup> |
| Alternative A3 (if any)                         | m <sup>2</sup>         |

#### 4 SITE ACCESS

|  |       |    |
|--|-------|----|
| Does ready access to the site exist?                                   | ✓ YES | NO |
| If NO, what is the distance over which a new access road will be built | m     |    |

Describe the type of access road planned:

The expansion site will be accessed directly from the authorised RE Capital 2 solar site, that has its own access road. This expansion forms an integrated extension of the approved site and as such does not require its own access.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

#### 5 LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

#### 6 LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and

- a north arrow.

## 7 SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

## 8 SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

## 9 FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

## 10 ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

|   |   |                             |                |
|---|---|-----------------------------|----------------|
| 1. Is the activity permitted in terms of the property's existing land use rights?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | Please explain |
| The entire property is zoned for business use which is consistent with the already authorised RE Capital 2 solar development as well as this proposed expansion.  |   |                             |                |
| 2. Will the activity be in line with the following?   |   |                             |                |
| (a) Provincial Spatial Development Framework (PSDF)   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | Please explain |
| In terms of Electricity infrastructure related to forms of renewable energy, the spatial distribution of supply should aim to follow clearly defined corridors, with electricity services being highly concentrated close to the major routes and high capacity electricity infrastructure (PSDF, 2011). This project aims to link to existing and approved electrical infrastructure associated with renewable energy project (Solar PV Development) and the Eskom national grid network (via the Zeerust substation). |   |                             |                |
| This expansion is associated with a renewable energy project that is a preferred bidder in terms of the Department of Energy REIPPP.  |   |                             |                |
| One of the sustainable development objectives of the PSDF is to utilize renewable resources as opposed to non-renewable resources. This expansion is associated with the generation of electricity from a renewable resource. It also promotes the concept of Bioregionalism as enshrined in the PSDF.  |   |                             |                |

|   |      |    |                |
|---|------|----|----------------|
| (b) Urban edge / Edge of Built environment for the area   | ✓YES | NO | Please explain |
| The nature of a renewable energy power development dictates that they need not be situated within an urban edge or within the edge of built up areas. The RE Capital 2 facility is however on the edge of the built up area of the town of Zeerust.   |      |    |                |
| (c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).  | ✓YES | NO | Please explain |
| The IDP defines public infrastructure development such as energy generation as a critical action within the municipal area  |      |    |                |
| (d) Approved Structure Plan of the Municipality   | YES  | NO | Please explain |
| To the best of our knowledge, there is not an approved structure plan for the local municipality.   |      |    |                |
| (e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)   | YES  | NO | Please explain |
| To the best of our knowledge, there is not an approved Environmental Management Framework for the local municipality.   |      |    |                |
| (f) Any other Plans (e.g. Guide Plan)   | YES  | NO | Please explain |
| the best of our knowledge, there is not an approved plan for the local municipality.  |      |    |                |
| 3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?   | YES  | NO | Please explain |
|   |      |    |                |
| 4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)  | ✓YES | NO | Please explain |
| This expansion is related to a renewable energy project that has been selected as a preferred bidder under the Department of Energy's Renewable Energy Independent Power Producers procurement programme.   |      |    |                |
| Given the context of PV farm developments in the local context, this proposed powerline can be considered to be in-line / associated with the local investment already placed in this emerging renewable energy landscape. Care has been taken to avoid impacting on the agricultural land-use in the area, as well as the scenic / cultural landscape, by positioning the proposed expansion area directly adjacent to the authorised project, thus minimising fragmentation of the landscape. |      |    |                |
| On a strategic level, the proposed expansion aligns with the regional, national and international need for the distribution of 'green electricity' from renewable energy.   |      |    |                |
| 5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)   | ✓YES | NO | Please explain |
| This activity is considered in support of a primary service, i.e. the provision of electricity. No additional services are required to support the activity.  |      |    |                |
| 6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)   | ✓YES | NO | Please explain |
| Not Applicable. The activity in itself is an infrastructure development   |      |    |                |

|   |   |  |                |
|---|---|--|----------------|
| 7. Is this project part of a national programme to address an issue of national concern or importance?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | Please explain |
| <p>The generation of 'green / clean electricity' from a renewable energy resource (Solar) forms part of a national programme to reduce reliance of coal-powered generation of electricity. The proposed powerline will serve to transmit / distribute the electricity to be generated by three renewable energy development into the national Eskom grid.</p> <p>Securing renewable energy sources into the overall energy matrix has been highlighted as a priority by the Department of Energy. The Renewable Energy Independent Power Producers Procurement Programme was established as a result of this.</p> |   |  |                |
| 8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | Please explain |
| <p>This expansion forms part of an already authorised renewable energy that has been selected as a preferred bidder. This projects will be generating 75MW of electricity for inclusion into the National Grid.</p>   |   |  |                |
| 9. Is the development the best practicable environmental option for this land/site?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | Please explain |
| <p>The portion of land proposed for this expansion is a small section of the parent property that is isolated between the approved re capital 2 development and the railway line. The railway line thus forms a hard boundary on the solar development.</p>   |   |  |                |
| 10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | Please explain |
| <p>The benefit of optimising a facility that will be generating energy from a renewable resource will far outweigh the extremely limited impacts of this expansion,</p>   |   |  |                |
| 11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?   | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | Please explain |
| <p>The RE Capital 2 solar development is the only renewable energy facility in the area that has been selected as a preferred bidder. The expansion thereof by approximately 19ha will not set a precedent.</p>   |   |  |                |
| 12. Will any person's rights be negatively affected by the proposed activity/ies?   | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | Please explain |
| <p>Furthermore, a detailed public participation process took place as part of the EIA (for the facility). No major concerns nor objections were raised in this environmental process. An additional public participation process has taken part as part of this application.</p>  |   |  |                |
| 13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?  | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | Please explain |
| <p>The property is zoned for business use, which is deemed to be consistent with the construction of a PV development.</p>  |   |  |                |



|  |                |    |                |
|--|----------------|----|----------------|
| 14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?   | ✓YES           | NO | Please explain |
| <p><b>SIP 8:</b> Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the IPR2010</p> <p>The distribution of electricity generated from renewable resource (solar) by the preferred bidders that will connect to the national grid via this powerline.</p> <p><b>SIP 9:</b> Electricity Generation to support socio-economic development</p> <p>The distribution of electricity generated from renewable resource (Solar) by the by the preferred bidders that will connect to the national grid via this powerline.</p> <p><b>SIP 10:</b> Electricity Transmission and Distribution for all.</p> <p>As the proposed powerline is associated with renewable energy projects (preferred bidders) under the Independent Power Producer (IPP) Procurement Programme, it can be considered as a Strategically Important Development ("SID"), due to their potentially significant contribution to the regional and national economy.</p> |                |    |                |
| 15. What will the benefits be to society in general and to the local communities?  | Please explain |    |                |
| <p>Addition of much needed electricity into the national grid.</p> <p>This expansion will form part of a project that will distribute 75mw of “clean-electricity” generated by the Solar Development from a renewable resource (solar) into the national electrical grid, which is currently under enormous pressure. The national grid currently relies heavily of coal for electricity generation, has associated pollution and climate-change repercussions, thus this project indirectly contributes to minimising these impacts through its associated with renewable energy generation.</p>  |                |    |                |
| 16. Any other need and desirability considerations related to the proposed activity?   | Please explain |    |                |
| <p>The studies undertaken as part of this environmental process, as well as those associated with the solar facility, contribute to a greater understanding of the landscape and context and the sensitive elements within it (e.g. remnant natural vegetation and watercourses, cultural heritage areas, archaeological and palaeontological resources, avifaunal species and populations etc.), as well as the protection and rehabilitation of these elements (e.g. implementation of buffers, removal and monitoring of alien vegetation etc.).</p>  |                |    |                |
| 17. How does the project fit into the National Development Plan for 2030?  | Please explain |    |                |
| <p>Contribution to the provision of electricity to the nation, and investment in electrical infrastructure for its distribution (as part of the strategy to remedy the electricity crisis of 2008 and that associated with the future demands).</p> <p>This expansion aligns with the one of the prioritised infrastructure investments listed in the NDP: “Procuring at least 20 000MW of renewable electricity by 2030, importing electricity from the region, decommissioning 11 000MW of ageing coal-fired power stations and stepping up investments in energy-efficiency”, as well as one the key proposals to “Implement the 2010 Integrated Resource Plan (procuring at least 20 000MW of electricity from renewables) to reduce carbon emissions from the electricity industry from 0.9kg per kilowatt-hour to 0.6kg per kilowatt-hour.</p>   |                |    |                |
| 18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.   |                |    |                |
| <p>The investigation, assessment and communication of potential impacts of this proposal on the receiving environment have considered alternatives (the no-go) and cumulative impacts, and recommended mitigation and monitoring measures to ensure that potential negative impacts are kept to a minimum and potential positive impacts are enhanced. Among these is the recommendation for on-going monitoring of the access tracks to avoid erosion and removal alien plants.</p>   |                |    |                |

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

It is argued that the proposed development of this expansion area will be socially, environmentally and economically sustainable, due to the following:

Further disturbance to the local ecosystems / loss of biodiversity is likely to be negligible as the expansion area has been positioned in such a manner as to avoid sensitive features. The infrastructure associated with the expansion has been positioned outside of the 1:100 year floodline.

Mitigation and monitoring measures have been recommended to minimise and avoid potential degradation of the environment, as well as rehabilitate the current disturbed context where possible.

## 11 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

| Title of legislation, policy or guideline                   | Applicability to the project  | Administering authority                         | Date                       |
|---|---|---|----------------------------|
| <b>National Environmental Management Act.</b>               | Basic Assessment  | Department of Environmental Affairs             | Act 107 of 1998 as amended |
| <b>National Environmental Management: Biodiversity Act.</b> | Endangered / Vulnerable vegetation types and Protected Species (TOPS)                 | Provincial Nature Conservation Department       | Act 10 of 2004             |
| <b>National Spatial Biodiversity Assessment</b>             | Critical Biodiversity Areas & Ecological Support Areas across alignment               | Provincial Nature Conservation Department       | 2011                       |
| <b>Conservation of Agricultural Resources Act</b>           | Agricultural land traversed by powerline.<br>Alien vegetation in and surrounding site | Department of Agriculture, Forestry & Fisheries | Act 43 of 1983             |
| <b>National Veld and Forest Fire Act</b>                    | Alien infested Thicket and Fynbos in relation to fire risk.                           | Department of Agriculture, Forestry & Fisheries | Act 101 of 1998            |
| <b>Nature &amp; Environment Conservation Ordinance</b>      | Lists Endangered & Protected animals & plants (species) in Schedules 1-4.             | Provincial Nature Conservation Department       | Ordinance 19 of 1974       |
| <b>National Heritage Resources Act</b>                      | Activity on site greater than 5000m <sup>2</sup> in extent.                           | SAHRA   | Act 25 of 1999             |

## 12 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

**a) Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase?

|   |                             |
|---|-----------------------------|
| <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| 10m <sup>3</sup>                        |                             |

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

Normal domestic and construction waste will be disposed of by the contractor in a licenced landfill site. Damaged or defunct solar panels will be returned to the supplier for dismantling and recovery.

Where will the construction solid waste be disposed of (describe)?

Municipal landfill site. The Ramotshere Moiloa local municipality will be approached by the contractor to advise which of the landfill sites may be used to accept construction waste

Will the activity produce solid waste during its operational phase?

|                              |  |
|------------------------------|--|
| <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| 0m <sup>3</sup>              |  |

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

Non performing PV panels will not be treated as waste, but must be returned to the supplier for recycling and recovery of components.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

NA

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

NA

*If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

|                              |  |
|------------------------------|--|
| <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
|------------------------------|--|

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

|     |     |
|-----|-----|
| YES | ✓NO |
|-----|-----|

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

**b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

|     |     |
|-----|-----|
| YES | ✓NO |
|-----|-----|

If YES, what estimated quantity will be produced per month?

|                 |  |
|-----------------|--|
| 0m <sup>3</sup> |  |
|-----------------|--|

Will the activity produce any effluent that will be treated and/or disposed of on site?

|     |     |
|-----|-----|
| YES | ✓NO |
|-----|-----|

*If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Will the activity produce effluent that will be treated and/or disposed of at another facility?

|     |     |
|-----|-----|
| YES | ✓NO |
|-----|-----|

If YES, provide the particulars of the facility:

|                        |              |  |
|------------------------|--------------|--|
| <b>Facility name:</b>  |              |  |
| <b>Contact person:</b> |              |  |
| <b>Postal address:</b> |              |  |
| <b>Postal code:</b>    |              |  |
| <b>Telephone:</b>      | <b>Cell:</b> |  |
| <b>E-mail:</b>         | <b>Fax:</b>  |  |

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

The activity will not generate any waste water. Plain Water will be used for the cleaning of panels, however this will not be reused or recycled.

**c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

|     |  |
|-----|--|
| YES | <input checked="" type="checkbox"/> NO |
| YES | NO                                     |

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

The activity will not result in any emissions controlled by legislation during either the construction or operational phase of the development. Potential emissions will be limited to dust generated by construction activities during the construction phase. Management of dust is dealt with in the Environmental Management Programme appended hereto.

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

|     |  |
|-----|--|
| YES | <input checked="" type="checkbox"/> NO |
|-----|--|

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

**e) Generation of noise**

Will the activity generate noise?

|     |  |
|-----|--|
| YES | <input checked="" type="checkbox"/> NO |
| YES | NO                                     |

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

There may be low levels of noise during the construction phase of the development. Measures to manage and mitigate these are included in the EMPR attached to this BAR.

**13 WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

|                      |                        |   |                                       |                  |  |
|----------------------|------------------------|---|---------------------------------------|------------------|--|
| <del>Municipal</del> | <del>Water board</del> | <input checked="" type="checkbox"/> Groundwater | <del>River, stream, dam or lake</del> | <del>Other</del> | <del>The activity will not use water</del> |
|----------------------|------------------------|---|---------------------------------------|------------------|--|

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

10000litres

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

|      |    |
|------|----|
| ✓YES | NO |
|------|----|

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

A water use licence application has been submitted for the entire facility (i.e. the RE Capital 2 Development along with this expansion).

## 14 ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

Not Applicable

The activity is for the generation of electricity.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

None.

The activity is for the generation of electricity from a renewable source.

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

**Important notes:**

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?

|      |    |
|------|----|
| ✓YES | NO |
|------|----|

If YES, please complete the form entitled “Details of specialist and declaration of interest” for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

The specialist declarations of interest are included in their respective reports in Appendix E.

|   |                              |   |
|---|------------------------------|---|
| <b>Property description/physical address:</b> | <b>Province</b>              | North West Province                       |
|   | <b>District Municipality</b> | Ngaka Modiri Molema District Municipality |
|   | <b>Local Municipality</b>    | Ramotshere Moiloa Local Municipality      |
|   | <b>Ward Number(s)</b>        | 2   |
|   | <b>Farm name and number</b>  | Portion 15 of the Farm Kameeldoorn 271    |
|   | <b>Portion number</b>        | Portion 15 of the Farm Kameeldoorn        |

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

**Current land-use zoning as per local municipality IDP/records:**

|               |
|---------------|
| Business Zone |
|---------------|

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

|     |     |
|-----|-----|
| YES | ✓NO |
|-----|-----|

### 1 GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

|       |             |             |             |              |             |                  |
|-------|-------------|-------------|-------------|--------------|-------------|------------------|
| ✓Flat | 1:50 — 1:20 | 1:20 — 1:15 | 1:15 — 1:10 | 1:10 — 1:7,5 | 1:7,5 — 1:5 | Steeper than 1:5 |
|-------|-------------|-------------|-------------|--------------|-------------|------------------|

Alternative S2 (if any):

|       |             |             |             |              |             |                  |
|-------|-------------|-------------|-------------|--------------|-------------|------------------|
| ✓Flat | 1:50 — 1:20 | 1:20 — 1:15 | 1:15 — 1:10 | 1:10 — 1:7,5 | 1:7,5 — 1:5 | Steeper than 1:5 |
|-------|-------------|-------------|-------------|--------------|-------------|------------------|

Alternative S3 (if any):

|      |             |             |             |              |             |                  |
|------|-------------|-------------|-------------|--------------|-------------|------------------|
| Flat | 1:50 — 1:20 | 1:20 — 1:15 | 1:15 — 1:10 | 1:10 — 1:7,5 | 1:7,5 — 1:5 | Steeper than 1:5 |
|------|-------------|-------------|-------------|--------------|-------------|------------------|

### 2 LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

|                                 |                          |                   |                                     |                                  |                          |
|---------------------------------|--------------------------|-------------------|-------------------------------------|----------------------------------|--------------------------|
| 2.1 Ridgeline                   | <input type="checkbox"/> | 2.4 Closed valley | <input type="checkbox"/>            | 2.7 Undulating plain / low hills | <input type="checkbox"/> |
| 2.2 Plateau                     | <input type="checkbox"/> | 2.5 Open valley   | <input type="checkbox"/>            | 2.8 Dune                         | <input type="checkbox"/> |
| 2.3 Side slope of hill/mountain | <input type="checkbox"/> | 2.6 Plain         | <input checked="" type="checkbox"/> | 2.9 Seafront                     | <input type="checkbox"/> |
| 2.10 At sea                     | <input type="checkbox"/> |                   |                                     |                                  |                          |

### 3 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

|  | Alternative S1: |     | Alternative S2 (if any): |    | Alternative S3 (if any): |    |
|--|-----------------|-----|--------------------------|----|--------------------------|----|
| Shallow water table (less than 1.5m deep)          | YES             | ✓NO | YES                      | NO | YES                      | NO |
| Dolomite, sinkhole or doline areas                 | YES             | ✓NO | YES                      | NO | YES                      | NO |
| Seasonally wet soils (often close to water bodies) | YES             | ✓NO | YES                      | NO | YES                      | NO |



|  |     |     |     |    |     |    |
|--|-----|-----|-----|----|-----|----|
| Unstable rocky slopes or steep slopes with loose soil      | YES | ✓NO | YES | NO | YES | NO |
| Dispersive soils (soils that dissolve in water)            | YES | ✓NO | YES | NO | YES | NO |
| Soils with high clay content (clay fraction more than 40%) | YES | ✓NO | YES | NO | YES | NO |
| Any other unstable soil or geological feature              | YES | ✓NO | YES | NO | YES | NO |
| An area sensitive to erosion                               | YES | ✓NO | YES | NO | YES | NO |

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

#### 4 GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

|  |  |  |  |                      |
|--|--|--|--|----------------------|
| <del>Natural veld – good condition<sup>E</sup></del> | ✓Natural veld with scattered aliens <sup>E</sup> | <del>Natural veld with heavy alien infestation<sup>E</sup></del> | <del>Veld dominated by alien species<sup>E</sup></del> | Gardens              |
| <del>Sport field</del>                               | ✓Cultivated land                                 | <del>Paved surface</del>   | <del>Building or other structure</del>                 | <del>Bare soil</del> |

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

#### 5 SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

|                              |      |     |        |
|------------------------------|------|-----|--------|
| Perennial River              | YES  | ✓NO | UNSURE |
| Non-Perennial River          | ✓YES | NO  | UNSURE |
| Permanent Wetland            | YES  | ✓NO | UNSURE |
| Seasonal Wetland             | YES  | ✓NO | UNSURE |
| Artificial Wetland           | ✓YES | NO  | UNSURE |
| Estuarine / Lagoonal wetland | YES  | ✓NO | UNSURE |

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Please refer to the Freshwater Ecology Specialist Study attached to the BAR.

## 6 LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a **500m radius** of the site and give description of how this influences the application or may be impacted upon by the application:

|  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Natural area | <input checked="" type="checkbox"/> Dam or reservoir          | Polo fields  |
| Low density residential                          | Hospital/medical centre                                       | Filling station <sup>#</sup>                                 |
| Medium density residential                       | School  | Landfill or waste treatment site                             |
| High density residential                         | Tertiary education facility                                   | Plantation   |
| Informal residential <sup>A</sup>                | Church  | <input checked="" type="checkbox"/> Agriculture              |
| Retail commercial & warehousing                  | Old age home  | <input checked="" type="checkbox"/> River, stream or wetland |
| Light industrial                                 | Sewage treatment plant <sup>A</sup>                           | Nature conservation area                                     |
| Medium industrial <sup>AN</sup>                  | Train station or shunting yard <sup>N</sup>                   | Mountain, koppie or ridge                                    |
| Heavy industrial <sup>AN</sup>                   | <input checked="" type="checkbox"/> Railway line <sup>N</sup> | Museum   |
| Power station                                    | Major road (4 lanes or more) <sup>N</sup>                     | Historical building  |
| Office/consulting room                           | Airport <sup>N</sup>  | Protected Area   |
| Military or police base/station/compound         | Harbour   | Graveyard  |
| Spoil heap or slimes dam <sup>A</sup>            | Sport facilities  | <input checked="" type="checkbox"/> Archaeological site      |
| Quarry, sand or borrow pit                       | Golf course   | Other land uses (describe)                                   |

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

The railway line borders this expansion area to the West. Transnet have provided a comment of no objection to the RE Capital 2 Solar Development and have been given an opportunity to comment on this environmental process for the expansion of the RE Capital 2 Solar development.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

None

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

None

Does the proposed site (including any alternative sites) fall within any of the following:

|  |      |     |
|--|------|-----|
| Critical Biodiversity Area (as per provincial conservation plan)             | ✓YES | NO  |
| Core area of a protected area?   | YES  | ✓NO |
| Buffer area of a protected area?   | YES  | ✓NO |
| Planned expansion area of an existing protected area?                        | YES  | ✓NO |
| Existing offset area associated with a previous Environmental Authorisation? | YES  | ✓NO |
| Buffer area of the SKA?  | YES  | ✓NO |

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust. According to the SANBI Plants of South Africa database only a single red data plant species, *Cineraria alchemilloides* DC. subsp. *Alchemilloides*, was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site. There are no TOPS plant species present on the site.

## 7 CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

|           |     |
|-----------|-----|
| YES       | ✓NO |
| Uncertain |     |

There are sensitive archaeology features identified within the total development footprint. These have been incorporated into the development layout. None of these are within the proposed expansion area.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

A Heritage Impact Assessment has been undertaken and is attached to this report.

Will any building or structure older than 60 years be affected in any way?  
 Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?  
 If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

|     |     |
|-----|-----|
| YES | ✓NO |
| YES | ✓NO |

## 8 SOCIO-ECONOMIC CHARACTER

### a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

According to the IDP, The current official unemployment rate is 10.0 % (In comparison to 16.1 % in 2011)

Economic profile of local municipality:

It is important to note that new opportunities have opened up for municipal area since the need to facilitate the generation of sustainable energy was introduced in South Africa by Eskom and the South African government. Economic spin-offs are eagerly anticipated.

Level of education:

### b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

~R150m

What is the expected yearly income that will be generated by or as a result of the activity?

R0

|  |              |    |
|--|--------------|----|
| Will the activity contribute to service infrastructure?  | <b>✓YES</b>  | NO |
| Is the activity a public amenity?  | <b>✓YES</b>  | NO |
| How many new employment opportunities will be created in the development and construction phase of the activity/ies? | <b>~130</b>  |    |
| What is the expected value of the employment opportunities during the development and construction phase?            | <b>~R60m</b> |    |
| What percentage of this will accrue to previously disadvantaged individuals?   | <b>~60%</b>  |    |
| How many permanent new employment opportunities will be created during the operational phase of the activity?        | <b>0</b>     |    |
| What is the expected current value of the employment opportunities during the first 10 years?                        | <b>R0</b>    |    |
| What percentage of this will accrue to previously disadvantaged individuals?   | <b>0%</b>    |    |

## 9 BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIShelp@sanbi.org](mailto:BGIShelp@sanbi.org). Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP’s responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

|  |   |
|--|---|
| <b>Systematic Biodiversity Planning Category</b> | <b>If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan</b> |
|--|---|

|   |                                      |                                 |  |  |
|---|--------------------------------------|---------------------------------|--|--|
| <p><b>✓Critical Biodiversity Area (CBA)</b></p> | <p>Ecological Support Area (ESA)</p> | <p>Other Natural Area (ONA)</p> | <p>No Natural Area Remaining (NNA)</p> | <p>GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust. According to the SANBI Plants of South Africa database only a single red data plant species, Cineraria alchemilloides DC. subsp. Alchemilloides, was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site. There are no TOPS plant species present on the site.</p> |
|---|--------------------------------------|---------------------------------|--|--|

**b) Indicate and describe the habitat condition on site**

| Habitat Condition   | Percentage of habitat condition class (adding up to 100%) | Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc). |
|---|---|---|
| Natural   | %   | 5   |
| Near Natural (includes areas with low to moderate level of alien invasive plants) | %   | 40  |
| Degraded (includes areas heavily invaded by alien plants)                         | %   | 40  |
| Transformed (includes cultivation, dams, urban, plantation, roads, etc)           | %   | 15  |

**c) Complete the table to indicate:**

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

| Terrestrial Ecosystems  |             | Aquatic Ecosystems   |                |                  |
|---|-------------|--|----------------|------------------|
| <p><b>Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</b></p> | Critical    | <p>Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)</p> | <p>Estuary</p> | <p>Coastline</p> |
|   | Endangered  |  |                |                  |
|   | ✓Vulnerable |  |                |                  |
|   | Least       |  |                |                  |

| Terrestrial Ecosystems |            | Aquatic Ecosystems |     |        |     |     |     |     |
|------------------------|------------|--------------------|-----|--------|-----|-----|-----|-----|
|                        | Threatened | YES                | ✓NO | UNSURE | YES | ✓NO | YES | ✓NO |

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The vegetation, flora and vertebrate fauna study of the on Portion 15 of the Farm Kameeldoorn 271 JP Zeerust, Ramotshere Moiloa Local Municipality, Ngaka Modiri Molema District Municipality North-West Province, revealed the presence of four plant communities as representative ecosystems. The study showed that the entire site should be classified under the Moot Plains Bushveld (Mucina & Rutherford 2006). According to Mucina & Rutherford (2006) the conservation status of the Moot Plains Bushveld is Vulnerable, although about 13% is statutorily protected. The reason for this conservation status is that almost 30% of Moot Plains Bushveld has been transformed, but this is mainly in the Pretoria-Hartebeespoort Dam-Rustenburg area, with considerable pressure for more development. The western part of Moot Plains Bushveld is, in contrast, quite natural, with very little transformed by development, and here it could be regarded as Least Threatened.

It seems that the GIS derived, coarse scale Critical Terrestrial Biodiversity areas map (SANBI) considered the area of the Moot Plains Bushveld as a CBA1. Considering the above, and from the results of this study, it is clear that the CBA1 status should only be applied to the eastern part (Pretoria-Hartebeespoort Dam-Rustenburg area) of the Moot Plains Bushveld, where biodiversity is indeed threatened. This could surely not be applied to the western parts from Rustenburg to Zeerust. According to the SANBI Plants of South Africa database only a single red data plant species, *Cineraria alchemilloides* DC. subsp. *Alchemilloides*, was ever collected within the 2526CA grid. The current survey could not confirm the presence of this species on the site. There are no TOPS plant species present on the site.

## SECTION C: PUBLIC PARTICIPATION

### 1 ADVERTISEMENT AND NOTICE

|                             |                 |                  |
|-----------------------------|-----------------|------------------|
| <b>Publication name</b>     | Zeerust Nuus    |                  |
| <b>Date published</b>       | 30/06/2016      |                  |
| <b>Site notice position</b> | <b>Latitude</b> | <b>Longitude</b> |
|                             | 25 03 55.70     | 26 03 25.76      |
| <b>Date placed</b>          | 13/04/2016      |                  |

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

### 2 DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

| <b>Title, Name and Surname</b>  | <b>Affiliation/ key stakeholder status</b> | <b>Contact details (tel number or e-mail address)</b> |
|---|--|---|
| Birdlife Africa   | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Ikageng Community Trust   | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Ramotshere Moiloa Municipality  | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Department Of Agriculture, Forestry and Fisheries                         | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Department of Water And Sanitation  | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Square Kilometre Array  | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Department of Economic Development, Environment, Conservation and Tourism | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Eskom   | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Sentech   | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Department of Communications  | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Roads and Public Works  | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Department of Energy  | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |
| Department of Rural Development and Land Reform                           | See attached I&AP Register in Appendix E5  | See attached I&AP Register in Appendix E5             |

|          |   |   |
|----------|---|---|
| SAHRA    | See attached I&AP Register in Appendix E5 | See attached I&AP Register in Appendix E5 |
| Transnet | See attached I&AP Register in Appendix E5 | See attached I&AP Register in Appendix E5 |

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

### 3 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

No issues raised to DATE. This section will be updated in the final report.

| Summary of main issues raised by I&APs | Summary of response from EAP |
|--|------------------------------|
|  |                              |
|  |                              |

### 4 COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

### 5 AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

| Company   | First Name | Surname   | Postal Address 1 | Postal Address 2 | Postal Suburb | Postal Code | City     | Fax              | eMail                    |
|---|------------|-----------|------------------|------------------|---------------|-------------|----------|------------------|--------------------------|
| Department of Agriculture, Forestry & Fisheries | Mashudu    | Marubini  | Private Bag X120 |                  |               | 0001        | Pretoria | (012) 329 - 5938 | mashuduma@daff.gov.za    |
| Department of Agriculture, Forestry & Fisheries | N          | Motete    | Private Bag X120 |                  |               | 0001        | Pretoria |                  | nthabisengmo@daff.gov.za |
| Department of Agriculture, Forestry & Fisheries | Thoko      | Buthelezi | Private Bag X120 |                  |               | 0001        | Pretoria | 012 349 5938     | thokob@daff.gov.za       |



|  |          |          |                                     |           |               |      |              |                |                                |
|--|----------|----------|-------------------------------------|-----------|---------------|------|--------------|----------------|--------------------------------|
| Department of Communications                                       | Ayanda   | Mbolekwa | Private Bag X860                    | Pretoria  |               | 0001 | Pretoria     |                | Ayandam@doc.gov.za             |
| Department of Environmental Affairs                                | Tumelo   | Ratlou   | Private Bag X447                    |           |               | 0001 | Pretoria     |                | tratlou@environment.gov.za     |
| Department of Minerals and Energy                                  | Noma     | Qase     | Private Bag X 19                    |           | Arcadia       | 0007 | Arcadia      |                | nomawethu.qase@energy.gov.za   |
| Endangered Wildlife Trust (EWT)                                    | Bridget  | Corrigan | Pvt Bag X11                         |           | Modderfontein | 1645 | Johannesburg | 086 715 614 0  | bridgetc@ewt.org.za            |
| South African Civil Aviation Authority                             | Lizelle  | Stroh    | Private Bag X73                     |           | Halfway House | 1685 | Johannesburg | 011 545 128 2  | strohl@caa.co.za               |
| ESKOM  | John     | Geeringh | P.O. Box 1091                       |           |               | 2000 | Johannesburg | 086 661 406 4  | geerinh@eskom.co.za            |
| ESKOM  | Kevin    | Leask    | P.O. Box 1091                       |           |               | 2000 | Johannesburg |                | leaskk@eskom.co.za             |
| Birdlife Africa  | Samantha | Ralston  | Private Bag X5000                   | Parklands | Parklands     | 2121 | Johannesburg | +27 (0)1 1 789 | energy@birdlife.org.za         |
| WESSA  | John     | Wesson   | PO Box 435                          |           |               | 2160 | Ferndale     | 011 462 566 3  |                                |
| Department Economic Development and Environmental Affairs (E-Cape) | Ouma     | Skosana  | Cnr of Provident & University Drive |           |               | 2375 | Mmbatho      | 011 389 543 0  | Oskosana@nwpg.gov.za           |
|  | Maureen  | Scholts  | PO Box 596                          |           |               | 2735 | Mmbatho      |                | mscholtz@mafonline.co.za       |
| Department of Agriculture & Rural Development (Gauteng)            | Poncha   | Mokaila  | PO Box X2039                        |           |               | 2735 | Mmbatho      | 018 392 437 7  |                                |
| Department of Water & Sanitation                                   | Wendy    | Ralekoa  | Private Bax X5                      |           |               | 2735 | Mmbatho      | 018 384 209 5  | ralekoaw@dwa.gov.za            |
| North West Department of Public Works, Road and Transport          | J        | van Wyk  | Private Bag X2080                   |           |               | 2735 | Mmbatho      | 018 388 45 47  | vanwykj@nwpg.gov.za            |
|  | Johan    | Theron   | PO Box 479                          |           |               | 2865 | Zeerust      |                |                                |
|  | Johannes | Kelder   | PO Box 325                          |           |               | 2865 | Zeerust      |                |                                |
|  | Willem   | Erasmus  | PO Box 596                          |           |               | 2865 | Zeerust      |                | werasmus@saol.com              |
| Ramotshere Moiloa  | Crosby   | Maema    | PO Box 92                           |           |               | 2865 | Zeerust      | 018 642 358 6  | crosby.maema@ramotshere.gov.za |
| Ramotshere Moiloa  | Paddy    | Mokotong | PO Box 555                          |           |               | 2865 | Zeerust      | 018 381 056 1  | municipalmanager@nmmdm.gov.za  |
| SANRAL   | Rene     | De Kock  | Private Bag X19                     |           |               | 7535 | Bellville    | (02 1) 946 -   | dekockr@nra.co.za              |

|  |         |           |               |  |  |      |             |                          |                      |
|--|---------|-----------|---------------|--|--|------|-------------|--------------------------|----------------------|
|  |         |           |               |  |  |      |             | 163<br>0                 |                      |
| ESKOM  | Barbara | van Geems | P.O. Box 222  |  |  | 7561 | Brackenfell |                          | vgeemsb@eskom.co.za  |
| ESKOM Distribution - Western Operating Unit                | Justine | Wyngaardt | P.O. Box 222  |  |  | 7561 | Brackenfell | (021)<br>980<br>305<br>3 | wyngaajo@eskom.co.za |
| SAHRA  | Phillip | Hine      | P.O. Box 4637 |  |  | 8000 | Cape Town   |                          | phine@sahra.org.za   |
| Department of Agriculture                                  | Cynthia | Fortune   | P/B X5018     |  |  | 8301 | Kimberley   | 053<br>831<br>363<br>5   | fortunec@ncpg.gov.za |
| Department of Agriculture, Land Reform & Rural Development | Nico    | Toerien   | P.O. Box 52   |  |  | 8800 | Upington    | 054<br>337<br>800<br>1   | ntoerien1@gmail.com  |

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

## 6 CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1 IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.\

| Ecological Impacts      |        |           |           |             |              |          |            |
|-------------------------|--------|-----------|-----------|-------------|--------------|----------|------------|
| Impact on Vegetation    | Extent | Duration  | Intensity | Probability | Significance | Status   | Confidence |
| Plant Communities 1     | Site   | Permanent | High      | High        | Medium       | Negative | High       |
| Plant Community 2       | Site   | Permanent | High      | Low         | Medium       | Negative | High       |
| Plant Community 3       | Site   | Permanent | Low       | Low         | Low          | Negative | Medium     |
| Plant Community 4       | Site   | Permanent | High      | High        | Low          | Negative | High       |
| Impact on plant species |        |           |           |             |              |          |            |

|  |                             |           |                                   |      |                 |          |      |
|--|-----------------------------|-----------|-----------------------------------|------|-----------------|----------|------|
| Indigenous species                             | Site                        | Permanent | High                              | High | Medium          | Negative | High |
| Alien plant species                            | Site                        | Permanent | Low                               | High | High            | Positive | High |
| Impact on fauna                                |                             |           |                                   |      |                 |          |      |
| Mammals  | Site                        | Permanent | Low                               | Low  | Low             | Neutral  | High |
| Birds  | Site                        | Permanent | Low                               | Low  | Low             | Neutral  | High |
| Herpetofauna                                   | Site                        | Permanent | Low                               | Low  | Low             | Neutral  | High |
| Activity                                       | Nature of Impact            |           | Severity*                         |      | Likelihood**    |          |      |
|  |                             |           | 0 (low) – 10 (high)<br>+ve or -ve |      | High/Medium/Low |          |      |
| Substation construction                        | Construction activities     |           | -10                               |      | High            |          |      |
| Pole/ power line erection                      | Loss of habitat             |           | -4                                |      | Low             |          |      |
| Servitude maintenance                          | Loss of habitat             |           | -3                                |      | Low             |          |      |
|  | Disturbance                 |           | -2                                |      | Low             |          |      |
|  | Exotic/alien plant increase |           | -5                                |      | Medium          |          |      |
| Internal access roads and other site clearings | Habitat and species damage  |           | - 10                              |      | High            |          |      |
|  | Substrate transformation    |           | - 4                               |      | Medium          |          |      |
|  | Contamination risk          |           | - 3                               |      | Low             |          |      |

|  |                                    |     |        |
|--|------------------------------------|-----|--------|
| Equipment construction camp and service area     | Habitat and species damage         | - 8 | High   |
| Water supply                                     | Servitude disturbance              | - 3 | Medium |
| Storage and use of fuels and chemicals on site   | Habitat and species damage         | - 5 | High   |
|  | Contamination risk local           | - 3 | Medium |
|  | Contamination risk beyond site     | - 1 | Low    |
| Electricity connection                           | Habitat and species damage         | - 3 | Low    |
| Movement and presence of machinery and personnel | Contamination risk                 | - 3 | High   |
|  | Vegetation change                  | - 3 | Medium |
|  | Plant harvesting and / or poaching | - 8 | Medium |
|  | Substrate transformation           | - 8 | Medium |
| Staff facilities on site                         | Habitat and species damage         | - 5 | High   |
|  | Increased fire risk                | - 2 | Low    |
|  | Contamination risk                 | - 3 | Medium |
| Access/maintenance management                    | Habitat and species damage         | - 3 | Medium |
| Servitude management                             | Servitude disturbance              | - 3 | Low    |
| Water management                                 | Contamination risk                 | - 3 | Low    |
| Presence and / or use                            | Contamination risk                 | - 3 | Low    |

|                            |   |     |               |
|----------------------------|---|-----|---------------|
| of hazardous materials     |   |     |               |
| Top soil interference      | Substrate transformation                            | - 5 | Medium        |
| Land use interference      | Vegetation change                                   | ± 2 | Low           |
| Vegetation management      | Vegetation change                                   | ± 5 | Medium        |
| Material removal/recycling | Habitat and species damage                          | - 5 | Medium        |
|                            | Contamination risk                                  | - 5 | Medium        |
| Substrate repair           | Substrate transformation                            | - 5 | Medium        |
| Vegetation restoration     | Vegetation change                                   | ± 5 | Medium        |
|                            | Invasion by aliens                                  | - 5 | Medium        |
|                            | Improvement of vegetated cover compared to original | + 5 | Low to Medium |
| Top soil interference      | Substrate transformation                            | - 8 | Medium        |
| Facility conversion        | Substrate transformation                            | - 5 | Medium        |

**Visual Impacts**

| Impact Activity | Phase | Mitigation | Nature | Extent | Duration | Severity | Probability | Significance without | Significance with |
|-----------------|-------|------------|--------|--------|----------|----------|-------------|----------------------|-------------------|
| TX Alt 1        | Cons. | W/Out      | -ve    | Local  | Short    | M        | P           | H                    |                   |
|                 |       | With       | -ve    | Local  | Short    | ML       | P           |                      | M                 |
|                 | Ops.  | W/Out      | -ve    | Local  | Long     | MH       | P           | H                    |                   |
|                 |       | With       | -ve    | Local  | Long     | M        | P           |                      | M                 |

|       |       |     |       |       |    |   |    |   |
|-------|-------|-----|-------|-------|----|---|----|---|
| Close | W/Out | -ve | Local | Short | M  | P | ML |   |
|       | With  | -ve | Local | Short | MH | P |    | N |
| Cuml. | W/Out | -ve | Local | Long  | M  | P | MH |   |
|       | With  | +ve | Local | Long  | L  | P |    | L |

## 2 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### Alternative A (preferred alternative)

*Cape EAPrac* is of the opinion that the information contained in the Draft Basic Assessment Report and the documentation attached was sufficient to allow the general public and key stakeholders to apply their minds to the potential negative and positive impacts associated with the development of the RE Capital 2 Expansion Area.

This Draft Basic Assessment Report contains the details of the Pre Application Public Participation process undertaken and includes all comments received during this process.

The final preferred alternative (Alternative 2) has no major environmental constraints and potential impacts can be reduced to very low levels through management interventions.

Aside from potential negative impacts, it is submitted that the proposed Grid Connection has **notable positive impacts**, in that it aligns with, and is in furtherance of, international, national, regional and local strategies to support alternative / renewable energy projects. These include the distribution of much-needed ‘clean’ electricity into the national grid, provision of local electrical infrastructure for use in long-term, and the provision of employment opportunities during the construction and operation phases for members of local communities.

Sufficient mitigation has been recommended to reduce potential negative impacts to an acceptable level. It is submitted that the proposed installation of the preferred overhead powerline alternatives will be sustainable in the long term and the preferred alternative can be considered to be the most feasible / viable option, from environmental and practical perspectives.

**Alternative B****Alternative C****No-go alternative (compulsory)**

The no-go alternative would entail the construction of the RE Capital 2 solar development without the addition of this proposed expansion area.

The solar development would not operate at an optimal generation capacity and as such would not fully achieve the notable environmental and social benefits.



### SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

|   |                             |
|---|-----------------------------|
| <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
|---|-----------------------------|

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

- The proposed expansion area must be accessed by a single road over the drainage feature
  - MV cabling between the main facility and the expansion area must be routed above ground or within the access road.
  - The recommendations contained in the Basic Assessment Report must be adopted and implemented.

Is an EMPr attached?

|   |                             |
|---|-----------------------------|
| <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
|---|-----------------------------|

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

NAME OF EAP

SIGNATURE OF EAP

DATE

## **SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

## REFERENCES

- DWA** (2001). *Generic public participation guideline*. Department of Water Affairs and Forestry.
- DEAT** (2002). *Integrated Environmental Management Information Series 3: Stakeholder Engagement*. Department of Environmental Affairs and Tourism, Pretoria.
- DEADP** (2003). *Waste Minimisation Guideline for Environmental Impact Assessment reviews*. NEMA EIA Regulations Guideline & Information Series, Department Environmental Affairs & Development Planning.
- DEAT** (2004). *Criteria for determining alternatives in EIAs*, Integrated Environmental Management, Information Series 11, Department of Environmental Affairs & Tourism, Pretoria.
- DEAT** (2004). *Environmental management Plans*, Integrated Environmental management, Informatino Series 12, Department Environmental Affairs & Tourism.
- DEAT** (2005). *Assessment of Impacts and Alternatives*, Integrated Environmental Management Guideline Series, Department of Environmental Affairs & Tourism, Pretoria.
- DEAT** (2005). *Guideline 4: Public Participation*, in terms of the EIA Regulations 2005, Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism, Pretoria.
- DEADP** (2005). *Guideline for the review of specialist input in the EIA process*. NEMA EIA Regulations Guideline & Information Document Series, Department of Environmental Affairs & Development Planning.
- DEADP** (2005). *Guideline for involving biodiversity specialists in the EIA process*. NEMA EIA Regulations Guideline & Information Document Series, Department of Environmental Affairs & Development Planning.
- DEADP** (2005). *Guideline for environmental management plans*. NEMA EIA Regulations Guideline & Information Document Series, Department of Environmental Affairs & Development Planning.
- DEADP** (2005). *Provincial urban edge guideline*. Department Environmental Affairs & Development Planning.
- DEAT** (2006). *EIA Regulations* in terms of the National Environmental Management Act (Act No 107 of 1998) (Government Notice No R 385, R 386 and R 387 in Government Gazette No 28753 of 21 April 2006).

**DEADP** (2006). *Guideline on the Interpretation of the Listed Activities*. NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEADP** (2007). *Guide on Alternatives*, NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEADP** (2007). *Guideline on Appeals*, NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEADP** (2007). *Guideline on Exemption Applications*. NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEADP** (2007). *Guideline on Public Participation*. NEMA EIA Regulations Guidelines & Information Document Series, Department of Environmental Affairs & Development Planning.

**DEADP** (2009). *Guideline on Need & Desirability*, NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEADP** (2009). *Guideline on Alternatives*, NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEADP** (2009). *Guideline on Transitional Arrangements*, NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEADP** (2009). *Guideline on Exemption Applications*. NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEADP** (2009). *Guideline on Appeals*. NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**DEADP** (2009). *Guideline on Public Participation*. NEMA EIA Regulations Guideline and Information Document Series, Department Environmental Affairs & Development Planning.

**Keatimilwe K & Ashton PJ** 2005. *Guideline for the review of specialist input in EIA processes*. Department Environmental Affairs & Development Planning.

**Lochner P** (2005). *Guideline for Environmental Management Plans*. Department Environmental Affairs & Development Planning.

**Münster, F.** (2005). *Guidelines for Determining the Scope of Specialist Involvement in EIA Processes: Edition 1*. CSIR Report No ENV-S-C 2005 053 A. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

**Oberholzer B** (2005). *Guideline for involving visual & aesthetic specialists*. Department Environmental Affairs & Development Planning.

**Winter S & Beaumann N** (2005). *Guideline for involving heritage specialists in EIA processes*. Department Environmental Affairs & Development Planning.

**DEA** (2010). *National Climate Change Response Green Paper 2010*.

**DEA** (January 2008). *National Response to South Africa's Electricity Shortage*. Interventions to address electricity shortages.

**DEA&DP**. (May 2006). *Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape: Specialist Study: Executive Summary - CNdV Africa* prepared for Provincial Government of the Western Cape.

**Department of Mineral & Energy** (1998). *White Paper on Energy Policy of the Republic of South Africa*.

**Department of Mineral & Energy** (2003). *The White Paper on Renewable Energy*.

**Hsai-Yang, F** (Ed)(2006). *Environmental Geotechnology Dictionary* (online version). University of North Carolina, Charlotte, USA.

**Integrated Resource Plan for Electricity** (Oct. 2010). Revision 2, Version8.

**International Finance Corporation – World Bank Group**. (April 2007). *Environmental, Health and Safety Guidelines for Electric Power Transmission and Distribution*.

**International Finance Corporation – World Bank Group**. (April 2007). *Environmental, Health and Safety Guidelines for Wind Energy*.

**International Finance Corporation – World Bank Group**. (April 2007). *General Environmental, Health and Safety Guidelines*.

**Mucina, L. & Rutherford, M.C.** (eds) 2006. *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*. South African National Biodiversity Institute, Pretoria.

**National Energy Regulator of South Africa (NERSA)**(Feb.2010). *Rules on selection criteria for renewable energy projects under the REFIT Programme*.

**Saayman, I.** (2005). *Guideline for Involving Hydrogeologists in EIA Processes: Edition 1*. CSIR Report No ENV-S-C 2005 053 D. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning, Cape Town.

**SANBI Biodiversity GIS** (2007). South African National Biodiversity Institute, Cape Town, South Africa.