

KOTULO TSATSI ENERGY PV1

Northern Cape Province

Social Impact Assessment

January 2021

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REPORT DETAILS

Title	:	Social Impact Assessment (SIA) Report for Kotulo Tsatsi Energy PV1, Northern Cape Province
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External Peer Review	:	Dr Neville Bews
Client	:	Kotulo Tsatsi Energy (Pty) Ltd
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SPECIALIST DECLARATION OF INTEREST

I, Lisa Opperman, 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.

Lisa Opperman

Name

January 2021

Date



Signature

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ACRONYMS

B-BBEE	Broad-Based Black Economic Empowerment
CLO	Community Liaison Officer
DAEARD&LR	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries (National)
DENC	Department of Environment and Nature Conservation (Northern Cape Provincial)
DMRE	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	Greenhouse Gas
GNP	Gross National Product
GNR	Government Notice
HDI	Historically Disadvantaged Individuals
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IFC	International Finance Corporation
IPP	Independent Power Producer
IRP	Integrated Resource Plan
km	Kilometre
kV	Kilovolt
LED	Local Economic Development
LM	Local Municipality
MTS	Main Transmission Substation
MW	Megawatt
NEMA	National Environmental Management Act (No. 107 of 1998)
NDP	National Development Plan
O&M	Operation and Maintenance
PGDS	Provincial Growth and Development Strategy
PICC	Presidential Infrastructure Coordinating Committee
PSDF	Provincial Spatial Development Framework
PV	Photovoltaic

RBS	Revised Balanced Scenario
RE	Renewable Energy
REIPPP	Renewable Energy Independent Power Producer Procurement Programme
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIP	Strategic Infrastructure Project
SKA	Square Kilometre Array
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation

1. INTRODUCTION AND PROJECT DESCRIPTION

The Applicant, **Kotulo Tsatsi Energy (Pty) Ltd**, is proposing the construction of a photovoltaic (PV) solar energy facility (known as the Kotulo Tsatsi Energy PV1) located on a site located approximately 70km south-west of the town of Kenhardt and 60km north east of Brandvlei in the Northern Cape Province (**Figure 1.1**). The solar energy facility will comprise several arrays of PV panels and associated infrastructure and will have a contracted capacity of up to 200MW. The facility will be located within the farm Portion 3 of Farm Styns Vley 280. The PV facility is planned to be located adjacent to the authorised 100MW Kotulo Tsatsi PV2 facility, and within an area previously authorised for CSP project infrastructure. The project site¹ falls under the jurisdiction of the Hantam Local Municipality which is part of Namakwa District Municipality. The site is accessible via an existing gravel farm road (known as Soafskolk Road) which provides access to the farm off of the R27 which is located east of the project site.

The development of Kotulo Tsatsi Energy PV1 requires Environmental Authorisation (EA) from the national Department of Environment, Forestry and Fisheries (DEFF), in accordance with the National Environmental Management Act (No. 107 of 1998) (NEMA), and the 2014 Environmental Impact Assessment (EIA) Regulations (GNR 326), as amended, subject to the completion of an Environmental Impact Assessment (EIA) process.

Lisa Opperman 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 Phase of process being conducted for the project.

1.1 Project Description

The PV infrastructure assessed in this application is in response to the Applicant's need to change the authorised generation technology for the facility located on the farm Portion 3 of Farm Styns Vley 280. That is, a technology change from the previously authorised CSP project infrastructure to PV project infrastructure. In this regard, the solar PV facility will be connected to the grid via a previously authorised grid connection solution², which consists of a collector substation, switching station and a power line to the Eskom Aries Substation located north-east of the project site.

Kotulo Tsatsi Energy PV1 is planned to be bid into the Department of Mineral Resources and Energy's (DMRE) Renewable Energy Independent Power Producer Procurement (REIPPP) 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 with Kotulo Tsatsi Energy PV1 set to inject up to 200MW_{AC} into the national grid.

A development envelope of ~847ha was defined through the Scoping evaluation of the site, and has now been assessed for the project which includes the PV infrastructure required to generate 200MW of electricity.

¹ The project site is defined as Portion 3 of Farm Styns Vley 280, which has the extent of ~ 2560ha.

² A CSP facility plus associated infrastructure, including a complete grid connection to Aries Substation was previously authorised on the site. This PV facility infrastructure replaces the CSP facility infrastructure, and will retain the authorised grid connection solution (including all substations and power lines) and other associated infrastructure (including the man camp (including on-site accommodation), all water reservoirs and pipelines, the power block and thermal storage).

The infrastructure to be developed within the development envelope will be known as the development footprint and will have an extent of ~810ha. The infrastructure associated with this PV development includes:

- » Solar PV array footprint comprising of:
 - * PV modules and mounting structures
 - * Inverters and transformers
 - * Integrated Energy Storage System (IESS)
 - * Cabling between the project components
 - * Internal access roads
- » Access roads, internal distribution roads and fencing around the development footprint
- » Admin block comprising of:
 - * Site offices and maintenance buildings, including workshop areas for maintenance and storage.
 - * Assembly plant
 - * Laydown areas

The assessment of the PV facility on the site is to support the technology change from the previously authorised CSP project infrastructure to PV project infrastructure. In this regard, the following previously authorised infrastructure will be retained for use for the planned PV facility, and the associated footprint areas of the following previously authorised infrastructure have not been reassessed in this EIA:

- » Complete grid connection to Aries Substation:
 - * Grid connection via a previously authorised grid connection solution, which consists of internal grid reticulation, a collector substation, switching substation and a power line to the Eskom Aries Substation located north-east of the project site.
- » Other associated infrastructure:
 - * facility man camp (including on-site accommodation),
 - * all water reservoirs and pipelines,
 - * power block and thermal storage solution.

As the above infrastructure was previously assessed and authorised under a separate EIA process these project components will not be re-assessed in detail within this SIA report.

1.2 Details of the Independent Specialist

This SIA has been undertaken by Lisa Opperman of Savannah Environmental, and peer reviewed externally by Dr. Neville Bews of Dr. Neville Bews & Associates.

- » **Lisa Opperman** – holds a Bachelor degree with Honours in Environmental Management and has six years of experience in the environmental field. She has undertaken numerous social impact assessments, environmental impact assessments, public participation, environmental management plans and programmes, as well as mapping using ArcGIS for a variety of projects. Her main focus has been on projects related to the energy sector, including solar energy facilities
- » **Dr Neville Bews** is a Senior Social Scientist and Human Resource professional at Dr Neville Bews & Associates. Dr Bews has a Doctorate in Literature and Philosophy (D. Litt. et Phil) from the Rand Afrikaans University (RAU) (now the University of Johannesburg (UJ)), and 37 years of experience in the fields of

Social Impact Assessment and Research, and Human Resource Management. Dr Bews has worked on a number of large infrastructure, mining and water resource projects.

Dr Bews has undertaken an external review of this SIA and has provided an external reviewer's letter. This letter is attached as **Appendix B**.

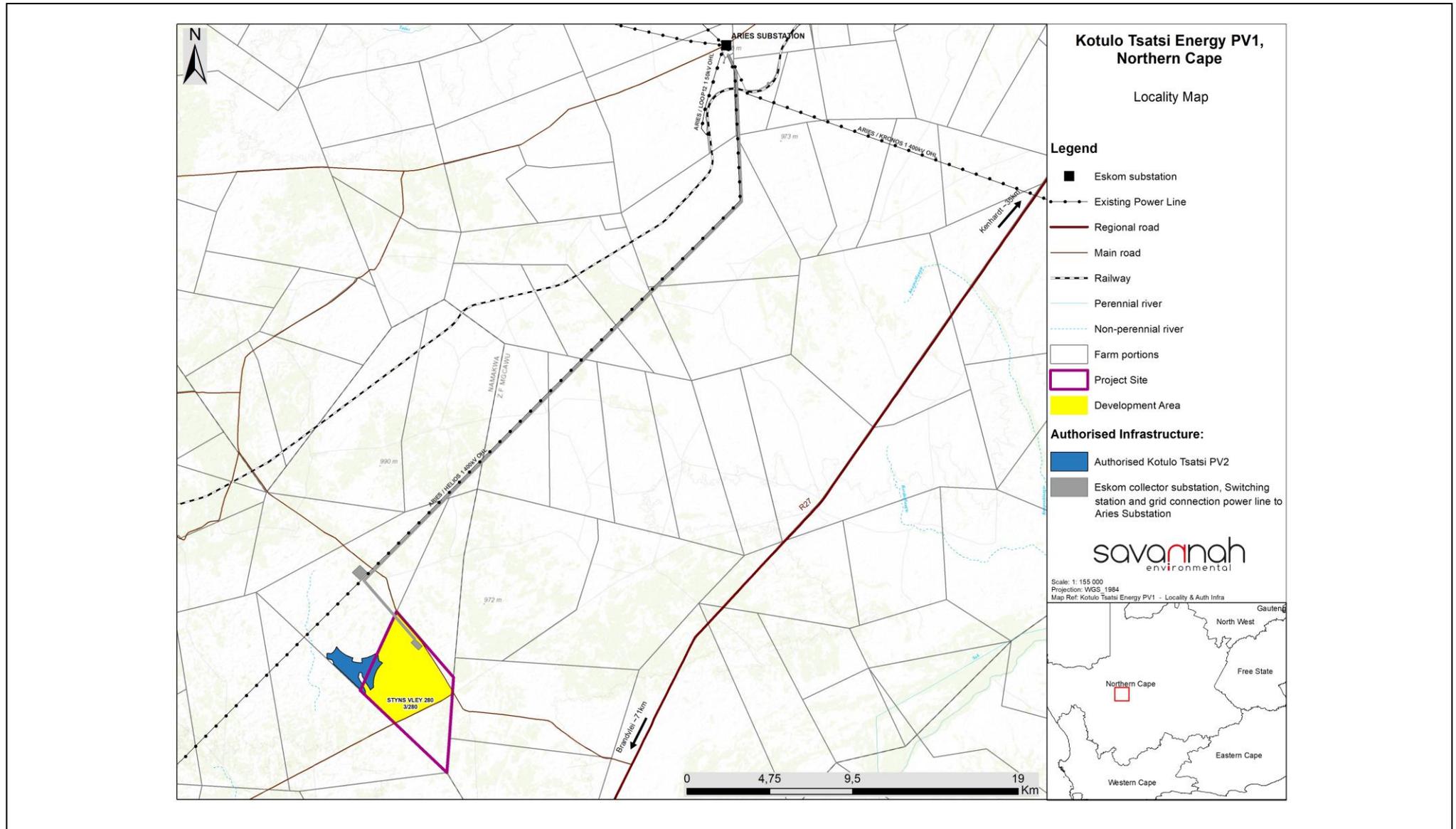


Figure 1.1: Locality map showing the proposed development area for Kotulo Tstatsi Energy PV, Northern Cape Province

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 (GNR 326), 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.	Declaration of Interest
(c) An indication of the scope of, and the purpose for which, the report was prepared.	Section 2
(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 2
(e) A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.	Section 2
(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
(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 2
(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 6
(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 6
(o) A description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 2
(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 Report 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 Kotulo Tsatsi Energy PV1 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 manner in which 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.
- » Previous environmental impact assessment processes have been undertaken for the development of renewable energy projects (mainly including the development of Concentrated Solar Power (CSP) facilities and a PV facility) within the affected property and directly adjacent properties identified for the development of Kotulo Tsatsi Energy PV1. These previous processes included the undertaking of social impact assessments for the proposed projects as well as adequate public participation processes which identified and addressed social concerns and impacts. Based on the similarities between the previous projects assessed and authorised and Kotulo Tsatsi Energy PV1 (in terms of location and nature of infrastructure, i.e. solar energy developments) the previous social studies and comments and responses reports (compiled through the public participation process) have contributed to the identification and assessment of the social impacts considered to be associated with the proposed PV1 development. These sources of information (which included the undertaking of a site visit and interviews as part of the previous EIA processes and Social Impact Assessments) contributed to the data collection. The following list provides the details of the previous projects, as well as the associated DEA reference numbers of the Applications for Environmental Authorisation:
 - * 200MW Kotulo Tsatsi Energy Solar Power Facility 1 (CSP 1) – DEA Ref.: 14/12/16/3/3/2/694/1;
 - * 200MW Kotulo Tsatsi Energy Solar Power Facility 2 (CSP 2) – DEA Ref.: 14/12/16/3/3/2/694/2;
 - * 200MW Kotulo Tsatsi CSP Facility – DEA Ref.: 14/12/16/3/3/2/694; and
 - * Kotulo Tsatsi Photovoltaic Power Plant 2 – DEA Ref.: 14/12/16/3/3/2/696.
- » Consideration of all social issues raised during the Scoping phase public participation process undertaken for the proposed PV1 project and inclusion as part of this SIA report. Any further social comments raised will be addressed, where relevant, in the final SIA Report to be submitted to DEFF for decision-making.
- » Stakeholder consultation/telephonic interviews were undertaken with affected and adjacent landowners to identify specific social impacts which need to be assessed and considered for the development³.
- » Identification of potential direct, indirect and cumulative impacts likely to be associated with the construction, operation, and decommissioning of the proposed project.
- » Assessment of identified impacts in terms of their nature, extent, duration, consequence/magnitude, probability, significance, and status.
- » Where applicable, mitigation measures with which to minimise impacts and enhance benefits associated with the project were identified.
- » Preparation of an SIA Report and inputs into the Environmental Management Programme (EMPr) to be prepared for the project.

³ It must be noted that the SIA was undertaken during the COVID-19 national state of disaster and therefore no on-site meetings with stakeholders were held. All meetings were telephonic or virtual, and considered to be acceptable by the interviewees.

2.2.1 Stakeholder Identification and Analysis

Stakeholders are defined as:

"Any group or organisation which may affect or be affected by the issue under consideration" (UN, 2001: 26).

These may be directly or indirectly impacted and may include organisations, institutions, groups of people or individuals, and can be at any level or position in society, from the international to regional, national, or household level (Franke & Guidero, 2012).

Stakeholder analysis involves the identification of affected or impacted people and their key grouping and sub-groupings (IFC, 2007). Identifying stakeholders that are directly and indirectly affected by the project is important to determine who might be impacted by the development and in what way. The key stakeholders in the proposed project have been identified, grouped / sub-grouped and described (as per Ilse Aucamp SIA methodology and Aucamp et al, 2011). There are immediate, direct and indirect areas of influence to the proposed development. Affected stakeholders comprise sensitive social receptors that may potentially be affected by the proposed development based on their location.

A description of each of the stakeholders groups in relation to Kotulo Tsatsi Energy PV1 is discussed in detail below:

- » **Farming community:** The project is located within an area where low-yielding grazing practises are predominant. The farming community can be grouped into three categories, namely farm owners, farm tenants, and farm workers. Farm owners comprise individuals who own and make a living off of their properties. Farm tenants are people who lease land and work on the land to earn an income. Farm workers are people who work, and also often reside on the farm with their families, and as employees are seen as a vulnerable community. The primary farming activities within the surrounding area is sheep farming and grazing - the area has a limited carrying capacity due to semi-arid climate, which indicates that large farm portions are required for grazing fewer livestock. The area experiences a relatively low overall soils potential, with majority of the land in the municipal area not suitable for crop production. A small number of farmsteads, which are sparsely populated, are present within the area. Sensitive social receptors to the project will include farmers residing on their farm, workers living on the farms and tenants residing in farmhouses on the farms. The most sensitive farming community are those that are located within the affected property and directly adjacent to the site, including landowners located along the Soafskolk Road which provides direct access to the development area of the project. The affected property is currently being utilised for cattle farming, for approximately 2500 head of cattle. The affected landowner does not live on the farm, however a foreman operates the farm. The affected landowner has indicated that the area is getting drier each year and that farming activities are becoming unfeasible for the area due to the limitations.
- » **Farming industry:** There are potentially vulnerable farming activities in the broader surrounding area of the development area. Agriculture is one of the main economic activities within the area. Livestock farming (mainly sheep farming) and small scale game farming is undertaken within and within the area surrounding the project. Sensitive social receptors include impacted farmlands where livestock farming occurs and directly adjacent farmlands where game farming and sheep farming activities are undertaken.
- » **Surrounding towns/affected communities:** The development area is located approximately 70km south-west of the town of Kenhardt and 60km north-east of Brandvlei. Kenhardt is a small town in the

Kalahari and is the largest town in the area (with a population of 4843, including the farming community). The Kenhardt area is known for small stock farming especially the Dorper sheep. Brandvlei is a much smaller town in the Karoo (with a population of 2 859 people). This region contains very little vegetation, primarily very low shrubs and yellow grass among a rocky desert kind of landscape.

- » **Service providers:** The major service providers which will be affected by the project include the DM, LM, and local businesses in the area. The Hantam LM (Ward 3) and to a lesser degree the Namakwa DM are likely to be impacted by the proposed development. The Hantam LM will absorb a number of positive and negative social impacts. In addition there are a number of local businesses in the surrounding area that could benefit from the opportunities of the proposed project.
- » **Stakeholders outside the direct area of influence:** Several stakeholders reside outside the direct area of influence, but may be affected by the project. These include road users that use the R27 on a frequent basis as part of their daily or weekly movement patterns, as well as road users that utilise the Soafskolk access road to access their farms. These same roads will be used by vehicles associated with the construction phase, and later the operations phase of the development. The development will also have an indirect effect on the Kenhardt and Brandvlei local residents; with influx of in-migrants and growth in the local economy. An important stakeholder outside the direct area of influence is the Square Kilometre Array (SKA) project that is underway. The world's largest and most sensitive radio telescope will be constructed in the Northern Cape Province, approximately 90 km outside the small Northern Cape town of Carnarvon. The SKA project is sensitive to any electromagnetic and radio frequency interference, and therefore, satellite stations need to be protected from other infrastructure that emit radio waves that could potentially interfere with the faint incoming radio signals coming from galaxies in the distant Universe. The SKA project is of international significance and is important to scientific research (SKA, 2014).
- » **Tourism:** The tourism industry in the area is developed around sense of place, natural beauty and natural resources. The tourism activities in the broader surrounding area include limited eco-tourism (Quiver tree forest and the bird sanctuaries); heritage sites and ancient rock art, as well as hunting in nearby private game farms.

Figure 2.1 provides an organogram of the key stakeholders that will be impacted by Kotulo Tsatsi Energy PV1.

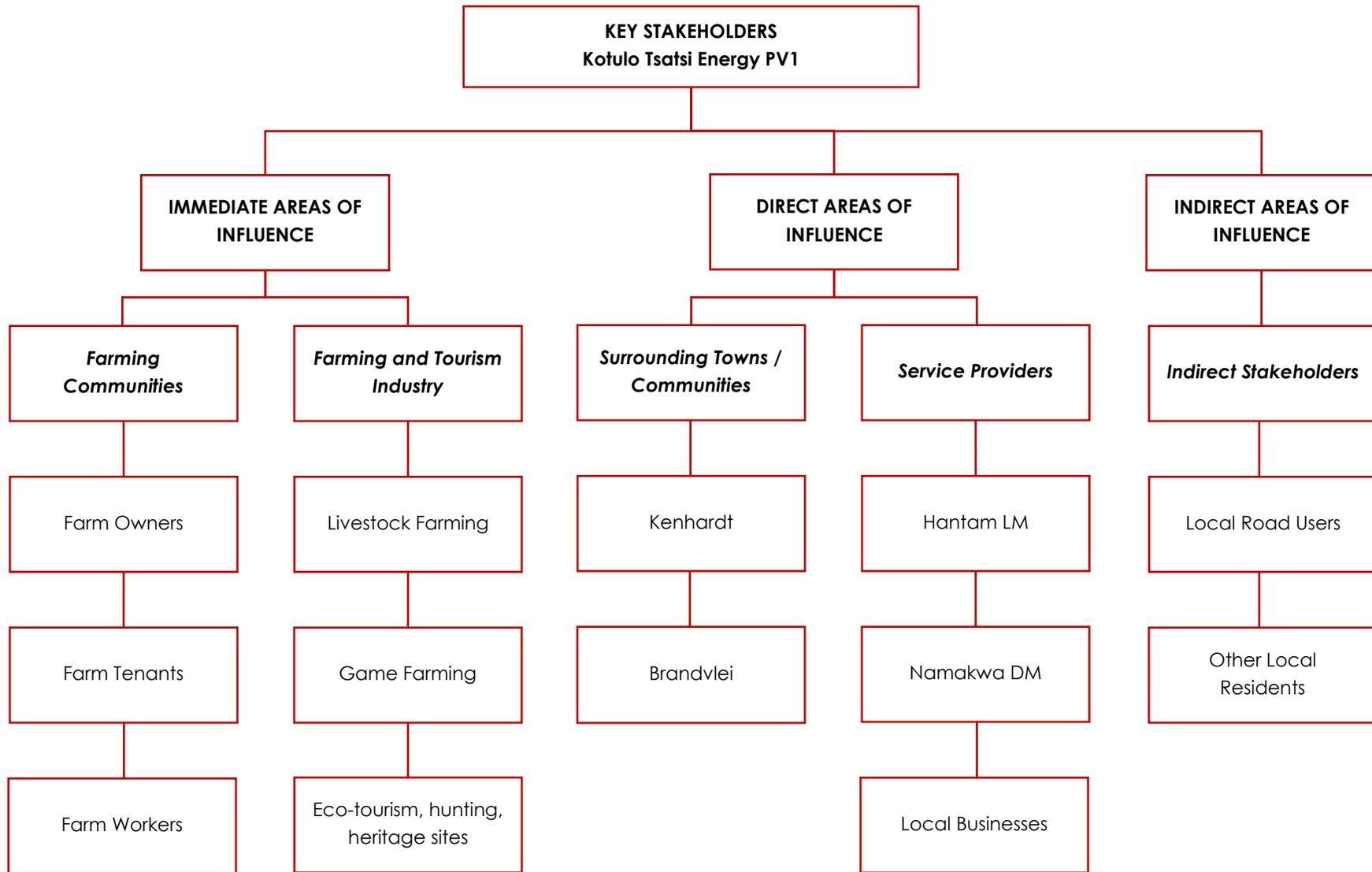


Figure 2.1: Key Stakeholders identified for Kotulo Tsatsi Energy PV1, Northern Cape Province

2.2.2 Collection and Review of Existing Information and Data

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 energy facilities and associated infrastructure.
- » Previous studies undertaken within the affected properties, as well as the consideration of the outcomes and comments raised during the public participation processes undertaken as part of the previous studies.

Further to the above, telephonic interviews were held with affected and adjacent landowners during which social impacts were identified and noted and considered within this SIA report. The interviews were held between 22 January and 25 January 2021, and included consultation with the following stakeholders. A summary of the main points raised by each is presented in the table below.

Stakeholder Organisation	/ Details of consultation	Summary of main points raised (not verbatim)
Pieter Janeke Affected and adjacent landowner: Melkbosch Vley 278 RE, Styns Vley 281 Ptns 1,2 & 3; Gemsboks Rivier 301 Ptn1 & RE	Telephonic interview held on Friday 22 January 2021	<ul style="list-style-type: none"> » Current land use (livestock farming) will not be impacted by the development due to availability of large portions of land for farming. » Considers proposed project / new land use as an opportunity to contribute to an arid area with agricultural limitations. Farming in the area is not considered viable with the area getting drier each year and the project brings development and growth opportunity to the area. » Shadow of panels and washing of panels provides an opportunity for vegetation growth which will assist with future grazing activities during operation. » Considers project to have a positive impact on neighbouring properties with a possible increase in property prices with development being undertaken. » The water pipeline (as previously authorised as part of the CSP project) is an opportunity to bring freshwater to the area as only brackish water in limited quantities is currently available. » No major tourism activities in the area. There is however a game hunting facility, known as Dagab, which is mainly utilised for hunting activities and not for leisure activities.

Stakeholder Organisation	/ Details of consultation	Summary of main points raised (not verbatim)
		<ul style="list-style-type: none"> » Local roads are mainly used by landowners and Spoornet employees. » The project will bring better security to the area with more monitoring of the area and possible upgrades to security in the area. » Traffic impacts will occur during the construction phase, but will decrease once operation commences. » Does not consider PV to have a high visual impact. » In support of the development as the positive impacts will outweigh the negative impacts and provides an opportunity to change the land use to a more productive use, other than farming which is not considered viable in the area.
<p>Kosie Zandberg</p> <p>Foreman for Pieter Janeke: Melkbosch Vley 278 RE, Styns Vley 281 Ptns 1,2 & 3; Gemsboks Rivier 301 Ptn1 & RE (currently residing on the properties)</p>	<p>Telephonic interview held on Friday 22 January 2021</p>	<ul style="list-style-type: none"> » Indicates that the project will have a positive impact as the development would benefit and support the current land use activities in a financial way. » Considers the project to be more financially viable than farming. » No major tourism activities in the area. » Safety and security concerns related to the development phase of the project and additional people in the area. » No concern raised in terms of nuisance impacts (i.e. noise, dust and visual). » In support of the project.
<p>Mari Wilson</p> <p>Adjacent landowner: Melkbosch Vley 278, Ptn 1</p>	<p>Telephonic interview held on Friday 22 January 2021</p>	<ul style="list-style-type: none"> » Current land use is livestock farming, mainly dorper sheep. » A main concern is the potential for security risks with the influx people into the area during the construction phase, and the potential risk associated with livestock farming, including stock theft. » Project will not have an impact on future plans for the property, which also includes the potential development of renewable energy developments. » No major tourism activities in the area. » The project site is located too far to have an impact on Melkbosch Vley 278, Ptn 1 in terms of noise, dust and visual intrusion. » In support of the project.
<p>Ronelle Muller</p> <p>Adjacent landowner: Jagt Kolk 244, Ptn 7</p>	<p>N/A</p>	<p>Telephonically contacted the landowner on Monday 25 January 2021. The signal was not sufficient for the telephonic discussion, but it was agreed that the landowner would complete the questionnaire and email it back to the specialist. A follow-up email as a reminder to the landowner was sent on 05 March 2021, however to date no feedback has been received.</p>
<p>Schalk Visagie</p> <p>Representative of the Brandvlei Community Safety Forum</p>	<p>Telephonic interview held Monday 25 January 2021</p>	<ul style="list-style-type: none"> » Indicated that the project will have a positive impact on the area through the creation of jobs and indicated that the community is excited for the project and the opportunity for growth in the area. » There will be a negative impact on the roads in the area. » Vulnerable / older community which will be impacted by an influx of people to the area and the associated safety and security risks. » Police services are located far from the project site. » An existing company in the area, known as Pro-action Securities, will be able to place key areas under camera observation, however financial resources are required in this regard. The project

Stakeholder Organisation	/ Details of consultation	Summary of main points raised (not verbatim)
		<p>provides an opportunity for the bettering of the current safety and security of the area.</p> <ul style="list-style-type: none"> » Potential of the project to impact on the Square Kilometre Array (SKA). » No major tourism activities in the area. » Indicated that the positive economic development and growth in the area will outweigh the potential negative impact of the facility. » The proposed project might attract visitors to the area which in turn will promote economic development. » From an employment perspective, job opportunities must be provided to local residents of the area first, where available, to ensure that the locals of the area receive a financial injection with the development of the project. » In support of the project.
<p>Paul Slabbert</p> <p>Representative of the landowner Whitey Basson: De Paarden Vleyen 283, Ptn 1</p> <p>The landowner has various properties in the area, however these are not directly adjacent to the project site.</p>	<p>Telephonic interview held Monday 25 January 2021</p>	<ul style="list-style-type: none"> » Land use includes game farming for agri-tourism (including a lodge and further smaller accommodation units / cottages - understood to be located on the farm Dagab) and livestock farming. » Agri-tourism facility is mainly used during 6 months of the year (during winter times), however the facilities are also used in the rest of the year by friends and family visiting the area. » Indicates that there is no current plans for further development within the relevant properties, however the potential for future development and the impact of the proposed project on the future development must not be disregarded. » A private landing strip is located on one of the properties owned by Mr Basson which is used for the agri-tourism activities undertaken. » The project will result in a change of a unique landscape which is also located in an ecological corridor. » The community is vulnerable to influx of people to the area, with the possibility of people staying behind in the area following project development. The area will also not have sufficient infrastructure to support the influx. » Creation of social ills. » The development will have a ripple effect on the area and the social structures within. » Construction activities will create disturbance and nuisance impacts. » Negative impacts to roads in the area. » Objects to the project.
<p>Japie du Toit</p> <p>Adjacent landowner: Klaas Jobs Vley 302 RE & Ptn1; Gemsboks Kolk 279 RE</p>	<p>Telephonic interview held Thursday 28 January 2021</p>	<ul style="list-style-type: none"> » The Soafskolk Road, which provides access to the project, traverses the landowner's property. » Construction phase is considered to be a risk to the safety (and loss) of livestock as the properties are not fenced. Heavy vehicles during construction may cause livestock loss. » Landowner indicated that there is an agreement between the Applicant and himself relating to the fencing of the landowner's properties, the supply of water to the properties where this is cut-off due to the required fencing and the safety of his farm workers. The landowner requested that this agreement be revisited and updated through consultation with the Applicant for this project, as the risks previously identified as part of the CSP project, are still valid for the development of the PV facility. It must be noted, that

Stakeholder Organisation	/ Details of consultation	Summary of main points raised (not verbatim)
		<p>following the telephonic interview, the client and landowner subsequently finalised an updated agreement in this regard.</p> <ul style="list-style-type: none"> » Influx of construction workers and people seeking employment to the area may pose a risk to the farm workers currently residing on the properties. » Dust related to traffic will be a nuisance during the construction phase, but will disappear with the commencement of the operation phase. » The development of the project/commercialising of the directly adjacent area could attract people to the area and increase the risk of livestock theft. » Neutral towards the project as landowner will receive no benefit, however this is subject to the appropriate mitigation and management of impacts and risks.
Frans van Niekerk Adjacent landowner: Kopjes vley 281 RE	N/A	Landowner advised that he is not available for a telephonic interview, however it was advised that feedback/comment will be provided on the project during the EIA process. No written comments have been received to date.
Andries van Niekerk Adjacent landowner: Gemsboks Kolk 279 RE	N/A	Landowner advised that he is not available for a telephonic interview. No written comments or further feedback have been received to date.

Should any comments or concerns be raised from a social perspective regarding the project during the public participation process of the project (including the 30-day review and comment period of the EIA Report), these will be included and addressed as part of the final SIA to be submitted to DEFF for decision-making.

2.3 Impact Assessment Evaluation Method

The main objective of this SIA is to determine the social risks and opportunities, and positive and negative impacts which may be associated with the construction, operation, and decommissioning of the project. The methodology below (as provided by Savannah Environmental) allows for the evaluation of the overall impact of a proposed project on the social environment. This includes an assessment of the significant direct, indirect, and cumulative impacts associated with the project. Social impacts were assessed in terms of their perceived extent (scale), duration, magnitude (severity), probability (certainty), and status (negative, neutral or positive).

- » The **nature**, which includes a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it is 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 was assigned as appropriate (with 1 being low and 5 being high).
- » The **duration**, wherein it is 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.
- * 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 describes the likelihood of the impact actually occurring. Probability is 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 is determined through a synthesis of the characteristics described above and can be assessed as low, medium or high.
- » 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** was then calculated by combining the criteria in the following formula:

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

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).

2.4 Limitations and Assumptions

The following assumptions and limitations are applicable to this SIA Report:

- » Data derived from the 2011 Census, Northern Cape Provincial Spatial Development Framework (PSDF) 2012, Northern Cape Reviewed Spatial Development Framework (PSDF) Executive Summary 2018 (complete report was not available at the time of compilation of this report), Namakwa District Municipality (NDM) Integrated Development Plan (2017-2022) and Hantam Local Municipality Integrated Development Plan (IDP) 2020/2021 (Final, May 2020) was used to generate the majority of information provided in the baseline profile of the broader study area and the development area. The

possibility exists that some of the data utilised may be out of date, and may not provide an accurate reflection of the current status quo.

- » This SIA Report was prepared based on information that 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. Additional information available from the public participation undertaken during the EIA process will be included and considered within the final report, where relevant.
- » It is assumed that the information provided by the stakeholders and collected during the telephonic interviews is true and accurate.
- » The use and interpretation of previously collected data from previous environmental impact assessment processes undertaken for the development of renewable energy projects (mainly including the development of CSP facilities) within the affected property identified for the development of Kotulo Tsatsi Energy PV1 is considered to be sufficient. No site visit has been undertaken as part of this SIA⁴.
- » Some of the project details and projections reflected in this SIA Report 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, as well as planning and the 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 Report.

⁴ Partly owing to travel restrictions at this stage.

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:

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)
- » White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)
- » National Energy Act (No. 34 of 2008)
- » Integrated Energy Plan (IEP) (2015)
- » Integrated Resource Plan (IRP) for Electricity (2010 – 2030) (2011) (and subsequent updates thereto)
- » National Development Plan (NDP) 2030 (2012)
- » Strategic Infrastructure Projects (SIPs)
- » Renewable Energy Development Zones (REDZ)

Provincial Policy and Planning Context:

- » Northern Cape Provincial Spatial Development Framework (PSDF) 2012
- » Northern Cape Reviewed Spatial Development Framework (PSDF) 2018⁵
- » The Northern Cape Climate Change Response Strategy

Local Policy and Planning Context:

- » Namakwa District Municipality (NDM) Integrated Development Plan (2017-2022)
- » Hantam Local Municipality Integrated Development Plan (IDP) 2020/2021 (Final, May 2020)

3.1 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 that 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.

⁵ It must be noted that only the executive summary of the document was available and the complete PSDF was not available for consideration at the time of compilation of this report.

Table 3.1: Relevant national legislation and policies for Kotulo Tsatsi Energy PV1

Relevant legislation or policy	Relevance to Kotulo Tsatsi Energy PV1
Constitution of the Republic of South Africa, 1996	<p>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.</p> <p>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.</p>
National Environmental Management Act (No. 107 of 1998) (NEMA)	<p>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.</p> <p>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.</p> <p>The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.</p>
White Paper on the Energy Policy of the Republic of South Africa (1998)	<p>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.</p> <p>The policy states that the advantages of RE 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.</p>
White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)	<p>The White Paper on Renewable Energy Policy supplements Government's predominant policy on energy as set out in the White Paper on the Energy Policy of the Republic of South Africa (DME, 1998). The policy recognises the potential of RE and aims to create the necessary conditions for the development and commercial implementation of RE technologies.</p> <p>The White Paper on RE sets out Government's vision, policy principles, strategic goals, and objectives for promoting and implementing RE in South Africa. The country relies heavily on coal to meet its energy needs due to its abundant, and fairly accessible and affordable coal resources. However, massive RE resources that can be sustainable alternatives to fossil fuels, have so far remained largely untapped.</p>

Relevant legislation or policy	Relevance to Kotulo Tsatsi Energy PV1
	<p>The White Paper on Renewable Energy of 2003 set a target of 10 000GWh to be generated from RE by 2013 to be produced mainly from biomass, wind, solar and small-scale hydro. The target was subsequently reviewed in 2009 during the RE summit of 2009. The policy supports the investment in RE facilities as they contribute towards ensuring energy security through the diversification of energy supply, reducing GHG emissions and the promotion of RE sources.</p>
<p>National Energy Act (No. 34 of 2008)</p>	<p>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 management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies (REs).</p> <p>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.</p>
<p>The Electricity Regulation Act (No. of 2006)</p>	<p>The Electricity Regulation Act of 2006, replaced the Electricity Act (No. 41 of 1987), as amended, with the exception of Section 5B, which provides funds for the energy regulator for the purpose of regulating the electricity industry. The Act establishes a national regulatory framework for the electricity supply industry and introduces the National Energy Regulator (NERSA) as the custodian and enforcer of the National Electricity Regulatory Framework. The Act also provides for licences and registration as the manner in which the generation, transmission, distribution, trading, and import and export of electricity are regulated.</p>
<p>Integrated Energy Plan (IEP), 2015</p>	<p>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.</p>
<p>Integrated Resource Plan for Electricity (IRP) 2010-2030 (2019)</p>	<p>The Integrated Resource Plan (IRP) for Electricity 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.</p> <p>On 27 August 2018, the then Minister of Energy published a draft IRP which was issued for public comment. The lengthy public participation and consultation process has culminated in the issue of the overdue IRP 2019 which updates the energy forecast from the current period to the year 2030. Since the promulgated IRP 2010, the following capacity developments have taken place:</p> <ul style="list-style-type: none"> » A total of 6 422MW has been procured thus far under the REIPPP Programme, with 3 876MW being currently operational and made available to the grid. In addition, IPPs have commissioned 1005MW from two (2) Open Cycle Gas Turbines (OCGT) peaking plants; and

Relevant legislation or policy	Relevance to Kotulo Tsatsi Energy PV1
	<p>» Under the Eskom Build Programme, 1 332MW has been procured from the Ingula Pumped Storage Project, 1 588MW and 800MW from the Medupi and Kusile power stations and 100MW from the Sere Wind Farm.</p> <p>Provision has been made for the following new capacity by 2030:</p> <ul style="list-style-type: none"> » 1 500MW of coal; » 2 500MW of hydro; » 6 000MW of solar PV; » 14 400MW of wind; » 1 860MW of nuclear; » 2 088MW of storage; » 3 000MW of gas/diesel; and » 4 000MW from other distributed generation, co-generation, biomass and landfill technologies. <p>Based on the IRP 2019, 1 474MW has been installed for solar PV facilities, whereas, 814MW has already been procured. In addition, 1 000MW has been allocated for solar PV facilities from 2022 to 2030. This will bring the total installed capacity of solar PV facilities by 2030 to 8 288MW. Therefore, the development of the Kotulo Tsatsi Energy PV1 is supported by the IRP 2019.</p>
National Development Plan 2030 (2012)	<p>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.</p> <p>In terms of the Energy Sectors role in empowering South Africa, the NDP envisages that, by 2030, South Africa will have an energy sector that promotes:</p> <ul style="list-style-type: none"> » 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. » Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. <p>The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The development of Kotulo Tsatsi Energy PV1 supports the NDP through the development of energy-generating infrastructure which will not lead to the generation of GHGs and will result in economic development and growth of the area surrounding the development area.</p>
Strategic Integrated Projects (SIPs)	<p>The Presidential Infrastructure Coordinating Commission (PICC) is integrating and phasing investment plans across 18 Strategic Integrated Projects (SIPs) which have 5 core functions, including to unlock opportunity, transform the economic landscape, create new jobs, strengthen the delivery of basic services and support the integration of African economies.</p> <p>SIP 8 of the energy SIPs supports the development of RE projects as follows: 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</p>

Relevant legislation or policy	Relevance to Kotulo Tsatsi Energy PV1
	<p>as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities.</p> <p>The development of Kotulo Tsatsi Energy PV1 is aligned with SIP 8 as it constitutes a green energy initiative that would contribute clean energy in accordance with the IRP 2010 – 2030.</p>
National Climate Change Response Policy, 2011	<p>The Conference of the Parties (COP) 21 was held in Paris from 30 November to 12 December 2015. From this conference, an agreement to tackle global warming was reached between 195 countries. This Agreement is open for signature and subject to ratification, acceptance or approval by States and regional economic integration organisations that are Parties to the Convention from 22 April 2016 to 21 April 2017. Thereafter, this Agreement shall be open for accession from the day following the date on which it is closed for signature. The agreement can only be sanctioned once it has been ratified by 55 countries, representing at least 55% of emissions.</p> <p>South Africa signed the Agreement in April 2016 and ratified the agreement on 01 November 2016. The Agreement was assented to by the National Council of Provinces on 27 October 2016, and the National Assembly on 1 November 2016. The Agreement was promulgated on 04 November 2016, thirty days after the date on which at least 55 Parties to the Convention, which account for at least 55% of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.</p> <p>South Africa's National Climate Change Response Policy (NCCRP) establishes South Africa's approach to addressing climate change, including adaptation and mitigation responses. The NCCRP formalises Government's vision for a transition to a low carbon economy, through the adoption of the 'Peak, Plateau and Decline' (PPD) GHG emissions trajectory whereby South Africa's emissions should peak between 2020 and 2025, plateau for approximately a decade, and then decline in absolute terms thereafter, and based on this the country has pledged to reduce emissions by 34% and 42% below Business As Usual (BAU) emissions in 2020 and 2025, respectively.</p> <p>The policy provides support for Kotulo Tsatsi Energy PV1, which will contribute to managing climate change impacts, supporting the emergency response capacity, as well as assist in reducing GHG emissions in a sustainable manner.</p>
Climate Change Bill, 2018	<p>On 08 June 2018, the Minister of Environmental Affairs published the Climate Change Bill ("the Bill") for public comment. The Bill provides a framework for climate change regulation in South Africa aimed at governing South Africa's sustainable transition to a climate resilient, low carbon economy and society. The Bill provides a procedural outline that will be developed through the creation of frameworks and plans.</p> <p>Kotulo Tsatsi Energy PV1 consists of a renewable energy generation facility and would not result in the generation or release of emissions during its operation.</p>

3.2 Provincial Policies

This section provides a brief review of the most relevant provincial policies. Kotulo Tstasi Energy PV1 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 Kotulo Tsatsi Energy PV1

Relevant policy	Relevance to Kotulo Tsatsi Energy PV1
Northern Cape Provincial Spatial Development Framework (PSDF) 2012	<p>The Northern Cape Provincial Spatial Development Framework (PSDF) 2012 states that the overarching goal for the province is to enable sustainability through sustainable development. The province considers social and economic development as imperative in order to address the most significant challenge facing the Northern Cape, which is poverty.</p> <p>The PSDF identifies key sectoral strategies and plans which are considered to be the key components of the PSDF. Sectoral Strategy 19 refers to a provincial renewable energy strategy. Within the PSDF a policy has been included which states that renewable energy sources (including the utilisation of solar energy) are to comprise 25% of the province's energy generation capacity by 2020.</p> <p>The overall energy objective for the province also includes promoting the development of renewable energy supply schemes which are considered to be strategically important for increasing the diversity of domestic energy supply and avoiding energy imports, while also minimising the detrimental environmental impacts. The implementation of sustainable renewable energy is also to be promoted within the province through appropriate financial and fiscal instruments.</p> <p>The development of Kotulo Tsatsi Energy PV1 supports the overall energy objective of the province to have 25% of its electricity from renewable energy sources.</p>
Northern Cape Provincial Spatial Development Framework (PSDF) 2018 Review - Executive Summary	<p>The review of the Northern Cape PSDF (2018) refers to infrastructure investment and that a balance must be maintained between investments aimed at meeting the social needs of communities and investment aimed at promoting economic development and job creation.</p> <p>The Spatial Development Strategy identified in the PSDF for basic infrastructure includes the achieving the provision of green infrastructure which includes renewable energy.</p> <p>As part of the Vision 2040 of the PSDF key opportunities are identified for the Province. The strengthening of the development triangle that is formed by the linking of Kimberley, Vryburg, Upington and De Aar. The development triangle sustains a diverse economy with strong mining, agricultural and renewable energy sectors. It is stated in the PSDF that a sustainable and viable economic network must be driven within the development triangle to improve the return of public investment in the Province.</p> <p>The development of Kotulo Tsatsi Energy PV1 will contribute to the economic network of the province specifically in terms of the renewable sector, albeit it does not fall within the development triangle.</p>
The Northern Cape Climate Change Response Strategy	<p>The key aspects of the Northern Cape Climate Change Response Strategy (NCCCRS) Report are summarised in the MEC's (NCPG: Environment and Nature Conservation) 2011 budget speech: <i>"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</i></p>

Relevant policy	Relevance to Kotulo Tsatsi Energy PV1
	<p><i>the frequency and intensity of extreme weather events such as flooding and wildfire, with heightened requirements for effective disaster management”.</i></p> <p>Key points from the MEC address include the NCPG's commitment to develop and implement policy in accordance with the National Green Paper for the National Climate Change Response Strategy (2010), and an acknowledgement of the Northern Cape Province's extreme vulnerability to climate-change driven desertification. The development and promotion of a provincial green economy, including green jobs, and environmental learnership is regarded 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 an important element of the Provincial Climate Change Response Strategy.</p> <p>The development of Kotulo Tsatsi Energy PV1 will assist in achieving (although only to a limited extent) the promotion of the provincial green economy of the Northern Cape.</p>

3.3 District and Local Municipalities Policies

The strategic policies at district and local level have similar objectives for the respective areas, namely to accelerate economic growth, create jobs, and uplift communities. Kotulo Tsatsi Energy PV1 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 Kotulo Tsatsi Energy PV1

Relevant policy	Relevance to Kotulo Tsatsi Energy PV1
<p>Namakwa District Municipality (NDM) Integrated Development Plan (2017-2022)</p>	<p>The mission statement for the NDM is summarised by the following aspects:</p> <ul style="list-style-type: none"> » The stimulation of radical economic and social transformation; » The fostering of partnership with relevant role-players; » Supporting and capacitating of local municipalities; » Transparent and accountable processes; and » Providing of local leadership <p>The key priority issues listed in the Namakwa District Municipality's Integrated Development Plan (NDM:IDP) include:</p> <ul style="list-style-type: none"> » Basic service delivery; » Municipal institutional development and transformation; » Local economic development; » Municipal financial viability and management; » Good governance and public participation. <p>The development goals listed in the IDP that are relevant to the development of Kotulo Tsatsi Energy PV1 include:</p> <ul style="list-style-type: none"> » To deliver a positive contribution to the sustainable growth and development within its boundaries and the rest of the Northern Cape; » The creation of a healthy and environmentally friendly environment within and outside of the Councils' district boundaries, must be attempted;

Relevant policy	Relevance to Kotulo Tsatsi Energy PV1
	<ul style="list-style-type: none"> » The promotion of human resources within and outside the organisation through training and the implementation of new technological aids. <p>Linked to the developmental goals are a number of developmental objectives. The following objectives are relevant to the development of Kotulo Tsatsi Energy PV1 :</p> <ul style="list-style-type: none"> » Promotion of SMMEs in order to strengthen the Local Economic Sector; » Promote the infrastructure development, including electricity.
<p>Hantam Local Municipality Integrated Development Plan (IDP) 2020/2021 (Final, May 2020)</p>	<p>The Hantam LM IDP indicates that there has been a significant increase in the electricity, gas and water sector due to the establishment of renewable energy generation facilities in the municipal area. The IDP also reports that there has been an increase in the construction and transport sectors due to strong linkages with the establishment of renewable energy facilities. The municipality considers that the establishment of renewable energy projects in the region will positively impact on the economy of the municipal area.</p> <p>Therefore, the development of Kotulo Tsatsi Energy PV1 is desirable by the local municipality due to the alignment with the IDP.</p>

3.4 Conclusion

The review of relevant legislation, policies and documentation pertaining to the energy sector indicates that renewable or green energy (i.e. energy generated by naturally occurring renewable resources), and therefore the establishment of Kotulo Tsatsi Energy PV1, 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.

4. SOCIO-ECONOMIC PROFILE

Kotulo Tsatsi Energy PV1 is proposed within a development area with an extent of ~1797ha on a site located approximately 70km south-west of the town of Kenhardt and 60km north-east of the town of Brandvlei in the Northern Cape Province. The site and proposed infrastructure for the development falls within the Hantam Local Municipality, as well as the greater Namakwa District Municipality (**Table 4.1**).

Table 4.1: Spatial Context of the Proposed Development Area for the development of Kotulo Tsatsi Energy PV1

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Hantam Local Municipality
Ward Number (s)	Ward 3
Nearest town(s)	Kenhardt (~70km north-east) and Brandvlei (~60km south)
Farm name(s) and number(s) of properties affected by the Solar Facility	Farm Styns Vley 280
Portion number(s) of properties affected by the Solar Facility	Portion 3 of Farm Styns Vley 280
SG 21 Digit Code (s)	C0360000000002800003
Current zoning	Agricultural (grazing of cattle, including sheep farming)
Site Coordinates (centre of affected property)	29°48'43.07"S ; 20°36'1.68"E

This Chapter provides an overview of the socio-economic environment of the Province, DM, and LMs within which Kotulo Tsatsi Energy PV1 is proposed for development, and provides the socio-economic basis against which potential issues can be identified.

4.1 Northern Cape Province

The Northern Cape Province is located in the north-western extent of South Africa and constitutes South Africa's largest province, occupying an area 372 889km² in extent, equivalent to nearly a third (30.5%) of the country's total land mass. It is also South Africa's most sparsely populated province with a population of 1 145 861, and a population density of 3.1/km². It is bordered by the provinces of the Western Cape, and Eastern Cape to the south, and south-east, the provinces of Free State, and North West to the east, Botswana and Namibia, to the north, and the Atlantic Ocean to the west. The Northern Cape is South Africa's only province which borders Namibia, and therefore plays an important role in terms of providing linkages between Namibia and the rest of South Africa. The Orange River is a significant feature within the province, is the main source of water, and also constitutes the international border between South Africa and Namibia.

The Northern Cape offers unique tourism opportunities including wildlife conservation destinations, natural features, historic sites, festivals, cultural sites, star gazing, adventure tourism, agricultural tourism, eco-tourism, 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).

The Northern Cape makes the smallest contribution to South Africa's economy (contributing only 2% to South Africa's Gross Domestic Product per region (GDP-R) in 2007). The mining sector is the largest contributor to the provincial GDP, contributing 26%. The Northern Cape's mining industry is of national and international importance, as it produces approximately 37% of South Africa's diamond output, 44% of its zinc, 70% of its silver, 84% of its iron-ore, 93% of its lead and 99% of its manganese.

In 2007 the agricultural sector contributed 5.8% to the Northern Cape GDP per region which was equivalent to approximately R1.3 billion. The agricultural sector also employs approximately 19.5% of the total formally employed individuals (LED Strategy). The sector is experiencing significant growth in value-added activities, including game-farming, while food production and processing for the local and export market is also growing significantly (PGDS, July 2011). Approximately 96% of the land is used for stock farming, including beef cattle and sheep or goats, as well as game farming, while approximately 2% of the province is used for crop farming, mainly under irrigation in the Orange River Valley and Vaalharts Irrigation Scheme (LED Strategy).

The Northern Cape comprises five Districts, namely Frances Baard, John Taolo Gaetsewe, Namakwa, Pixley ka Seme, and ZF Mgcawu (refer to **Figure 4.1**).

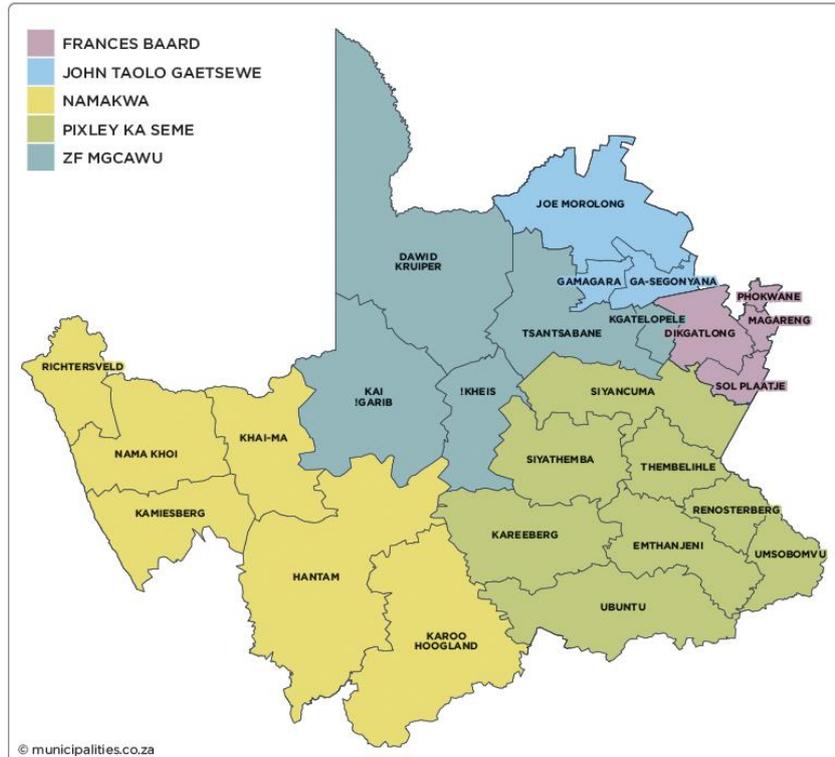


Figure 4.1: Map showing the district municipalities of the Northern Cape (Source: www.municipalities.co.za)

4.2 Namakwa DM

The Namakwa District Municipality is a Category C municipality located in the Northern Cape Province. It is bordered by the Republic of Namibia in the north, ZF Mgcawu Local Municipality in the north-east, Cape Winelands District Municipality in the south, West Coast District Municipality in the south-west, Pixley Ka Seme District Municipality in the east, Central Karoo District Municipality in the south-east, and the Atlantic Ocean in the west. The seat of the Namakwa District Municipality is Springbok. The main economic sectors of the municipal area include agriculture and tourism.

It is the largest district in the Province, making up over a third of its geographical area, and is 126 836km² in extent. It is comprised of six local municipalities: Nama Khoi, Hantam, Khâi-Ma, Kamiesberg, Karoo Hoogland and Richtersveld (refer to **Figure 4.2**).

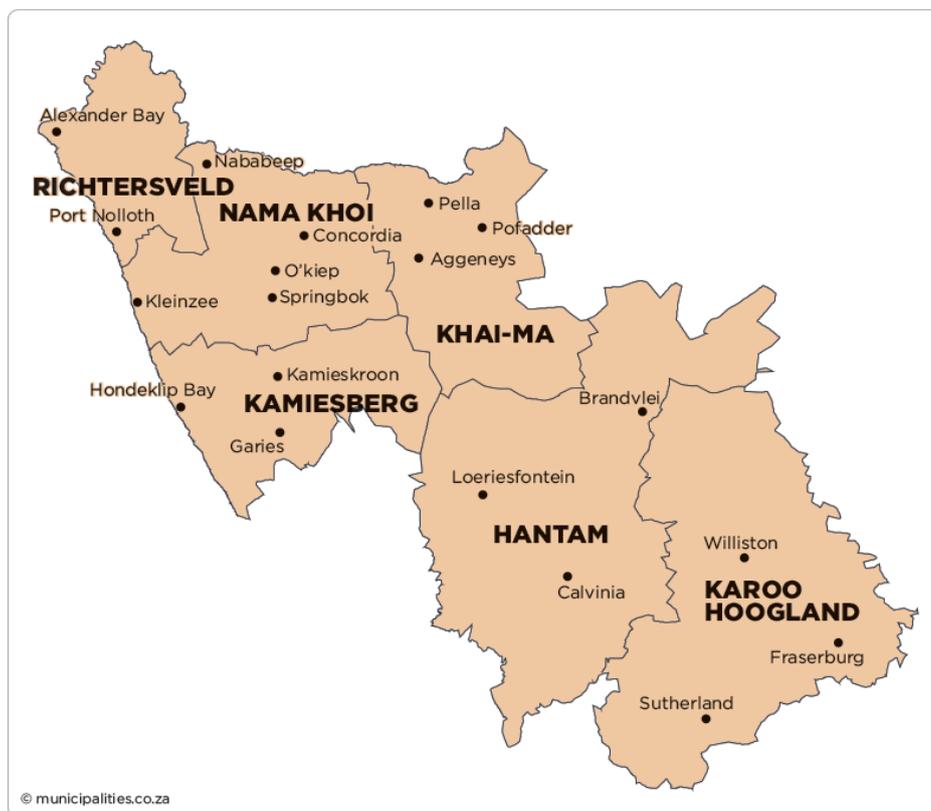


Figure 4.2: Map showing the local municipalities of the Namakwa DM (Source: www.municipalities.co.za)

4.3 Hantam LM

The jurisdiction of the Hantam Local Municipality (LM) covers an area of 36 128 km², which constitutes 28% of the total area (viz. 126 836km²) of the Namakwa District Municipality. The Hantam LM is located in the south-western segment of the district and wedged mainly between both Northern Cape and Western Cape municipalities. The LM is the largest local municipality of six in the district, making up a third of its geographical area.

The LM is categorised as a Category B municipality and is well known for its open spaces, mountain ranges and nature reserves with arrays of plants and bulbs endemic to the area.

The main human settlements in the municipality include Calvinia, Nieuwoudtville, Loeriesfontein, Brandvlei and Middelpos. These settlements are home to the majority of the population. Calvinia is the largest, followed by Loeriesfontein, Nieuwoudtville, Brandvlei and Middelpos. The major routes connecting these areas include major tarred roads such as the R27 and the R63. The major gravel roads in the municipal area include the R357, R355 and the R354. A small light aircraft airfield is also evident in Calvinia, smaller airstrips have been identified in Brandvlei as well. The Saldanha-Sishen railway line further bisects the north western parts of the Hantam Local Municipality.

The LM is considered to be a small-town sub-region with a mix of sparsely populated towns and low levels of development despite the strategic location of some towns in terms of road and rail transport corridors. Unfortunately, the railway line that served for many years as the primary conduit for the transportation of agricultural products from Calvinia, has fallen into disuse. Calvinia serves as the main agricultural service centre with the associated transport infrastructure shaping the (original) spatial structure of the town.

The highest population densities are found in lower-income neighbourhoods with sub-standard quality of services and urban environment.

The main economic sectors in the Hantam LM are agriculture, tourism, mining and renewable energy.

4.4 Study Area and Development Area

Kotulo Tsatsi Energy PV1 is proposed on Portion 3 of the Farm Styns Vley 280 which is located approximately 70km south-west of the town of Kenhardt and 60km north-east of the town of Brandvlei. Very few communities, other than Kenhardt and Brandvlei are located in close vicinity of the project. These communities are considered to be sparsely populated and relate mainly to agricultural activities.

Land uses within close proximity to the development area are very limited due to the remote location of the project. The land uses are mainly related to agricultural activities (low intensity sheep farming with the affected farms divided into livestock camps) and transportation infrastructure, which includes roads, railway and electricity transmission and distribution. The closest main access road to the proposed site is the R27 which is a Regional Route that consists of two disjointed segments. The first segment, also known as the West Coast Highway, connects Cape Town with Velddrif along the West Coast. The second runs from Vredendal via Vanrhynsdorp, Calvinia, Brandvlei and Kenhardt to Keimoes on the N14 near Upington. The larger site can be accessed from public gravel roads off the R27 with the most direct access provided by Soafskolk Road. The Sishen/Saldanha freight railway line bypasses the site to the north west.

The development area is situated south of the Soafskolk Road and east of the Aries-Helios 400kV overhead servitude line, which connects to the Aries Substation located ~50km to the north-east. The site is characterised by a barren flat to uneven surface bisected by a number of shallow drainage basins.

The 10MW Aries PV Solar Energy Facility is the only operational solar PV facility within the surrounding area of the project. The solar PV facility is located ~39km north-east, adjacent to the Aries Substation. The Aries Transmission Substation is located approximately 40km north-east of the development area, and the existing Aries-Helios 400kV power line is west of the development area.

An area of land approximately 847ha has been earmarked for the establishment of Kotulo Tsatsi Energy PV1, which comprises of the development of a commercial PV solar energy facility with a contracted capacity

of 200MW and associated infrastructure. Three other solar energy facilities have been authorised to the west of Kotulo Tsatsi Energy PV1 which includes the 200MW Kotulo Tsatsi Energy Solar Power Facility 2 (CSP 2), the 200MW Kotulo Tsatsi CSP Facility and the Kotulo Tsatsi Photovoltaic Power Plant 2 (located directly adjacent and to the west). Considering the other PV solar energy facilities proposed and authorised, the immediate area will become more industrial with the addition of infrastructure to the area. This change in land use is considered to be acceptable considering the current and previous land use activities undertaken within the area which includes mainly agricultural activities, as well as the low population density of the area.

There are no major social receptors located within or directly adjacent to the development area. Social receptors that could be affected are adjacent landowners and the local travellers making use of the R27 and surrounding gravel roads (including the Soafskolk Road). Other social receptors include the homesteads surrounding the development area, as well as the agricultural activities including livestock grazing. The distance between Kotulo Tsatsi Energy PV1 and the social receptors provides a buffer in terms of direct impact (in most cases). Due to the fact that renewable energy development has already been authorised within the surrounding area of the social features, the development of the proposed project will not introduce solar energy as a land use to the area.

Very limited tourism facilities are available in the surrounding area, with none located in close proximity to the affected property. Kenhardt offers various activities and sights which includes the Giant Camelthorn Tree which is about 600 years old, an old library which is declared as a national monument, the Quiver Tree Forest and Hiking Trail which leads into a forest of about 5000 kokerbome, a San Trail which include San engravings and the Verneuk Pan. Further tourism activities / facilities are available in towns located further from the site which include the Windpomp museum and Quiver Trees in Loeriesfontein, the Hantam Vleisfees, the Giant Post Box and Clavinia Museum in Calvinia and the Bokkeveld Plateau, Hantam National Botanical Gardens and Vanrhyn's Pass in Nieuwoudtville.

The description provided above is considered to be the current *status quo* and social landscape associated with the area within which Kotulo Tsatsi Energy PV1 is proposed to be placed.

4.5 Baseline Description of the Social Environment

Table 4.2 provides a baseline summary of the socio-economic profile of the Hantam LM within which Kotulo Tsatsi Energy PV1 is proposed. The data presented in this section have been derived from the 2011 Census, the Local Government Handbook South Africa 2019, the Northern Cape Provincial Spatial Development Framework (PSDF), and the Integrated Development Plans of the Namakwa DM and Hantam LM⁶.

Table 4.2: Baseline description of the socio-economic characteristics of the area proposed for Kotulo Tsatsi Energy PV1

Location characteristics
» The project is proposed within the Northern Cape Province, which is South Africa's largest, but least populated Province.
» The project is proposed within the Hantam LM and the Namakwa DM.
» The Hantam LM covers an area of land 36 128km ² in extent.

⁶ While information was derived from the Local Government Handbook South Africa 2019, Northern Cape PSDF, Namakwa DM and Hantam these sources largely make use of statistical information derived from the Census 2011. The information presented in this Chapter may therefore be somewhat outdated, but is considered sufficient for the purposes of this assessment (i.e. to provide an overview of the socio-economic characteristics against which impacts can be identified and their significance assessed).

Population characteristics

- » The Hantam LM has a total population of 21 505 with a growth rate of 0.2% between 2011 and 2017.
- » In terms of the age structure 6 192 of the population is between the ages of 0 and 14 years, 13 274 of the population is between the ages of 15 and 64 and 2 038 of the population is older than 65 years.
- » Coloureds comprise the predominant population group within the Hantam LM.
- » Within the Hantam LM 83.4% of the population is coloured, 11% is white, 4.9% is Black African and 0.6% is Asian.
- » The dominant language spoken in the Hantam LM is Afrikaans at 93.1%. The remaining spoken languages in the area includes English (1%), IsiNdebele (0.1%), IsiXhosa (0.6%), IsiZulu (0.1%), Sesotho (0.1%), Setswana (0.4%), Sign Language (0.4%) and Tshivenda (0.1%).
- » The Hantam LM, Namakwa DM, and Northern Cape provincial, and South African national population age structures are all youth dominated. A considerable proportion of the respective populations therefore comprise individuals within the economically active population between the ages of 15 and 64 years of age.

Economic, education and household characteristics

- » The Hantam LM has a dependency ratio of 62.0. The dependency ratios of the Namakwa DM is 47.1, the Northern Cape Province is 35.8, and South Africa is 34.5.
- » Education levels within the Hantam LM are 3 068 of the population has No Schooling, 2 451 has Matric and 1056 has a higher education.
- » The population within the working age (15-64) is 13 508, with 5 165 people employed, 802 people unemployed and 5 646 people not economically active.
- » In 2011, the unemployment rate was highest across the Northern Cape at 27.4% and lowest across the Namakwa DM at 20.1%.
- » The number of indigent households in the Hantam LM area is, on average, between 35% and 40% of all households with the most of these households living in Calvinia.
- » 96.8% of the Hantam LM population live in formal dwellings and 2.5% live in informal dwellings.
- » The primary economic sectors within the Hantam LM include agriculture, tourism and mining.

Services

- » The two hospitals are available within the Namakwa DM which includes the Abraham Esau Hospital in Calvinia and the Dr Van Niekerk Hospital in Springbok. The Hantam LM houses two community health centres, three clinics and one small district hospital.
- » The majority of households within the Hantam LM are well serviced with regards to flush toilets connected to sewage, refuse removal, piped water and electricity.
- » Limited construction of residential and non-residential buildings.
- » Home availability and affordability problems owing to supply that has not been keeping up with demand and may therefore lead to over crowding.

5. SOCIAL IMPACT ASSESSMENT

This Chapter provides a detailed description and assessment of the potential social impacts that have been identified for the detailed design and construction, operation, and decommissioning phases of Kotulo Tsatsi Energy PV1.

A facility layout has been provided by the applicant for consideration as part of the EIA process and is considered within the SIA. The layout provides an indication of the facility infrastructure proposed within the development footprint (**Figure 5.1**).

Through the undertaking of this Social Impact Assessment for the development of Kotulo Tsatsi Energy PV1, the current *status quo* of the area from a social and land use perspective, as well as previous studies within the broader study area, was considered in order to provide an indication of the pre-construction environment and aid in the identification of positive and negative social impacts expected to occur. This assessment considered the following points:

- » The location of the development area in relation to immediately adjacent and surrounding social features or receptors that may be affected.
- » The nature, extent and significance of the features within the social landscape being considered.
- » The existing disturbance already present within the social landscape (i.e. current land use activities and industrial developments).

Social impacts are expected to occur during both the construction and operation phase of Kotulo Tsatsi Energy PV1. The status of the impacts will be either positive or negative and either mitigation or enhancement measures are recommended for the management of the impacts depending on the status of the impacts.

The following social impacts have been identified during the Scoping phase public participation process and the telephonic interviews held with key stakeholders from 22 January to 25 January 2021.

- » Upgrading and maintenance of access roads;
- » On site staff accommodation and associated safety risks;
- » General safety and security of the farming community which is considered to be a vulnerable community;
- » Stock theft;
- » Influx of migrant workers and associated long-term impacts, including insufficient infrastructure to support the influx;
- » Procurement of labour and management of migratory labour;
- » Dust and noise management;
- » Positive impact in terms of community investment and growth of the area;
- » Employment opportunities including the need for jobs to be allocated to local residents to the area;
- » Need for easy identification of staff and project vehicles used during construction and operation;
- » Change in land use providing a viable economic land use other than farming;
- » Change of a unique landscape.

From the telephonic interviews undertaken it is concluded that majority of the stakeholders are in support of the development, with only one landowner in the broader area objecting to the project. Positive economic and growth opportunities were identified to be associated with the project which included a benefit in terms

of a change in the land use to a function which is viable for the area, where the current farming activities are severely limited and challenging. Negative impacts were also identified which were mainly related to safety and security concerns to the vulnerable community, stock theft, an influx of people and the lack of sufficient infrastructure in the area to support the influx, a change in the unique landscape and traffic impacts.

These impacts have formed the basis of this SIA report.

As part of this Social Impact Assessment, the comments and responses reports and Social Impact Assessments of the following previous projects (undertaken within the same affected property and directly adjacent properties and includes the development of the same proposed technology (i.e. solar)) were consulted to obtain a better understanding of the potential social impacts expected with the development of the proposed project:

- * 200MW Kotulo Tsatsi Energy Solar Power Facility 1 (CSP 1) – DEA Ref.: 14/12/16/3/3/2/694/1;
- * 200MW Kotulo Tsatsi Energy Solar Power Facility 2 (CSP 2) – DEA Ref.: 14/12/16/3/3/2/694/2;
- * 200MW Kotulo Tsatsi CSP Facility – DEA Ref.: 14/12/16/3/3/2/694; and
- * Kotulo Tsatsi Photovoltaic Power Plant 2 – DEA Ref.: 14/12/16/3/3/2/696.

Refer to Section 2.2 on the approach followed in terms of identification of social impacts and the use of existing information previously collected in the area for this SIA report.

The following main issues were raised in the comments and responses reports and Social Impact Assessment Reports of the previous projects (as listed above) which has supplemented the social impact assessment for Kotulo Tsatsi Energy PV1:

- » Direct employment and skills development (specifically for local people who do not have the required skills);
- » Impact from the economic multiplier effects from the use of local goods and services;
- » Economic growth within the Municipal area;
- » Impact on small business owners;
- » Impact on adjacent landowners;
- » Disturbance of existing farm infrastructure such as fences;
- » In-migration of people (non-local workforce) and job seekers and the associated population change;
- » Impact on daily living and movement patterns, including traffic impacts and nuisance impacts;
- » Impact on sense of place and visual impacts;
- » Nuisance impacts during construction, including noise and dust;
- » Traffic impacts, including the use of access roads through adjacent properties and the maintenance thereof;
- » Safety and security risks with influx of people into the remote area (including unauthorised access to adjacent properties);
- » Development of clean renewable energy infrastructure;
- » Cumulative benefit from employment, skills and business opportunities;
- » Cumulative impact associated with large-scale in-migration of people;
- » Cumulative impacts on the sense of place and landscape.

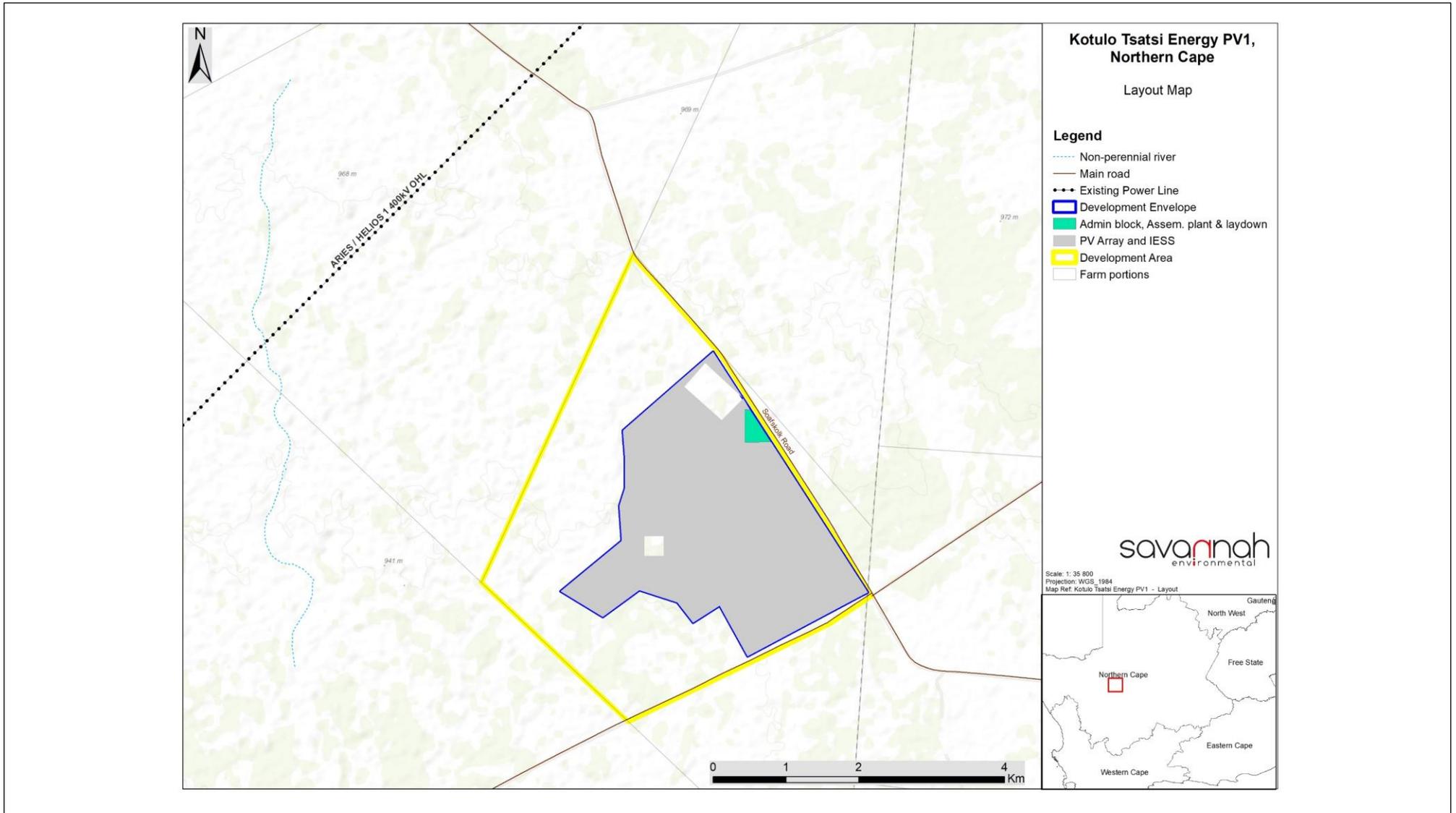


Figure 5.1: Facility layout of Kotulo Tsatsi Energy PV1 illustrating all infrastructure associated with the project

5.1 Consideration of project specific alternatives

No alternatives have been identified for the development of Kotulo Tsatsi Energy PV1. This assessment considers an alternative technology to the development of CSP which is authorised for the site⁷.

5.2 Social Impacts during the Construction Phase

The majority of social impacts associated with the project are anticipated to arise during the construction phase of development, and are typical of the type of social impacts generally associated with construction activities. These impacts will be temporary and short-term (12-18 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 (including planning of construction activities) be conducted in such a manner so as not to result in permanent social negative impacts associated with the ill-placement of project components and associated infrastructure or result in the mis-management of the construction phase activities. Positive social impacts also need to be enhanced within the area during the construction phase in order for the area to absorb the social benefits and associated upliftment.

The positive and negative social impacts identified and assessed for the construction phase include:

- » Direct and indirect employment opportunities
- » Economic multiplier effects
- » Influx of jobseekers and change in population
- » Safety and security impacts
- » Impacts on daily living and movement patterns
- » Nuisance impacts, including noise and dust
- » Visual impacts and sense of place impacts

Table 5.1: Impact assessment on direct and indirect employment opportunities

Nature: The creation of direct and indirect employment opportunities during the construction phase of the project.

A workforce for the construction of the facility will be required and therefore direct employment will be generated. The two closest towns (i.e. Kenhardt and Brandvlei) have a relatively large economically active population. It is estimated that during the construction phase (for the period of 12-18 months) approximately ~200-250 employment opportunities will be generated for the PV facility. In terms of skills requirements, it is common that highly skilled or skilled labour such as engineers, technical staff and project managers will make up approximately 20% of the work force; semi-skilled staff would typically be required to operate machinery and this will constitute about 30% of employees; while unskilled staff such as construction and security workers will constitute about 50% of the work force. Employment opportunities for the proposed development will peak during the construction phase and significantly decline during the operation phase.

The project has the potential to create several job opportunities for low skilled (construction, security and maintenance workers) and semi-skilled workers, which could potentially be sourced from the surrounding towns and area. However due to the small population sizes of these towns; the number of employees required and the limited skills available at local level, the required labour may need to be sourced from outside the immediate local areas within the Hantam Local Municipality. Therefore, it could be expected that some of the workers will be sourced from region rather than only the closest towns. While the local labour pool may be qualified for less-skilled jobs, often local

⁷ Authorised associated infrastructure of the Kotulo Tsatsi Energy CSP 1 project will be retained for the Kotulo Tsatsi Energy PV1 project.

hiring will not meet the demands in professional, technical and supervisory areas. A number of specialist contractors would most likely be brought in from other areas.

It should be encouraged that majority of the labour be sourced from within the local pool where possible and if the relevant skills are not available then these should be sought out from surrounding local municipalities or provincial basis where possible. It is likely that an Engineering, Procurement and Construction (EPC) contractor will be appointed by the developer who will hire the necessary employees.

Another positive impact is the indirect employment opportunities that will be created. These opportunities will be experienced in the industries that provide services to the construction team where more women can be involved and employed in the process through catering and laundry services that will be needed to service the man camp and other places of accommodation. Other indirect employment opportunities that will be created during construction phase will relate to increased demand for services such as transportation, equipment rental, sanitation and waste removal.

Skills development will also be undertaken as part of the construction phase. The skills development will broaden the skills of employees associated with the project and enable possible future opportunities where these become available.

	Without enhancement	With enhancement
Extent	Local- Regional (3)	Local- Regional (3)
Duration	Short term (2)	Short term (2)
Magnitude	Low (4)	Moderate (6)
Probability	Highly probable (4)	Highly probable (4)
Significance	Medium (36)	Medium (44)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes (enhanced)	

Enhancement:

- » A local employment policy must be adopted to maximise opportunities made available to the local labour force (sourced from the nearest towns or within the affected municipal area).
- » Labour must be sourced from the local labour pool where possible. If the necessary skills are unavailable, labour should be sourced from (in order of preference) the greater Hantam LM, Namakwa DM, Northern Cape Province, South Africa, or elsewhere. Where required, training and skills development programmes must be initiated prior to the commencement of the construction phase.
- » Labour force suppliers must as far as possible be sourced locally.
- » Where feasible local suppliers and contractors, that are compliant with Broad-Based Black Economic Empowerment (B-BBEE) criteria, must be used as far as possible to ensure that the benefits resulting from the project accrue as far as possible to the local communities which are also likely to be most significantly impacted/ affected by the project.
- » Enhance indirect local employment/entrepreneurship opportunities by supporting local entrepreneurs as far as possible, where appropriate.
- » The recruitment selection process must seek to promote gender equality and the employment of women wherever possible.
- » Proof of skills development must be provided to the upskilled individual for future opportunity.

Residual benefits/impacts:

- » Improved pool of skills and experience in the local area.
- » Improved overall quality of life.
- » Economic growth for small-scale entrepreneurs.

- » Short-term employment during the construction phase will mean that upskilled construction workers will need to seek alternative new employment opportunities following the end of the construction of the project.

Table 5.2: Economic multiplier effects impact assessment

Nature: Significance of the impact from the economic multiplier effects from the use of local goods and services.

There are likely to be opportunities for local businesses to provide services and materials for the construction phase of the development. The local service sector will also benefit from the proposed development.

On-site accommodation would be required for labourers due to the remote location of the proposed site; a man camp will be set up where basic the necessities will be provided to employees⁸. Off-site accommodation in the nearest towns (Kenhardt or Brandvlei) would also be required for contract workers and certain employees. The economic multiplier effects from the use of local goods and services opportunities will include, but is not limited to, construction materials and equipment and workforce essentials such as services, catering, trade clothing, safety equipment, accommodation, transportation and other goods. There would be expenditure on the set-up of the man camp as it would require temporary/portable housing, ablution and sewage treatment, and catering facilities. In addition, it is expected that labourers who move into the area will need to purchase various consumables and personal items while living and working in the area. It is estimated that 40% of the capital expenditure will be spent locally on all other goods and services required for the development of the PV facility. It must be noted that the man camp was previously assessed within the SIA Report of the Kotulo Tsatsi Energy CSP 1 facility, and is duly authorised infrastructure.

In terms of business opportunities for local companies, expenditure during the construction phase will create business opportunities for the regional and local economy. The increase in demand for new materials and services in the nearby area may stimulate local business and local economic development (however locally sourced materials and services will be limited due to availability). There is likely to be a direct increase in industry and indirect increase in secondary businesses where gaps in the market open up.

	Without enhancement	With enhancement
Extent	Local- Regional (3)	Local- Regional (3)
Duration	Short term (2)	Short term (2)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Probable (3)
Significance	Low (27)	Medium (33)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes (enhanced)	

Enhancement:

- » A local procurement policy must be adopted to maximise the benefit to the local economy and the existing local SMMEs.
- » A database of local companies, specifically Historically Disadvantaged Individuals (HDIs) which qualify as potential service providers (e.g. construction companies, security companies, catering companies, waste collection companies, transportation companies etc.) must be created prior to the tender process and companies listed thereon must be invited to bid for project-related work where applicable.

⁸ The man camp is already authorised under the Kotulo Tsatsi CSP1 development Environmental Authorisation.

- » Local procurement must be encouraged along with engagement with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers where feasible.

Residual benefits/ impacts:

- » Improved local service sector, growth in local business.

Table 5.3: Assessment of impacts from an influx of jobseekers and change in population in the study area

Nature: In-migration of labourers in search of employment opportunities, and a resultant change in population, and increase in pressure on local resources and social networks (rise in social conflicts), or existing services and infrastructure.

An influx of people looking for employment or other economic opportunities could result in increased pressure being placed on economic and social infrastructure, and a change in the local population. Population change refers to the size, structure, density as well as demographic profile of the local community.

An influx of jobseekers into an area, could lead to a temporary increase in the level of crime, cause social disruption and put added pressure on basic services delivery as well as health care services. This includes municipal services such as sanitation, electricity, water, waste management, health facilities, transportation and the availability of housing. It could also potentially create conflict between locals and outsiders due to potential differences in racial, cultural and ethnic composition. A further negative impact that could result due to an influx of jobseekers into an area is an increase in unemployment levels due to an oversupply of available workforce, particularly with respect to semi- and unskilled workers.

Informal settlements may develop near towns to accommodate jobseekers. It is difficult to control the influx of people into an area, especially in a country and province where there are high levels of unemployment. It is recommended that efforts be made to source labour from the surrounding local towns first, and if availability of local labour is limited, and expand the search to the Hantam Local Municipality and other surrounding municipal areas. The local municipality population could fulfil the majority of the lower and semi-skilled employment opportunities that emerge.

	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Highly Probable (4)	Probable (3)
Significance	Medium (36)	Low (21)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » 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.
- » Develop and implement a local procurement policy which prioritises "locals first" to prevent the movement of people into the area in search of work.
- » Engage with local community representatives prior to construction to facilitate the adoption of the "locals first" procurement policy.
- » Provide transportation for workers (from towns such as Kenhardt, Brandvlei and others) to ensure workers can easily access their place of employment and do not need to move closer to the site.
- » Compile and implement a grievance mechanism.
- » Appoint a Community Liaison Officer (CLO) to assist with the procurement of local labour.

- » Prevent the recruitment of workers at the site.
- » Implement a method of communication whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.
- » Establish clear rules and regulations for access to the proposed site.
- » Appoint a security company and implement appropriate security procedures to ensure that workers do not remain onsite after working hours.
- » Inform local community organisations and policing forums of construction activities and times and the duration of the construction phase.

Residual impacts:

- » Possibility of outside workers remaining in the area after construction is completed and subsequent pressures on local infrastructure, resources and services.

Table 5.4: Assessment of safety and security impacts

Nature: Temporary increase in safety and security concerns associated with the influx of people during the construction phase.

An increase in crime is often associated with construction activities. The perceived loss of security during the construction phase of the proposed project due to the influx of workers and/ or outsiders to the area (as in-migration of newcomers, construction workers or jobseekers are usually associated with an increase in crime), may have indirect effects such as increased safety and security issues for neighbouring properties or damage to property, increased risk of veld fire, stock theft, poaching, and crime. The influx of labour over this period could potentially result in a security risk and conflict with residents. The establishment of the on-site accommodation for the construction phase also intensifies the presence of construction workers and thereby increases the safety and security risks. It is recommended that the project developer foster and maintain good relationships with neighbouring landowners and institute adequate grievance control mechanisms.

Majority of the impacted and adjacent farm owners utilise their farms for sheep farming, there are also minor game farming activities on nearby farms. A major concern raised by adjacent landowners is stock theft which is considered to be a problem already present within the area. The in-migration of people to the area (that will be residing in the immediate area in the man camp for 12-18 months) as well as outsiders coming into the area (contractors, construction crews and jobseekers) may increase risk posed to workers employed on the affected and adjacent properties, infrastructure on the properties, stock theft and poaching. Adjacent farm owners have expressed concern that criminal activity would increase during the construction phase which poses a potential risk to surrounding farming operations. The movement of people along the access road also increases these potential risks for farms located on the Soafskolk road. The primary access road off the R27 bisects Farm Klaas Jobs Vley 1/302.

It is recommended that the appointed EPC contractor appoints a security company and implement appropriate security procedures and measures considering the location of the project. The stakeholder engagement and management plan must also be considered with the implementation of safety and security measures.

	Without mitigation	With mitigation
Extent	Local (2)	Local (2)
Duration	Short term (2)	Short term (2)
Magnitude	High (8)	Low (4)
Probability	Probable (3)	Improbable (2)
Significance	Medium (36)	Low (16)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » Working hours must be kept within daylight hours during the construction phase, and/or as any deviation that is approved by the relevant authorities.
- » Employees must be easily identifiable and must adhere to the security rules of the site.
- » A specific code of conduct and rules must be set-up and enforced for all employees that will be residing within the man camp. Specific fines must be set out where these rules are not complied with.
- » Provide transportation for workers (from towns such as Kenhardt and Brandvlei) where workers will not be residing within the site.
- » Enforce adherence to speed limits for all vehicles associated with the project, with fines being issued to offenders as appropriate.
- » Appropriate road signage and road rules must be implemented and enforced for all personnel.
- » Road signage must be maintained throughout the construction phase.
- » The perimeter of the construction site must be appropriately secured to prevent any unauthorised access to the site. The fencing of the site must be maintained throughout the construction and operation phases.
- » The appointed EPC contractor must appoint a security company and implement appropriate security procedures and measures.
- » Access in and out of the construction site must be strictly controlled by a security company appointed for the project.
- » No open fire are permitted outside of designated areas.
- » The EPC must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.
- » The contractor should have personnel trained in first aid on site to deal with smaller incidents that require medical attention
- » A Community Liaison Officer (CLO) must be appointed to implement a grievance mechanism. A communication protocol must 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.
- » A stakeholder management plan must be implemented by the EPC contractor to address adjacent landowners and tenants concerns regarding safety and security.
- » A comprehensive employee induction programme would cover land access protocols, fire management and road safety. This must be addressed in the construction EMP as the best practice.

Residual impacts:

- » Residual impacts related to losses through crime, stock theft and lasting damage to properties and infrastructure.

Table 5.5: Assessment of impacts on daily living and movement patterns.

Nature: Temporary increase in traffic disruptions and movement patterns during the construction phase.

Project components and equipment will be transported to site using road transport which will lead to an increase in traffic due to heavy vehicles and could create short-term disruptions and safety hazards for road users. The site can be accessed via an existing gravel access road (known as Soafskolk Road) branching off of the R27 between Kenhardt and Brandvlei. Higher traffic volumes are expected to take place during the construction phase. Minor geometric layout upgrades to improve road safety and intersection functionality are required. Local farmers use the Soafskolk gravel road to access their farms. Increased use of local road systems may cause road deterioration and congestion. This impact could be magnified since farm roads are not designed to carry heavy traffic and are prone to erosion.

Increased traffic due to construction vehicles could cause disruptions to the local community and increase safety hazards. The use of local roads and transport systems may cause road deterioration (and associated safety risks) and congestion. This impact could be magnified since roads of a gravel nature are not necessarily designed to carry heavy traffic and are prone to erosion. Noise, vibrations, dust and visual pollution from heavy vehicle traffic during the construction phase could also negatively impact local residents and road users.

Existing infrastructure such as roads and fencing should be maintained in the present condition or repaired, if disturbed due to project-related activities, including the upgrading of roads. The contractor should be responsible for managing this impact. In terms of the use of provincial and regional roads, the developer will consult with the relevant roads agency to ensure that they obtain the relevant road permits, specifically for abnormal loads.

Where specific land use activities are being undertaken on affected properties, these may be impacted. This could impact the land use of portions of the affected property for agricultural activities (i.e. grazing), as well as affected and surrounding landowners which use their properties for mainly livestock grazing. It is understood that a property located adjacent to the Soafskolk road is not fenced and that livestock regularly cross this road. With the increase of traffic and the use of the road by heavy vehicles, the loss of livestock has been identified as a potential impact due to the lack of fencing. It is understood that the Applicant has formalised agreements with the adjacent landowner, Mr Japie du Toit, regarding the risks of use of the Soafskolk Road to his livestock and farm infrastructure, which included the specific management of risks. This agreement must be adhered to.

It is expected that the presence of the man camp will also create impacts on daily living and movement patterns for the adjacent landowners with an increase of the amount of people present within the area and also an increase in noise and movement within the area which is not characteristic of the general area.

	Without mitigation	With mitigation
Extent	Local (2)	Local (2)
Duration	Short term (2)	Short term (2)
Magnitude	High intensity (8)	Low (4)
Probability	Highly probable (4)	Probable (3)
Significance	Medium (48)	Low (24)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » Working hours must preferably be restricted to daylight hours during the construction phase. Where deviation of the working hours is required it must be approved by the relevant authorities and surrounding landowners must be notified.
- » All vehicles must be roadworthy and drivers must be licensed, obey traffic rules, follow speed limits and made aware of the potential road safety issues.
- » Construction vehicles should be inspected regularly by the EPC contractor to ensure their road worthiness.
- » Adequate and strategically placed traffic warning signs and control measures must be implemented along the R27 and gravel access roads (including the Soafskolk road) to warn road users of the construction activities taking place for the duration of the construction phase. Warning signs must be visible at all times, and especially at night. Signage must be maintained throughout the construction phase.
- » Consult with adjacent landowners where livestock crosses the Soafskolk road in order to come to an agreement regarding the use of the road and the management of the livestock due to the lack of fencing.
- » Implement penalties for reckless driving as a way to enforce compliance to traffic rules.
- » Avoid heavy vehicle activity through residential areas during "peak" hours (when children are taken to school, people driving to work, etc.).
- » The developer and EPC contractor must ensure that all fencing along access roads is maintained in the present condition or repaired if disturbed or damaged due to construction activities.
- » The developer and EPC Contractor must ensure that the roads utilised for construction activities are either maintained in the present condition or upgraded if damaged (i.e. wear and tear) due to construction activities.
- » A protocol communication must 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.

- » Communication channels between the affected and surrounding landowners and the EPC contractor must be established.
- » It is recommended that a Community Liaison Officer be appointed to implement as the proposed grievance mechanism. 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
- » Undertake information sessions with the surrounding communities prior to construction in order to ensure that communities are fully informed of the project to be developed in its final form. This must be undertaken through the Community Liaison Officer (CLO).

Residual impacts:

- » None anticipated.

Table 5.6: Assessment of nuisance impacts (noise and dust)

Nature: Nuisance impacts in terms of temporary increase in noise and dust.

Impacts associated with construction related activities include noise, dust and disruption or damage to adjacent properties. The potential impacts can be addressed by implementing effective mitigation measures.

The movement of heavy construction vehicles and construction activities have the potential to create noise along the R27 and along the Soafskolk gravel road off the R27. The primary sources of noise during construction would be from the construction equipment movement of vehicles/ traffic. Noise levels can be audible over a large distance however are generally short in duration. Generation of dust would come from construction activities as well as trucks/ vehicles driving on the Soafskolk gravel access road. This impact will negatively impact social sensitive receptors. The impact of noise and dust on farmsteads can only be reduced through mitigation measures and not avoided. With the in-migration of people and construction workers into the area (including construction workers residing within the man camp), noise impacts will increase from current levels. The noise, dust and increased use of the local roads are expected to be negative, mainly impacting the nearby social receptors, but are short term impacts.

	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Highly probable (4)	Probable (3)
Significance	Medium (36)	Low (21)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » A specific code of conduct and rules must be set-up and enforced for all employees that will be residing within the man camp. Specific fines must be set out where these rules are not complied with.
- » Dust suppression measures must be implemented for heavy vehicle movement in the dry season and ensure that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- » A speed limit of 45km/hr must be implemented on gravel roads. Should the speed limit be exceeded appropriate action must be taken against the offender of the rules.
- » Ensure all vehicles are road worthy, drivers are licensed and are made aware of the potential noise and dust issues.
- » A CLO must be appointed. A method of communication must 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.

Residual impacts:

- » No significant residual impacts expected to occur.

Table 5.7: Assessment of visual impacts and impacts on the sense of place and landscape character

Nature: Intrusion impacts from construction activities will have an impact on the area's "sense of place".

Intrusion impacts such as aesthetic pollution, noise and light pollution will impact the "sense of place" for the local community and the surrounding landowners, specifically where land use activities sensitive to visual impacts and impacts on the "sense of place" are undertaken. The site is of a rural nature and it is expected that the development of the PV facility will impact the sense of place for the local community where visible from public access points or adjacent properties (however only to a limited extent).

As the location of Kotulo Tsatsi Energy PV1 is on a private property, within an area characterised as having a low population density the visual impact, change in landscape character and impact on the area's sense of place, from a social perspective, is anticipated to be of a low significance. However, adjacent landowners will experience a higher impact for the duration of the construction phase due to the proximity to the activities.

Construction related activities have the potential to negatively impact a local area's "sense of place", as well as the landscape character. Such an impact is likely to be present during the construction phase. It is expected that the project will mostly affect areas and receptors directly adjacent to the affected property, including road users utilising the Soafskolk Road. Other infrastructure present within the area to the west of the affected property which presents a current impact includes the Aries-Helios 1 400kV power line, the Aries 400kV substation and the Sishen-Saldanha railway line.

The identification of the significance of the impact on sense of place for the construction phase was undertaken through the consideration of the Visual Impact Assessment (LOGIS, 2021) undertaken for the project. The visual impact is expected to be of a low significance from a visual perspective due to the relatively low viewer incidence in close proximity to the project. The Visual Impact Assessment has informed the visual impact from a social perspective.

	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	Low (27)	Low (21)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » Limit noise generating activities to daylight working hours and avoid weekends and public holidays.
- » Limit night-time lighting impacts to surrounding areas.
- » Communication, complaints and grievance channels must be implemented and contact details of the CLO must be provided to the local community (including the adjacent landowners) in the study area.
- » Ensure proper management and tidiness of the construction site.
- » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment.

Residual impacts:

- » None anticipated.

5.3 Social impacts during the Operation Phase

Kotulo Tsatsi Energy PV1 is anticipated to operate for a minimum of 20 years during daylight, 7 days a week. While the solar facility will be largely self-sufficient, monitoring and periodic maintenance activities will be required during the operation phase.

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

- » Direct and indirect employment opportunities
- » Development of non-polluting renewable energy infrastructure
- » Contribution to Local Economic Development (LED) and social upliftment
- » Visual impact and sense of place impacts
- » Impacts associated with the loss of agricultural land

Table 5.8: Long-term employment opportunities and skills development

Nature: The creation of employment opportunities and skills development opportunities during the operation phase for the country and local economy.

The operation phase of the project will require a workforce and therefore direct employment will be generated. Although the exact number of construction workers is not confirmed at this stage, it is estimated that approximately ~35-40 jobs will be generated for the lifetime of the project (approximately 20 – 25 years). Highly skilled employees are required for the proposed project and local experts will be employed and upskilled where available.

Employment opportunities during operation and maintenance (O&M) would include skilled engineers, specialising in both electrical and mechanical engineering. Employees that can be sourced from the local municipal pool include the less skilled such as safety and security staff and maintenance crew. Maintenance will be carried out throughout the lifespan of the project and associated infrastructure.

Typical activities during maintenance include washing of solar panels, vegetation control and maintenance around the project and along the linear infrastructure (as assessed within the CSP 1 EIA process). Employment opportunities will be created during the operation phase and this is rated as positive impact although limited. On-the-job training is a key element of staff development and many of the required skills during the operation phase will be taught to the staff through day-to-day operations. This is crucial to long-term development of skills and education in the area. This will accelerate the positive benefits and impacts of the development on the economy.

	Without enhancement	With enhancement
Extent	Local-regional (3)	Local-regional (3)
Duration	Long term (4)	Long term (4)
Magnitude	Small (0)	Minor (1)
Probability	Highly probable(4)	Highly probable (4)
Significance	Low (28)	Medium (32)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes (enhance)	

Enhancement:

- » A local employment policy must be adopted to maximise the opportunities made available to the local community.
- » The recruitment selection process must seek to promote gender equality and the employment of women wherever possible.

- » Vocational training programs must be established to promote the development of skills of the employees, where possible.
- » Proof of skills development must be provided to the upskilled individuals.

Residual impacts:

- » Improved pool of skills and experience in the local area.

Table 5.9: Assessment of the development of non-polluting, renewable energy infrastructure

Nature: Development of non-polluting, renewable energy infrastructure.

South Africa currently relies predominantly on coal-generated electricity and as a result, the country's carbon emissions are considerably higher than those of most developing countries. The use of solar technology for power generation is considered a non-consumptive use of a natural resource which produces zero greenhouse gas emissions during its operation. The generation of renewable energy (RE) utilising solar power will contribute positively to South Africa's electricity market. Given South Africa's reliance on Eskom as a power utility, the benefits associated with provision of electricity by an IPP are regarded as an important contribution, and the advancement of RE has been identified as a priority for South Africa.

Increasing the contribution of the RE sector to the local economy would contribute to the diversification of the local economy and provide greater economic stability. The growth in the RE sector as a whole could introduce new skills and development into the area. This is especially true with regards to solar power specifically considering the number of other solar power projects proposed within the broader area.

The development of RE projects have the potential to contribute to the stability of the economy, and could contribute to the local economy through employment generation (direct, indirect, and local service providers) and revenue generation for the LM. While the overall contribution of the project to South Africa's total energy requirements is small, the facility will also contribute towards offsetting the total carbon emissions associated with energy generation in South Africa. It should however be noted that such a benefit is associated with all RE projects and not only solar power projects in particular.

	Without enhancement	With enhancement
Extent	Local- Regional- National (4)	N/A
Duration	Long term (4)	N/A
Magnitude	Minor (2)	N/A
Probability	Highly probable (4)	N/A
Significance	Medium (40)	N/A
Status (positive or negative)	Positive	N/A
Reversibility	Yes	
Irreplaceable loss of resources?	Yes (impact of climate change)	
Can impacts be mitigated?	No	

Mitigation/Enhancement:

- » None required/anticipated.

Residual impacts:

- » Reduce carbon emissions through the use of renewable energy and contribute to reducing global warming.

Table 5.10: Assessment of the contribution to Local Economic Development (LED) and social upliftment

Nature: Contribution to LED and social upliftment during the operation of the project.

Projects which forms part of the DMRE's REIPPP Programme are required as part of their bidding requirements to contribute towards LED and social upliftment initiatives within the area in which they are proposed. In addition, they are required to spend a percentage of their revenue on socio-economic and enterprise development, as well as allocate ownership shares to local communities that benefit previously disadvantaged communities around the project. A portion of the dividends generated by each development also need to be invested into LED projects and programmes. Kotulo Tsatsi Energy PV1 therefore has the potential to contribute positively towards socio-economic development and improvements within the local area.

Socio-economic spin-offs from the project could contribute towards upliftment of the surrounding communities. An in-depth Community Needs Assessment (CNA) is required to ensure that the beneficiary community's needs are understood and sufficiently addressed by the proposed development programmes in order to contribute meaningfully towards local economic growth and development.

	Without enhancement	With enhancement
Extent	Local-Regional (3)	Local-Regional (3)
Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Highly probable (4)	Definite (5)
Significance	Medium (44)	High (65)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes (enhance)	

Enhancement:

- » A CNA must be conducted to ensure that the LED and social upliftment programmes proposed by the project are meaningful in terms of the local communities and the current situation.
- » Ongoing communication and reporting is required to ensure that maximum benefit is obtained from the programmes identified, and to prevent the possibility for such programmes being misused.
- » The programmes must be reviewed on an ongoing basis to ensure that they are best suited to the needs of the community at the time (bearing in mind that these are likely to change over time).

Residual impacts:

- » Social upliftment of the local communities through the development and operation of the project.

Table 5.11: Assessment of the visual impact and impacts on sense of place

Nature: Visual impacts and sense of place impacts associated with the operation phase of Kotulo Tsatsi Energy PV1.

An area's sense of place is created through the interaction of various characteristics of the environment, including atmosphere, visual resources, aesthetics, climate, lifestyle, culture, and heritage. An area's sense of place is however subjective and largely dependent on the demographics of the population residing within the area and their perceptions regarding trade-offs. For example, while some individuals may prefer not to see any form of infrastructure development, others may be interested in large-scale infrastructure, or engineering projects, and operation of the facility, and consider the impact to be less significant. Such a scenario may especially be true given that the project comprises a renewable energy project, and could therefore be seen as benefitting the local environment, when compared to non-renewable energy generation projects.

An impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light. The social impacts associated with the impact on sense of place relate to the change in the landscape character and visual impact of Kotulo Tsatsi Energy PV1. As the location of the project on a private property, within an area characterised as having

a low population density and being of a natural state, the visual impact and impact on the area's sense of place associated with the operation of Kotulo Tsatsi Energy PV1 is anticipated to be of a medium significance from a social perspective, which can be mitigated to a low significance. The alteration of the sense of place in view of the local residents (specifically adjacent landowners located within a 6km radius of the project) and road users will start during the construction phase and remain for the project's operational lifetime. Other infrastructure present within the area to the west of the affected property, which presents a current impact, includes the Aries-Helios 1 400kV power line, the Aries 400kV substation and the Sishen-Saldanha railway line.

The identification of the significance of the impact on sense of place for the operation phase was undertaken through the consideration of the Visual Impact Assessment (LOGIS, 2021) undertaken for the project. The visual impact is expected to be of a low significance from a visual perspective due to the relatively low viewer incidence in close proximity to the project. The Visual Impact Assessment has informed the visual impact from a social perspective.

	Without mitigation	With mitigation
Extent	Local (1)	Local (1)
Duration	Long-term (4)	Long-term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	Medium (33)	Low (27)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » Maintain and manage the facility to be in a good and neat condition to ensure that no degradation of the area and site takes place and impacts the visual quality of the area.
- » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment for the change in character and sense of place and landscape character.

Residual impacts:

- » The visual impact of Kotulo Tsatsi Energy PV1 will remain until the infrastructure is completely decommissioned and removed. Thereafter the impact will be removed.

Table 5.122: Assessment on the loss of area for agricultural activities and overall productivity

Nature: Loss of area for agricultural activities and overall productivity as a result of the operation of the project on a property used for livestock grazing.

The affected property where Kotulo Tsatsi Energy PV1 is located in an area with an arid climate which consists of shallow soils that limits the agricultural potential to low intensity grazing. Therefore, from a soils and agricultural potential the impact on agricultural resources is considered to be minimal.

The arid climate and associated low rainfall in the area means that there is little potential for rain-fed arable agriculture in the area. The broader area is currently used for livestock grazing, however arid climate of the area coupled with shallow soils limits the agricultural potential to low intensity grazing.

Considering the limitations of the site from an agricultural resource perspective, the significance of the impact on the loss of land for continued agricultural practises will be low from a social perspective.

The Agricultural Compliance Statement (The Biodiversity Company, 2020) was considered for the identification of the significance relating to the impact on loss of agricultural land.

It must be noted that the affected landowner, considers the shadow of the panels and washing of panels as an opportunity for vegetation growth which will assist with future grazing activities during operation. This positive contribution will however be limited.

	Without mitigation	With mitigation
Extent	Site (1)	Site (1)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Small (0)
Probability	Probable(3)	Improbable(2)
Significance	Low (21)	Low (10)
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- » Keep the project footprint as small as possible.
- » Implement appropriate erosion measures.
- » Implement mitigation measures recommended by the soils specialist.

Residual impacts:

- » None expected to occur.

5.4 Cumulative Impacts

The 2014 EIA Regulations (GNR 326) define a cumulative impact as follows:

“Cumulative impact in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.”

Kotulo Tsatsi Energy PV1 is located adjacent to one authorised PV facility. The facility is also located within 50km from one existing and several other authorised solar PV facilities (refer to **Table**).

Table 5.13: Other solar energy projects/developments proposed, approved and operational within proximity of Kotulo Tsatsi Energy PV1

Project Name	Distance from the proposed site	Project Status
Kotulo Tsatsi PV2, Northern Cape. Kotulo Tsatsi Energy (DEA reference number 14/12/16/3/3/2/696)	Located within the project site and development footprint	Environmental Authorisation issued

200MW Kotulo Tsatsi Energy Solar Power Facility 2 (CSP 2) (DEA Ref.: 14/12/16/3/3/2/694/2;	Located directly to the west of the project site	Environmental Authorisation issued
200MW Kotulo Tsatsi CSP Facility (DEA Ref.: 14/12/16/3/3/2/694)	Located directly to the west of the project site	Environmental Authorisation issued
Aries Photovoltaic PV Solar Energy Facility One, Northern Cape, BioTherm (Pty) Ltd. (DEA 12/12/20/2098/2)	36 km north east	Round 1 preferred bidder. Project is commissioned.
PV power plant, Kenhardt, AES Solar Energy Ltd. Process: Scoping & EIA (DEA reference number: 12/12/20/2170)	37 km north east	Environmental Authorisation issued
Solar Cape photovoltaic energy facility generation facility, Kenhardt District, Solar Land CC. Process: Scoping & EIA (DEA reference number: 12/12/20/2113)	39 km north east	Environmental Authorisation issued
Green Continent Partners 75MW Solar Energy Electricity Generation Facility (Kenhardt District), Wine Estate Capital Management South Africa (Pty) Ltd. Process: Scoping & EIA. (DEA reference number: 14/12/16/3/3/2/344)	45 km north east	Environmental Authorisation issued
Green Continent Partners photovoltaic energy electricity generation facility, Kenhardt district, Green Continent Partners (Pty) Ltd. Process: Scoping & EIA. (DEA reference number: 12/12/20/220)	47km north east	Environmental Authorisation issued

These projects were identified using the Department of Environmental Affairs latest release of the South African Renewable Energy EIA Application Database (REEA_OR_2020_Q2, 31 August 2020)⁹. A map showing the relative location of other relevant solar projects in the study area is shown in **Figure 5.2**.

The cumulative assessment will consider those facilities within 30km from Kotulo Tsatsi Energy PV1 only.

Considering the concentration of solar energy developments within the area directly surrounding Kotulo Tsatsi Energy PV1, the potential for some 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 areas sense of place.

It must be noted that the cumulative impact significance ratings provided assume that the impact has already been mitigated/enhanced.

⁹ Source: The DEA's Environment Geographic Information Systems (EGIS) website (<https://egis.environment.gov.za/>).

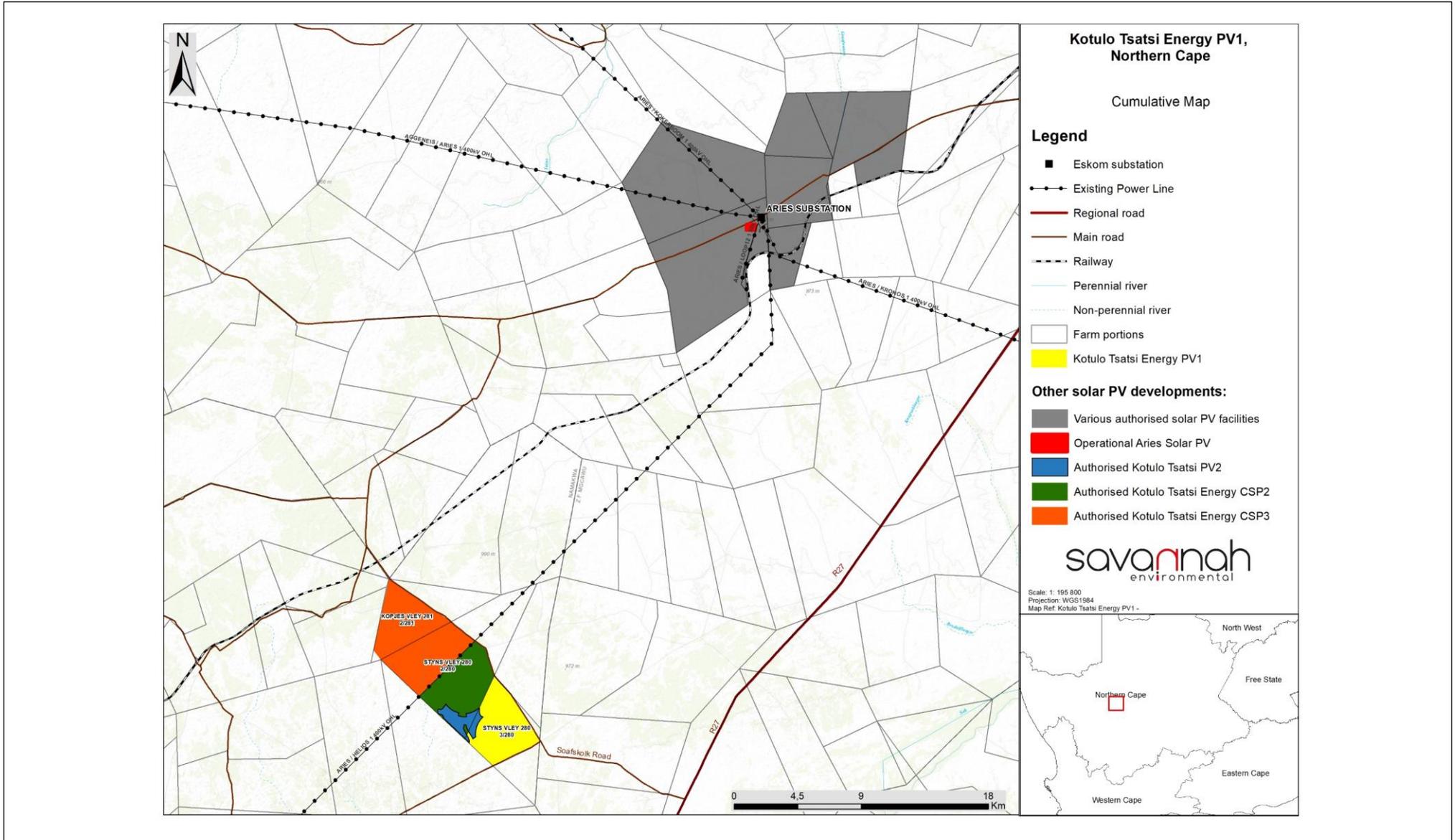


Figure 5.2: Cumulative map of Kotulo Tsatsi Energy PV1

5.4.1 Cumulative Impacts associated with Kotulo Tsatsi Energy PV1

Table 5.14: Cumulative impacts of employment opportunities, business opportunities and skills development

Nature: An increase in employment opportunities, skills development and business opportunities with the establishment of more than one solar power facility.

The Kotulo Tsatsi Energy PV1 and the establishment of other solar energy facilities has the potential to result in significant positive cumulative impacts; specifically with the creation of a number of socio-economic opportunities for the Province, 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 incentivise operation and maintenance companies to centralise and expand their activities towards education and training and more closely to the projects. The type of employment will most likely change significantly due to the skilled nature of the jobs associated with solar energy projects. Cumulative impacts on local entrepreneurs will be positive and assist in developing their businesses further. The cumulative impacts of are likely to have significant positive impact on the local economy.

	Overall impact/benefit of the proposed project considered in isolation	Cumulative impact/benefit of the project and other projects in the area
Extent	Local- Regional (3)	Local- Regional (3)
Duration	Short term (2)	Long term (4)
Magnitude	Moderate (6)	Moderate (6)
Probability	Highly probable (4)	Definite (5)
Significance	Medium (44)	High (65)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources?	N/A	
Can impacts be mitigated?	Yes (enhanced)	
Confidence in findings	High	

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, business opportunities and SED, 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.

Table 5.15: Cumulative impact with large-scale in-migration of people

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. Further potential impact related to in-migration of people into the area includes additional pressure on municipal services and housing, however this impact will need to be addressed in the municipal IDP process and considerations.

As one PV facility and two other CSP facilities are authorised adjacent to Kotulo Tsatsi Energy PV1, this implies that the surrounding area is likely to be subject to future development. 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 proponents 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 (1)	Local-Regional (3)
Duration	Short-term (2)	Long-term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Probable (3)
Significance	Low (21)	Medium (39)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Confidence in findings	High	

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.

Table 5.16: Cumulative impact on the sense of place and landscape character

Nature: Visual impact and impact on the sense of place and landscape character

The social impacts associated with the impact on sense of place relate to the change in the landscape character and visual impact of Kotulo Tsatsi Energy PV1. Given the location of the project on a private property, within an area characterised as having a low population density and being of a natural state, the visual impact and impact on the

area's sense of place associated with the operation of Kotulo Tsatsi Energy PV1 is anticipated to be of a low significance. The alteration of the sense of place in view of the local residents (specifically adjacent landowners) and road users will start during the construction phase and remain for the project's operational lifetime. The area has not been previously exposed to large scale industrial development, except for linear infrastructure such as the Aries-Helios 1 400kV power line and the Sishen Saldanha railway line.

The development of various PV facilities within the area will increase the extent of industrial infrastructure and result in a medium significance.

The identification of the significance of the cumulative impact on sense of place was undertaken through the consideration of the Visual Impact Assessment (LOGIS, 2021) undertaken for the project. The Visual Impact Assessment identified that the impact on sense of place will be of a low significance.

	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (1)	Local (1)
Duration	Long-term (4)	Long term (4)
Magnitude	Low (4)	Low (5)
Probability	Probable (3)	Probable (3)
Significance	Low (27)	Medium (30)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	No, only best practice measures can be implemented	
Confidence in findings	High	

Mitigation:

- » Maintain and manage the facilities to be in a good and neat condition to ensure that no degradation of the area and sites takes place and impacts the visual quality of the area.
- » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment.

Residual impacts

- » The visual impact will remain until the infrastructure is completely decommissioned and removed. Thereafter the impact will be removed.

5.4 Decommissioning Phase

Major social impacts associated with the decommissioning phase are typically 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. The impact will be of a local extent, short duration, minor magnitude and probable. The significance of the impact will be low. For Kotulo Tsatsi Energy PV1 it is anticipated that the 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.

5.5 Assessment of Impacts for the No-Go Alternative

The "no-go" alternative is the option of not constructing Kotulo Tsatsi Energy PV1. The implementation of Kotulo Tsatsi Energy PV1 is expected to result in a number of positive and negative social impacts. The majority of negative impacts identified for the project are associated with the construction phase of the

project, while the positive impacts are associated with both the construction and operation phases of the project.

Potential negative social impacts associated with the construction and operation of the project include the following:

- » Potential influx of job seekers and an associated change in population and social structures and increase in pressure on basic services.
- » Potential safety and security impacts.
- » Potential impacts on daily living and movement patterns.
- » Potential nuisance impacts (noise and dust).
- » Potential visual impact and impact on the sense of place.
- » Potential loss of agricultural land.

Potential positive social impacts associated with the construction and operation of the project include the following:

- » Potential direct and indirect employment opportunities.
- » Potential economic multiplier effect.
- » Development of clean, renewable energy infrastructure.
- » Contribution to Local Economic Development (LED) and social upliftment.

The impacts of pursuing the "no-go" alternative can therefore be summarised as follows:

- » The benefits would be that there is no short-term disruption from nuisance impacts (noise and dust during construction), visual impacts and safety and security impacts. The impact is therefore neutral.
- » There would also be an opportunity loss in terms of job creation, skills development, community upliftment and associated economic business opportunities for the local economy. This impact is considered to be negative.

The option of not developing Kotulo Tsatsi Energy PV1 would not compromise the development of renewable energy facilities in South Africa, however the socio-economic benefits for the local communities would be forfeited, and the current status of the social aspects associated with the area will remain as it is currently described in this report. The implementation of the no-go alternative is therefore not supported from a social perspective.

6. CONCLUSION AND RECOMMENDATIONS

This SIA focused on the collection of data to provide an understanding of the current social environment associated with the area within which Kotulo Tsatsi Energy PV1 is proposed and identify and assess social issues and potential social impacts associated with the development of such a project. Secondary data was collected and presented in a literature review and previous data from previous EIA processes undertaken within the area (including Social Impact Assessments) were considered to inform the social impacts associated with the development of Kotulo Tsatsi Energy PV1. Furthermore, consultation with affected and adjacent landowners and other key stakeholders was undertaken to identify any other social impacts that required to be considered and assessed. The environmental assessment framework for assessment of impacts and the relevant criteria was applied to evaluate the significance of the potential impacts and to recommend appropriate mitigation and enhancement measures for the identified impacts.

A summary of the potential positive and negative impacts identified for the detailed design and construction, and operation phases are presented in Error! Reference source not found. and Error! Reference source not found.. A summary of the cumulative positive and negative social impacts is provided in Error! Reference source not found..

Table 6.1: Summary of potential social impacts identified for the detailed design and construction phase of Kotulo Tsatsi Energy PV1

Impact	Significance Without Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Positive Impacts		
Creation of direct and indirect employment and skills development opportunities.	Medium (36)	Medium (44)
Economic multiplier effects	Low (27)	Medium (33)
Negative Impacts		
In-migration of people (non-local workforce and jobseekers).	Medium (36)	Low (21)
Safety and security impacts	Medium (36)	Low (16)
Impacts on daily living and movement patterns	Medium (48)	Low (24)
Nuisance impact (noise and dust)	Medium (36)	Low (21)
Visual, sense of place and general landscape impacts	Low (27)	Low (21)

Table 6.2: Summary of potential social impacts identified for the operation phase of Kotulo Tsatsi Energy PV1

Impact	Significance Without Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Positive Impacts		
Direct and indirect employment and skills development opportunities	Low (28)	Medium (32)
Development of non-polluting, renewable energy infrastructure	Medium (40)	N/A
Contribution to LED and social upliftment	Medium (44)	High (65)
Negative Impacts		

Impact	Significance Without Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Visual, sense of place and general landscape impacts	Medium (33)	Low (27)
Impacts associated with the loss of grazing land.	Low (21)	Low (10)

Table 6.3: Summary of potential cumulative social impacts identified for Kotulo Tsatsi Energy PV1

Cumulative Impact	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Positive Cumulative Impacts		
Cumulative impact from employment, skills and business opportunities and skills development	Medium (44)	High (65)
Negative Cumulative Impacts		
Cumulative impact with large-scale in-migration of people	Low (21)	Medium (39)
Cumulative impact on the sense of place and landscape change	Low (27)	Medium (36)

6.1 Key findings and Recommendations

The social impacts identified will be either of a low, medium or high significance. No negative impacts with a high significance rating have been identified to be associated with the development of Kotulo Tsatsi Energy PV1. Only positive social impacts are considered to be of a high significance. All negative social impacts are within acceptable limits (medium or low significance depending on the impact being considered with no impacts considered as unacceptable from a social perspective. The recommendations proposed for the project are considered to be 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.
- » A recruitment protocol must be developed and implemented in consultation with the municipality and local community leader/representative. 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).
- » Mitigation measures to minimise dust and noise pollution and damage to existing roads must be employed.
- » 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. This process must involve consultation with adjacent landowners.

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

6.2 Overall Conclusion

The proposed project and associated infrastructure will create a number of potential socio-economic opportunities and benefits and are unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the project is acceptable subject to the implementation of the recommended mitigation and enhancement measures and management actions identified for the project. Considering the findings of the report and potential for mitigation it is the reasoned opinion of the specialist that the project can be authorised from a social perspective.

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**APPENDIX A:
ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

1. Construction Phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Opportunities and benefits associated with the creation of local employment and skills development to be maximised.
Activity/risk source	<ul style="list-style-type: none"> » Construction procurement practice employed by the Engineering, Procurement and Construction (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.

Mitigation: Action/control	Responsibility	Timeframe
Where feasible local suppliers and contractors, that are compliant with Broad-Based Black Economic Empowerment (B-BBEE) criteria, should be used as far as possible to ensure that the benefits resulting from the project accrue as far as possible to the local communities which are also likely to be most significantly impacted / affected by the project.	The Proponent & EPC Contractor	Pre-construction & construction phase
Adopt a local employment policy to maximise the opportunities made available to the local labour force.	The Proponent & EPC Contractor	Pre-construction & construction phase
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.	The Proponent & EPC Contractor	Pre-construction & construction phase
In the recruitment selection process, a minimum percentage of women must be employed.	EPC Contractor	Pre-construction & construction phase
Set realistic local recruitment targets for the construction phase.	The Proponent & EPC Contractor	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	<ul style="list-style-type: none"> » Implement a business policy document that sets out local employment and targets completed before the construction phase commences. » Employ as many local semi-skilled and unskilled labour as possible. » Training and skills development programme is 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 must be shared with the Environmental Control Officer (ECO) for reporting purposes.

OBJECTIVE: Maximise the local economic multiplier effect during the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Potential local economic benefits
Activity/risk source	Developers procurement plan
Mitigation: Target/Objective	Increase the procurement of goods and services especially within the local economy

Mitigation: Action/control	Responsibility	Timeframe
A local procurement policy must be adopted to maximise the benefit to the local economy.	The Proponent & EPC Contractor	Pre-construction & construction phase
Develop a database of local companies, specifically Historically Disadvantaged Individuals (HDIs) which qualify as potential service providers (e.g. construction companies, security companies, catering companies, waste collection companies, transportation companies etc.) prior to the tender process and invite them to bid for project-related work where applicable.	The Proponent & EPC Contractor	Pre-construction & construction phase
Source as much goods and services as possible from the local area. Engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible.	The Proponent	Pre-construction & construction phase

Performance Indicator	<ul style="list-style-type: none"> » Local procurement policy is adopted. » Local goods and services are purchased from local suppliers, where feasible.
Monitoring	» The developer must monitor the indicators listed above to ensure that they have been met during the construction phase

OBJECTIVE: Reduce the pressure on resources, service delivery, infrastructure and social dynamics from a population change as a result of an increase of construction workers to the area during the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Population changes resulting in additional pressure on resources, service delivery, infrastructure maintenance and social dynamics during the construction phase as a result of an influx of construction workers and job seekers into the area.
Activity/risk source	Influx of construction workers and job seekers.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local infrastructure, services and communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
Implement a grievance and communication system for community issues.	The Proponent & EPC Contractor	Pre-construction & construction phase
Appoint a Community Liaison Officer (CLO).	The Proponent & EPC Contractor	Pre-construction & construction phase

Performance Indicator	» CLO is appointed.
Monitoring	» The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase.

OBJECTIVE: Reduce the pressure on economic and social infrastructure and social conflicts from an influx of jobseekers during the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Decline on local economic and social infrastructure and services as well as a rise in social conflicts from an influx of jobseekers.
Activity/risk source	Influx of jobseekers.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local infrastructure, services and communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
A 'locals first' policy must be implemented for employment opportunities, especially for semi-skilled and low-skilled job categories.	The Proponent & EPC Contractor	Pre-construction & construction phase
The tender documentation must stipulate the use of local labour as far as possible.	EPC Contractor	Pre-construction & construction phase
Inform local community members of the construction schedule and exact size of workforce (e.g. Ward Councillor, surrounding landowners).	EPC Contractor	Pre-construction & construction phase
Recruitment of temporary workers on-site must not be permitted. A recruitment office with a CLO should be established to deal with jobseekers.	EPC Contractor	Pre-construction & construction phase
Set up labour desk in a secure and suitable area to discourage the gathering of people at the construction site.	EPC Contractor	Pre-construction & construction phase
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
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Performance Indicator	<ul style="list-style-type: none"> » Ensure that a 'locals first' policy is adopted. » Ensure no recruitment takes place on-site. » Control/removal of loiters.
Monitoring	<ul style="list-style-type: none"> » The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes

OBJECTIVE: To avoid or reduce traffic disruptions and movement patterns of the local community during the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Increase in traffic disruptions, safety hazards, and impacts on movement patterns of the local community as well as an impact on private property due to the use of the existing roads and heavy vehicle traffic in the local area.
Activity/risk source	Construction activities affecting daily living and movement patterns.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
Working hours must be kept during daylight hours as per the Environment Conservation Act (No. 73 of 1989) (ECA) during the construction phase, and / or as any deviation that is approved by the relevant authorities.	EPC Contractor	Construction phase
All vehicles must be roadworthy and drivers must be licensed, obey traffic rules, follow speed limits and be made aware of potential road safety issues.	EPC Contractor	Pre-construction & Construction phase
Heavy vehicles must be inspected regularly to ensure their road safety worthiness. Records pertaining to this must be maintained and made available for inspection as necessary.	EPC Contractor	Construction phase
Adequate traffic warning signs and control measures (including speed limits) must be implemented along access roads to warn road users of the construction activities taking place for the duration of the construction phase. Ensure that all signage is visible at all times (especially at night) and must be maintained throughout the construction phase.	EPC Contractor	Construction phase
Implement penalties for drivers of heavy vehicles for reckless driving or speeding as a way to enforce compliance to traffic rules.	EPC Contractor	Construction phase
Existing infrastructure such as fencing and gates along access routes must be maintained in the present condition or repaired if disturbed or damaged due to construction activities.	EPC contractor	Construction phase
Ensure that roads utilised are either maintained in the present condition or restored if damaged due to construction activities.	EPC Contractor	Construction phase

A CLO should be appointed and a grievance mechanism implemented. A communication protocol 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
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Performance Indicator	<ul style="list-style-type: none"> » Vehicles are roadworthy, inspected regularly and speed limits are adhered to. » Ensure that there are traffic warning signs along access roads, and ensure that these are well illuminated (especially at night). » Roads and electric fencing are maintained or improved upon if disturbed from project activities. » A CLO is appointed for the project.
Monitoring	<ul style="list-style-type: none"> » The developer and EPC Contractor must monitor the indicators listed above to ensure that they have been met for the construction phase.

OBJECTIVE: To avoid or minimise the potential intrusion impacts such as noise, dust, aesthetic pollution and light pollution during the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Intrusion impacts could impact the area's "sense of place" and heavy vehicles and construction activities can generate noise and dust.
Activity/risk source	Construction activities
Mitigation: Target/Objective	To avoid or minimise the potential intrusion impacts such as aesthetic pollution, noise, dust and light pollution during the construction phase

Mitigation: Action/control	Responsibility	Timeframe
Limit noise generating activities to daylight working hours and avoid undertaking construction activities on weekends and public holidays.	EPC Contractor	Construction phase
The movement of heavy vehicles associated with the construction phase should be timed to avoid weekends, public holidays and holiday periods where feasible.	EPC Contractor	Construction phase
Dust suppression measures must be implemented for heavy vehicles such as the wetting of gravel roads on a regular basis and ensuring that vehicles used to transport building materials are fitted with tarpaulins or covers.	EPC Contractor	Construction phase
All vehicles must be roadworthy and drivers must be licensed and made aware of the potential road safety issues and the need for strict speed limits.	EPC Contractor	Construction phase
Communication, complaints and grievance channels must be implemented and contact details of the CLO are to be provided to the local community and affected and adjacent landowners.	EPC Contractor	Construction phase
Ensure that noise generated by machinery is within acceptable limits and implement silencers where required.	EPC Contractor	Construction phase

Ensure that the construction site is kept clean and is maintained within a good condition which includes the removal of waste as and when required.	EPC Contractor	Construction phase
Ensure that the lighting used does not spill into the adjacent surrounding areas.	EPC Contractor	Construction phase
Ensure that damage caused by construction related traffic / project activities to the existing roads is repaired before the completion of the construction phase.	EPC Contractor	Construction phase
A speed limit of 45km/hr should be implemented on gravel roads.	EPC Contractor	Construction phase

Performance Indicator	<ul style="list-style-type: none"> » Limit noise generating activities. » Dust suppression measures implemented on gravel roads. » Enforcement of strict speeding limits. » CLO available for community grievances and communication channel. » Roadworthy certificates are in place for all vehicles.
Monitoring	<ul style="list-style-type: none"> » The EPC contractor must monitor the indicators to ensure that they have been met for the construction phase

OBJECTIVE: To avoid or reduce the possibility of the increase in crime and safety and security issues during the construction phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Increase in crime due to influx of non-local workforce and job seekers into the area.
Activity/risk source	Safety and security risks associated with construction activities.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
Working hours to be restricted to daylight hours as per the ECA during the construction phase, and/or as any deviation that is approved by the relevant authorities.	EPC Contractor	Construction phase
Employees should be easily identifiable and must adhere to the security rules of the project site.	EPC Contractor	Pre-construction & Construction phase
The perimeter of the construction site is to be appropriately secured to prevent any unauthorised access to the site. The fencing of the site is to be maintained throughout the construction period.	The Proponent & 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.	The Proponent & EPC Contractor	Pre-construction & Construction phase
A security company is to be appointed and appropriate security procedures are to be implemented.	EPC Contractor	Construction Phase
No unauthorised entry to the construction site is to be allowed. Access control is to be implemented.	EPC Contractor	Construction Phase

Open fires on the construction site for heating, smoking or cooking are not allowed, except in designated areas.	EPC Contractor	Construction phase
The 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 must be developed and utilised to cover land access protocols, fire management and road safety.	EPC Contractor	Pre-construction & Construction phase
Have designated personnel trained in first aid on site to deal with smaller incidents that require medical attention	EPC Contractor	Pre-construction & construction phase
A specific code of conduct and rules must be set-up and enforced for all employees that will be residing within the man camp. Specific fines must be set out where these rules are not complied with.	EPC Contractor	Pre-construction & construction phase
Consult with adjacent landowners where livestock crosses the Soafskolk road in order to come to an agreement regarding the use of the road and the management of the livestock / lack fencing. The agreement between the affected landowner (Mr Japie du Toit) and the developer must be adhered to.	EPC Contractor and Developer	Pre-construction & construction phase

Performance Indicator	<ul style="list-style-type: none"> » Employee induction programme, covering land access protocols, fire management and road safety » The construction site is appropriately secured with a controlled access system » Ensure a security company is appointed and appropriate security procedures and measures are implemented
Monitoring	<ul style="list-style-type: none"> » The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase

2. Operation Phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the operation phase of the project

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Loss of opportunities to stimulate production and employment of the local economy.
Activity/risk source	Labour practices employed during operations.
Mitigation: Target/Objective	Maximise local community employment benefits in the local economy.

Mitigation: Action/control	Responsibility	Timeframe
Adopt a local employment policy to maximise the opportunities made available to the local labour force.	The Project Owner & Operation and Maintenance (O&M) Contractor	Operation phase
Establish vocational training programs for the local labour force to promote the development of skills.	The Project Owner	Operation phase

Performance Indicator	<ul style="list-style-type: none"> » Percentage of workers that were employed from local communities. » Number of people attending vocational training on an annual basis.
Monitoring	<ul style="list-style-type: none"> » The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes.

OBJECTIVE: Minimise visual impact and the impact on sense of place during the operation phase

Project component/s	<ul style="list-style-type: none"> » Solar PV array footprint » Access roads, internal distribution roads and fencing around the development footprint » Admin block
Potential Impact	Visual impacts and sense of place impacts associated with the operation phase of the project
Activity/risk source	Negative impact on receptors within the surrounding area
Mitigation: Target/Objective	Minimise visual impact and the impact on the sense of place

Mitigation: Action/control	Responsibility	Timeframe
Maintain and manage the facility to be in a good and neat condition to ensure that no degradation of the area and associated infrastructure servitudes takes place and impact the visual quality of the area.	The Project Owner & Operation and Maintenance (O&M) Contractor	Operation phase

Performance Indicator	<ul style="list-style-type: none"> » No complaints are submitted regarding the management of the project.
Monitoring	<ul style="list-style-type: none"> » The Project Owner and O&M Contractor must monitor the indicators listed above to ensure that they have been met for the operation phase.

**APPENDIX B:
EXTERNAL REVIEWER LETTER**

Dr Neville Bews & Associates

Social Impact Assessors

Committed to building high trust environments

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07 March, 2021

Attention: Lisa Opperman

Savannah Environmental Pty Ltd

5 Woodlands Drive Office Park
Cnr Woodlands Drive and Western Service Road
Woodmead

Re: Peer review of the Social Impact Specialists Report for Kotulo Tsatsi Energy PV1, Northern Cape Province

Having reviewed the above report I find that it provides a good description of the project and the social environment within which the project will unfold. It also provides a good indication of the social impacts that are likely to arise as a result of the proposed project and suggests appropriate optimisation and mitigation measure. The review was concluded on 07 March 2021 and the following comments are made:

1. The terms of reference are acceptable.
2. The methodology is clearly explained and acceptable.
3. The findings are based on acceptable evidence.
4. The mitigation measures and recommendations are appropriate.
5. No shortcomings have been identified.
6. The reference literature is appropriate.
7. No site-inspection was carried out as part of this peer review.
8. The report is well-written and easy to understand.

Attached is a schedule, in accordance with Appendix 6 of the National Environmental Management Act, 1998 (ACT NO. 107 OF 1998). Environmental Impact Assessment

Regulations, 2014, indicating the level of compliance of the report in respect of this regulation.

DECLARATION OF INDEPENDENCE

I, Neville Bews, as authorised representative of Dr Neville Bews & Associates hereby confirm my independence as a specialist and declare that neither I nor Dr Neville Bews & Associates have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which Dr Neville Bews & Associates was appointed as social impact assessment specialists in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for work performed. This declaration is specifically in connection with the review of the Social Impact Report the for Kotulo Tsatsi Energy PV1, Northern Cape Province.

Signed:



Date: 07 March 2021

Proposed Kotulo Tsatsi Energy PV1, Northern Cape Province

<u>Appendix 6: Specialist reports</u>	Section	Comment
A specialist report prepared in terms of these Regulations must contain-		
(a) details of- (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	Section 1.2	
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Specialist Declaration of Interest page ii	
(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 2.1	
cA) An indication of the quality and age of base data used for the specialist report.	Section 2.4	
cB) A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section 5	
(d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Not applicable	
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process;	Section 2	
(f) the specific identified sensitivity of the site related to the activity and its associated structures and infrastructure;	Sections 4 & 5	
(g) an identification of any areas to be avoided, including buffers;	None = N/A	
(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;	Section 1, Figure 1.1 Section 5, Figure 5.1 Section 5, Figure 5.2	
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 2	
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment;	Section 5 & 6	
(k) any mitigation measures for inclusion in the EMPr;	Appendix A	
(l) any conditions for inclusion in the environmental authorisation;	No	
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Appendix A	
(n) a reasoned opinion- (i) as to whether the proposed activity or portions thereof should be authorised; and (ii) if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Sections 6	
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 2.2.2	
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto	Section 2.2.2	
(q) any other information requested by the competent authority.	Not applicable	
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.	Not applicable	