RED SANDS PV 3

Northern Cape Province

Social Assessment - Baseline Report

December 2021

savannah environmental

t +27 (0)11 656 3237
f +27 (0)86 684 0547
e info@savannahsa.com
w www.savannahsa.com

Prepared for:

AGV Projects (Pty) Ltd
512 Riverside Lofts, Tyger Falls, Boulevard
Bellville,
7530
Cape Town

savannah environmental

t +27 (0)11 656 3237 f +27 (0)86 684 0547 e info@savannahsa.com w www.savannahsa.com
First Floor, Block 2, 5 Woodlands Drive Office Park, Cnr Woodlands Drive & Western Service Road, Woodmead, 2191

REPORT DETAILS

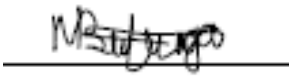
Title	:	Social Impact Assessment (SIA) Report: Red Sands PV3 Facility
Authors	:	Savannah Environmental (Pty) Ltd Nondumiso Bulunga
Client	:	Red Sands PV3
Report Revision	:	Revision 1
Date	:	December 2021

When used as a reference this report should be cited as: Savannah Environmental (2021) Social Impact Assessment (SIA) Basic Assessment Report for the Red Sands PV3 Facility, Northern Cape.

SPECIALIST DECLARATION OF INTEREST

I, Nondumiso Bulunga, declare that –

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



Nondumiso Bulunga
Name

Signature

03 December 2021
Date

TABLE OF CONTENTS

FIGURES

ACRONYMS

B-BBEE	Broad-Based Black Economic Empowerment
CLO	Community Liaison Officer
DEDECT	Department of Economic Development, Environment and Tourism
DFFE	Department of Forestry Fisheries and the Environment
DoE	Department of Mineral Resources and Energy
DM	District Municipality
EA	Environmental Authorisation
EAP	Economically Active Population
ECA	Environment Conservation Act (No. 73 of 1989)
ECO	Environmental Control Officer
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EP	Equator Principles
EPC	Engineering, Procurement and Construction
GDP	Gross Domestic Product
GDP-R	Gross Domestic Product per Region
GGP	Gross Geographic Product
GHG	Greenhous Gas
GNP	Gross National Product
GNR	Government Notice
HDI	Historically Disadvantaged Individuals
I&AP	Interested and Affected Party
IDC	Industrial Development Corporation
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IFC	International Finance Corporation
IRP	Integrated Resource Plan
km	Kilometre
kV	Kilovolt
LED	Local Economic Development
LM	Local Municipality
NEMA	National Environmental Management Act (No. 107 of 1998)
NDP	National Development Plan
PGDS	Provincial Growth and Development Strategy
PICC	Presidential Infrastructure Coordinating Committee
PSDF	Provincial Spatial Development Framework
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIP	Strategic Infrastructure Project

1. INTRODUCTION AND PROJECT DESCRIPTION

AGV Projects (Pty) Ltd is proposing the development of a solar PV facility (known as the Red Sands PV3 facility) and associated infrastructure on a site located approximately 26km northeast of Groblershoop, within the Tsantsabane Local Municipality and the ZF Mgcawu District Municipality in the Northern Cape Province. The project is to be known as Red Sands PV3 and will have a contracted capacity of up to 75MW.

The development of the PV Facility and associated infrastructure requires Environmental Authorisation (EA) from the national Department of Forestry, Fisheries and the Environment (DFFE) in accordance with the National Environmental Management Act (No. 107 of 1998) (NEMA), and the Environmental Impact Assessment (EIA) Regulations, 2014 (GNR 326), as amended, subject to the completion of an Environmental Impact Assessment (EIA) process.

Nondumiso Bulunga of Savannah Environmental (Pty) Ltd has been appointed as the independent social consultant responsible for undertaking a Social Impact Assessment (SIA) as part of the EIA process being conducted for the project.

1.1. Project Description

A preferred project site with an extent of ~7023ha and a development area of ~163ha within the project site has been identified by AGV Projects (Pty) Ltd as a technically suitable area for the development of the Red Sands PV3 facility. The development area for the PV facility is located on Portion 2 of the Farm Tities Poort 386. The project site is accessible via an existing gravel farm road from an existing main gravel road off the N8 which is located southeast of the project site.

The Red Sands PV3 project site is proposed to accommodate the following infrastructure, which will enable the PV facility to supply a contracted capacity of up to 75MW_{AC}:

- Solar PV array comprising PV modules and mounting structures.
- Inverters and transformers.
- Low voltage cabling between the PV modules to the inverters
- Fence around the project development area
- Camera surveillance
- Internet connection
- 33kV cabling between the project components and the facility substation
- 33/132kV onsite facility substation[1].
- Battery Energy Storage System (BESS).
- Site offices and maintenance buildings, including workshop areas for maintenance and storage.
- Laydown areas.
- Access roads (up to 6m) and internal distribution roads (up to 4m).

The solar PV facility is proposed in response to the identified objectives of the national and provincial government and local and district municipalities to develop renewable energy facilities for power generation purposes. It is the developer's intention to bid the Red Sands PV3 Facility under the Department

[1] A 132kV powerline will be assessed through a separate Basic Assessment Process

of Mineral Resources and Energy's (DMRE's) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme (or a similar programme), with the aim of evacuating the generated power into the national grid. This will aid in the diversification and stabilisation of the country's electricity supply, in line with the objectives of the Integrated Resource Plan (IRP) with the Red Sands PV3 Facility set to inject up to 75MW into the national grid.

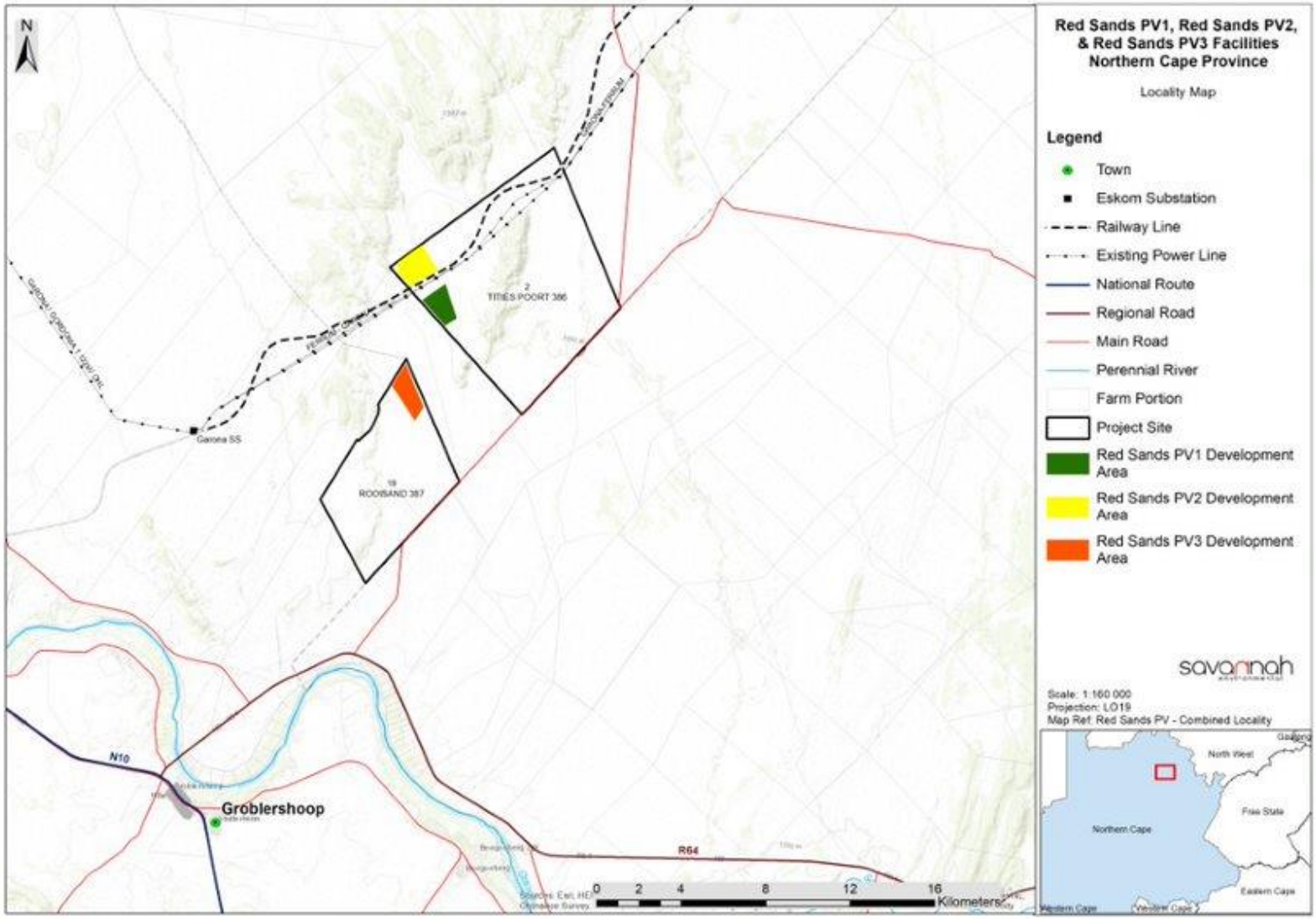


Figure 1-1: Locality map illustrating the location of the Red Sands PV3 facility development area in relation to the proposed Red Sands PV3 and Red Sands PV3 development areas.

1.2. Details of the Independent Specialist

This SIA Report has been undertaken by Nondumiso Bulunga of Savannah Environmental.

» **Nondumiso Bulunga** – holds a master's degree in advanced Geographical Information System and has eight years of experience in the environmental field. Her key focus is on environmental and social impact assessments, public participation, stakeholder engagement environmental management screening as well as mapping using ArcGIS for a variety of environmental projects.

» **Tony Barbour** is a social specialist who has undertaken in the region of 230 SIA's, including approximately 100 SIA's for a renewable energy projects, including wind and solar energy facilities. Al of the SIAs have included as assessment of socio-economic issues. In addition, he is the author of the Guidelines for undertaking SIA's as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa. Tony has also undertaken a number of SIAs for PV facilities within the North West Province and is therefore familiar with the local socio-economic conditions.

Tony Barbour has undertaken an external review of this SIA and has provided an external reviewer's letter. This letter is attached as **Appendix C**

1.3. Structure of the SIA Report

This SIA Report has been prepared in accordance with the requirements of Appendix 6 of the 2014 EIA Regulations, as amended. An overview of the contents of this SIA Report, as prescribed by Appendix 6 of the 2014 EIA Regulations (GNR 326), and where the corresponding information can be found within the report is provided in **Table 1-1**.

Table 1-1: Summary of where the requirements of Appendix 6 of the 2014 NEMA EIA Regulations (GNR 326), as amended, are provided within this Specialist Report.

	Requirement	Location in Report
(a)	Details of – (i) The specialist who prepared the report. (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae.	Section 1
(b)	A declaration that the specialist is independent in a form as may be specified by the competent authority.	Specialist Declaration of Interest
(c)	An indication of the scope of, and the purpose for which, the report was prepared.	Section 0
(cA)	An indication of the quality and age of base data used for the specialist report.	Section 4
(cB)	A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section 5
(d)	The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.	Section 0
(e)	A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.	Section 0
(f)	Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.	Section 4 Section 5
(g)	An identification of any areas to be avoided, including buffers.	N/A

	Requirement	Location in Report
(h)	A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	N/A
(i)	A description of any assumptions made and any uncertainties or gaps in knowledge.	Section 0
(j)	A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.	Section 5
(k)	Any mitigation measures for inclusion in the EMPr.	Appendix A
(l)	Any conditions for inclusion in the environmental authorisation.	Section 7
(m)	Any monitoring requirements for inclusion in the EMPr or environmental authorisation.	Appendix A
(n)	A reasoned opinion – (i) Whether the proposed activity, activities or portions thereof should be authorised. (iA) Regarding the acceptability of the proposed activity or activities. (ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures.	Section 7
(o)	A description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 0
(p)	A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	N/A
(q)	Any other information requested by the competent authority.	N/A
2.	Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

2. METHODOLOGY AND APPROACH

2.1. Purpose of the Study

The International Principles for Social Impact Assessment define SIA as:

"*The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions*".

The International Principles for Social Impact Assessment define social impacts as changes to one or more of the following:

- People's way of life – that is, how they live, work, play and interact with one another on a day-to-day basis.
- Their culture – that is, their shared beliefs, customs, values and language or dialect.
- Their community – its cohesion, stability, character, services and facilities.
- Their political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose.
- Their environment – the quality of the air and water people use, the availability and quality of the food they eat, the level of hazard or risk, dust and noise they are exposed to, the adequacy of sanitation, their physical safety, and their access to and control over resources.
- Their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity.
- Their personal and property rights – particularly whether people are economically affected or experience personal disadvantage which may include a violation of their civil liberties.
- Their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

The purpose of this SIA Process is therefore to:

- Provide baseline information describing the social environment within which the project is proposed, and which may be impacted (both positively and negatively) as a result of the proposed development.
- Identify, describe and assess possible social risks / fatal flaws and social impacts that may arise as a result of the proposed development (in terms of the detailed design and construction, operation, and decommissioning phases of the project).
- Recommend ways in which negative impacts can be avoided, minimised, or their significance reduced, and positive impacts maximised or enhanced.

2.2. Approach to the Study

This SIA Report provides a snapshot of the current social setting within which the Red Sands PV3 facility is proposed. It provides an overview of the manner and degree to which the current status quo is likely to change or be impacted by the construction, operation and decommissioning of the project, as well as the way the social environment is likely to impact on the development itself.

An overview of the assessment methodology utilised as part of this SIA is provided in **Section** Error! Reference source not found..
The SIA process comprised the following:

- Collection and review of existing information, including national, provincial, district, and local plans, policies, programmes, census data, and available literature from previous studies conducted within the area. Project specific information was obtained from the project proponent.
- Identification of potential direct, indirect and cumulative impacts likely to be associated with the construction, operation, and decommissioning of the proposed project. Impacts associated with construction can also be expected to be associated with the decommissioning phase (however, to a lesser extent as the project site would have previously undergone transformation and disturbance during construction)
- Preparation of a SIA BA Report for inclusion in the Basic Assessment Report to be prepared for the project.

2.2.1. Collection and Review of Existing Information

Existing desktop information that has relevance to the proposed project, project area and / or surrounds was collected and reviewed. The following information was examined as part of this process:

- Project maps and layouts.
- Google Earth imagery.
- A description of the project (as provided by the project proponent).
- Responses to questions posed to the project proponent regarding employment and social upliftment and local economic development opportunities (as provided by the project proponent).
- Census Data (2011), and the Local Government Handbook (2019).
- Planning documentation such as Provincial Growth and Development Strategies (PGDSs), Local and District Municipality Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs), and development goals and objectives.
- Relevant legislation, guidelines, policies, plans, and frameworks.
- Available literature pertaining to social issues associated with the development and operation of solar PV power plants and associated infrastructure.

2.2.2. Limitations and Assumptions

- Data derived from the 2011 Census, Northern Cape Provincial Growth and Development Strategy 2004-2014), northern Cape Climate Change Response Strategy; Tsantsabane Local Municipality Integrated Development Plan; ZF Mgcawu District Municipality Integrated Development Plan (2017 – 2022 was used to generate most of the information provided in the baseline profile of the study area. The possibility therefore exists that the data utilised may be out of date and may not provide an accurate reflection of the current status quo.
- This SIA Report is intended to provide an overview of the current social environmental and assist in the identification of potential social impacts
- As a result, no consultation has been conducted with key stakeholders as part of the BA process to date.
- This SIA BA Report was prepared based on information which was available to the specialist at the time of preparing the report. The sources consulted are not exhaustive, and the possibility exists that additional information which might strengthen arguments, contradict information in this report, and / or identify additional information might exist.

» Some of the project projections reflected in this SIA BA Report (i.e. with regards to job creation and local content) may be subject to change, and therefore may be higher or lower than those estimated by the project proponent.
» It is assumed that the motivation for, and planning and feasibility study of the project were undertaken with integrity; and that information provided by the project proponent was accurate and true at the time of preparing this SIA BA Report.

2.2.3. Assessment of Impacts

Direct, indirect, and cumulative impacts associated with the projects must be assessed in terms of the following criteria:

» The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.

» The **extent,** wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):

» The **duration**, wherein it will be indicated whether:
* the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
* the lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
* medium-term (5–15 years) – assigned a score of 3;
* long term (> 15 years) - assigned a score of 4; or
* permanent - assigned a score of 5;

» The **magnitude**, quantified on a scale from 0-10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.

» The **probability** of *occurrence,* which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen),

2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).

» the **significance,** which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and

» the **status**, which will be described as either positive, negative or neutral.
» the degree to which the impact can be reversed.
» the degree to which the impact may cause irreplaceable loss of resources.
» the degree to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

$$S=(E+D+M)P$$

S = Significance weighting
E = Extent

D = Duration
M=Magnitude
P=Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- > 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

The summarizing of assessment impacts in a prescribed table format including the rating values as per above criteria.
Measures for inclusion in the Environmental Management Programme.

3. LEGISLATION AND POLICY REVIEW

The legislative and policy context applicable to a project plays an important role in identifying and assessing the potential social impacts associated with the development. In this regard a key component of the SIA process is to assess a proposed development in terms of its suitability with regards to key planning and policy documents.

The following key pieces of documentation were reviewed as part of this legislation and policy review process:

3.1. National Policy and Planning Context:

- Constitution of the Republic of South Africa, 1996
- National Environmental Management Act (No. 107 of 1998) (NEMA)
- White Paper on the Energy Policy of the Republic of South Africa (1998)
- National Energy Act (No. 34 of 2008)
- Integrated Energy Plan (IEP) (2016)
- National Development Plan (NDP) 2030 (2012)
- Integrated Resource Plan for Electricity (IRP) 2010 – 2030 (2011) (and subsequent updates thereto)
- Strategic Infrastructure Projects (SIPs)

3.2. Provincial Policy and Planning Context:

- Northern Cape Provincial Growth and Development Strategy (2004-2014)
- Northern Cape Spatial Development Framework (2012)
- Northern Cape Climate Change Response Strategy

3.3. Local Policy and Planning Context:

- ZF Mgcawu District Municipality Integrated Development Plan (IDP) (2017 – 2022)
- Tsantsabane Local Municipality Integrated Development Plan (IDP) (2021 -2022)

3.4. National Policy and Planning Context

Any project which contributes positively towards the objectives mentioned within national policies could be considered strategically important for the country. A review of the national policy environment suggests that the increased utilisation of Renewable Energy (RE) sources is considered integral to reducing South Africa's carbon footprint, diversifying the national economy, and contributing towards social upliftment and economic development. As the project comprises a RE project and would contribute RE supply to provincial and national targets set out and supported within these national policies, it is considered that the project fits within the national policy framework.

A brief review of the most relevant national legislation and policies is provided in table format (**Table 3.1**) below.

Table 3.1: Relevant national legislation and policies for the Red Sands PV3 Facility

Relevant legislation or policy	Relevance to the proposed project
Constitution of the Republic of South Africa, 1996	Section 24 of the Constitution pertains specifically to the environment. It states that Everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution outlines the need to promote social and economic development. Section 24 of the Constitution therefore requires that development be conducted in such a manner that it does not infringe on an individual's environmental rights, health, or well-being. This is especially significant for previously disadvantaged individuals who are most at risk to environmental impacts.
National Environmental Management Act (No. 107 of 1998) (NEMA)	This piece of legislation is South Africa's key piece of environmental legislation and sets the framework for environmental management in South Africa. NEMA is founded on the principle that everyone has the right to an environment that is not harmful to their health or well-being as contained within the Bill of Rights. The national environmental management principles state that the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.
White Paper on the Energy Policy of the Republic of South Africa (1998)	The White Paper on Energy Policy places emphasis on the expansion of energy supply options to enhance South Africa's energy security. This can be achieved through increased use of RE and encouraging new entries into the generation market. South Africa has an attractive range of cost effective renewable resources, taking into consideration social and environmental costs. Government policy RE is thus concerned with meeting the following challenges: » Ensuring that economically feasible technologies and applications are implemented. » Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options. » Addressing constraints on the development of the renewable industry. The policy states that the advantages of Renewable Energy include; minimal environmental impacts during operation in comparison with traditional supply technologies, generally lower running costs, and high labour intensities. Disadvantages include; higher capital costs in some cases; lower energy densities; and lower levels of availability, depending on specific conditions, especially with sun and wind based systems. Nonetheless, renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The White Paper on Energy Policy therefore supports the advancement of RE sources and ensuring energy security through the diversification of supply.
National Energy Act (No.34 of 2008)	The purpose of the National Energy Act (No. 34 of 2008) is to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation; while taking environmental

Relevant legislation or policy	Relevance to the proposed project
	management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies (REs). The objectives of the Act, are to amongst other things, to: » Ensure uninterrupted supply of energy to the Republic. » Promote diversity of supply of energy and its sources. » Facilitate energy access for improvement of the quality of life of the people of the Republic. » Contribute to the sustainable development of South Africa's economy. The National Energy Act therefore recognises the significant role which electricity plays growing the economy while improving citizens' quality of life. The Act provides the legal framework which supports the development of RE facilities for the greater environmental and social good, and provides the backdrop against which South Africa's strategic planning regarding future electricity provision and supply takes place. It also provides the legal framework which supports the development of RE facilities for the greater environmental and social good.
Integrated Energy Plan (IEP) (2016)	The Integrated Energy Plan (IEP) (which was developed under the National Energy Act (No. 34 of 2008)), recognises that energy is essential to many human activities, and is critical to the social and economic development of a country. The purpose of the IEP is essentially to ensure the availability of energy resources, and access to energy services in an affordable and sustainable manner, while minimising associated adverse environmental impacts. Energy planning therefore needs to balance the need for continued economic growth with social needs, and the need to protect the natural environment. The IEP is a multi-faceted, long-term energy framework which has multiple aims, some of which include: » To guide the development of energy policies and, where relevant, set the framework for regulations in the energy sector. » To guide the selection of appropriate technologies to meet energy demand (i.e. the types and sizes of new power plants and refineries to be built and the prices that should be charged for fuels). » To guide investment in and the development of energy infrastructure in South Africa. » To propose alternative energy strategies which are informed by testing the potential impacts of various factors such as proposed policies, introduction of new technologies, and effects of exogenous macro- economic factors.
National Development Plan 2030 (2012)	The National Development Plan (NDP) 2030 is a plan prepared by the National Planning Commission in consultation with the South African public which is aimed at eliminating poverty and reducing inequality by 2030. In terms of the Energy Sector's role in empowering South Africa, the NDP envisages that, by 2030, South Africa will have an energy sector that promotes: » Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation. » Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households.

Relevant legislation or policy	Relevance to the proposed project
	» Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The development of the grid connection infrastructure is considered to be relevant to the plan due to the need of the infrastructure for economic growth within the Tsantsabane Local Municipality municipal area.
Integrated Resource Plan for Electricity (IRP) 2010-2030 (2011) and subsequent updates	The Integrated Resource Plan for Electricity (IRP) 2010 – 2030 is a subset of the IEP and constitutes South Africa's national electricity plan. The primary objective of the IRP is to determine the long term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing and cost. The IRP also serves as input to other planning functions, including amongst others, economic development and funding, and environmental and social policy formulation. The current iteration of the IRP, led to the Revised Balanced Scenario (RBS) that was published in October 2010. Following a round of public participation which was conducted in November / December 2010, several changes were made to the IRP model assumptions. The document outlines the proposed generation new-build fleet for South Africa for the period 2010 to 2030. This scenario was derived based on a cost- optimal solution for new-build options (considering the direct costs of new build power plants), which was then "balanced" in accordance with qualitative measures such as local job creation. The Policy-Adjusted IRP reflects recent developments with respect to prices for renewables. In addition to all existing and committed power plants, the plan includes 9.6GW of nuclear; 6.25GW of coal; 17.8GW of renewables; and approximately 8.9GW of other generation sources such as hydro, and gas.
Strategic Infrastructure Projects (SIPs)	The Presidential Infrastructure Coordinating Committee (PICC) are integrating and phasing investment plans across 18 Strategic Infrastructure Projects (SIPs) which have the following 5 core functions: » To unlock opportunity. » Transform the economic landscape. » Create new jobs. » Strengthen the delivery of basic services. » Support the integration of African economies. A balanced approach is being fostered through greening of the economy, boosting energy security, promoting integrated municipal infrastructure investment, facilitating integrated urban development, accelerating skills development, investing in rural development and enabling regional integration. SIP 8 of the energy SIPs supports the development of RE projects as follow: » SIP 8: Green energy in support of the South African economy: Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities.

Relevant legislation or policy	Relevance to the proposed project
	The development of the proposed project is therefore also aligned with SIP 8 as it constitutes a green energy initiative which would contribute clean energy in accordance with the IRP 2010 – 2030.

3.5. Provincial Policies

This section provides a brief review of the most relevant provincial policies. The proposed Red Sands PV3 Facility and associated infrastructure is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

A brief review of the most relevant provincial policies is provided in table format (**Table 3.2**) below.

Table 3.2: Relevant provincial policies for the Red Sands PV3 Facility

Relevant policy	Relevance to the proposed project
Northern Cape Provincial Growth and Development Strategy (2004 - 2014)	The Northern Cape Provincial Growth and Development Strategy (NCPGDS) identifies poverty reduction as the most significant challenges facing the government and its partners. All other societal challenges that the province faces emanate predominately from the effects of poverty. The NCPGDS notes that the only effective way to reduce poverty is through long-term sustainable economic growth and development, The sectors where economic growth and development can be promoted include: » Agriculture and Agro-processing; » Fishing and Mariculture » Mining and mineral processing » Transport » Manufacturing » Tourism However, the NCPGDS also notes that economic development in these sectors also requires: » Creating opportunities for lifelong learning » Improving the skills of the labour force to increase productivity » Increasing accessibility to knowledge and information The achievement of these primary development objectives depends on the achievement of a number of related objectives that, at a macro-level, describe necessary conditions for growth and development. These are: » Developing requisite levels of human and social capital » Improving the efficiency and effectiveness of governance and other development institutions; » Enhancing infrastructure for economic growth and social development Of specific relevance to the SIA the NCPGDS makes reference to the need to ensure the availability of inexpensive energy. The section notes that in order to promote economic growth in the Northern Cape the availability of electricity to key industrial users at critical localities at rates that enhance the competitiveness of their industries must be ensured, At the same time, the development of new sources of energy through the promotion of the adoption of energy applications that display a synergy with the province's natural resource endowments must be encouraged. In this regard the NCPGDS notes "the development of energy sources such as **solar energy**, the natural gas fields, bio-fuels etc., could be some of the means by which new economic opportunity and activity is generated in the Northern Cape". The NCPGDS also highlights the importance of close co-operation between the public and private sectors in order for the economic development potential of the Northern Cape to be realised.

Relevant policy	Relevance to the proposed project
	The NCPGDS also highlights the importance of enterprise development, and notes that the current levels of private sector development and investment in the Northern Cape are low. In addition, the province also lags in the key policy priority areas of SMME Development and Black Economic Empowerment. The proposed solar energy facility therefore has the potential to create opportunities to promote private sector investment and the development of SMMEs in the Northern Cape Province. In this regard care will need to be taken to ensure that the proposed STPs and other renewable energy facilities do not negatively impact on the regions natural environment, In this regard the NCPGDS notes that the sustainable utilisation of the natural base on which agriculture depends is critical in the Northern Cape with its fragile eco-systems and vulnerability to climatic variation. The document also indicates that due to the provinces exceptional natural and cultural attributes, it has the potential to become the preferred adventure and ecotourism destination in South Africa. Care therefore needs to be undertaken to ensure that the development of large renewable energy project, such as the proposed solar energy facility, do not affect the tourism potential of the province.
Northern Cape Provincial Spatial Development Framework	Northern Cape Provincial Spatial Development Framework (NCSDF)(2012) lists a number of sectoral strategies and plans are to be read and treated as key components of the PSDF. Of these there are a number that are relevant to the proposed STPs. These includes: Sectoral Strategy 1: Provincial Growth and Development Strategy of the Provincial Government; Sectoral Strategy 2: Comprehensive Growth and Development Programme of the Department of Agriculture, Land Reform and Rural Development Sectoral Strategy 5: Local Economic Development (LED) Strategy of the Department of Economic Development and Tourism Sectoral Strategy 11: Small Micro Medium Enterprises (SMME) Development Strategy of the Department of Economic Development and Tourism; Sectoral Strategy 12: Tourism Strategy of the Department of Economic Development and Tourism Sectoral Strategy 19: Provincial renewable energy strategy (to be facilitated by the Department of Economic Development and Tourism) Under Section B14.4, Energy Sector the NCSDF (2012), notes the total area of high radiation in South Africa amounts to approximately 194 000 km² of which the majority falls within the Northern Cape. It is estimated that, if the electricity production per km² of mirror surface in a solar thermal power station were 30.2 MW and only 1% of the area of high radiation were available for solar power generation, the generation potential would equate to approximately 64 GW. A mere 1.25% of the area of high radiation could thus meet projected South African electricity demand in 2025 (80 MW) (NCPSDF, 2012). However the SDF does indicate that this would require large investments in transmission lines from the areas of high radiation to the main electricity consumer centres. The SDF also notes that the implementation of large concentrating solar power (CSP) plants has been proposed as one of the main contributors to greenhouse gas emission reductions in South Africa. In this regard various solar parks and CSP plants have been proposed in the province with Upington being the hub of such developments (NCPSDF,2012). Section C8.23, Energy Objectives, set out the energy objectives for the Northern Cape Province. The section makes specific reference to renewable energy, The objectives are listed below. » Promote the development of renewable energy supply schemes. Large-scale renewable energy supply schemes are strategically important for increasing the

Relevant policy	Relevance to the proposed project
	diversity of domestic energy supplies and avoiding energy imports while minimizing detrimental environmental impacts » Enhance the efficiency of Eskom;s power station at the Vanderkloof power station » To reinforce the existing transmission network and to ensure a reliable electricity supply in the Northern Cape, construct a 400 IV transmission power line from Ferrum Substation (near Kathu/Sishen) to Garona Substation (near Groblershoop). There is a national electricity supply shortage and the country is now in a position where it needs to commission additional plants urgently. Consequently, renewable energy project are a high priority » Develop and institute innovative new energy technologies to improve access to reliable, sustainable and affordable energy services with the objectives to realize sustainable economic growth and development. The goals of service in supplying and providing energy services, tackling climate change, avoiding air pollution and reaching sustainable development in the province offer both opportunities and synergies which require joint planning between local and provincial government as well as the private sector » Develop and institute energy supply schemes with the aim to contribute to the achievement of the targets set by the White Paper on Renewable Energy (2003).This target relates to the delivery of 10 000 GWh of energy from renewable energy sources (mainly biomass, wind, solar, and small-scale hydro) by 2013. Section C8.3.3, Energy Policy, sets out the policy guidelines for the development of energy sector, with specific refence to the renewable energy sector. » The construction of telecommunication infrastructure must be strictly regulated in terms of the spatial plans and guidelines put forward in the PSDF. They must be carefully places to avoid visual impacts on landscapes of significant symbolic, aesthetic, cultural or historic value and should blend in with the surrounding environment to the extent possible » EIAs undertaken for such construction must assess the impacts of such activities against the directives above » Renewable energy sources such as wind, solar thermal, biomass and domestic hydroelectricity are to constitute 25% of the province's energy generation capacity by 2020. The following key policy principles for renewable energy apply: » Full cost accounting: Pricing policies will be based on an assessment of the full economic, social and environmental costs and benefits of energy production and utilisation » Equity: There should be equitable access to basic services to meet human needs and ensure human well-being. Each generation has a duty to avoid impairing the ability of future generation to ensure their own well-being » Global and international cooperation and responsibilities: Government recognises its share responsibility for global and regional issues and act with due regard to the principles contained in relevant policies and applicable regional and international agreements » Allocation of functions: Government will allocate functions within the framework of the Constitution to competent institutions and spheres of government that can mostly effectively achieve the objectives of the energy policy » The implementation of sustainable renewable energy is to be promoted through appropriate financial and fiscal instruments » An effective legislative system to promote the implementation of reenable energy is to be developed, implemented, and continuously improved

Relevant policy	Relevance to the proposed project
	» Public awareness of the benefits and opportunities of renewable energy must be promoted » The development of renewable energy systems is to be harnessed as a mechanism for economic development throughout the province in accordance with the Sustainable Development Initiative (SDI)an approach » Renewable energy must, first and foremost, be used to address the needs of the province before being exported
Northern Cape Climate Change Response Strategy	The key aspects of the PCCRS Report are summarised in the MEC's (NCPG Environment and Nature Conservation) 2011 budget speech "The Provincial Climate Change Response Strategy will be underpinned by specific critical sector climate change adaptation and mitigation strategies that include the Water, Agriculture and Human Health sectors as the 3 key Adaptation Sectors, the Industry and Transport alongside the Energy sector as the 3 key Mitigation Sectors with the Disaster Management, Natural Resources and Human Society, livelihoods and Services sectors as 3 remaining key sectors to ensure proactive long term responses to the frequency and intensity of extreme weather events such as flooding and wild fore, with heightened requirements for effective disaster management Key points from the MEC's address include the NCPG's commitment to develop and implement policy in accord with the National Green Paper for the National Climate Change Response Strategy (2010) and an acknowledgment of the NCP's extreme vulnerability to climate-change driven desertification. The development and promotion of a provincial green economy, including green jobs, and environmental leadership is indented as an important provincial intervention in addressing climate change. The renewable energy sector, including solar and wind energy (but also biofuels and energy from waste), is explicitly indicated as important element to the Provincial Climate Change Response Strategy. The MEC also indicated that the NCP was involved in the processing several WEF and Solar Energy Facility EIA applications.
Northern Cape Province Green Document	The NCP Green Document (2017-2018) was prepared by the Northern Cape Department of Economic Development and Tourism and provides an impact assessment of IPPs on the communities in the province located within a 50 km radius from existing facilities. The document notes that the NCP is nationally a leader in commercial-scale renewable energy projects. By 2018 a total of 23 IPP projects in the province had been integrated into the national grid. These projects include Solar PV, Concentrated Solar and WEFs. The document notes that through their economic development obligations these projects have already made a significant positive contribution to affected communities. Much of the effort has been directed at supporting local education. The document also notes that, as these projects are committed to 20-year minimum lifespans, the collectively hold a tremendous potential for socio-economic upliftment. Key issues identified with regard to improving the potential beneficial impact of IPPs in the NCP include: » Local community members abusing project benefits for personal gain. » Difficulty in outreach to local community beneficiaries due to high local illiteracy levels. » A lack of business skills generally hampers the successful establishment of local small enterprises which could benefit from projects. » Community benefit obligations are currently met in a piecemeal and uncoordinated fashion. » Anticipated community benefits are often frustrated by inadequate engagement and insufficient ongoing consultation.

Relevant policy	Relevance to the proposed project
	» The scarcity of people skilled in maths and sciences in local communities hampers meaningful higher-level local skills development and employment. » Insufficient support from local municipalities for IPP development.

3.6. District and Local Municipalities Policies

The strategic policies at a district and local level have similar objectives for the respective areas, namely to accelerate economic growth, create jobs, and uplift communities. The proposed Red Sands PV3 Facility and associated infrastructure is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

A brief review of the most relevant district and local municipal policies is provided in table format (**Table 3.3**) below.

Table 3.3: Relevant district and local municipal policies for the Red Sands PV3 Facility

Relevant policy	Relevance to the proposed project
ZF Mgcawu District Municipality Integrated Development Plan	The vision set out in the ZFMDM is "Quality support to deliver quality services". The mission is a "Centre of excellence in providing quality basic services through support to local municipalities". In terms of the National Spatial Development Perspective, the ZF Mgcawu District area has been classified as a 'medium' importance area which means that no significant investment is concentrated in the region, in terms of the National Spatial Development Perspective, the ZF Mgcawu District area has been classified as a 'medium' importance area which means that no significant investment is concentrated in the region. The IDP lists a number of strategic objectives and development objectives. The relevant objectives include **Strategic objective** To Facilitate the Development of Sustainable regional land use, economic, spatial and environmental planning frameworks that will support and guide the development of a diversified, resilient and sustainable district economy, the associated development objective is to: » Establish a vehicle to ensure all businesses are co-operating (i.e. District LED Forum) » Create investment opportunities in sectorial development (i.e. investment activities; Entrepreneurial business support programme) » Enable an environment for business establishment and support initiatives (i.e. increase the number of businesses; entrepreneurial support) **Strategic objective** To market, develop and co-ordinate tourism in the ZFMDM. The associated development objective is to: » Promote the Green Kalahari tourism brand in the ZF Mgcawu district The IDP identifies several key challenges. The following are relevant to the proposed development » High rate of unemployment » Inadequate human capital » Youth development » Access to health care facilities

Relevant policy	Relevance to the proposed project
	The IDP also notes that the ZF Mgcawu District Municipality acknowledged that climate change poses a threat to the environment, its residents, and future development. Actions are required to reduce carbon emissions (mitigation), and prepare for the changes that are projected to take place (adaptation in the District, ZF Mgcawu District Municipality has therefore prioritised the development of a Climate Change Vulnerability Assessment and Climate Change Response Report. Spatial vision of the district as it mentions renewable energy The spatial vision for the district is a mix of • Tourism, Cultural, wilderness, floristic, river tourism ranging from the Kgalagadi international trans frontier park to the culture of the Riemvasmak community to river tourism on the mighty Orange River ; • Mining and mining beneficiation; • Agriculture: river bank vineyards and expansive stock and game farming in the Kalahari; and • Renewable energy technology opportunities
Tsantsabane Local Municipality Integrated Development Plan	The municipal spatial vision is 'to create a place of opportunities, in cooperation with the private sector, where the basic needs of all residents are met in a safe, healthy and sustainable environment. There are six performance areas which are aligned to the strategic objectives of the municipal area: 1. KPA 1: Service Delivery This KPA refers to the physical infrastructure and energy efficiency in order to ensure efficient infrastructure and energy supply that will contribute to the improvement of quality of life for all citizens of the Tsantsabane local municipality 2. KPA 2: Local Economic Development KPA 2 refers to Economic Growth and Development in order to facilitate sustainable economic empowerments for all communities within the Tsantsabane local municipality and enabling a viable and conducive economic environment through the development of related initiatives including job creation and skills development 3. KPA 3: Financial Viability This SPA refers to financial sustainability to ensure the financial sustainability of the municipality in order to adhere to statutory requirements 4. KPA 4: Institutional Arrangement and PMS This refers to institutional transformation to provide an effective and efficient workforce by aligning our institutional arrangements to our overall strategy in order to deliver quality services 5. KPA 5: Good Governance and Public Participation KPA 5 refers to governance and stakeholder participation in order to promote proper governance and public participation

Relevant policy	Relevance to the proposed project
	6. KPA 6: Spatial Development This KPA gives direction for the municipality in terms of its lands use and its potential direction for growth,

The implementation of Red Sands PV3 Facility would contribute towards addressing the Tsantsabane local municipality key issue regarding high levels of poverty and unemployment, skills shortage, and inequalities through the creation of employment opportunities, the provision of skills training opportunities, and local economic growth, including growth in personal income levels of those community members who would be employed on the project.

3.7. Conclusion

The review of relevant legislation, policies and documentation pertaining to the energy sector indicate that renewable or green energy (i.e., energy generated by naturally occurring renewable resources) and therefore the establishment Red Sands PV3 Facility is supported at a national, provincial, and local level, and that the proposed project will contribute positively towards a number of targets and policy aims. Specifically, those relating to employment creation, social and economic development and upliftment, and an increase in RE and electricity supply which has the potential to further improve individuals' standard of living.

4. SOCIAL PROFILE

Red Sands PV3 Facility including associated facility is proposed on Portion 2 of the Farm Tities Poort 386 within the Tsantsabane Local Municipality within the ZF Mgcawu District Municipality, Northern Cape Province (refer to **Table 4-1**).

Table 4-1: Spatial Context of the study area for the development of the Red Sands PV3 Facility and associated infrastructure

Province	Northern Cape Province
District Municipality	ZF Mgcawu District Municipality
Local Municipality	Tsantsabane Local Municipality
Ward number(s)	6
Nearest town(s)	26km northeast of the town of Groblershoop
Preferred access	The project site is accessible via an existing gravel farm road from an existing main gravel road off the N8 which is located southeast of the project site.

This Chapter provides an overview of the socio-economic environment of the province, DM, and LM within which the Red Sands PV3 Facility is proposed and provides the socio-economic basis against which potential issues can be identified.

4.1. Northern Cape Province

The Northern Cape Province, is the largest province in South Africa and covers an area of 361 830 km2 and, constitutes approximately 30% of South Africa. The province is divided into five district municipalities (DM), namely, Frances Baard, Karoo, Namakwa, Pixley Ka Seme and ZF Mgcawu District Municipality (known before 1 July 2013 as Siyanda DM). Despite having the largest surface area, the Northern Cape has the smallest population of 1 193 780 (Community Household Survey, 2016) or 2.2% of the population of South Africa. Of the five districts, Frances Baard has the largest population (32.5%), followed by ZF Mgcawu District Municipality (21.2%), John Taola Gaetsewe (20.3%), Pixley ka Seme (16.4%) and Namakwa (9.7%). The majority of the population in the Northern Cape Province are Black African (48.1%), followed by Coloureds (43.7%) and Whites (7.7%).

In terms of age, 36.5% of the Northern Cape population is between 15 and 34 years old, which is the highest age distribution, followed by 29.2% of those aged 35–64 years, while only 6.6% comprised those aged 65 years and older. Similarly, this pattern is also seen across all districts in the province. The district profile shows that the highest proportions of persons aged 15–34 years were recorded in Pixley Ka Seme, ZF Mgcawu and John Taolo Gaetsewe districts. The figures for these three districts were also above the provincial average of 36.5%. The proportion of persons aged 65 years and older was higher in Namakwa (9.5%) and Frances Baard (8.2%).

The Northern Cape offers unique tourism opportunities including wildlife conservation destinations, natural features, historic sites, festivals, cultural sites, star gazing, adventure tourism, agricultural tourism, ecotourism, game farms, and hunting areas, etc. The province is home to the Richtersveld Botanical and Landscape World Heritage Site, which comprises a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site under the World Heritage Convention. The Northern Cape is also home to two (2) Transfrontier National Parks, namely the Kgalagadi Transfrontier Park, and the Richtersveld /Ai-Ais Transfrontier Park, as well as five (5) national parks, and six (6) provincial reserves.

The Northern Cape plays a significant role in South Africa's science and technology sector, and is home to the Square Kilometre Array (SKA), the Southern African Large Telescope (SALT), and the Karoo Array Telescope (MeerKAT).

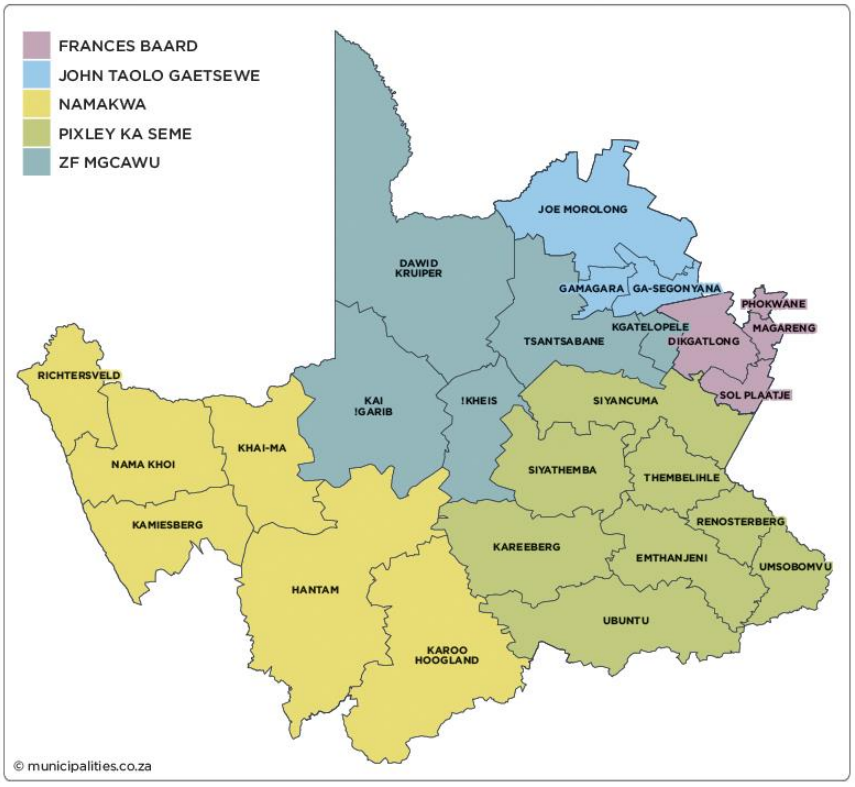


Figure 4-1: Map showing the district municipalities of the Northern Cape (Source www.municiaplities.co.za)

4.2. ZF Mgcawu District Municipality

The ZF Mgcawu District Municipality (ZFMDM) consists of six local Municiaplaities namely, Dawid Kruiper [2]; Kai! Garib; //Khara Hais; Tsantsabane, !Kheis and Kgatelopele, and covers an area of more than 100 000km² (almost 30 % of the Northern Cape Province). Of this total, 65% (65 000km²) is made up of the Kalahari Desert, Kgalagadi Transfrntier Park and the former Bushman Land. The largest town in the region is Upington, which also functions as the district municipal capital. Following the municipal elections in 2011, Riemvasmaak (Sending and Vredesvallei) were included within the KGLM. The Riemvasmaak Community is located approximately 60 km west of Kakamas. Based on the Household Community Survey data the population of the ZFMDM was 252 692 in 2016 compared to 236 763 in 2011, The DLKM and KGLM are home to approximately 70% of the ZFMDM population.

The ZFMDM accounts for approximately 30% of the Northern Cape economy. Agriculture plays a role in the local economy and is strongly linked to irrigation along the Gariep River (Orange River). The Orange River is perennial with a flow which varies between 50 and 1800 cubic meter per second (cum/s) depending on the season. The flow of the river is largely controlled by the releases of the dams upstream, like the

[2] Dawid Kruiper LM was established after the August 2016 local elections merging Mier and //Khara Hais local municipalities.

Bloemhof,Gariep and van der Kloof dams. Agriculture in the ZFMDM is dominated by grape production for table grapes, which is mainly exported to Europe, as well as livestock and game farming.

Tourism represents one of the most important economic sectors in the Northern Cape as well as within the ZFMDM. In this regards the ZFMDM IDP indicates that tourism is the fastest growing component of the economy. Key tourism assets include the world renowned Kgalagadi Transfrontei Park, Augrabies National Park and Pitskop Nature Reserve near Upington.

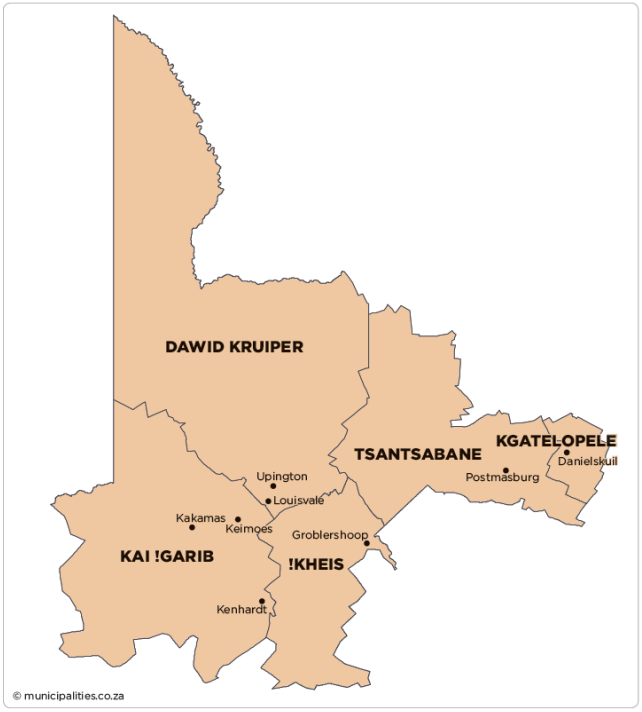


Figure 4-2: Map showing the local municipalities of the ZF Mgcawu DM (Source: www,municiaplities.co.za)

4.3. Tsantsabane Local Municipality

The Tsantsabane Local Municipality is situated in the ZF Mgcawu District Municipality of the Northern Cape Province. The Tsantsabane Local Municipality covers a geographical area of approximately 18 333 km². The main town situated within this Local Municipality is the town of Postmasburg. This town is geographically the biggest town in the area with the highest population rate, other towns in the area include Glosam, Goedgedacht, Oliefantshoek and Groenwater. This municipal area is characterised by a mixture of land uses of which agriculture and mining is the dominant land use within the rural areas. The residential areas vary from the relatively large town of Postmasburg to small-scattered rural communities, some of these communities are the remains of railway stations.

According to the 2011 Census the population of this municipal area is 35 093 people. Compared to the 2011 Census the population of the municipal area has increased, mainly due to job migration and other factors. The gender population has also increased with 24% in male population and 2.7% increase in the female population. The 2011 Census further indicates that the majority of population is relatively young, with regards to the racial makeup of the population, the 2011 Census recorded that the majority (52.8%) of the population are black, while the rest are coloured (37.6%) and white (8.4%). The main languages spoken in this municipal area are Afrikaans (55.2%) and Tswana (33.2%).

4.4. Project Site

Red Sands PV3 Facility is proposed on Portion 2 of the Farm Tities Poort 386 34 within Ward 6 of the Tsantsabane Local Municipality, of the ZF Mgcawu District Municipality. The closest major town to the project site is Grobershoop, which is located approximately 26km northeast of the project site. The region has a strong agricultural character, interspersed with human settlements, The predominant land use of the arid areas is low intensity grazing and game farming this has resulted in the maintenance of a relatively natural vegetation cover.

Occasional farmsteads that are scattered thinly throughout the surrounding plain. The low density of development is no doubt a product of the low agricultural potential / carrying capacity of the area. It should be noted that a number of farm properties in the vicinity of the proposed development including an adjacent property are used as eco-tourism facilities (Landscape and Visual Impact Assessment, 2021)

Relatively dense agricultural development that is located close to the banks of the Orange River. This is the main development type close to the proposed site and is comprised largely of vineyards and pivot irrigated crops. The field pattern is relatively dense and is interspersed with residential and agricultural buildings. Throughout this area there are extensive irrigation schemes that are fed by an irrigation channel that runs parallel to the river. A number of homesteads within this valley also have tourism use including padstals and river-side lodges.

4.5. Baseline Description of the Social Environment

Table 4.2 provides a baseline summary of the socio-economic profile of the Tsantsabane Local Municipality within which Red Sands PV3 Facility is proposed. In order to provide context against which the Local Municipality's socio-economic profile can be compared, the socio-economic profiles of the ZF Mgcawu District, Northern Cape Province, and South Africa as a whole have also been provided where applicable. The data presented in this section have been derived from the 2011 Census, the Northern Cape Provincial Spatial Development Framework (PSDF), and the ZF Mgcawu DM and Tsantsabane LM IDPs.

Table 4.2: Baseline description of the socio-economic characteristics of the area within which the Red Sand PV3 Facility

Location characteristics
» The project is proposed within the Northern Cape Province, located in the North western corner of South Africa. » The project is proposed within the Tsantsabane LM of the ZF Mgcawu DM. » The Tsantsabane LM is approximately 18 333km² in extent.
Population characteristics
» Tsantsabane LM has a population of 39 344 which is less than a fifth of the figure in Z F Mgcawu. » Compared to the 2011 Census the population of the municipal area has increased, mainly due to job migration and other factors. » The gender population has also increased with 24% in male population and 2.7% increase in the female population » The 2011 census recorded that the majority (52.8%) of the population are black, while the rest are coloured (37.6%) and white (8.4%) » The attributing factor to this population growth is the increase of people who come to the municipal area in search for better living conditions or jobs in the mining and solar industrial sectors. » The main languages spoken in this municipal area are Afrikaans (55.2%) and Tswana 933.2%) » The age pyramid indicated that the population of Tsantsabane is predominately young people.

Economic, education and household characteristics
» From a statistical analysis it is clear that there has been an increase of people obtaining Matric since 2001.
» There is also an increase in the number of people with higher education.
» Males seems to be doing much better when it comes to education levels, as more men have some secondary education, grade 12 and higher education that their female counterparts.
» According to StatsSA unemployment figure has drastically reduced from 4 466 in 2011 to 3 795 in 2011 this shows a decrease of 15%.
» Employment has increased by 69% in 2011, this clearly indicates that the there are more people working in 2011 than in 2001.
» There is a very high level of economically inactive members in 2011 than it was in 2001.
» The high number of economical inactive could indicate a high level of dependency on those who are employed.
» Almost half of the population has no income, whole more than 10% of population earns less than R1400,00pm.
» Residents of the municipality have access to educational facilities such as primary schools and high schools, however there is a need for Primary Schools.
» Mining is the single biggest contributor of all industry to the GDP.
» Mining contributed 74%, namely R3.9 billion and tertiary sector contributed 4% and 20% respectively.
Services
» Regarding water provision the percentage of households having access to pipe water inside their dwellings have also increased from 37.1% to 62% (2001 and 2011 period)
» Most residents in the LM drink water that is from a water scheme.
» Small percentage drinks water from borehole
» There is a general increase in the number of people having access to electricity, across the country
» 2011 StatsSA indicates that 8211 households use electricity for lighting while 1356 households use candles
» The community survey of 2007 further indicates an improvement in sanitation and sewerage provision. However, there are still 552 households that use bucket toilets.
» Most of the residents (6563 households) use a flush toilet that is connected to a sewerage system.
» The number of households receiving refuses removal services by the local authority have strangely decreased to 77.9% in comparison to the 83% in 2001.

5. KEY CONSIDERATIONS FOR SOLAR PV POWER PLANTS

While no industry sector Environmental, Health and Safety (EHS) Guidelines have been developed for PV solar power, the International Finance Corporation (IFC) has published a Project Developer's Guide to Utility-Scale Solar Photovoltaic Power Plants (IFC, 2015). Section 8 of the Project Developer's Guide pertains to Permits, Licensing and Environmental Considerations, and states that in order to deliver a project which will be acceptable to international lending institutions, environmental and social assessments should be carried out in accordance with the requirements of the key international standards and principles, namely the Equator Principles and IFC's Performance Standards (IFC PS).

Some of the key environmental considerations for solar PV power plants contained within the Project Developer's Guide are provided below:

5.1. Construction Phase Impacts

Construction activities lead to temporary air emissions (dust and vehicle emissions), noise related to excavation, construction and vehicle transit, solid waste generation and wastewater generation from temporary building sites and worker accommodation. In addition, Occupational Health and Safety (OHS) is an issue that needs to be properly managed during construction in order to minimise the risk of preventable accidents leading to injuries and / or fatalities. Proper OHS risk identification and management measures should be incorporated in every project's management plan and standard Engineering, Procurement and Construction (EPC) contractual clauses.

5.2. Water Usage

Although water use requirements are typically low for solar PV plants, clusters of PV plants may have a high cumulative water use requirement in arid areas where local communities rely upon scarce groundwater resources. In such scenarios, water consumption should be estimated and compared to local water abstraction by communities (if any), to ensure no adverse impacts on local people. Operation and Maintenance (O&M) methods in relation to water availability and use should be carefully reviewed where risks of adverse impacts to community usage are identified.

5.3. Land Matters

As solar power is one of the most land-intensive power generation technologies, land acquisition procedures and in particular the avoidance or proper mitigation of involuntary land acquisition / resettlement are critical to the success of the project. This includes land acquired either temporarily or permanently for the project site itself and any associated infrastructure – i.e. access roads, powerlines, construction camps (if any) and switchyards. If involuntary land acquisition is unavoidable, a Resettlement Action Plan (RAP) (dealing with physical displacement and any associated economic displacement) or Livelihood Restoration Plan (LRP) (dealing with economic displacement only) will be required. This is often a crucial issue with respect to local social license to operate, and needs to be handled with due care and attention by suitably qualified persons.

5.4. Landscape and Visual Impacts

Key impacts can include the visibility of the solar panels within the wider landscape and associated impacts on landscape designations, character types and surrounding communities. Common mitigation measures to reduce impacts can include consideration of layout, size and scale during the design process and landscaping / planting in order to screen the modules from surrounding receptors. Note that it is important that the impact of shading on energy yield is considered for any new planting requirements. Solar panels are designed to absorb, not reflect, irradiation. However, glint and glare should be a consideration in the environmental assessment process to account for potential impacts on landscape / visual and aviation aspects.

5.5. Ecology and Natural Resources

Potential impacts on ecology can include habitat loss / fragmentation, impacts on designated areas and disturbance or displacement of protected or vulnerable species. Receptors of key consideration are likely to include nationally and internationally important sites for wildlife and protected species such as bats, breeding birds and reptiles. Ecological baseline surveys should be carried out where potentially sensitive habitat, including undisturbed natural habitat, is to be impacted, to determine key receptors of relevance to each site. Mitigation measures can include careful site layout and design to avoid areas of high ecological value, where possible or translocation of valued ecological receptors. Habitat enhancement measures could be considered where appropriate to offset adverse impacts on sensitive habitat at a site.

5.6. Cultural Heritage

Potential impacts on cultural heritage can include impacts on the setting of designated sites or direct impacts on below-ground archaeological deposits as a result of ground disturbance during construction. Where indicated as a potential issue by the initial environmental review / scoping study, field surveys should be carried out prior to construction to determine key heritage and archaeological features at, or in proximity to, the site. Mitigation measures can include careful site layout and design to avoid areas of cultural heritage or archaeological value and implementation of a 'chance find' procedure that addresses and protects cultural heritage finds made during a project's construction and/or operation phases.

5.7. Transport and Access

The impacts of transportation of materials and personnel should be assessed in order to identify the most appropriate transport route to the site while minimising the impacts on project-affected communities. The requirement for any oversized vehicles / abnormal loads should be considered to ensure access is appropriate. On-site access tracks should be permeable and developed to minimise disturbance to agricultural land. Where project construction traffic has to traverse local communities, traffic management plans should be incorporated into the environmental and social management plan and EPC requirements for the project.

5.8. Drainage / Flooding

A review of flood risk should be undertaken to determine if there are any areas of high flood risk associated with the site. Existing and new drainage should also be considered to ensure run-off is controlled to minimise erosion.

5.9. Consultation and Disclosure

It is recommended that early-stage consultation is sought with key authorities, statutory bodies, affected communities and other relevant stakeholders. This is valuable in the assessment of project viability and may guide and increase the efficiency of the development process. Early consultation can also inform the design process to minimise potential environmental impacts and maintain overall sustainability of the project. The authorities, statutory bodies and stakeholders that should be consulted vary from country to country but usually include the following organisation types:

- Local and / or regional consenting authority.
- Government energy department / ministry.
- Environmental agencies / departments.
- Archaeological agencies / departments.
- Civil aviation authorities / Ministry of Defence (if located near an airport).
- Road's authority.
- Health and safety agencies / departments.
- Electricity utilities.
- Military authorities.

Community engagement is an important part of project development and should be an on-going process involving the disclosure of information to project-affected communities. The purpose of community engagement is to build and maintain over time a constructive relationship with communities located near the project and to identify and mitigate the key impacts on project-affected communities. The nature and frequency of community engagement should reflect the project's risks to, and adverse impacts on, the affected communities.

5.10. Environmental and Social Management Plan (ESMP)

Whether or not an Environmental and Social Impact Assessment (ESIA) or equivalent has been completed for the site, an ESMP should be compiled to ensure that mitigation measures for relevant impacts of the type identified above (and any others) are identified and incorporated into project construction procedures and contracts. Mitigation measures may include, for example, dust suppression during construction, safety induction, training and monitoring programs for workers, traffic management measures where routes traverse local communities, implementation of proper waste management procedures, introduction of periodic community engagement activities, implementation of chance find procedures for cultural heritage, erosion control measures, fencing off any vulnerable or threatened flora species, and so forth. The ESMP should indicate which party will be responsible for (a) funding, and (b) implementing each action, and how this will be monitored and reported on at the project level. The plan should be commensurate to the nature and type of impacts identified.

6. SOCIAL IMPACT ASSESSMENT

This section provides an overview of the potential social impacts that have been identified, which may be associated with the development of Red Sands PV3 Facility. Potential impacts have been identified based on the current understanding of the project and the socio-economic environment within which it is proposed.

Social impacts are expected to occur during both the construction and operation phases of the associated infrastructure. The status of the impacts will either be positive or negative and either mitigation or enhancement measures are recommended for the management of the impacts depending on the status of the impacts.

6.1.1. Construction Phase Impacts associated with Red Sands PV3 Facility

The majority of social impacts associated with the project are anticipated to occur during the construction phase of the development and are typical of the type of social impacts generally associated with construction activities. These impacts will be temporary and short-term (~12 months) but could have long-term effects on the surrounding social environment if not planned or managed appropriately. It is therefore necessary that the detailed design phase be conducted in such a manner so as not to result in permanent social impacts associated with the ill-placement of project components or associated infrastructure or result in the mis-management of the construction phase activities.

The positive and negative social impacts identified at this stage and will be assessed for the construction phase includes:

- Direct and indirect employment opportunities
- Construction workers on local communities
- Influx of jobseekers and change in population
- Risk to safety, livestock and damage to farm infrastructure
- Increased risk of grass fires
- Impacts associated with construction related activities
- Visual impacts and sense of place impacts

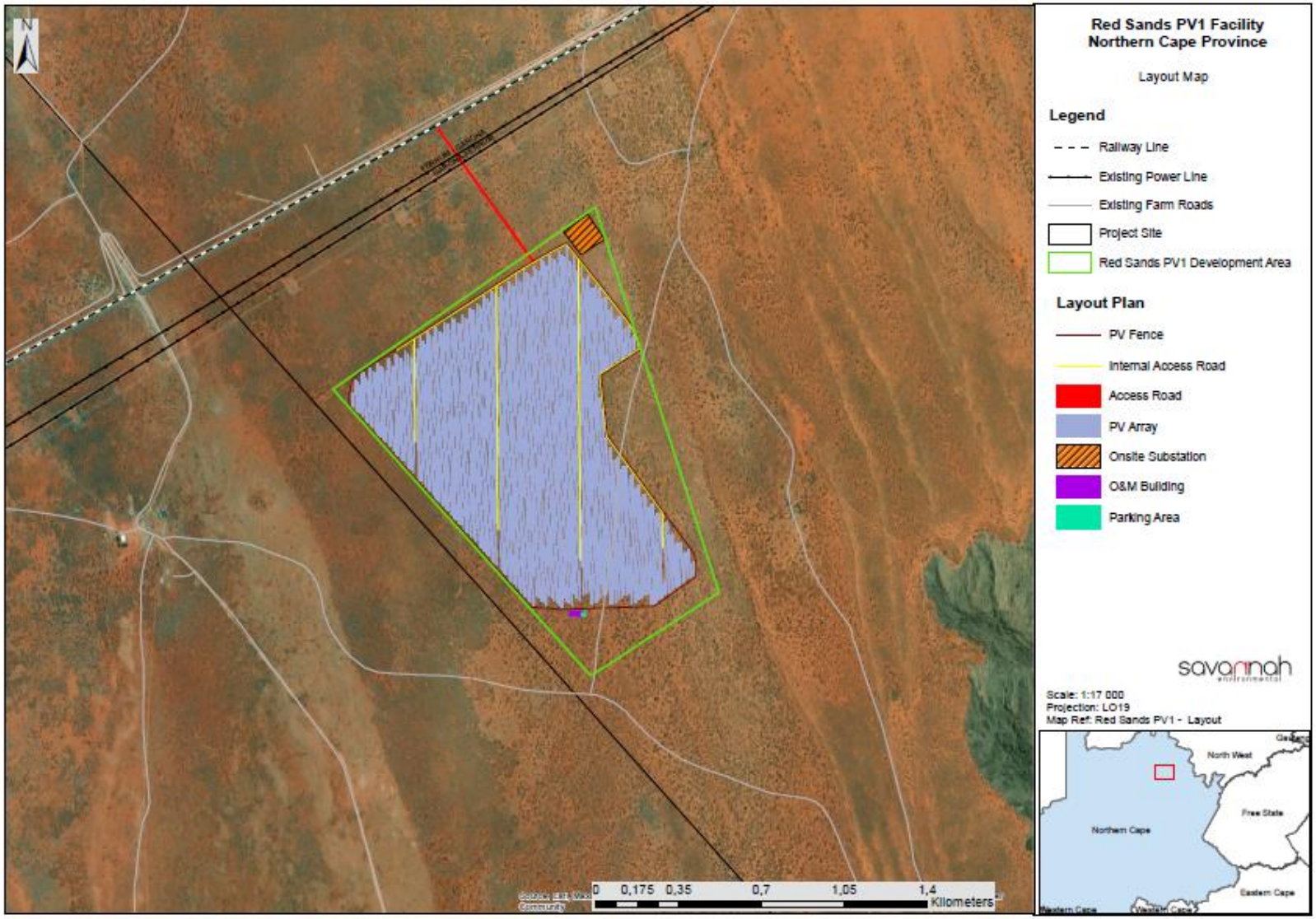


Figure 5.1: Layout of the PV Facility and Associated Infrastructure

Direct and indirect employment opportunities

The construction phase of PV Facility will extend over a period of approximately 18 months and create in the region of 350 employment opportunities. Members from the local communities in the area, specifically Groblershoop, would be able to qualify for most of the low skilled and semi-skilled employment opportunities. Most of these employment opportunities will accrue to Historically Disadvantaged (HD) members of the community. Based on information from similar projects the total wage bill will be in the region of R 31 million (2021 Rand values). A percentage of the wage bill will be spent in the local economy which will also create opportunities for local businesses in the local towns in the area.

Given relatively high local unemployment levels and limited job opportunities in the area, this will represent a significant, if localised, social benefit. The capital expenditure associated with the construction phase will be approximately R 1.5 billion (2021 Rand value). Due the lack of diversification in the local economy the potential for local companies is likely to be limited. Most benefits are therefore likely to accrue to contractors and engineering companies based outside the Tsantsabane Local Municipality. The local service sector will also benefit from the construction phase. The potential opportunities would be linked to accommodation, catering, cleaning, transport, and security, etc. associated with the construction workers on the site.

Table 6-1: Impact assessment on direct and indirect employment opportunities

Nature: Creation of employment and business opportunities during the construction phase		
	Without mitigation	**With mitigation**
Extent	Local - Regional (2)	Local - Regional (3)
Duration	Short term (2)	Short term (2)
Magnitude	Moderate (6)	Moderate (6)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	**Medium (40)**	**Medium (44)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impacts be mitigated?	Yes	
Mitigation: To enhance the local employment, skills development and business opportunities associated with the construction phase the following measures should be implemented: » It is recommended that local employment policy is adopted to maximise the opportunities made available to the local labour force. Red Sands PV3 (Pty) Ltd should make it a requirement for contractors to implement a 'locals first' policy, especially for semi and low skilled job categories. Enhance employment opportunities for the immediate local area Tsantsabane Local Municipality, if this is not possible, then the broader focus areas should be considered for sourcing workers. » In the recruitment selection process; consideration must be given to women during recruitment process » It is recommended to set realistic local recruitment targets for the construction phase		

» Training and skills development programmes should be initiated prior to the commencement of the construction phase
Cumulative impacts: Opportunity to upgrade and improve skills levels in the area
Residual Risks: Improved pool of skills and experience in the local area

Construction workers on local communities

The presence of construction workers poses a potential risk to family structures and social networks. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities. The most significant negative impact is associated with the disruption of existing family structures and social networks. This risk is linked to potentially risky behaviour, mainly of male construction workers, including:

- » An increase in alcohol and drug use.
- » An increase in crime levels.
- » The loss of girlfriends and/or wives to construction workers.
- » An increase in teenage and unwanted pregnancies.
- » An increase in prostitution.
- » An increase in sexually transmitted diseases (STDs), including HIV.

The objective will be to source as many of the low and semi-skilled workers locally. These workers will be from the local community and form part of the local family and social networks. This will reduce the risk and mitigate the potential impacts on the local community. The potential impact on the local community will therefore be negligible.

Table 6-2 Impact of construction workers on local communities

Nature: Potential impacts on family structures and social networks associated with the presence of construction workers		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Medium (40)**	**Low (21)**
Status (positive or negative)	Negative	Negative
Reversibility	No in case of HIV and Aids	No in case of HIV and Aids
Irreplaceable loss of resources?	Yes, if people contract HIV/AIDs. Human capital plays a critical role in communities that rely on farming for their livelihoods	

Can impacts be mitigated?	Yes, to some degree. However, the risk cannot be eliminated.	

Mitigation:

The potential risks associated with construction workers can be mitigated, the detailed mitigation measures should be outlined in the Environmental Management Plan (EMP) for the Construction Phase. The following aspects should be covered:

- Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically for semi and low-skilled job categories
- The proponent and the contractor(s) should in consultation with representatives from the MF, develop a code of conduct for the construction phase
- The proponent and contractor should implement an HIV/AIDS awareness programme for all constriction workers at the outset of the construction phase
- The constriction area should be fenced off before construction comments and no workers should be permitted to leave the fenced off.
- It is recommended that no constriction workers, with the exception of security personnel, should be permitted to stay over-night on the site, However due the location of the site, on-site accommodation for workers may need to be provided.

Cumulative impacts:

Impacts on family and community relations that may, in some cases, persist for a long period of time. Also in cases where unplanned/unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDs, the impacts may be permanent and have long term to permanent cumulative impacts on the affected individuals and/or their families and community

Residual Risks:

See cumulative impacts

Influx of jobseekers and change in population

Large construction projects tend to attract people to the area in the hope that they will secure a job, even if it is a temporary job. These job seekers can in turn become "economically stranded" in the area or decide to stay on irrespective of finding a job or not. While the proposed project on its own does not constitute a large construction project, the establishment of a number of renewable energy projects in the area may attract job seekers to the area. As in the case of construction workers employed on the project, the actual presence of job seekers in the area does not in itself constitute a social impact. However, the way in which they conduct themselves can impact on the local community. The main areas of concern associated with the influx of job seekers include:

- Impacts on existing social networks and community structures.
- Competition for housing, specifically low-cost housing.
- Competition for scarce jobs.
- Increase in incidences of crime.

Table 6-3 Impact of job seekers on local communities

Nature:

Potential impacts on family structures, social networks and community services associated with the influx of job seekers		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Minor (2)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	**Low (40)**	**Low (24)**
Status (positive or negative)	Negative	Negative
Reversibility	No in case of HIV and Aids	No in case of HIV and Aids
Irreplaceable loss of resources?	Yes, if people contract HIV/AIDs. Human capital plays a critical role in communities that rely on farming for their livelihoods	
Can impacts be mitigated?	Yes, to some degree. However, the risk cannot be eliminated.	
Mitigation: The potential risks associated with construction workers can be mitigated, the detailed mitigation measures should be outlined in the Environmental Management Plan (EMP) for the Construction Phase. The following aspects should be covered: » Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically for semi and low-skilled job categories » The proponent and the contractor(s) should in consultation with representatives from the MF, develop a code of conduct for the construction phase » The proponent and contractor should implement an HIV/AIDS awareness programme for all constriction workers at the outset of the construction phase » The constriction area should be fenced off before construction comments and no workers should be permitted to leave the fenced off. » It is recommended that no constriction workers, with the exception of security personnel, should be permitted to stay over-night on the site, However due the location of the site, on-site accommodation for workers may need to be provided.		
Cumulative impacts: Impacts on family and community relations that may, in some cases, persist for a long period of time. Also in cases where unplanned/unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDs, the impacts may be permanent and have long term to permanent cumulative impacts on the affected individuals and/or their families and community		
Residual Risks: See cumulative impacts		

Risk to safety, livestock and damage to farm infrastructure

The presence on and movement of construction workers on and off the site poses a potential safety threat to local famers and farm workers in the vicinity of the site. In addition, farm infrastructure, such as fences and gates, may be damaged and stock losses may also result from gates being left open and/or fences being

damaged, or stock theft linked either directly or indirectly to the presence of construction workers on the site. The potential risks (safety, livestock, and farm infrastructure) can be effectively mitigated by careful planning and managing the movement of construction workers on and off the site workers during the construction phase.

Table 6-4 Safety, livestock and damage to farm impacts

Nature: Potential risk to safety of scholars, farmers and farm workers, livestock and damage to farm infrastructure associated with the presence of constriction workers on site		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (2)
Duration	Short-term (2)	Short-term (2)
Magnitude	Medium (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Medium (33)**	**Low (24)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes, compensation paid for stock losses and damage to farm infrastructure etc	Yes, compensation paid for stock losses and damage to farm infrastructure etc
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	Yes
Mitigation: » The construction area should be fenced off prior to the commencement of the construction phase, The movement of construction workers on the site should be confined to the fenced off area » The proponent should enter into an agreement with he local farmers in the area whereby damages to farm property etc, during the construction phase will be compensated for. The agreement should be signed before the construction phase » Traffic and activities should be strictly contained within the designated areas, including for the construction of the transmission line » Strict traffic speed limits must be enforced on the farm » All farm gates must be closed after passing through » Contractors appointed by the proponent should provide daily transport for low and semi-skilled workers to and from the site, » The proponent should consider the option of establishing a MF (see above) that includes local farmers and develop a Code of Conduct for construction workers. » The proponent should hold contractors liable for compensating farmers and communities in full for any stock losses and /or damage to farm infrastructure that can be linked to construction workers. » The Environmental Management Plan (EMP) must outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested. » Contractors appointed by the proponent must ensure that construction workers who are found guilty stealing livestock and/or damaging farm infrastructure are dismissed and charged.		

» It is recommended that no contractors workers, except for security personnel, should be permitted to stay over-night on the site.
Cumulative impacts: No, provided losses are compensated for.
Residual Risks: See cumulative impacts

Increased risk of grass fires

The presence of construction workers and construction-related activities on the site poses an increased risk of grass fires that could, in turn pose, a threat to livestock, crops, wildlife and farm infrastructure. The potential risk of grass fires will be higher during the dry, windy winter months from May to October. The impacts will be largely local and can be effectively mitigated.

Table 6-5 Impact of increased risk of grass fires

Nature: Potential loss of livestock, crops and houses, damage to farm infrastructure and threat to human life associated with increased incidence of grass fires		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (2)
Duration	Short-term (2)	Permanent (5)
Magnitude	Moderate (6)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	**Medium (30)**	**Low (24)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes, compensation paid for stock losses and damage to farm infrastructure etc	Yes, compensation paid for stock losses and damage to farm infrastructure etc
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	Yes
Mitigation: » The proponent should enter into an agreement with the local farmers in the area whereby damages to farm property etc, during the construction phase will be compensated for. » The option of establishing a fire-break around the perimeter of the site prior to the commencement of the construction phase should be investigated » Contractor should ensure that open fires on the site for cooking or heating are not allowed expect in designated area » Smoking on site should be confined to designated area » Contractor to ensure that construction related activities that pose a potential fire risk, such as welding , are properly managed and are confirmed to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard epical care should be taken during the high risk dry, windy winter months		

» Contractor should provide adequate fire-fighting equipment on-site, including a fire fighting vehicle » Contractor to provide fire-fighting training to selected constriction staff
Cumulative impacts: No, provided losses are compensated for.
Residual Risks: See cumulative impacts

Nuisance impacts associated with construction related activities

Construction related activities, including the movement of heavy construction vehicles of and on the site, has the potential to create dust, noise and safety impacts and damage roads. The impacts will be largely local and can be effectively mitigated.

Table 6-6 Impact associated with construction related activities

Nature: Potential noise, dust and safety impacts associated with construction related activities		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (2)
Duration	Short-term (2)	Permanent (5)
Magnitude	Medium (6)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	**Medium (30)**	**Low (24)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	
Mitigation: The potential impacts associated with heavy vehicles can be effectively mitigated. The mitigation measures include: » The movement of construction vehicles on the site should be confined » The movement of heavy vehicles associated with the construction phase should be timed to avoid times day of the week, such as weekends, when the volume of traffic travelling along the N8 may be higher » Dust suppression measures must be implemented on un-surfaced roads, such as wetting on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers » All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need to strict speed limits.		
Cumulative impacts: If damage to local farms roads in not repaired, then this will affect the farming activities in the area and result in higher maintenance costs for vehicles of local farmers and other road uses. The costs will be borne by road users who were no responsible for the damage.		
Residual Risks:		

See cumulative impacts

Impacts associated with loss of farmland

The activities associated with the construction phase and establishment of the proposed project and associated infrastructure will result in the disturbance and loss of land available for grazing. The impact on farmland associated with the construction phase can be mitigated by minimising the footprint of the construction related activities and ensuring that disturbed areas are fully rehabilitated on completion of the construction phase. In addition, the landowner will be compensated for the loss of land.

Table 6-7 Impact on farmland due to construction related activities

Nature: The activities associated with the construction phase, such as establishment of access roads and the construction camp, movement of heavy vehicles and preparation of foundations for the project etc. will damage farmlands and result in a loss of farmlands for grazing		
	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Long term (5)	Short-term (2)
Magnitude	Medium (6)	Minor (2)
Probability	Probable (3)	Highly Probable (4)
Significance	**Medium (36)**	**Low (20)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes, disturbed areas can be rehabilitated	Yes, disturbed areas can be rehabilitated
Irreplaceable loss of resources?	Yes, loss of farmland. However, disturbed areas can be rehabilitated	Yes, loss of farmland. However, disturbed areas can be rehabilitated
Can impacts be mitigated?	Yes, however, loss of farmland cannot be avoided	Yes, however, loss of farmland cannot be avoided
Mitigation: The potential impacts associated with damage to and loss of farmland can be effectively mitigated. The aspects that should be covered include: » An Environmental Control Officer (ECO) should be appointed to monitor the establishment phase of the construction phase; » Existing internal roads should be used where possible. If new roads are required, these roads should be rehabilitated on the completion of the construction phase » The footprint associated with the construction related activities (access roads, sub-stations sites), construction camps, workshop etc) should be minimised » All areas distributed by construction related activities, such as access roads on the site, construction camps etc., should be rehabilitated at the end of the constriction phase; » The implementation of a rehabilitation programme should be included in the terms of reference for the contractor/s appointed. These specification for the rehabilitation programme should included in the EMP. » The implementation of the Rehabilitation Programme should be monitored by the ECO		
Cumulative impacts:		

Overall loss of farmland could affect the livelihoods of the affected farmers, their families, and the workers on the farms and their families. However, distributed areas can be rehabilitated
Residual Risks: See cumulative impacts

6.1.2. Operation Phase Impacts Associated with Red Sands PV3

It is anticipated that the Red Sands PV3 Facility will operate for approximately 20 years (which is equivalent to the operational lifespan of the project).

The potential positive and negative social impacts that could arise as a result of the operation of the proposed project include the following:

» The establishment of renewable energy infrastructure
» Direct and indirect employment opportunities
» Benefits associated with the establishment of a Community Trust
» Visual impact and sense of place impacts
» Potential impact on tourism

Improve energy security and support renewable sector

The primary goal of the proposed project is to improve energy security in South Africa by generating additional energy. The proposed SEF also reduces the carbon footprint associated with energy generation. The project should therefore be viewed within the context of the South Africa's current reliance on coal powered energy to meet most of its energy needs, and secondly, within the context of the success of the REIPPPP.

Table 6-8 Improve energy security and support renewable sector

Nature: Development of intraturn to improve energy security and support renewable sector		
	Without mitigation	**With mitigation**
Extent	Local and Regional (1)	Local and Regional (2)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	**Low (21)**	**Low (24)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Mitigation: The mitigated measures listed in 5.2 to enhance local employment and business opportunities during the construction phase, also apply to the operational phase.		
Cumulative impacts:		

South Africa's energy crisis, which started in 2007 and is ongoing, has resulted in widespread rolling blackouts (referred to as load shedding) due to supply shortfalls. The load shedding has had a significant impact on all sectors of the economy and on investor confidence. A review of the REIPPPP and establishment of renewable energy facilities not only addresses environmental issues associated with climate change and consumption of scarce water resources, but also create significant socio-economic opportunities and benefits, specifically for historically disadvantaged, rural communities.
Residual Risks: See cumulative impacts

Visual impact and impact on sense of place

The proposed renewable energy facility has the potential to impact on the areas existing rural sense of place. Based on an initial assessment of the location the potential impact on the areas sense of place is likely to be limited. Furthermore the visual assessment report states that existing landform and vegetation is likely to at least partially screen views of the closest homestead and is also likely to largely / completely screen views of the development from the furthest homestead.

Table 6-9 Improve visual impact on sense of place

Nature: Visual impact associated with the proposed facility and associated infrastructure and the potential impact on the areas rural sense of place.		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (1)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	**Low (24)**	**Low (21)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes, solar facility can be removed	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Mitigation: The recommendation contained in the Visual Impact Assessment should be implemented		
Cumulative impacts: Creation of permanent employment and skills and development opportunities for members from the local community and creation of additional business and economic opportunities in the area.		
Residual Risks: See cumulative impacts		

Potential impact on tourism

The potential visual impacts associated with the proposed renewable energy facility have the potential to impact on tourism facilities and tourism in the area. Based on the findings of the literature review there is

limited evidence to suggest that the proposed solar energy facility would impact on the tourism in the ZFMDM and TLM at a local and regional level.

Table 6-10 Impact on sense of place and the landscape

Nature: Potential impact on renewable energy facility on local tourism. This is usually linked to the visual impact associated with the proposed facility and associated infrastructure and the potential impact on the areas rural sense of place		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (1)
Duration	Long term (4)	Long term (4)
Magnitude	Low (2)	Low (2)
Probability	Probable (3)	Probable (3)
Significance	**Low (24)**	**Low (21)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Mitigation: The recommendation contained in the Visual Impact Assessment should be implemented		
Cumulative impacts: The proposed energy renewable facility does not have an impact on areas sense of place. For mitigation measures the collection of information on location of existing farming and hospitality operations and activities. Site visit and interviews with local farmers and representatives from local farmers and representatives from local municipality and farming and hospitality associations		
Residual Risks: See cumulative impacts		

The proposed renewable energy facility has the potential to impact on the areas existing rural sense of place. Based on an initial assessment of the location the potential impact on the areas sense of place is likely to be limited.

6.1.3. Decommissioning Phase

Typically, major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income and will be similar to the impacts during the construction phase. This has implications for the households who are directly affected, the communities within which they live, and the relevant local authorities. However, in the case of Red Sands PV3 Facility it is anticipated that the proposed facility will be refurbished and upgraded to prolong its lifespan, where possible and decommissioning will only take place once the economic viability of the project has come to an end.

6.2. Assessment of Cumulative Impacts

Cumulative impacts have been considered as part of this energy facility has the potential to result in significant positive cumulative impacts; specifically with the establishment of a number of Solar energy facilities in the vicinity of the Local Municipality will create a number of socio-economic opportunities for the

area, which in turn, will result in a positive social benefit. The positive cumulative impacts include creation of employment, skills development and training opportunities, and downstream business opportunities. Benefits to the local, regional and national economy through employment and procurement of services could be substantial should many renewable energy facilities proceed. This benefit will increase significantly should critical mass be reached that allows local companies to develop the necessary skills to support construction and maintenance activities and that allows for components of the renewable energy facilities to be manufactured in South Africa. Furthermore at municipal level, the cumulative impact could be positive and could incentivize operation and maintenance companies to centralize and expand their activities towards education and training.

Cumulative Social Impacts

The potential for social cumulative impacts is likely and includes both positive and negative impacts. The significance of the negative cumulative impacts of Red Sands PV3 and other projects in the area is low, and the significance of the positive cumulative impacts of the proposed development and other projects in the areas is medium. This is based on the location of the Red Sands PV3 within the Upington REDZ.

Considering the concentration of solar energy developments within the surrounding area of Red Sands PV3 the potential for cumulative impacts to occur is likely. Potential cumulative impacts identified for the project include positive impacts on the economy, business development, and employment, as well as negative impacts such as an influx of jobseekers and change in the area's sense of place.

Cumulative benefits associated with the development of multiple renewable energy facilities within the area will be experienced including employment opportunities, skills development, community upliftment, business opportunities and the generation of clean energy.

Nature: *An increase in employment opportunities, skills development, and business opportunities with the establishment of more than one solar power facility.*
Red Sands PV3 and the establishment of other solar power projects within the area has the potential to result in significant positive cumulative impacts, specifically with regards to the creation of a number of socio-economic opportunities for the region, which in turn, can result in positive social benefits. The positive cumulative impacts include creation of employment, skills development and training opportunities, and downstream/spin-off business opportunities. The cumulative benefits to the local, regional, and national economy through employment and procurement of services are more considerable than that of Red Sands PV3 alone.

	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Regional (4)	Regional (4)
Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Highly Probable (4)
Significance	**Medium (36)**	**Medium (56)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impacts be mitigated?	Yes (enhanced)	

Mitigation/Enhancement:

» The establishment of a number of solar power projects in the area has the potential to have a positive cumulative impact on the area in the form of employment opportunities, skills development and business opportunities, where these opportunities are localised. The positive benefits will be enhanced if local employment policies are adopted and local services providers are utilised by the developers to maximise the project opportunities available to the local community.

Residual Impacts:

» Improved pool of skills and experience in the local area.
» Improved standard of living through the creation of employment opportunities.
» Economic growth for small-scale entrepreneurs.

Nature: *Negative impacts and change to the local economy with an in-migration of labourers, businesses and jobseekers to the area*

While the development of a single solar power project may not result in a major influx of people into the area, the development of several projects at the same time may have a cumulative impact on the in-migration and movement of people. In addition, the fact that the project is proposed within REDZ 7, which has specifically been earmarked for the development of large scale solar PV energy facilities, implies that the surrounding area is likely to be subject to considerable future applications and expansion of solar energy facilities. Levels of unemployment, and the low level of earning potential may attract individuals to the area in search of better employment opportunities and standards of living.

It is very difficult to control an influx of people into an area, especially in a country where unemployment rates are high. It is therefore important that the project proponent implement and maintain strict adherence with a local employment policy in order to reduce the potential of such an impact occurring.

	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Local (2)	Local-Regional (3)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Low (4)
Probability	Very Improbable (1)	Improbable (2)
Significance	**Low (8)**	**Low (22)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	No	No
Can impacts be mitigated?	Yes	

Mitigation:

» Develop a recruitment policy / process (to be implemented by contractors), which will source labour locally.
» Work together with government agencies to ensure that service provision is in line with the development needs of the local area.
» Form joint ventures with community organisations, through Trusts, which can provide local communities with benefits, such as employment opportunities and services.

» Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated.
Residual Impacts:
» Possibility of outside workers remaining in the area after the construction is completed and the subsequent potential pressures on local infrastructure, services and poverty problems.

7. CONCLUSION AND RECOMMENDATIONS

This SIA Report focused on the collection of available secondary information to provide a social baseline against which potential social impacts, associated with the development of Red Sands PV 1 and identifying and assessing social issues and potential social impacts associated with the development of such a nature.

A summary of the potential positive and negative impacts identified for the detailed design, construction and operation phases are presented in Error! Reference source not found. and Error! Reference source not found. for the potential impacts identified at scoping phase.

Table 7-1: Summary of potential social impacts identified for the detailed design and construction phase of the Red Sands PV3 Facility

Impact	Status	Significance
Creation of direct and indirect employment opportunities	Positive	Medium
Construction workers on local communities	Negative	Low
Influx of jobseekers and change in population	Negative	Low
Risk to safety, livestock and damage to farm infrastructure	Negative	Low
Increased risk of grass fires	Negative	Low
Impacts associated with construction related activities	Negative	Low
Loss of farmland	Negative	Low

Table 7-2: Summary of potential social impacts identified for the operation phase of the Red Sands PV3 Facility

Impact	Status	Significance
Direct and indirect employment opportunities	Positive	Low
Visual impact and impact on sense of place	Negative	Low
Impact on tourism	Negative	Low

Table 7-3: Summary of potential cumulative social impacts identified for Red Sands PV3 Facility

Impact	Status	Significance
Positive Cumulative Impacts		
Cumulative impact from employment, skills and business opportunities and skills development	Negative	Low
Negative Cumulative Impacts		
Cumulative impact with large-scale in-	Negative	Low

migration of people		
Cumulative impact on the sense of place	Negative	Low

7.1. Key findings and Recommendations

7.1.1. Key Findings

The social impacts identified will be either of a low, medium or high significance. No negative impacts with a high significance rating has been identified to be associated with the development of Red Sands PV3, only positive social impacts are considered to be of a high significance. All negative social impacts are within acceptable limits with no impacts considered as unacceptable from a social perspective. The recommendations proposed for the project are appropriate and suitable for the mitigation of the negative impacts and the enhancement of the positive impacts.

Based on the findings of the social impact assessment, the following recommendations are made:

- A Community Liaison Officer (CLO) must be appointed to assist with the management of social impacts and to deal with community issues, if feasible.
- Develop and implement a recruitment protocol in consultation with the municipality and local community leader. Ensure that the procedures for applications for employment are clearly communicated.
- It is recommended that local labour be sourced, wherever possible, to ensure that benefits accrue to the local communities. Efforts should be made to involve local businesses during the construction phase where possible.
- Local procurement of services and equipment is required where possible in order to enhance the multiplier effect.
- Involve the community in the project process as far as possible (encourage co-operative decision making and partnerships with local entrepreneurs).
- Employ mitigation measures to minimise the dust and noise pollution and damage to existing roads.
- Safety and security risks should be taken into account during the planning / construction phase of the proposed project. Access control, security and management should be implemented to limit the risk of crime increasing in the area.

All other recommended mitigation measures provided in this SIA Report must also be adhered to.

7.1.2. Recommendations

The following recommendations are made based on the Social Impact Assessment and a thorough review of the concerns and suggestions raised by stakeholders and interested and affected parties during the stakeholder engagement process. The proposed mitigation measures should be implemented to limit the negative impacts and enhance the positive impacts. Based on the social assessment, the following recommendations are made:

- In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled are scarce commodities in the study area and could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen

local endeavours to obtain jobs and provoke discontent as well as put pressure on the local services available. Local labour should be utilised to enhance the positive impact of employment creation in the area. Local businesses should be involved with the construction activities where possible. It is imperative that local labour be sourced to ensure that benefits accrue to the local communities. Preference should thus be given to the use of local labour during the construction and operational phases of the project as far as possible.

- Locals should also be allowed an opportunity to be included in a list of possible local suppliers and service providers, enhancing the multiplier effect. This aspect would serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.
- Impacts associated with the construction period should be carefully mitigated to minimise any possible dust and noise pollution.
- Safety and security concerns should be taken into account during the planning and construction phases of the proposed project.

7.2. Overall Conclusion

The proposed Red Sands PV 1 Facility and associated infrastructure is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the project could be developed subject to the implementation of the recommended mitigation measures and management actions contained in the report.

8. REFERENCES

Department of Energy (DoE). (2008). National Energy Act (No. 34 of 2008). Republic of South Africa.

Department of Energy (DoE). of South Africa. (2011).National Integrated Resource Plan for Electricity 2010-2030. Republic

Department of Energy (DoE). (2003). White Paper on Renewable Energy. Republic of South Africa.

Department of Environmental Affairs (DEA). (1998). National Environmental Management Act 107 of 1998 (No. 107 of 1998). Republic of South Africa.

Department of Environmental Affairs (DEA). (2010). National Climate Change Response Green Paper. Republic of South Africa.

Department of Justice (DoJ). (1996). The Constitution of the Republic of South Africa (Act 108 of 1996). ISBN 978-0-621-39063-6. Republic of South Africa.

Department of Minerals and Energy (DME). (1998). White Paper on Energy Policy of the Republic of South Africa. Republic of South Africa.

International Finance Corporation (IFC). (2007). Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets. International Finance Corporation: Washington.

Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. US Principles and Guidelines – Principals and guidelines for social impact assessment in the USA. Impact Assessment and Project Appraisal, 21(3): 231-250.

National Development Agency (NDA). (2014). Beyond 10 years of unlocking potential. Available from: http://www.nda.org.za/?option=3&id=1&com_id=198 &parent_id= 186&com_task=1

National Planning Commission. (2012). National Development Plan 2030. ISBN: 978-0-621-41180-5. Republic of South Africa.

Northern Cape Provincial Growth and Development Strategy

Northern Cope Provincial Growth and Development Strategy (2004-2014).

Northern Cape Provincial Government. (2012). Northern Cape Provincial Spatial Development Framework (PSDF) 2012.

Northern Cape Provincial Government. (2018). Northern Cape Reviewed Spatial Development Framework (PSDF) Executive Summary 2018

Statistics South Africa. (2011). Census 2011 Community Profiles Database. Pretoria.

Tsantsabane Local Municipality. Tsantsabane Local Municipality Integrated Development Plan Review for 2021 – 2022.

United Nations Environment Programme (UNEP). (2002). EIA Training Resource Manual. 2nd Ed. UNEP.

United Nations Economic and Social Commission for Asia and the Pacific (UN). (2001). Guidelines for Stakeholders: Participation in Strategic Environmental Management. New York, NY: United Nations.

Vanclay, F. (2003). Conceptual and methodological advances in Social Impact Assessment. In Vanclay, F. & Becker, H.A. 2003. The International Handbook for Social Impact Assessment. Cheltenham: Edward Elgar Publishing Limited.

ZF Mgcawu District Municipality. (2019). ZF Mgcawu District Municipality Final Integrated Development Plan (IDP) 2019/2020 (2017-2022)

9. APPENDIX A: SIA ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

1. Construction Phase

Direct employment and skills development

OBJECTIVE: Maximise local employment and skills opportunities associated with the construction phase		
Project component/s	Construction of the proposed project	
Potential Impact	The opportunities and benefits associated with the creation of local employment and skills development to be maximised.	
Activity/risksource	» Construction procurement practice employed by the EPC contractor » Developers investment plan	
Mitigation Target/Objective	The developer should aim to employ as many low-skilled and semi-skilled workers from the local area as possible. This should also be made a requirement for all contractors.	
Enhancement: Action/control	**Responsibility**	**Timeframe**
Employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria	The Proponent & EPC Contractors	Pre-construction & construction phase
Adopt a local employment policy to maximise the opportunities made available to the local labour force as far as possible (	The Proponent & EPC Contractors	Pre-construction & construction phase
In the recruitment selection process; consideration must be given to women during recruitment process	EPC Contractors	Pre-construction & construction phase
Set realistic local recruitment targets for the construction phase	The Proponent & EPC Contractors	Pre-construction & construction phase
Training and skills development programmes to be initiated prior to the commencement of the construction phase	The Proponent	Pre-construction & construction phase
Performance Indicator	» Employment and business policy document that sets out local employment and targets completed before construction phase commences; » Employ as many semi and unskilled labour from the local areaor local municipality as possible » Training and skills development programme undertaken prior to the commencement of construction phase.	
Monitoring	» The developer and EPC contractor must keep a record of local recruitments and information on local labour to be shared withthe ECO for reporting purposes.	

Economic multiplier effects

OBJECTIVE: Construction workers on local communities	
Project component/s	Construction of the proposed project
Potential Impact	The opportunities and benefits associated with the creation of local employment and skills development to be maximised.
Activity/risksource	» Construction procurement practice employed by the EPC contractor

	» Developers investment plan
Mitigation Target/Objective	The developer should aim to employ as many low-skilled and semi-skilled workers from the local area as possible. This should also be made a requirement for all contractors.

Enhancement: Action/control	**Responsibility**	**Timeframe**
Employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria	The Proponent & EPC Contractors	Pre-construction & construction phase
Adopt a local employment policy to maximise the opportunities made available to the local labour force as far as possible (	The Proponent & EPC Contractors	Pre-construction & construction phase
In the recruitment selection process; consideration must be given to women during recruitment process	EPC Contractors	Pre-construction & construction phase
Set realistic local recruitment targets for the construction phase	The Proponent & EPC Contractors	Pre-construction & construction phase
Training and skills development programmes to be initiated prior to the commencement of the construction phase	The Proponent	Pre-construction & construction phase

Performance Indicator	» Employment and business policy document that sets out local employment and targets completed before construction phase commences; » Employ as many semi and unskilled labour from the local areaor local municipality as possible » Training and skills development programme undertaken prior to the commencement of construction phase.
Monitoring	» The developer and EPC contractor must keep a record of local recruitments and information on local labour to be shared withthe ECO for reporting purposes.

Influx of jobseekers and population change

OBJECTIVE: Influx of jobseekers and change in population	
Project component/s	Construction of the proposed project
Potential Impact	Increase in traffic disruptions, safety hazards, and impacts onmovement patterns of local community as well as impact on private property due to the upgrade of the existing road and heavy vehicle traffic in the local area
Activity/risksource	Construction activities affecting daily living and movement patterns
Mitigation Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods

Enhancement: Action/control	**Responsibility**	**Timeframe**
Where possible, make it a requirement for contractors to implement a 'locals first' policy. Should be advertised for construction employment opportunities, especially for semi and low-skilled job categories (preference to Tsantsabane Municipality). Enhance employment opportunities for the immediate local area, , if this is not possible, then the broader	The proponent & EPC Contractor	Pre- construction phase & construction phase

focus areas should be considered for sourcing workers such as the Tsantsabane Local Municipality		
Prior to construction commencing representatives from the local community e.g. ward councillor, surrounding landowners should be informed of details of the construction schedule and exact size of the workforce.	EPC Contractor	Construction phase
Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office located in town with a Community Liaison officer should be established to deal with jobseekers.	EPC Contractor	Construction phase
Have clear rules and regulations for access to the proposed site to control loitering.	The Proponent & EPC contractor	Construction phase
A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process	EPC Contractor	Pre-construction & construction phase
Performance Indicator	» Percentage of the workers employed in construction that come from local communities	
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes	

Safety and security impacts

OBJECTIVE: Risk to safety, livestock and damage to farm infrastructure		
Project component/s	Construction of the proposed project	
Potential Impact	Increase in crime due to influx of non-local workforce and job seekers into the area	
Activity/risksource	Safety and security risks associated with construction activities	
Mitigation Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods	
Enhancement: Action/control	**Responsibility**	**Timeframe**
Access in and out of the construction camp should be strictly controlled by a securitycompany	EPC Contractor	Construction phase
The appointed EPC contractor must appoint a security company and appropriate securityprocedures are to be implemented	EPC Contractor	Construction phase
Open fires on the site for heating, smoking orcooking are not allowed, except in designated areas.	EPC Contractor	Construction phase
Contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.	EPC Contractor	Pre-construction & construction phase
A comprehensive employee induction programme to be developed and utilised to cover land access protocols, fire	EPC Contractor	Pre-construction & construction phase

managementand road safety		
Have clear rules and regulations for access to the proposed site.	EPC Contractor	Pre-construction & construction phase
All construction workers must be easily identifiable.	EPC Contractor	Pre-construction & construction phase
Local community organisations and policing forums must be informed of construction times and the duration of the construction phase. Also, procedures for the control and removal of loiterers at the construction site must be established.	EPC Contractor	Pre-construction & Construction phase
A security company must be appointed, and appropriate security procedures must be implemented.	EPC Contractor	Pre-construction & Construction phase
Performance Indicator	» Ensure that a 'locals first' policy is adopted » Ensure no recruitment takes place on-site » Control/removal of loiters	
Monitoring	» The developer and EPC contractor must keep a record of local recruitments and information on local labour to be shared withthe ECO for reporting purposes.	

Nuisance impacts (Noise &Dust)

OBJECTIVE: To avoid or minimise the potential impacts of noise and dust from construction activities during the construction phase		
Project component/s	Construction of the proposed Red Sands PV3 Solar energy facility and associated infrastructure	
Potential Impact	Heavy vehicles and construction activities can generate noise and dust impacts.	
Activity/risksource	Construction activities	
Mitigation Target/Objective	To avoid and or minimise the potential noise and dust impacts associated with construction activities	
Enhancement: Action/control	**Responsibility**	**Timeframe**
Implement dust suppression measures for heavy vehicles such as wetting the roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers	EPC Contractor	Construction phase
Ensure all vehicles are road worthy, driversare qualified and are made aware of the potential noise and dust issues	EPC Contractor	Construction phase
Ensure that drivers adhere to speed limits	EPC Contractor	Construction phase
A Community Liaison Officer should be appointed. A method of communication should be implemented whereby proceduresto lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process	The Proponent & EPC contractor	Pre-construction & construction phase
Performance Indicator	» Dust suppression measures implemented for all heavy vehicles that require such measures during the construction phase » Enforcement of strict speeding limits » Road worthy certificates in place for all vehicles » Community liaison officer available for community grievances and	

	communication channel
Monitoring	» The EPC contractor must monitor the indicators to ensure that they have been met for the construction phase

2. Operational Phase

Direct employment and skills development during operation phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the construction phase			
Project component/s	Operation and maintenance of the proposed Red Sands PV3 Solar energy facility and associated infrastructure		
Potential Impact	Loss of opportunities to stimulate production and employment of the local economy		
Activity/risksource	Labour practices employed during operations		
Enhancement: Target/Objective	Maximise local community employment benefits in the local economy		
Enhancement: Action/control		**Responsibility**	**Timeframe**
Adopt a local employment policy to maximise the opportunities made available to the local labour force. (preference to Tsantsabane Local Municipality)		The Proponent & EPC Contractors	Operation phase
The recruitment selection process should seek to promote gender equality and the employment of women wherever possible		The Proponent & EPC Contractors	Operation phase
Establish vocational training programs for the local labour force to promote the development of skills		The Proponent & EPC Contractors	Operation phase
Performance Indicator	» Percentage of workers that were employed from local communities (Tsantsabane Local Municipality) » Number of people attending vocational training throughout the operation phase		
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes		

Visual and 'sense of place' impacts

OBJECTIVE: Reduce the visual and sense of place impacts associated with the operation phase of the project			
Project component/s	Operation and maintenance of the Proposed Red Sands PV3 solar energy facility and associated infrastructure		
Potential Impact	Change in the sense of place that also leads to the negative impact on the area and visual intrusions		
Activity/risksource	The PV facility and associated infrastructure		
Enhancement: Target/Objective	Reduce the visual disturbances to minimise the losses of the sense of place		
Enhancement: Action/control		**Responsibility**	**Timeframe**
» Vegetation screening to be placed between the site and adjacent properties if required.		The Proponent	Operation phase
Performance Indicator	» Vegetation screening if required/necessary		
Monitoring	» The developer must monitor the indicators if vegetation screening is required by adjacent landowners		

10. APPENDIX B: KEY STAKEHOLDERS CONTACTED AND MEETING SCHEDULED

Stakeholder consultation will take place during the 30-day made available to stakeholders for consultation. All consultation for the social impact assessment will be included in the final report that will be submitted to the Competent Authority.