SOCIAL IMPACT ASSESSMENT
EIA REPORT

PROPOSED ESTABLISHMENT OF THE ILANGA CSP 5 PROJECT, NEAR UPINGTON, NORTHERN CAPE PROVINCE

APRIL 2016

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EXECUTIVE SUMMARY

FG Emvelo (Pty) Ltd is proposing the development of an additional Concentrated Solar Power (CSP) Facility and associated infrastructure adjacent to the authorised CSP site Karoshoek LFT 2 (1 x 100 MW Parabolic Trough) Site 1.4, DEA Ref No.: 14/12/16/3/3/2/299) within the Karoshoek Solar Valley Development on Portion 3 of the Farm Matjiesrivier 41, located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape.

The Ilanga CSP 5 Project is proposed to generate up to 50MW in capacity and will be constructed over an area of approximately 200ha in extent within the broader property. It is the intention of the developer to develop the above proposed project together with the already authorised project, i.e. the project is to be developed as a single 150MW facility in total. This proposal is in response to the requirements of the Department of Energy (DoE) in terms of the capacity of CSP projects to be bid into the REIPPP Programme.

The Social Impact Assessment (SIA) was undertaken by Candice Hunter of Savannah Environmental. The purpose of the report is to assess the potential social impacts associated with the proposed development and to recommend management measures to reduce / avoid the negative social impacts and enhance the positive social impacts associated with the proposed development. This report contains the findings of the SIA for the EIA process for the proposed project.

Legislation and Guidelines

The review of the relevant planning and policy documents was undertaken as a part of the SIA process. The key documents reviewed included:

National Policies:

- The Constitution of the Republic of South Africa (Act 108 of 1996)
- The National Environmental Management Act (107 of 1998) (NEMA)
- The National Energy Act (34 of 2008)
- National Development Plan 2030
- National Climate Change Response Green Paper (DEA, 2010)
- White Paper on Energy Policy of the Republic of South Africa (1998)
- White Paper on Renewable Energy of the Republic of South Africa (2003)
- National Integrated Resource Plan South Africa (2010-2030)
- Strategic Infrastructure Projects (SIPs)

Provincial Policies:

- Northern Cape Provincial Development and Resource Management Plan / Provincial Spatial Development Framework (PSDF) (2012)
- Northern Cape Provincial Growth and Development Strategy (PGDS) (2011)
- Northern Cape Provincial Local Economic Development (LED) Strategy (2009)

Local and District Policies:

- » Siyanda (ZF Mgcawu) District Municipality Growth and Development Strategy (2007)
- » Siyanda (ZF Mgcawu) District Municipality Integrated Development plan (IDP) (2013-2014)
- » //Khara Hais Local Municipality Integrated Development Plan (IDP) (2012-2017)
- » //Khara Hais Local Municipality Spatial Development Framework (SDF) (2009)

Solar Energy Policies:

- » Solar Energy Technology Roadmap (2013)
- » Renewable Energy Development Zones (REDZs)

Baseline Description of the Social Environment

The socio-economic profile provided an overview of the study area. The following is a summary of the key baseline findings as a result of the study conducted on the ZFDM and the KHLM, in the Northern Cape Province. In summary, the area was found to have the following general characteristics:

- » The population of the ZFDM in 2011 was approximately 236 783 people, of which 93 494 people reside in the KHLM.
- » The majority of the local population belong to the Coloured group and the most spoken language is Afrikaans.
- » 64.6% of the KHLM population comprise the Economically Active Population (EAP); this implies that there is a larger human resource base for development projects to involve the local population. The dependency ratio is high at 54.7.6% of the KHLM population (that is almost a third of the local population) which puts pressure the EAP and the local municipality.
- » The female population is slightly more prominent in the KHLM comprising 50.7% of the population.
- » More than half of the local population are semi- skilled or low skilled based on education levels. This reflects the rural nature of the region and relatively poor education. The skills profile of the area indicates that the availability of local labour for the proposed project is largely limited to low-skilled /semi-skilled construction workers and a small number of skilled workers.
- » There is a high unemployment rate in the KHLM (22.1%) with a large economically active population seeking employment opportunities. Local workers should be utilised as much as possible for the proposed development in order to alleviate local unemployment.
- » Higher unemployment and lower income levels in the study area demonstrate the need for job creation.
- » The high demand for employment can be addressed (although marginally) through direct job creation during the construction phase of the proposed development

» Access to basic services is generally greater in the KHLM than at a district and provincial level demonstrating that service delivery is generally more accessible (Upington will be the primary area closest to the proposed site).

The proposed development supports the social and economic development through enabling skills development and creating temporary employment opportunities within the local area. The development would mainly focus on economic benefits to the area. Negative dimensions of impacts such as influx of jobseekers into the area putting pressure on the provision of basic services and poverty level have been assessed though this impact assessment.

Social Impact Assessment

The environmental assessment framework for the assessment of impacts and the relevant criteria were applied to evaluate the significance of the potential social impacts. A summary of the potential positive and negative social impacts identified in the SIA for the construction and operation phase of the proposed development are presented in Table 1 and Table 2 below. Table 3 presents the cumulative impacts associated with the proposed development.

Table 1: Summary of social impacts during construction phase

CONSTRUCTION PHASE		
Impact	**Significance without Mitigation/ enhancement**	**Significance with Mitigation/ enhancement**
Positive Impacts		
Direct employment and skills development	Medium (36)	Medium (44)
Economic multiplier effects	Low (24)	Medium (30)
Negative Impacts		
Influx of jobseekers	Low (24)	Low (18)
Impacts on daily living and movement patterns (traffic impacts)	Low (24)	Low (12)
Safety and security risks	Low (27)	Low (14)
Nuisance impact (noise and dust)	Low (15)	Low (12)

Table 2: Summary of social impacts during operation phase

OPERATION PHASE		
Impact	**Significance without Mitigation/ enhancement**	**Significance with Mitigation/ enhancement**
Positive Impacts		
Direct employment and skills development	Medium (32)	Medium (40)
Development of clean, renewable energy infrastructure	Medium (40)	Medium (40)
Benefits associated with REIPPP socio-economic development plans and community trust	Medium (30)	Medium (48)
Negative Impacts		
Visual and sense of place impacts	Low (20)	Low (16)
Impacts associated with the loss of agricultural land for grazing	Low (28)	Low (28)

Table 3: Summary of cumulative social impacts

CUMULATIVE IMPACTS		
Cumulative Impact	**Cumulative Contribution of Proposed Project**	**Cumulative Impact without Proposed Project**
Positive Cumulative Impacts		
Cumulative impacts from employment, skills and business opportunities	Medium (39)	Medium (33)
Negative Cumulative Impacts		
Cumulative impacts with large-scale in-migration of people	Medium (39)	Medium (33)
Cumulative impacts on the sense of place and landscape	Medium (36)	Medium (30)

From a social perspective it is concluded that the project is supported, but that mitigation measures should be implemented and adhered to. Positive and negative social impacts have been identified. The assessment of the key issues indicated that there are no negative impacts that can be classified as fatal flaws and which are of such significance that they cannot be successfully mitigated. Positive impacts could be enhanced by implementing appropriate enhancement measures and through careful

planning. Based on the social assessment, the following general conclusions and findings have been made:

» The potential negative social impacts associated with the construction phase are typical of construction related projects and not just focussed on the construction of CSP facilities (these relate to influx of non-local workforce and jobseekers, intrusion and disturbance impacts, safety and security). These impacts could be reduced with the implementation of the mitigation measures proposed.
» Employment opportunities will be created in the construction and operation phase and the impact is rated as positive even if only a small number of individuals benefit in this regard.
» The proposed project could assist the local economy in creating entrepreneurial development, especially if local business could be involved in the provision of general material and services during the construction and operational phases.
» Capacity building and skills training among employees are critical and would be highly beneficial to those involved, especially if they receive portable skills to enable them to also find work elsewhere and in other sectors.
» The proposed development represents an investment in infrastructure for the generation of clean, renewable energy, which, given the increased awareness of climate change and the need for additional electricity supply, represents a positive social benefit for society as a whole.
» The proposed additional 50MW facility to the authorised project will therefore not result in any other social impacts that were not considered in the original application for authorisation.

Recommendations

Based on the social assessment, the following recommendations are made:

» 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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained by the Contractor and monitored by the ECO to record all complaints and queries relating to the project and the action taken to resolve the issue.
» In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled in the study area could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen local endeavours to obtain jobs and provoke discontent as well as put pressure on the local services available. It is imperative 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 activities where possible. Local procurement of labour and

services/products would greatly benefit the community during the construction and operational phases of the project.

» Local procurement of services and equipment where possible in order to enhance the multiplier effect. This would serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.
» Involve the community in the process as far as possible (encourage co-operative decision making and partnerships with local entrepreneurs).
» Implement mitigation measures to reduce and avoid negative impacts.
» Employ mitigation measures to minimise the dust pollution, damage to existing roads and fences and/ gates.
» 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.

Overall Conclusion

The proposed Ilanga CSP 5 project and associated infrastructure is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the project could be developed subject to the implementation of the recommended mitigation measures and management actions contained in the SIA report.

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List of Abbreviations

CNA	Community Needs Assessment
CSP	Concentrated Solar Power
DoE	Department of Energy
DEA	Department of Environmental Affairs
DGDS	District Growth and Development Strategy
DM	District Municipality
EAP	Economically Active Population
ED	Enterprise Development
EIA	Environmental Impact Assessment
EMF	Environmental management Framework
EMPr	Environmental Management Programme
EMZ	Environmental Management Zone
EPC	Engineering, Procurement and Construction
GDP	Gross Domestic Product
HA	Hectares
HD	Historically Disadvantaged
HDSA	Historically Disadvantaged South Africans
IDP	Integrated Development Plan
IPP	Independent Power Producer
KHLM	//Khara Hais Local Municipality
KPA	Key Performance Area
kV	Kilovolts
LED	Local Economic Development
LM	Local Municipality
MW	Megawatt
NEMA	National Environmental Management Act
NSSD	National Strategy for Sustainable Development
PV	Photovoltaic
PSDF	Provincial Spatial Development Framework
PGDS	Provincial Growth and Development Strategy
SED	Socio-Economic Development
SEMP	Strategic Environmental Management Plan
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIPs	Strategic Infrastructure Projects
VIA	Visual Impact Assessment
ZFMDM	ZF Mgcawu District Municipality
WWF	World Wide Fund

1. INTRODUCTION

FG Emvelo (Pty) Ltd is proposing the development of an additional Concentrated Solar Power (CSP) Facility and associated infrastructure adjacent to the authorised CSP site Karoshoek LFT 2 (1 x 100 MW Parabolic Trough) Site 1.4, DEA Ref No.: 14/12/16/3/3/2/299) within the Karoshoek Solar Valley Development on Portion 3 of the Farm Matjiesrivier 41, located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape.

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This Social Impact Assessment (SIA) was undertaken by Candice Hunter of Savannah Environmental as part of the EIA process.

1.1. Social Impact Assessment (SIA)

SIA is described as "the process of assessing or estimating, in advance, the social consequences that are likely to follow from specific policy actions or project developments, particularly in the context of appropriate national, state, or provincial environmental policy legislation" (Becker et al, 2003). By social impacts meaning the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society (National Maritime Fisheries Service, 1994).

SIA is a methodology or instrument used by social assessment practitioners to determine the social impacts from a project and to provide ways to mitigate and monitor potential impacts (Vanclay, 2003). The SIA is divided into a number of phases however the public consultation is a crucial step in the preparation of an SIA. SIA is concerned with the human dimensions of the environment, this meaning that;

> *"SIA is the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programs, plans,*

projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment (Vanclay, 2003: 2)."

The National Environmental Management Act (NEMA) (Act 107 of 1998) sets out a number of principles which underpin environmental management in South Africa. A number of these principles relate to the social dimension of sustainable development and public process requirements such as transparency, accountability, democracy and environmental justice. The following principle outlines the basis for a Social Impact Assessment:

Environmental management must place people and their needs at the; forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

More specifically, the social, economic and environmental impacts of activities must be considered and assessed. SIA is a useful planning tool that can assist the project proponent to conceptualise and implement a project in a manner which would see the identified negative social impacts addressed through avoidance or mitigation and the positive impacts realised and optimised. It also allows the community to anticipate, plan for, and deal with the social changes once they come to effect. In this sense then the SIA is an indispensable part of the EIA, the Environmental Management Programme (EMPr) and any participative activity (E.g. Community involvement in mitigation and monitoring during planning and implementation). The purpose of an SIA report is to provide baseline information regarding the social environment and to identify possible social impacts that may come about as a result of a project. The report highlights the most likely associated social impacts to occur from the proposed project and provides methods to aim towards emphasizing positive impacts and avoiding, reducing or mitigating negative identified impacts.

1.2. Terms of Reference

The main aim of the SIA report is to assess the potential social impacts that may arise from the proposed development (i.e. 50MW extension to the already authorised 100MW facility), and to recommend the most suitable mitigation/enhancements measures from a social perspective. The purpose of the study:

» To provide baseline information describing the social environment affected by the proposed development
» To identify, describe and assess possible social risks/ fatal flaws and social impacts that may come about as a result of the proposed development (in terms of the construction, operational and decommissioning phases of the project);and

» To suggest ways in which these impacts can be mitigated or enhanced, aiming at maximising opportunities and avoiding and or reducing negative social impacts, including cumulative impacts.

1.3. Specialist Details

The SIA report was prepared by Candice Hunter of Savannah Environmental, a SIA specialist with a Master's degree in Environmental Management and an advanced certificate in SIA from the University of Johannesburg. The SIA report has been reviewed by Dr Neville Bews, an independent external SIA specialist who has consulted in the SIA field for over 10 years and has a Ph.D in Sociology (see Appendix E).

1.4. Declaration of Independence

A signed declaration of independence and CV for Candice Hunter of Savannah Environmental (Pty) Ltd is attached in Appendix D.

1.5. Project Overview

Project background and description:

The Ilanga CSP 5 Facility, comprising the already authorised 100MW CSP facility and the proposed 50MW extension, is proposed to utilise the solar parabolic trough technology with a generation capacity of up to 150MW, and energy storage of up to 6 hours (using molten salts technology). The trough system will be comprised of parabolic collectors (i.e. trough-shaped reflectors which focus the solar radiation onto a receiver at its focal point), a receiver tube/heat collection element (i.e. a metal absorber containing the heat transfer fluid surrounded by a glass envelope which absorbs the solar energy received from the parabolic trough), a sun-tracking system (i.e. an electronic control system and associated mechanical drive system used to focus the reflector onto the sun), and support structure (i.e. holds the parabolic trough in accurate alignment with incoming solar radiation while resisting the effects of the wind). The collected heat energy in the heat transfer fluid is used to generate steam through a conventional heat exchanger system that is, in turn, used for electricity generation in a conventional steam turbine and generator. The consilidated150MW Ilanga CSP 5 will have a development footprint of up to 680ha, to be placed within a broader site of ~6000ha and will include the following associated infrastructure:

» Parabolic troughs utilising a heat transfer fluid (HTF).
» Internal access roads.
» Power Plant/Power Island: power island with steam turbine generator, auxiliary boilers, dry cooling and molten salt storage.

» Associated infrastructure: access roads, plant substation, power line, water abstraction point and supply pipeline, water storage tanks, packaged water treatment plant, lined evaporation ponds, and workshop and office buildings.

The above infrastructure will be shared infrastructure for all the proposed projects within the Karoshoek Solar Valley Development. This infrastructure is to be assessed within a separate Basic Assessment process.

Table 4: A detailed description of the farm Matjiesrivier 41

Province	**Northern Cape Province**
District Municipality	Mgcawu District (Siyanda) Municipality
Local Municipality	//Khara Hais Local Municipality
Ward number(s)	14
Nearest town(s)	Upington
Farm name(s) and number(s)	Matjiesrivier 41
Portion number(s)	3
SG Code	C03600000000004100003
Site Co-ordinates (centre of site)	Lat: 28°30'35.32"SLong: 21°30'34.43"E

Locality:

The proposed Ilanga CSP 5 project will be located within Portion 2 of the Farm Matjiesrivier 41, located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. The 50MW Ilanga CSP 5 Project will be constructed over an area of approximately 200ha in extent, adjacent to Site 1.4 (the authorised 100MW CSP site Karoshoek LFTT 2, 100MW Parabolic Trough) within the broader property (see Figure 1).

Construction phase:

This section will provide an overview of the construction phase for the additional 50MW trough plant adjacent to Site 1.4 (Ilanga CSP 5):

» *Duration:* It is estimated that the construction phase for the additional 50MW trough plant is expected to extend over a period of 12-14 months.
» *Capital expenditure:* The total construction capital expenditure associated with the additional 50MW trough plant is estimated to be in the region of R1 billion (2016 rand value). In terms of business opportunities for local companies, expenditure during the construction phases will create business opportunities for the regional and local economy.
» *Employment opportunities and wages:* the additional 50MW trough plant is likely to create approximately ~250-350 employment opportunities, depending on the final design. Of this approximately 60% of the opportunities will be available to low-skilled workers (construction labourers, security staff

etc.), 25% will be available to semi-skilled workers (drivers, equipment operators etc.), and 15% will be available to skilled personnel (engineers, land surveyors, project managers etc.). Majority of low-skilled and semi-skilled opportunities are likely to be available to local workers (approximately 40%). The total wage bill for the construction for the additional 50MW trough plant is estimated to be in the region of R35-50 million (2016 rand value). The injection of income into the area in the form of wages will represent an opportunity for the local economy and businesses in the area.

» *Skills development and training:* The developer has indicated that there will be opportunities for on-site skills development and training for semi-skilled workers during the construction phase.

» *Labour accommodation:* The developer has indicated that no on-site accommodation is envisaged. Most labourers will come from within the local area and will not be housed on site, given the relative proximity of the study area to Upington. However, overnight site worker presence will be limited to security staff; a security team is likely to be present at the construction camp at all times. Labourers and skilled staff from outside the area will be housed off-site within the town of Upington. Approximately 90% of the workers will be bused to site and about 10% would use private vehicles.

» *Transportation of components and equipment:* Transportation of project components and equipment to the proposed study area would be transported using vehicular / trucking transport. The national, secondary and internal access roads will be used to transport all components and equipment required during the construction phase of the facilities. Some of the components (i.e. substation transformer) may be defined as abnormal loads in terms of the Road Traffic Act (Act No. 29 of 1989)[1] by virtue of the dimensional limitations. Typical civil engineering construction equipment will need to be brought to the study area (e.g. excavators, trucks, graders, compaction equipment, cement trucks, etc.) as well as components required for the mounting of the trough plant, construction of the substation and site preparation. The existing gravel access road is located off the N10 approximately 20km east of Upington.

Operational phase:

This section will provide an overview of the operation phase for the additional 50MW trough plant adjacent to Site 1.4 (Ilanga CSP 5):

» *Duration:* CSP trough plants are designed to be operational for at least 20-25 years.

» *Employment*: Full-time operational and maintenance crews would be required for the additional 50MW trough plant. Based on information provided by the developer, the additional 50MW trough plant will create approximately ~15-25

[1] A permit will be required for the transportation of these abnormal loads on public roads.

full-time equivalent employment positions during the operation phase. The employment force during the operational phase will mainly comprise of a skilled workforce. Approximately 26% of the opportunities will be available to low-skilled workers, 13% will be available to semi-skilled workers and 61% will be available to skilled personnel (engineers, land surveyors, project managers etc.). Approximately 30% of the workforce will be sourced from the local area, depending on the skills pool available.

» *Skills development and training:* There will be opportunities for on-site skills development and training for the operation phase.
» *On-site presence*: Trough plants are designed to operate continuously with low maintenance. Regular monitoring and maintenance activities would be required to ensure safe and consistent operation for at least 20-25 years of operation (i.e. a mobile team for maintenance and vegetation control).

Decommissioning phase:

The trough plant infrastructure is anticipated to have a lifespan of approximately 25 years. It is a possibility that the trough facility will be replaced with more modern technology at the end of its lifespan, but this will depend on the need for the facility at the time. Disassembling and replacement activities will require the transport of abnormal loads to and within the site. Decommissioned components will be removed from the site and reused, recycled or disposed of in accordance with regulatory requirements. According to current legislation, infrastructure will have to be removed and the site rehabilitated once final decommissioning has occurred. Decommissioning activities will be required to be undertaken in accordance with the relevant legislation at the time.

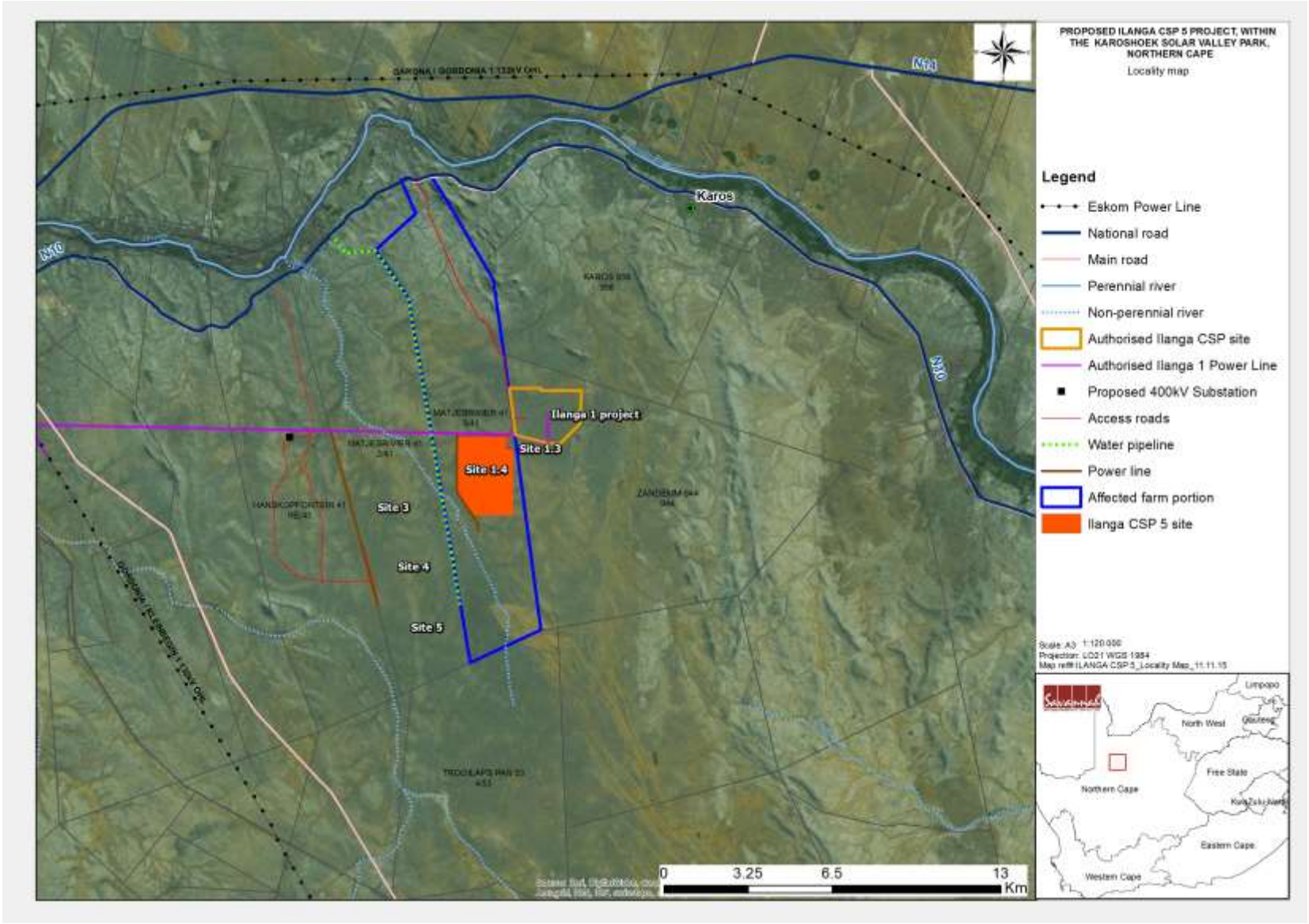

Figure 1: Location of the proposed Ilanga CSP 5 plant (authorised facility and additional 50MW) trough located on Site 1.4 in the Northern Cape Province

2. METHODOLOGY AND APPROACH

2.1. Approach to Study

The main aim for the social report is to determine the social impacts that may arise from the proposed development. The approach used for the SIA study is based on the Western Cape Department of Environmental Affairs and Development Planning Guidelines for Social Impact Assessment (February 2007). These guidelines are based on the international best practice. The key objectives in the SIA process include:

- Describing and obtaining an understanding of the proposed development (type, scale, location), the communities likely to be affected and determining the need and scope of the SIA;
- Collecting baseline data on the current social environment and historical social trends;
- Identifying and collecting data on the Social Impact Assessment variables and social change processes related to the proposed intervention. This requires consultation with affected individuals and communities;
- Assessing and documenting the significance of social impacts associated with the proposed project;
- Assessing the project (including any feasible alternatives) and identifying potential mitigation and enhancement measures;
- Developing an Environmental Management Plan.

2.2. Data Collection

Primary and secondary data sources were utilised to inform the study in aid of the objectives of the study. Primary data sources for the SIA included the following:

- A site visit was undertaken on Tuesday 16 February 2016. Observations were made while on site and within the study area.
- Meetings were arranged and held with key representative stakeholders to collect primary social data (see Table 5). Meetings were held with individuals that were both directly and indirectly associated with the proposed development. Data collection was primarily gathered from meetings held with the impacted landowner, adjacent landowners, and the local and district municipality.
- Consultations with key stakeholders took place on 15 – 19 February 2016. Numerous key stakeholders were visited personally; where face-to-face meetings were not possible, telephonic discussions took place with as many stakeholders as could be reached. Key stakeholders in the area were contacted to advise them of the project and/ or to arrange meetings. Stakeholders that were unable to meet were briefed over the phone on the

background of the project, an overview of the environmental assessment process was provided and social issues / concerns / questions with the proposed development were discussed.

» Key stakeholders were contacted and meeting arrangements were made with key stakeholders during the social consultation process (see Appendix B).
» Email correspondence took place with the key stakeholders. The background information document and the comments and response form was emailed to the stakeholders to provide more detailed information about the project, advise them of the opportunity to comment and to arrange meetings.
» A project specific questionnaire was developed and utilised for the semi-structured meetings (see minutes of meetings in Appendix B). These meetings formed the basis of the primary data collection and assisted with the gathering of baseline information as well as establishing the stakeholder's perceptions, interests and concerns on the proposed development.
» Meetings were held with the following key stakeholders catalogued in Table 5:

Table 5: Stakeholder consultations

Meeting	Details	Notes
Monday 15 February 2016		
I&AP Name: Frikkie Truter	Date: Monday 15 February 2016 Time: 09:30-10:30	*Address:* 52 Mark Street, Upington
Power line landowner Name: Nestor Sterling (NS) Strauss Lentlands Pan (Pty) Ltd Newhaven Trust	Date: 15 February 2016 Time: 11:00-12:00	*Farms:* Vaal Koppies 4/40, 7/40, 8/40, 62/40
Adjacent Landowner Name: Theunis Eksteen	Date: 15 February 2016 Time: 12:30-13:30	*Address:* 14 Murray Avenue, Upington *Farm:* Trooilaps Pan 7/53
Department of Water & Sanitation Name: Shaun Cloete	Date: 15 February 2016 Time: 14:00-15:00	*Address:* Louisvale road, Upingon, 8800
Adjacent landowner Name: Johan Van Der Merwe & Marius Orffer (Future Labour Solutions cc)	Date: 15 February 2016 Time: 15:00-16:00	*Address:* 66 Mark street, upington Farm: Tooilaps Pan RE/53

Meeting	Details	Notes
Adjacent landowner Name: Andre Burger	Date: 15 February 2016 Time: 16:00-16:30	*Farm:* Ezelfontein 1/50
Adjacent landowner Name: Jacobus Burger & Riette Burger	Date: 15 February 2016 Time: 16:30-17:00	*Farm:* Ezelfontein 1/50
Adjacent landowner Name: Koos Burger	Date: 15 February 2016 Time: 17:00-17:30	*Farm:* Ezelfontein 1/50
Power line landowner Name: J.J. Eksteen	Date: 17 February 2016 Time: 15:30-16:30	*Farm:* Vaal Koppies 7/40, 4/40
Thursday 18 February 2016		
//Khara-Hais Local Municipality Ward Councillor Ward 14 Name: James Moya	Date: 18 February 2016 Time: 08:00-08:30	*Address:* Mark Street, Upington
//Khara-Hais Local Municipality Municipal Manager Name: Eric Ngxanga	Date: 18 February 2016 Time: 09:30-10:00	*Address:* Mark Street, Upington
DAFF & DENC Name: Jacoline Mans (DAFF) Samantha De La Fontaine (DENC)	Date: 18 February 2016 Time: 10:30-11:00	*Address:* Louisvale road, Upingon, 8800
Adjacent Landowner Name: Jacobus Spangenberg	Date: 18 February 2016 Time: 11:30-12:00	*Farm:* Trooilaps Pan 15/53
!Kheis Local Municipality Municipal Manager Name: Teresa Scheepers	Date: 18 February 2016 Time: 14:00-14:30	*Address:* 97 Oranje Street, Groblershoop
!Kheis Local Municipality Ward Councillor Ward 1 Name: Andries Diergaardt	Date: 18 February 2016 Time: 15:30-16:30	*Address:* 97 Oranje Street, Groblershoop
Adjacent Landowner Name: Gog & Johan Van Der Colff	Date: 18 February 2016 Time: 16:30-17:30	*Farm:* Trooilaps Pan 20/53
Adjacent Landowner Name: Ellewee van Zyl	Date: 18 February 2016 Time: 17:30-18:30	*Farm:* Rooidraai RE/49 & Farm ERF 943 Karos

Secondary data, mostly collected by means of a desktop study, was gathered and analysed for the purpose of the study. The following documents were examined:

- Project maps;
- A desktop aerial study of the affected area through the use of the latest version of Google Earth Pro 2016;
- The scoping report – to ensure that all the issues have been addressed at the EIA stage of the process;
- The background information document (BID);
- The Karoshoek Solar Valley stakeholder database;
- The 2011 South African Census Survey and the Local Government Handbook;
- Planning documentation such as District Municipality (DM) Integrated Development Plans (IDPs), Spatial Development Framework (SDF) and Environmental Management Framework (EMF) as well as the Local Municipality (LM) IDPs and policies;
- Relevant guidelines, policies and plan frameworks, as outlined in Section 3 of this report;
- Other similar specialist studies and relevant information where there have been cross-cutting issues, such as the EIAs undertaken for previous solar energy facilities in the Northern Cape Province and other parts of South Africa;
- Literature reviews of social issues associated with solar energy facilities.

Information that was relevant to the project was identified and assessed from these sources within the context of the pre-construction, construction, operational and decommissioning phases of the proposed project. The evaluation of the social impacts involved the assessment of both quantitative and qualitative data and the use of professional judgement. Quantitative data collected through national sources or local level interviews is assessed and analysed with sociological techniques (see Figure 2). However, qualitative data collected using the same methodology is more open to interpretation. In addition, what is a major impact to one person, one household or one community may be a minor impact to another according to specific personal circumstances. Hence, the results do not lend themselves easily to being ranked or assessed in exactly the same way as environmental data.

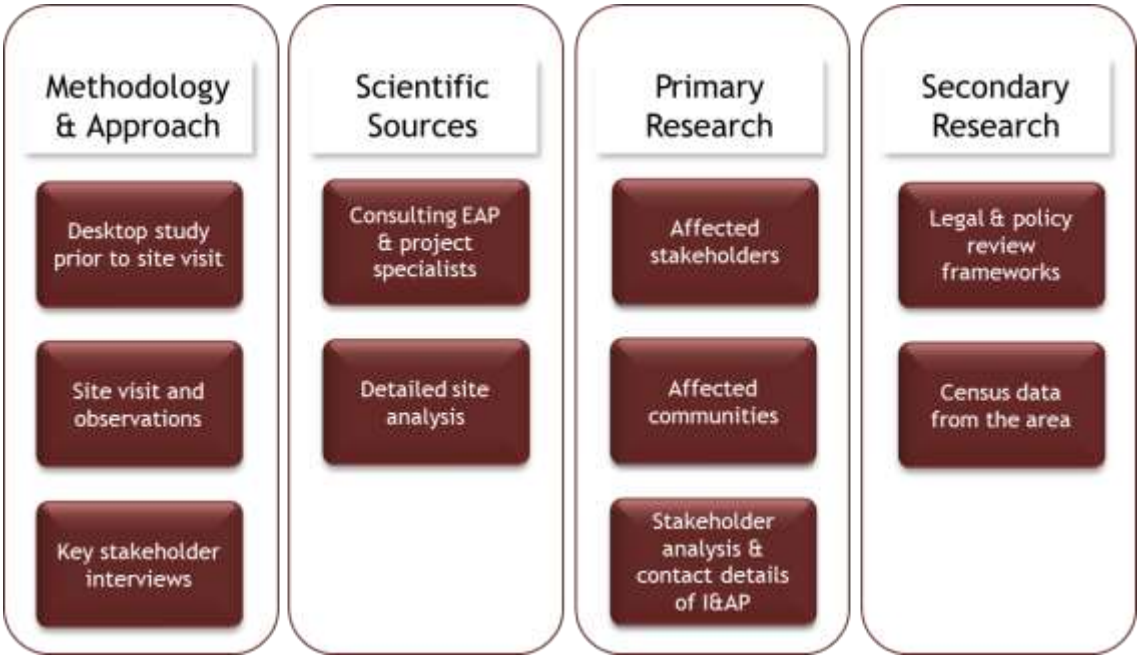

Figure 2: Research methodology and sources diagram

2.3. Public Participation Process

The Public Participation Process (PPP) played an important part in the EIA process. The process of stakeholder disclosure consultation is an ongoing overarching requirement that applies to the entire SIA process, and where possible, the PPP and SIA processes have been integrated. Effective consultation with stakeholders is important to understand the concerns and requirements of affected communities and ensuring their participation in the formulation and refinement of the project design. Relevant stakeholders are informed about the proposed project and thereafter are able to register and participate in the environmental impact assessment process. The communications during the PPP and written submission of comments have been reviewed and issues raised through this process have been incorporated into the SIA where relevant. The PPP involves raising awareness of the proposed development by providing information about the proposed project to all interested and affected parties and providing an opportunity for these parties to raise any issues and/or concerns regarding the project. Consultations were of critical importance in gaining insights into the key environment and social issues and concerns of communities and other stakeholders, and in aiding the development of potential strategies for addressing these impacts.

2.4. Impact Evaluation Method

This section provides an overview of the method used to identify and evaluate the social impacts for the construction and operation phase of the solar energy facility. The main objective is to determine the social risks and opportunities, and

positive and adverse impacts of the solar energy facility. The methodology below allows for the evaluation of the overall effect of a proposed activity on the social environment. This includes an assessment of the significant direct, indirect, and cumulative impacts. The significance of social impacts is to be assessed by means of the criteria of extent (scale), duration, magnitude (severity), probability (certainty) and direction (negative, neutral or positive).

The **nature** of the impact refers to the causes of the effect, what will be affected and how it will be affected.

Extent (E) of impact
Local (site or surroundings) to Regional (provincial)
Rating = 1 (low) to 5 (high).

Duration (D) rating is awarded as follows:
Whether the life-time of the impact will be:

- Very short term – up to 1 year: Rating = 1
- Short term – >1 – 5 years: Rating = 2
- Moderate term - >5 – 15 years: Rating = 3
- Long term – >15 years: Rating = 4
  - The impact will occur during the operational life of the activity, and recovery may occur with mitigation (restoration and rehabilitation).
- Permanent – Rating = 5
  - The impact will destroy the ecosystem functioning and mitigation (restoration and rehabilitation) will not contribute in such a way or in such a time span that the impact can be considered transient.

Magnitude (M) (severity):
A rating is awarded to each impact as follows:

- Small impact – the ecosystem pattern, process and functioning are not affected.
  Rating = 0
- Minor impact - a minor impact on the environment and processes will occur.
  Rating = 2
- Low impact - slight impact on ecosystem pattern, process and functioning.
  Rating = 4
- Moderate intensity – valued, important, sensitive or vulnerable systems or communities are negatively affected, but ecosystem pattern, process and functions can continue albeit in a slightly modified way.
  Rating = 6
- High intensity – environment affected to the extent that the ecosystem pattern, process and functions are altered and may even temporarily cease. Valued, important, sensitive or vulnerable systems or communities are substantially affected.

Rating = 8

» Very high intensity – environment affected to the extent that the ecosystem pattern, process and functions are completely destroyed and may permanently cease.
Rating = 10

Probability (P) (certainty) describes the probability or likelihood of the impact actually occurring, and is rated as follows:

» Very improbable – where the impact will not occur, because of either design or historic experience.
Rating = 1

» Improbable – where the impact is unlikely to occur (some possibility), either because of design or historic experience.
Rating = 2

» Probable - there is a distinct probability that the impact will occur (<50% chance of occurring).
Rating = 3

» Highly probable - most likely that the impact will occur (50 – 90% chance of occurring).
Rating = 4

» Definite – the impact will occur regardless of any prevention or mitigating measures (>90% chance of occurring).
Rating = 5

Significance (S) - Rating of low, medium or high. Significance is determined through a synthesis of the characteristics described above where:
S = (E+D+M)*P

The **significance weighting** should influence the development project as follows:

» Low significance (significance weighting: <30 points)
If the negative impacts have little real effects, it should not have an influence on the decision to proceed with the project. In such circumstances, there is a significant capacity of the environmental resources in the area to respond to change and withstand stress and they will be able to return to their pre-impacted state within the short-term.

» Medium significance (significance weighting: 30 – 60 points)
If the impact is negative, it implies that the impact is real and sufficiently important to require mitigation and management measures before the proposed project can be approved. In such circumstances, there is a reduction in the capacity of the environmental resources in the area to withstand stress and to return to their pre-impacted state within the medium to long-term.

» High significance (significance weighting: >60 points)
The environmental resources will be destroyed in the area leading to the collapse of the ecosystem pattern, process and functioning. The impact strongly influences the decision whether or not to proceed with the project. If mitigation cannot be effectively implemented, the proposed activity should be terminated.

2.5. Limitations and Assumptions

The following assumptions and limitations were relevant:

» The 2011 Census is the most recent source of official statistics and this has been used for generating a lot of the information provided in the baseline profile of the study area. In addition to this, the latest District and Local Municipality policies and plans were utilised in generating information. While the data does provide useful information, it should be noted that this data may now be out of date to some degree and may no longer accurately reflect the current socio-economic profile.
» This study was done with the information available to the specialist at the time of executing the study, within the available timeframes. The sources consulted are not exhaustive, and additional information which might strengthen arguments, contradict information in this report, and/or identify additional information might exist. The specialist did try to take an evidence-based approach in the compilation of this report and did not intentionally exclude scientific information relevant to the assessment.
» A limited amount of finalised project details from the project developer means that some of the actual project projections may be higher or lower than estimated in this report.
» It was assumed that the motivation for, planning and feasibility study of the project were undertaken by the developer with integrity, and that information provided to date by the project developer, the independent environmental assessment practitioner and the public participation consultant was accurate.

3. LEGISLATION AND GUIDELINES

A review of the policy environment provides valuable insight into the government's priorities and plans. The review of the relevant planning and policy documents was undertaken as a part of the SIA process. The key documents reviewed included:

National Policies:

- The Constitution of the Republic of South Africa (Act 108 of 1996)
- The National Environmental Management Act (107 of 1998) (NEMA)
- The National Energy Act (34 of 2008)
- National Development Plan 2030
- National Climate Change Response Green Paper (DEA, 2010)
- White Paper on Energy Policy of the Republic of South Africa (1998)
- White Paper on Renewable Energy of the Republic of South Africa (2003)
- National Integrated Resource Plan South Africa (2010-2030)
- Strategic Infrastructure Projects (SIPs)

Provincial Policies:

- Northern Cape Provincial Development and Resource Management Plan / Provincial Spatial Development Framework (PSDF) (2012)
- Northern Cape Provincial Growth and Development Strategy (PGDS) (2011)
- Northern Cape Provincial Local Economic Development (LED) Strategy (2009)

Local and District Policies:

- Siyanda (ZF Mgcawu) District Municipality Growth and Development Strategy (2007)
- Siyanda (ZF Mgcawu) District Municipality Integrated Development plan (IDP) (2013-2014)
- //Khara Hais Local Municipality Integrated Development Plan (IDP) (2012-2017)
- //Khara Hais Local Municipality Spatial Development Framework (SDF) (2009)

Solar Energy Policies:

- Solar Energy Technology Roadmap (2013)
- Renewable Energy Development Zones (REDZs)

The legislative and policy context plays an important role in identifying and assessing the potential social impacts associated with a proposed development. In this regards a key component of the SIA process is to assess the proposed development in terms of its suitability with regards to the key planning and policy documents. A brief overview of the most relevant policies, plans and guidelines, in relation to the proposed development are discussed in this section below.

3.1. National Policies

Any project contributing to the objectives mentioned within the national policies discussed briefly below could be considered strategically important for the nation. The review of the policy environment suggests that utilisation of renewable energy sources in the country is considered to be an integral means of reducing carbon footprint of South Africa, diversifying the national economy, and reducing poverty. As the project would contribute renewable energy supply to provincial and national targets set out and supported within these national policies, it is considered that the proposed development fits within the national policy framework. A brief review of the most relevant national policies is provided below.

3.1.1. The Constitution of the Republic of South Africa (Act 108 of 1996)

The Constitution of the Republic of South Africa (Act 108 of 1996) has been adopted as the supreme law of the country and forms the foundations for a democratic society in which fundamental human rights are protected. In terms of the environment, Chapter 2 Section 24 states that everyone has a right:

(a) "To an environment that is not harmful to their health or well-being; and
(b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

i. *prevent pollution and ecological degradation;*
ii. *promote conservation; and*
iii. *secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."*

Chapter 7 defines the role of local government in its community. Five objectives of local government are described in Chapter 7 Section 152:

- to provide democratic and accountable government for local communities;
- to ensure the provision of services to communities in a sustainable manner;
- to promote social and economic development;
- to promote a safe and healthy environment; and
- to encourage the involvement of communities and community organisations in the matter of local government.

The Constitution outlines the need to promote social and economic development. An SIA is a requirement for sustainable development as it assesses the social impacts associated with development and aims towards safeguarding people's future well-being. The proposed solar energy facility aims to increase the economic opportunities of the area by providing more job opportunities for the local community. The development will also aid in promoting a healthy environment through the provision of clean, renewable energy.

3.1.2. The National Environmental Management Act (107 of 1998) (NEMA)

NEMA is the legislation setting out the framework for environmental management in South Africa. The Act promotes cooperative environmental governance and establishes principles for decision making on matters affecting the environment. An overarching principle in Chapter 1 emphasises that development must be socially, environmentally and economically sustainable.

The EIA Regulations (Government Notices R982-985 of December 2014) define an environmental impact assessment as 'the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of that application'. The SIA aims to fulfil these requirements by providing all social information relevant to the consideration of the project.

3.1.3. The National Energy Act (34 of 2008)

One of the objectives of the National Energy Act is to promote diversity of supply of energy and its sources. In this regard, the preamble makes direct reference to renewable resources, including solar:

> *"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, taking into account environmental management requirements; to provide for increased generation and consumption of renewable energies (Preamble)."*

The National Energy Act aims 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, taking into account environmental management requirements and interactions amongst economic sectors, as well as matters relating to renewable energy. The Act provides the legal framework which supports the development of renewable energy facilities for the greater environmental and social good.

3.1.4. Department of Energy Strategic Plan 2015-2020

The Department of Energy (DoE) is mandated to ensure secure and sustainable provision of energy for socio-economic development. This is achieved by developing an Integrated Resource Plan (IRP) for the entire energy sector and promoting investment in accordance with the IRP which focuses on energy. The DoE envisions the pursuance of the aforementioned mandate through the following strategic statements:

» *Aim*: Formulate energy policies, regulatory frameworks and legislation, and oversee their implementation to ensure energy security, promotion of environmentally-friendly energy carriers and access to affordable and reliable energy for all South Africans.
» *Vision*: Improving our energy mix by having 30% clean energy by 2025. The vision of the DoE will be realised by the following factors as depicted in Figure 3 below.
» *Mission*: To regulate and transform the energy sector for the provision of secure, sustainable and affordable energy.

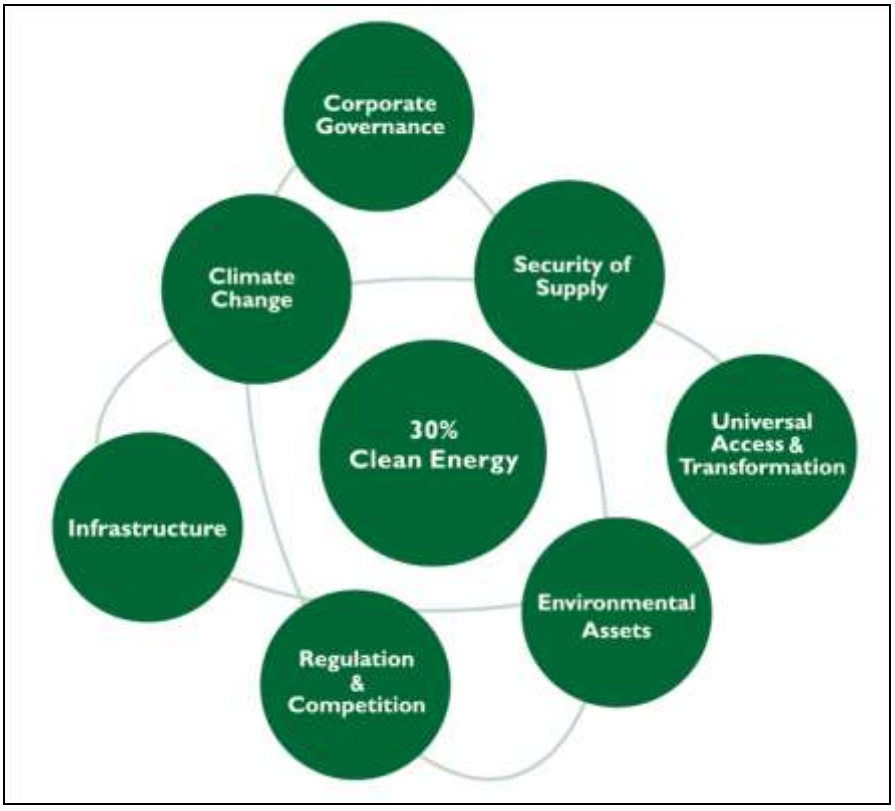

Figure 3: Factors affecting the DoE's 2025 vision of 30% clean energy by 2025

The DoE Strategic Plan 2015-2020 Programme 6 on Clean Energy focusses on managing and facilitating the development and implementation of clean and renewable energy initiatives as well as Energy Efficiency Demand-Side Management (EEDSM). Sub-programmes within Programme 6 include: energy efficiency, renewable energy, climate change and designated national authority.
The proposed CSP facility will contribute towards the DoE target of implementing 30% clean energy by 2025.

3.1.5. National Development Plan 2030

The National Development Plan aims to eliminate poverty and reduce inequality by 2030. Given the complexity of national development, the plan sets out a number of interlinked priorities, some of which include:

- » Bringing about faster economic growth, higher investment and greater labour absorption.
- » Focusing on key capabilities of people and the state.
- » Building a capable and developmental state.

Enabling milestones include:

- » Increase employment from 13 million in 2010 to 24 million in 2030.
- » Establish a competitive base of infrastructure, human resources and regulatory frameworks.
- » Ensure that skilled, technical, professional and managerial posts better reflect the country's racial gender and disability makeup.
- » Increase the quality of education.
- » Provide affordable access to quality health care.
- » Establish effective, safe and affordable public transport.
- » Produce sufficient energy to support industry at competitive prices, ensuring access for poor households, while reducing carbon emissions per unit of power by about one-third.
- » Ensure that all South Africans have access to clean running water in their homes.
- » Make high-speed broadband internet universally available at competitive prices.
- » Realise a food trade surplus, with one-third produced by small-scale farmers or households.

The National Development Plan aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The proposed solar energy facility will assist in reducing carbon emissions targets and creating jobs in the local area, as well as assist in creating a competitive infrastructure based on terms of energy contribution to the national grid.

3.1.6. National Climate Change Response White Paper (2011)

South Africa’s response to climate change has two objectives: 1) to effectively manage the inevitable climate change impacts through interventions that build and sustain South Africa’s social, economic and environmental resilience and emergency response capacity; and 2) to make a fair contribution to the global efforts to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enabled economic, social and environmental development to proceed in a sustainable manner. The paper proposes a number of approaches

dealing with climate change impacts with respect to selected sectors. Energy, in this context, is considered to be one of the key sectors that provides for possible mitigations to address climate changes. The White Paper provides support for the proposed development of a renewable energy facility 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.

3.1.7. White Paper on the Energy Policy of the Republic of South Africa (1998)

The White Paper on Energy Policy states the need to improve the energy security in the country by means of expanding the energy supply options. This implies the increase in the use of renewable energy and encouraging new entries into the generation market. The support for the renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly solar and wind and that renewable applications are in fact the least cost energy service in many cases; more so when social and environmental costs are taken into account. Government policy on renewable energy is thus concerned with meeting the following challenges:

- » Ensuring that economically feasible technologies and applications are implemented;
- » Ensuring that an equitable level of national resources are invested in renewable technologies, given their potential and compared to investments in other energy supply options; and,
- » Addressing constraints on the development of the renewable industry.

The policy states that the advantages of renewable energy include minimal environmental impacts during operation in comparison with traditional supply technologies, generally lower running costs, and high labour intensities. Disadvantages include: higher capital costs in some cases; lower energy densities; and lower levels of availability, depending on specific conditions, especially with sun and wind based systems. Nonetheless, renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. Therefore the policy supports the advancement of renewable energy sources at ensuring energy security through the diversification of supply, which is in line with the proposed solar energy facility.

3.1.8. White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)

The White Paper on Renewable Energy Policy supplements the Government's overarching policy on energy as set out in its White Paper on the Energy Policy of the republic of South Africa (DME, 1998). The White Paper on Renewable Energy

Policy recognises the significance of the medium and long-term potential of renewable energy. The main aim of the policy is to create the conditions for the development and commercial implementation of renewable technologies. The position of the White Paper on Renewable Energy is based on the integrated resource planning criterion of:

> *"Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options."*

The White Paper on Renewable Energy sets out Government's vision, policy principles, strategic goals and objectives for promoting and implementing renewable energy in South Africa. South Africa relies heavily on coal to meet its energy needs because it is well-endowed with coal resources in particular. However South Africa is endowed with renewable energy resources that can be sustainable alternatives to fossil fuels, but which have so far remained largely untapped. This White Paper fosters the uptake of renewable energy in the economy and has a number of objectives that include: ensuring that equitable resources are invested in renewable technologies; directing public resources for implementation of renewable energy technologies; introducing suitable fiscal incentives for renewable energy and; creating an investment climate for the development of renewable energy sector. The White Paper on Renewable Energy of 2003 set a target of 10 000GWh to be generated from renewable energy by 2013. The target was reviewed during the renewable energy summit of 2009 held in Pretoria. The summit raised the issue over the slow implementation of renewable energy projects and the risks to the South African economy of committing national investments in the energy infrastructure to coal technologies. Other matters that were raised include potential large scale roll out of solar water heaters and enlistment of Independent Power Producers to contribute to the diversification of the energy mix. The objectives of the White Paper on Renewable Energy are considered in six focal areas, namely: financial instruments, legal instruments, technology development, awareness raising, capacity building and education, and market based instruments and regulatory instruments. The policy supports the investment in renewable energy facilities as they contribute towards ensuring energy security through the diversification of energy supply, reducing GHG emissions and the promotion of renewable energy sources.

3.1.9. National Integrated Resource Plan for South Africa (2010-2030)

The primary objective of the Integrated Resource Plan (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. However, the IRP also serves as input to other planning functions, *inter alia* economic development, and funding, and environmental and social policy formulation. The accuracy of the IRP is to be

improved by regular reviews and updates. The National Integrated Resource Plan 2010 projected that an additional capacity of up to 56 539MW of generation capacity will be required to support the country's economic development and ensure adequate reserves over the next twenty years. The required expansion is more than two times the size of the existing capacity of the system. A significant component of the plan, amongst others, is the expansion of the use of renewable energy sources to reduce carbon emissions involved in generating electricity. In this regard, the IRP supports the development of 17GW of renewable energy generation by 2030. The proposed solar energy facility contributes to the targets in this policy.

3.1.10. Strategic Infrastructure Projects (SIPs)

The Presidential Infrastructure Coordinating Committee (PICC) are integrating and phasing investment plans across 18 Strategic Infrastructure Projects (SIPs) which have five core functions: to unlock opportunity, transform the economic landscape, create new jobs, strengthen the delivery of basic services, and support the integration of African economies. A balanced approach is being fostered through greening of the economy, boosting energy security, promoting integrated municipal infrastructure investment, facilitating integrated urban development, accelerating skills development, investing in rural development, and enabling regional integration.

SIP 8 of the energy SIPs supports the development of the solar energy facility which is as follows:

» *SIP 8: Green energy in support of the South African economy:*
Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities.

3.2. Provincial Policies

A brief review of the most relevant provincial policies is provided below. The proposed development is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

3.2.1. Northern Cape Provincial Development and Resource Management Plan / Provincial Spatial Development Framework (PSDF) (2012)

As part of the development planning process that underlies the formulation of the Northern Cape Provincial Spatial Development Framework (PSDF). The PSDF not only gives effect to national spatial development priorities but it also sets out a

series of provincial, district and local development priorities for the space economy of the Northern Cape.

The Northern Cape PSDF is premised upon and gives effect to the following five strategic objectives of the National Strategy for Sustainable Development (NSSD 2011-2014):

» Enhancing systems for integrated planning and implementation
» Sustaining our ecosystems and using natural resources efficiently
» Towards green economy
» Building sustainable communities
» Responding effectively to climate change

The PSDF makes reference to the need to ensure the availability of energy. Under the economic development profile of the Northern Cape PSDF, the White Paper on Renewable Energy Policy (2003) discussed a target of 10 000GWh of energy to be produced from renewable energy sources. It was also stated that the total area of high radiation in South Africa amounts to approximately 194 000km^2, of which the majority falls within the Northern Cape. It is estimated that, if the electricity production per km^2 of mirror surface in solar thermal power stations were 30.2MW and only 1% of the area of high radiation were available for solar generation, then generation potential would equate to approximately 64GW. A mere 1.25% of the area of high radiation could thus meet projected South African electricity demand in 2025 (80GW). It was also stated in the Northern Cape PSDF that the implementation of large Concentrating Solar Power (CSP) plants has been proposed as one of the main contributors to reducing greenhouse gas emission in South Africa. The Northern Cape PSDF also discusses economic development and that it typically responds to the availability of environmental capital (e.g. water, suitable agricultural soil, mining resources etc.) and infrastructural capital (e.g. roads, electricity, bulk engineering services etc.); over time this has resulted in the distinct development regions and corridors. The development corridors of the Northern Cape are demonstrated in Figure 4 below, with the Solar Corridor situated in the Northern Cape represented in yellow. One of the policies in the NC PSDF is for renewable energy sources (e.g. Wind, solar, biomass, and domestic hydro-electricity generation) to comprise 25% of the province's energy capacity by 2020; thereby the proposed development will assist in contributing to the province's renewable energy capacity.

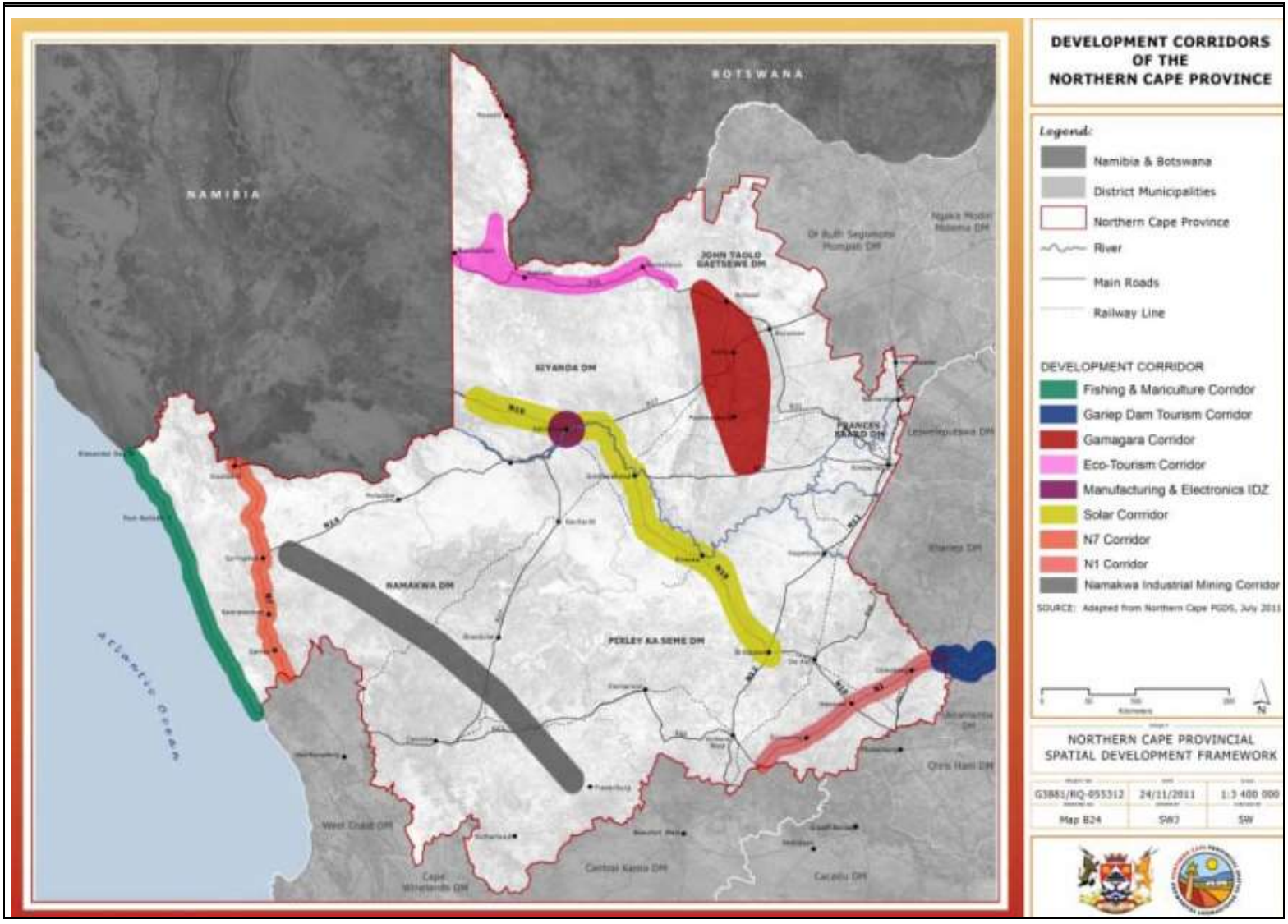

Figure 4: Development regions and corridors of the Northern Cape (Source: Northern Cape PSDF 2012)

3.2.2. Northern Cape Provincial Growth and Development Strategy (PGDS) (2011)

The Northern Cape Provincial Growth and Development Strategy (PGDS) sets the tone for development planning and outlines the strategic planning direction in the province. Planning for the promotion of economic growth and social development lies at the core of the Government's responsibility to provide a better life for the nation. It is essential to ensure that planning is integrated across disciplines, coordinated within and between different planning jurisdictions and aligned with the budgeting processes of national, provincial and local government. The core purpose of the Northern Cape PGDS is to enable stakeholders from public and private sectors, together with labour and civil society, to determine a plan for sustainable growth and development of the Northern Cape. The main objectives set by the Northern Cape PGDS for development planning in the province are as follows:

» Promoting growth, diversification and transformation of the provincial economy
» Poverty reduction through social development
» Developing requisite levels of human and social capital
» Improving the efficiency and effectiveness of governance and other development institutions
» Enhancing infrastructure for economic growth and social development

The Northern Cape PGDS aims at building a prosperous, sustainable, growing provincial economy to eradicate poverty and improve social development. The proposed solar energy facility will contribute to growth and development of the province by expanding the economic base, diversifying the economy and creating employment opportunities, which will contribute towards reducing poverty.

3.2.3. Northern Cape Provincial Local Economic Development (LED) Strategy (2009)

The Northern Cape Local Economic Development (LED) strategy is intended to build a shared understanding of LED in the province and put into context the role of local economies in the provincial economy. It seeks to mobilise local people and local resources in an effort to fight poverty. The Northern Cape LED strategy investigated the options and opportunities available to broaden the local economic base of the province in order to promote the creation of employment opportunities and the resultant spin-off effects throughout the local economy. Areas of opportunity include:

» Livestock products
» Game farming
» Horticulture
» Agriculture

» Ago-related industries
» Tourism
» Manganese and iron Ore
» Beneficiation of minerals
» Renewable energy

The purpose of the LED is to build up the economic capacity of a local area to improve its economic future and quality of life for all. The LED provides local municipalities with leadership and direction in policy making, in order to administer policy, programmes and projects, and to be the main initiator of economic development programmes through public spending. It is noted in the LED that renewable energy is an area of opportunity to broaden the local economic base and promote the creation of employment opportunities as well as local economy spin-off effects.

3.3. District and Local Municipalities Policies

These strategic policies at the district and local level have similar objectives for the respective areas, namely to accelerate economic growth, create jobs, uplift communities and alleviate poverty. The proposed development is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor. The ZF Mgcawu District Municipality (ZFMDM) was previously known as Siyanda District Municipality (the name was changed on 1 July 2013, however the latest policies still refer to the ZFMDM as Siyanda District Municipality).

3.3.1. Siyanda (ZF Mgcawu) District Municipality Growth and Development Strategy (2007)

The Siyanda District Growth and Development Strategy (Siyanda DGDS) has a longer range planning horizon, and thus focusses on the short, medium and long term. The Siyanda DGDS emphasises development partnerships with other stakeholders, such as national, provincial government, the private sector, labour and the civil society, and it acts as a platform for targeted strategic interventions in terms of the following overarching strategic priorities/objectives/focus areas:

» To encourage economic growth and development, thereby making the economy of Siyanda nationally and globally competitive and more focused;
» To establish local government structures that will ensure democratic, responsible and equitable governance, as well as effective service delivery;
» To manage the physical integration of the constituent municipalities and their comprising towns;
» To ensure the communities well-being by addressing poverty and making essential services available, accessible and affordable;

» To ensure a safe and secure environment by making community safety services both available and accessible
» To enhance Siyanda's provincial and national status as the destination of choice for investment and access to Africa;
» To care for the natural and cultural resources by preserving, utilising and enhancing them.

The overarching direction of the Siyanda DGDS articulates a vision for economic growth and development, social and human development, justice and crime prevention as well as good governance. The proposed development will contribute to economic growth and development, which will in turn help eradicate poverty through job creations in the region, which is in line with the Siyanda DGDS.

3.3.2. Siyanda (ZF Mgcawu) District Municipality Integrated Development Plan (IDP) (2013-2014)

The Siyanda District Municipality IDP has a vision to provide basic services to all in the municipality. The main mission of the IDP is to enhance economic development for the benefit of the community of the district area. The strategic and development objectives of the IDP include:
» To monitor and determine the housing backlogs in the district as well as to inform the public on housing information;
» To assess and provide targeted support improving institutional capacity and service delivery capabilities of local municipalities;
» To promote environmental health and safety of communities in the district through the proactive prevention, mitigation, identification and management of environmental health services, fire and disaster risks;
» To promote safety of communities in the district through the proactive prevention, mitigation, identification and management of fire and disaster risks;
» To facilitate the development of sustainable regional land use, economic, spatial and environmental planning frameworks that will support and guide the development of a diversified, resilient and sustainable district economy.

The proposed development will contribute to employment creation and economic growth, which in turn will have a positive multiplier effect on the local area through income expenditure, therefore supporting the Siyanda IDP.

3.3.3. //Khara Hais Local Municipality Integrated Development Plan (IDP) (2012-2017)

Ten Key Priority Issues (KPIs) were identified based on the challenges faced by the municipality. These KPIs were linked to the municipality's eight Key

Performance Areas (KPA's) that is in line with the six National Key Focal Areas and the development objectives of the municipality.

KPA 1: Economic Growth and Development (Focal Area 4: LED)

Development objective(s):

- » Graduate people out of poverty by facilitating development and empowerment initiatives in order to create sustainable job opportunities
- » Market, develop and co-ordinate tourism in //Khara Hais
- » Create an environment for business establishment and support initiatives (i.e. increase in the number of businesses; entrepreneurial support)
- » Promote external investment opportunities in sectoral development (i.e. investment activities; entrepreneurial business support program)

KPA 2: Social and Community Development (Focal Area 5: Good Governance: Public Participation, labour, IGR etc.)

Development objective(s):

- » Facilitate and ensure the development and empowerment of the poor and most vulnerable people through the implementation of special programmes (i.e. gender, elderly, youth and disabled)
- » Facilitate the development of sustainable land use, economic, spatial and environmental planning frameworks that will support and guide the development of a diversified, resilient and sustainable economy
- » Provision of sustainable human settlement (housing).
- » Provide equal access to sport, park, recreational facilities and other public amenities to all residents.

KPA 3: Physical Infrastructure and Energy Efficiency (Focal Area 3: Service Delivery and Infrastructure Planning)

Development objective(s):

- » Invest in new and existing infrastructure in order to extend the lifespan of municipal infrastructure (incl. roads; storm water, electricity; water; sanitation; public places, etc.)

KPA 4: Health, Safety and Environment (Focal Area 6: Institutional Arrangements)

Development objective(s):

- » Pro-active prevention, mitigation, identification and management of environmental health, fire and disaster risks.
- » Provide safety to communities through law enforcement services and through legislative requirements

KPA 5: Governance and Stakeholder Participation (Focal Area 5: Good Governance: Public Participation, labour, IGR etc. and Focal Area 6: Institutional Arrangements)

Development objective(s):

- » Promote stakeholder participation through regular interaction with Stakeholders (i.e. IDP/Budget/PM Representative Forum; Ward Committees; LED Forum; IGR Forum and other spheres of governance)

» Facilitate the establishment of good governance practices (i.e. Audit Committee; Performance Audit Committee; Policies and By-laws; Oversight Committees – Internal and external)

KPA 6: Services and Customer Care (Focal Area 2: Financial Planning and Budgets; Focal Area 3: Service Delivery and Infrastructure Planning; Focal 5: Good Governance: Public Participation, labour, IGR etc. and Focal Area 6: Institutional Arrangements)

Development objective(s):

» Promote and improve public relations through servicing customers with dignity and care.
» Provide quality basic services to all communities within the municipality (i.e. electricity; water; sanitation; refuse)
» Facilitate and ensure the development and empowerment of the poor and most vulnerable people through the implementation of special programmes (Gender, elderly, youth and disabled)

KPA 7: Institutional Transformation (Focal Area 6: Institutional Arrangement)

Development objective(s):

» Aligning institutional arrangements in order to provide an effective and efficient support service in order to deliver on organisational objectives

KPA 8: Financial Sustainability (Focal Area 2: Financial Planning and Budgets)

Development objective(s):

» Enable and improve financial viability and management through well-structured budget processes, financial systems, and MFMA compliance (i.e. promote good budget and fiscal management; unqualified audits, etc.)

Key constraints/problems/issues in terms of the development of //Khara Hais Municipality include a shortage of job opportunities and job creation in the area. The natural resource base and economy does not have the capacity to support the total population, forcing the labour force to seek employment opportunities outside of the Municipality (e.g. Kimberley), etc. Furthermore low levels of income obtained in the area imply low levels of buying power and, therefore, few opportunities for related activities such as trade. The proposed project will have minor benefits to the local area through economic benefits such as short term employment opportunities.

3.3.4. //Khara Hais Spatial Development Framework (SDF) 2009

The main access routes to //Khara Hais Municipality are the national roads (N14) via Pofadder/Kakamas in the west, the N10 via Prieska in the south and the N14 via Kuruman. Regional roads include the R27 via Kenhardt in the south and the R360 from the north via the Kgalagadi Transfrontier Park. One of the six primary spatial planning categories adopted for /Khara Hais that relates to the proposed project is Category F (Surface infrastructure and buildings)- All surface

infrastructure and building including roads, railway lines, power lines, communication structures etc. Activity corridors are important structural elements focused on the:
(i) Promotion of social integration,
(ii) Increasing residential and business densities,
(iii) Enhancing accessibility of economic and social opportunities; and
(iv) Creating high-quality urban environments through urban renewal and intensive landscaping.

Policy guidelines for land use outside of the urban edge are described within Volume 2, pages 27-29 of the SDF, 2009:
Policy and standard application guidelines exist in respect of the rezoning of agricultural land. The key objective of these guidelines and policy is to prevent fragmentation of high potential agricultural land. This is also a fundamental objective of bioregional planning, which recognises that the protection and appropriate management of high potential agricultural land are imperative for sustainable development.

The SDF states that for //Khara Hais Municipality to consider non-agricultural development to be undertaken on SPC C areas (Agricultural land), applicants have to provide assurance that such development would not fragment high potential agricultural land and that it would significantly support the over-arching objective of environmental sustainability. The proposed development must, therefore, imply a direct, or indirect, positive impact on, for example, regional tourism, agriculture, environmental conservation and the interests of previously disadvantaged people.

The proposed development will have positive economic contributions in the form employment opportunities that can be created for previously disadvantaged people within the local area during construction phase if the social environmental management programme (EMPr) is followed by EPC contractors and the proponent.

3.4. Solar Energy Policies

3.4.1. Solar Energy Technology Roadmap 2013

Diffusion of renewable energy, generally, and solar technology, specifically, in South Africa aims to address the government's desire to aggressively integrate renewable energy technologies into the national energy mix to reduce the country's carbon emissions levels, to help address its growing electricity generation needs, and its industrial heat needs (DEA draft integrated Energy planning report, 2012). The use of solar radiation 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 will contribute to South Africa's electricity market which has, to date, been heavily dominated by coal-based power generation. The advancement of renewable energy is a priority for South Africa as the government has set a goal of generating 17GW renewable electricity by 2030, as part of the IRP 2010. Furthermore, recent policy highlights the desirability of clean, green energy and solar generated energy will play a significant role in reaching these quotas.

3.4.2. Renewable Energy Development Zones (REDZs)

The Department of Environmental Affairs (DEA) has committed to contribute to the implementation of the National Development Plan and National Infrastructure Plan by undertaking Strategic Environmental Assessments (SEAs) to identify adaptive processes that streamline the regulatory environmental requirements for Strategic Integrated Projects (SIPs) while safeguarding the environment. The wind and solar photovoltaic (PV) SEA was accordingly commissioned by DEA in support of SIP 8, which aims to facilitate the implementation of sustainable green energy initiatives (CSIR, 2014).

This SEA identifies areas where large scale wind and solar energy facilities can be developed in terms of SIP 8 and in a manner that limits significant negative impacts on the environment, while yielding the highest possible socio-economic benefits to the country. These areas are referred to as Renewable Energy Development Zones (REDZs). The REDZs also provide priority areas for investment into the electricity grid. Suitable wind and solar development should still be promoted across the country and any proposed development must be evaluated on its own merit. The wind assessment domain for this first iteration of the SEA is based on the Wind Atlas for South Africa (WASA) coverage available at the time of commencing the SEA (i.e. parts of Northern Cape, Western Cape and Eastern Cape provinces). The solar assessment domain was informed by the location of the majority of existing solar project applications at the commencement of the SEA and includes the five provinces of Northern Cape, Western Cape, Eastern Cape, Free State, and North West. The assessment of these areas led to the identification of eight proposed REDZs with a combined size of approximately 80 000 km^2 and comprising about 17 000 farm portions (see Figure 5).

Figure 5: Renewable Energy Development Zones (REDZs) Focus Areas in South Africa (Source: CSIR)

Renewable Energy Development Zones (REDZs) are geographical areas;

» In which clusters (several projects) of wind and solar development will have the lowest negative impact on the environment while yielding the highest possible social and economic benefit to the country;
» That are widely agreed to have strategic importance for wind and solar development;
» Where the environmental and other authorisation processes have been aligned and streamlined based on scoping level pre-assessments and clear development requirements; and
» Where proactive and socialised investment can be made to provide time efficient infrastructure access

In the Statement on Cabinet Meeting of 17 February 2016 the cabinet approved the gazetting of Renewable Energy Development Zones (REDZ). The aim of the zones are to streamline the regulatory process, identifying geographical areas where wind and solar Photovoltaic technologies can be incentivised and where intense grid expansion can be directed. These REDZ will ensure a transition to a low carbon economy, accelerating infrastructure development and contributing to a more coherent and predictable regulatory framework.

The proposed site for the Karoshoek Solar valley development falls within the REDZ in the Northern Cape Province (REDZ Zone 7, see Figure 6), which is an area identified as having strategic importance for solar development. The site is therefore considered to be ideally situated for the proposed development of the authorised and proposed additional 50MW CSP facility.

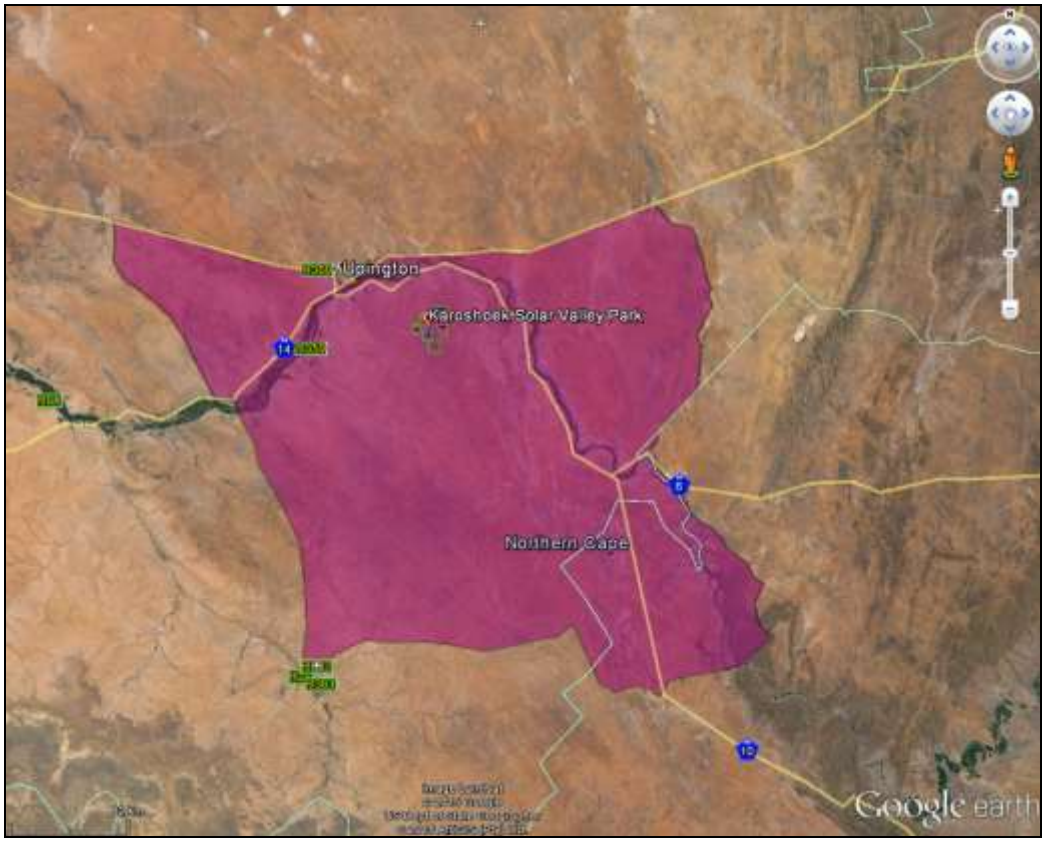

Figure 6: REDZ focus area in the Northern Cape Province and location of the proposed site in the REDZ (Source: CSIR)

3.5. Conclusion

The findings of the review of the relevant policies and documents pertaining to the energy sector indicate that solar energy and the establishment of solar energy facilities such as the one proposed are supported at a national, provincial, and local level, and that the proposed facility will contribute towards the various targets and policy aims.

4. BACKGROUND INFORMATION ON THE STUDY AREA, BASELINE DESCRIPTION AND STAKEHOLDER IDENTIFICATION

This section will provide a brief overview of the study area, baseline description of the social environment, land use character of the study area and a description of the key stakeholders of the proposed project.

4.1. Northern Cape

The vast and arid Northern Cape is by far the largest province in South Africa, taking up nearly a third of South Africa's land area. The area covers 372 899km^2, which is 30.5% of South Africa's total area. However, the Northern Cape has the country's smallest population with a little over 1 million people (population 1 145 861), which is 2.2% of South Africa's population, and an extremely low population density of three people per square kilometre. Just over half of the population speak Afrikaans (53.8%), with other languages being Setswana (33.1%), isiXhosa and English. The capital of the Northern Cape is Kimberley, located on the province's eastern border. Other important towns are Upington, the centre of the karakul sheep and dried fruit industries, and the most northerly wine-making region of South Africa, Springbok, located in the heart of the Namaqualand spring flower country, and De Aar, the hub of the South African railway network.

Portions of the Northern Cape Province that border the Orange River and Namibia have the highest solar radiation intensity in the world (State of the Environment Report (SOER), 2005, cited in the Northern Cape PSDF, 2012: 31). This represents a huge comparative economic advantage. At a provincial level, the Northern Cape has been identified as the area with highest potential for solar renewable energy generation, with high solar radiation levels and the availability of vast tracts of land. There are already a number of solar PV and CSP facilities planned in the region.

4.2. ZF Mgcawu District Municipality (ZFMDM)

The ZFMDM was formerly named Siyanda District Municipality (the name was changed on 1 July 2013). The ZFMDM forms the mid-northern section of the province on the border of Botswana. It covers more than 10 000km² (almost 30%) of the entire Northern Cape Province, out of which 65 000km² comprises the vast Kalahari Desert, Kgalagadi Transfrontier Park and the former Bushmanland. This district comprises six local municipalities: Mier, Kai !Garib, //Khara Hais, Tsantsabane, !Kheis, and Kgatelopele. Upington is the district municipal capital, where the municipal government is located.

The semi-arid, sparsely vegetated area nevertheless supports a huge diversity of game. The area is characterised by extensive livestock farms in the arid areas, as well as intensive irrigation farming along the Orange River. Grapes are grown on the intensely irrigated banks of the Orange River. The area is becoming a major exporter of table grapes and raisins. There is a growing tourism sector, primarily based on various national parks. Diamonds, iron, lime and salt are mined in the eastern parts of the district and are a major contributor to the district's economy. The ZFMDM has internationally known game parks within its boundaries, namely the Augrabies National Park and the Kgalagadi Transfrontier Park. Riemvasmaak is also being developed as a tourist destination. There is an international airport at Upington, mainly used for the export of agricultural products.

The most prominent economic activities in the ZFMDM include:

- Agriculture, comprising of grape production which is mainly exported to Europe, as well as livestock and game farming.
- Extensive livestock farming that occurs mainly on large farms.
- Irrigation farming, although the largest part of the ZFMDM area is taken up by extensive livestock farming.
- Tourism is one of the most important economic sectors in the Northern Cape as well as within the ZFMDM.
- The ZF Mgcawu economy is largely dominated by mining and agriculture. Currently salt is being mined and mining activity that occurs in the local municipalities of Tsantsabane and Kgatelopele area are mangnese, diamonds and raw ash for producing cement.

4.3. //Khara Hais Local Municipality

According to the //Khara Hais IDP (2012-2017) the local municipality benefits from a potentially economically active population that comprises approximately 67% of the total population, which provides the Municipality with a large human resource base. This allows opportunities for development projects to involve and benefit local people. The age distribution of the Municipality's population also indicates a fairly young potential economically active population, necessitating development to focus on the youth. In terms of economic indicators; the Municipality also has comparative advantages in all of the economic sectors, except mining, compared to the District. Furthermore, the fastest growing sectors in the Municipality were those of the agriculture, electricity and water, and mining sectors. The current growth occurring in these sectors should be exploited to ensure the creation of new job opportunities for local people.

Upington is the primary town of the //Khara Hais Local Municipality and serves a portal to Namibia, the Kalahari and the Kgalagdi Transfontier Park. Upington is also the agricultural hub of the area, the Orange River is a key natural feature

and irrigation forms the dominant land use. The Orange River has to a large degree dictated the settlement pattern in this arid region by providing a source of permanent water for the cultivation of grapes and other crops i.e. Lucerne and wheat, with subsidiary crops of vegetables, deciduous fruits and maize (//Khara Hais SDF, 2009). This and the associated production of wine is the primary agricultural activity of this district. Cattle and game farming practices also occur at a less intensive degree. The main access routes to the //Khara Hais Local Municipality are the national roads, namely the N14 and the N10. Regional roads include the R360 and the R27 (from Keimos). These roads, as well as the local roads are generally in a good condition even though large volumes of heavy vehicle traffic are experienced on the main routes.

The economic base is defined as the main industries that provide employment opportunities and drive economic growth in a study area. The following is an overview of the economic base in the local municipality. The Municipality's economy is rather centred on the trade and retail sector, due to its strong tourism sector, leaving the local economy fairly vulnerable for any significant changes in this industry. It is, therefore, important that the local municipality further diversifies its economy into other sectors. Furthermore, the manufacturing sector of the municipality is one of the lowest performing sectors of the local economy. This sector has the potential to generate significant growth for the region, and //Khara Hais Municipality is experiencing a lack of manufacturing activities. As a result much in the municipality has to be sourced from outside of the municipal boundaries, resulting in money flowing out of the local economy. Due to the unique spatial manifestation of the municipality, both the first and second economy is mostly located around the CBD and farms. Upington has a well-defined business centre with numerous residential areas. Secondary activities in the study area are mainly light industrial, warehousing, and light engineering works. The Agricultural sector is important to the local economy and therefore represents an emerging strength for the Municipality, which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation.

4.4. Baseline Description of the Social Environment

The purpose of the section is to provide an overview of the current socio-economic situation within the proposed project area. This section will provide a strategic understanding of the socio-economic profile of the study area, in order to develop a better understanding of the socio-economic performance as a background to the development of the project. The data presented in this section has been largely derived from the IDPs and SDFs of the //Khara Hais Local Municipality (KHLM) and ZF Mgcawu District Municipality (ZFMDM) (Siyanda); also the most recent (2011) Census, as well as the local government handbook 2012.

4.4.1. Population

The population trends in a geographical area affect the rate of economic growth through the provision of labour and entrepreneurialism and the demand for goods and services. These trends also indicate the number of people who are likely to be impacted by the proposed project. The Northern Cape Province is the largest province in South Africa with the country's smallest population of just over 1 million people. It is also the most sparsely populated province of South Africa with a surface area of 372 889km^2 and a population 1 145 861. The population of the ZFMDM in 2011 was approximately 236 783 people, of which 93 494 people reside in the KHLM. The average annual population growth rate in the study area is estimated by comparing data from 2001 to 2011 (see table 6).

Table 6: Population statistics (Source: Census 2011)

Census 2011	**Area (km2)**	**Population total**	**Population density /km^2**	**Population growth rate % (2001 - 2011)**
Northern Cape	372 889	1 145 861	3.1km^2	1.4%
ZF Mgcawu DM	102 524	236 783	2.3 km^2	1.6%
//Khara Hais LM	21 780	93 494	4.3 km^2	1.8%

The province and KHLM is sparsely populated, with a population density of about 4.3 people per square km in the KHLM. From 2001 to 2011 the ZFMDM experienced an average growth rate of 1.6% and a growth rate of 1.8% within the KHLM. The LM growth rate was slightly higher than the average growth rate for the Northern Cape Province.

Upington is the closest town to the proposed site within the KHLM which is located approximately 17km south from the proposed site. Upington is a town that covers an area of 580.8km^2 and consists of a population of 74 834 people, with a density of 130 people per squared kilometre (Census, 2011).

4.4.2. Population groups

The population groups and language distribution gives an indication of the cultural dynamics of the area and has implications for the proposed project in terms of the approach that should be used for communication regarding the project as well as implementation of the project. Table 7 demonstrates a comparison of the population and language distribution in the province, district municipality and local municipality.

Table 7: Population groups & language distribution (Source: Census 2011)

	Population groups				**Predominant languages**		
	Black African	*Coloured*	*Indian/ Asian*	*White*	*Afrikaans*	*Tswana*	*Xhosa*
Northern Cape	50.4%	40.3%	0.7%	7.1%	53.8%	33.1%	5.3%
ZF Mgcawu DM	29.4%	60.4%	0.7%	8.2%	76.4%	15.8%	2.7%
//Khara Hais LM	23.1%	65.2%	0.7%	9.9%	86.5%	3.6%	5.1%

The distribution of the population groups and prominent languages indicates that the local population are likely to be culturally similar to one another. In the KHLM it is evident that:

» The most spoken language is Afrikaans at 86.5% in the local municipality. This indicates that in addition to English, Afrikaans should also be used for communication processes throughout the project process.
» The most dominant population group is the Coloured comprising 65.2% of the KHLM population, see Figure 7 below of the population distribution.

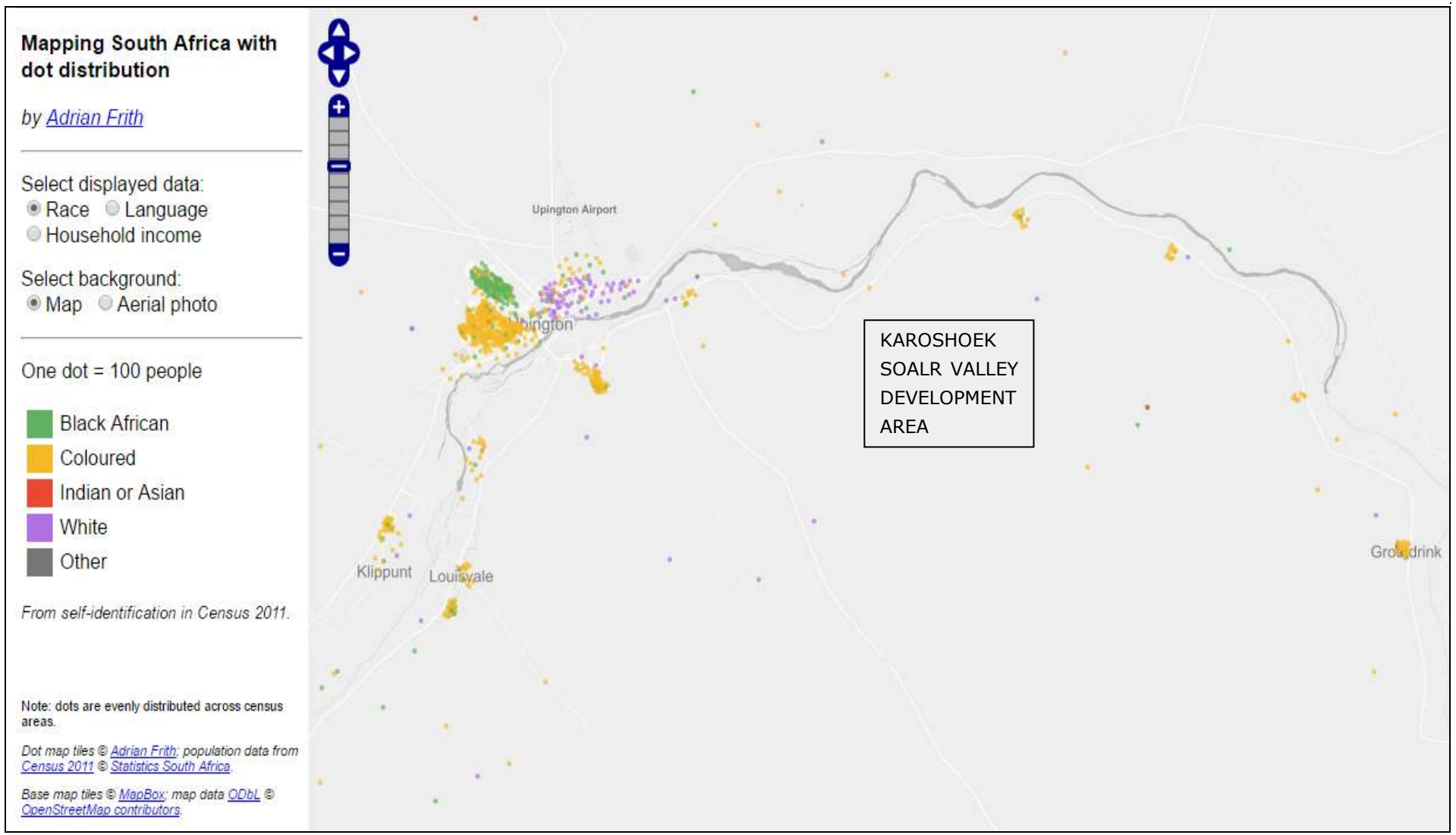

Figure 7: Distribution of population groups in the local area

4.4.3. Age composition and gender differentiation

The age structure of a population is extremely important for planning purposes. Table 8 indicates the age and gender profile of citizens at a provincial, district and municipal level.

Table 8: Age distribution and sex ratios (Source: Census 2011)

	AGE			**Dependency Ratio %**	**GENDER**	
	Age: 0-14	**Age: 15-64**	**Age: 65+**		**Male**	**Female**
Northern Cape	30.1%	64.3%	5.6%	55.7%	49.3%	50.6%
ZF Mgcawu DM	28.4%	66.4%	5.1%	50.5%	50.7%	49.2%
//Khara Hais LM	29.8%	64.6%	5.5%	54.7%	49.2%	50.7%

The age distribution of the population is very similar throughout the province with the greatest proportion of the population falling within the age group of 15-64 years. The gender differentiation is quite similar however there are slightly more females in the local municipality.

The dependency ratio indicates the number of individuals that are below the age of 15 and over the age of 64, that are dependent on the Economically Active Population (EAP) (Individuals that are aged 15-64 that are either employed or actively seeking employment). The total dependency ratio is used to measure the pressure on the productive population and government. Dependents increase the burden on the EAP / productive population and local municipality to maintain basic needs, upbringings and pensions. A high dependency ratio can also cause problems for municipalities as the largest proportion of government expenditure is on health, social grants and education that are mostly utilised by the young and old population. As demonstrated in the Table 8 above, it is evident in the //Khara Hais LM that:

- 64.6% of the KHLM population comprise the Economically Active Population (EAP).
- The dependency ratio is 54.7% of the KHLM population (more than half the local population). The dependency ratio is higher than the number of individuals below the age of 15 and over the age of 64, this is because not every individual in the EAP is employed (i.e. Some could be studying full-time into their 20s, actively seeking employment, some could be retrenched, some may be housewives etc., and therefore depend on other EAPs).

The high proportion of potentially economically active persons implies that there is a larger human resource base for development projects to involve the local population.

4.4.4. Education levels

Education plays a critical role in the development of communities and impacts greatly on economies. The type of education and training received by individuals equally determines the occupation or career they would eventually pursue. It provides a set of basic skills for development, creativity and innovative abilities. The level of education influences growth and economic productivity of a region. There is a positive correlation between a higher level of education and the level of development and standard of living. Education levels in any given population will influence economic and human development. It is clear that low education levels lead to low skills base in an area, while high education levels have the opposite effect, producing a skilled or highly skilled population. Household and personal income levels are also either positively or adversely affected by education levels.

The availability of skills available indicates whether it is possible to employ local residents in the construction and operation phase of a project. Table 9 demonstrates the level of education/skills availability in the study area.

Table 9: Education levels of the population aged 20 years and older (Source: Census 2011 & Mpumalanga Municipal Report)

	No schooling	**Some primary**	**Completed primary**	**Some secondary**	**Grade 12/Matric**	**Higher Education**
Northern Cape	11.3%	17.1%	6.3%	34.9%	22.7%	7.4%
ZF Mgcawu DM	9.5%	18.1%	7.3%	37.1%	21.7%	6.2%
//Khara Hais LM	7.1%	14.6%	6.8%	37.4%	26.1%	7.8%

The education levels in the area are generally low. More than half of the population aged 20 years and older in the municipality have only some secondary education or less (in the KHLM this being 65.9% of the population); this indicates that more than half of the local population are semi- skilled or low skilled. This reflects the rural nature of the region and relatively poor education. Only 26.1% of the KHLM have a matric and 7.8% have higher education; indicating that a relatively small proportion of the population are skilled or highly skilled.

The skills profile of the area indicates that the availability of local labour for the proposed project is largely limited to low-skilled construction workers and a small number of skilled workers.

4.4.5. Employment profile

The employment profile of the study area is an important indicator of human development. The quality of labour is reflected, among other things, by the educational profile of the economically active population and the availability of training facilities in the region. The term labour force refers to those people who are available for employment in a certain area. According to Statistics South Africa, the definitions of the following employment indicators are:

» Economically active person: "A person of working age (between 15 and 65 years inclusive) who is available for work, and is either employed, or is unemployed but has taken active steps to find work in the reference period."
» Employed: "Those who performed work for pay, profit or family gain for at least one hour in the seven days prior to the interview or who were absent from work during these seven days, but did have some form of paid work to return to."
» Official and expanded definition of unemployment: "The unemployed are those people within the economically active population who: (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within two weeks of the interview, and (c) have taken active steps to look for work or start some form of self-employment in the four weeks prior to the interview."
» Labour force: "All employed and unemployed persons of working age".
» Unemployment rate: "The percentage of the economically active population that is unemployed."

The employment profile of the study area is an important indicator of human development, but also of the level of disposable income and subsequently the expenditure capital of the residing population. Poverty and unemployment are closely correlated. The proposed project is expected to generate employment opportunities in the construction and operation phases. Table 10 demonstrates the unemployment rate in the study area.

Table 10: Distribution of population aged 15-64 years by employment status (Source: Census 2011)

	Employed	**Unemployed**	**Unemployment Rate**
Northern Cape	110 392	105 141	28.1%
ZF Mgcawu DM	17 600	174 463	21%
//Khara Hais LM	24 746	7 034	22.1%

The KHLM is largely populated by the potentially economically active population. In the KHLM the unemployment rate is 22.1% and there are approximately 7 034 people who are unemployed who are aged 15-64 years. This implies that there is a lot of human capital available for any kind of work, but also that there is space for training and developing economically active population in the relevant fields needed. This

could increase the employment level and decrease the poverty level in the local area. Local workers should be utilised as much as possible for the proposed development in order to alleviate local unemployment.

4.4.6. Household Income levels

Household income is one of the most important determinants of welfare in a region. The ability to meet basic needs, such as adequate food, clothing, shelter and basic amenities, is largely determined by the level of income earned by the households. Poverty is often defined as the lack of resources to meet these needs. Household income levels are one avenue for determining poverty levels in a community. Households that have either no income or low income fall within the poverty level (R0-R38 200 per annum); indicating the difficulty to meet basic needs requirements. A middle-income is classified as earning R38 201- R307 600, and a high income is classified as earning R307 601 or more per annum. Table 11 indicates the household income levels of the residents in the DM.

Table 11: Distribution of average household income in the local municipality (Source: Census 2011)

	Low Income ***(No income-R38 200)***	**Middle Income** ***(R38 201-R307 600)***	**High Income** ***(307 601 – R2 457 601+)***
//Khara Hais LM	54.9%	38.8%	6.3%

It is evident that in the KHLM have a high number of households that fall within a low income category (54.9% are within the poverty level). The number of households that fall within the middle income category is 38.8%. The high percentage of low income households indicates that that there is a high demand for employment opportunities which will help decrease the dependence on forms of assistance either from government and or non-government organisations. The high poverty level of 54.9% has social consequences such as not being able to pay for basic needs and services. The lower average income levels indicate a higher demand for employment opportunities in the economy. However skill levels are less likely to improve unless education levels improve which will lead to more skilled people which will in turn lead to the opportunity to earn higher income levels. This means that there should be less focus on the quantity of job creations and more focus on the quality of jobs created.

4.4.7. Household trends

Analysis of household data provides important indicators in relation to the consumption of electricity. The number of households the DM is approximately 61 097 and approximately 23 245 households within the LM. This equates to an average

household size of 3.6 people in the ZFMDM and 3.9 people in the KHLM. Majority of the local population reside in formal households (see Table 12).

Table 12: Distribution of average household size and type (Source: Census 2011)

Census 2011	Number of households	Average household size	Household type: *Formal*	Household type: *Traditional*	Household type: *Informal*
Northern Cape	301 406	3.7	82.3%	3.1%	13.1%
ZF Mgcawu DM	61 097	3.6	79.3%	1.2%	17.7%
//Khara Hais LM	23 245	3.9	75.2%	0.5%	23.1%

Majority of the population live in urbanized areas. The continuous increase in the number of households will have an upward impact on electricity demand thus requiring greater electrical capacity.

4.4.8. Access to services

Households are entitled to a minimum level of services. The proportion of households in the study area with the minimum access to services is indicated in Table 13.

Table 13: Distribution of average access to services (Source: Census 2011)

	Flush / chemical toilets connected to sewerage	Refuse removal by local authorities	Access to piped (tap) water in dwelling / yard	Access to electricity
Northern Cape	66.5%	66.2%	78%	85.3%
ZF Mgcawu DM	72.5%	74.1%	86.1%	86.5%
//Khara Hais LM	74.8%	89.1%	90.3%	91.1%

A large number of people in the local municipality have access to basic services. There is still room for improvement in the provision of basic services more specifically in the rural/farm areas, to expand basic services such as sanitation, refuse removal, water and electricity. The KHLM also indicates the need to improve health care facilities, management of disasters, roads, storm water, sport and recreational facilities, education and policing.

4.4.9. Health

Health facilities are distributed throughout the various municipalities in the ZFMDM. Majority of the health facilities, namely the community health centres and hospitals are located in the south of the N14, the main freeway connecting Springbok and Kuruman. Hospitals are located in Upington and Gordonia within the KHLM. Tuberculosis and HIV/AIDS are some of the infectious diseases that are receiving

priority attention and that a shortage of staff hampers the delivery of health services in the ZFMDM. In 2005, 10.8% of the total population was diagnosed with HIV positive. The Northern Cape experienced a growth of the number of people infected with HIV between 1996 (6.6%) and 2006 (17.6%) (Siyanda IDP 2013/2014: 10).

4.4.10. Summary and key challenges of the local area

The socio-economic profile provided an overview of the study area. The following is a summary of the key baseline findings as a result of the study conducted on the ZFMDM and the KHLM, in the Northern Cape Province. In summary, the area was found to have the following general characteristics:

- The population of the ZFMDM in 2011 was approximately 236 783 people, of which 93 494 people reside in the KHLM.
- The majority of the local population belong to the Coloured group and the most spoken language is Afrikaans.
- 64.6% of the KHLM population comprise the Economically Active Population (EAP); this implies that there is a larger human resource base for development projects to involve the local population. The dependency ratio is high at 54.7.6% of the KHLM population (that is almost a third of the local population) which puts pressure the EAP and local municipalities.
- The female population is slightly more prominent in the KHLM comprising 50.7% of the population.
- More than half of the local population are semi- skilled or low skilled. This reflects the rural nature of the region and relatively poor education. The skills profile of the area indicates that the availability of local labour for the proposed project is largely limited to low-skilled construction workers and a small number of skilled workers.
- There is a high unemployment rate in the KHLM (22.1%) with a large economically active population seeking employment opportunities. Local workers should be utilised as much as possible for the proposed development in order to alleviate local unemployment.
- Higher unemployment and lower income levels in the study area demonstrate the need for job creation.
- The high demand for employment can be addressed (although marginally) through direct job creation during the construction and slightly for the operation phase of the proposed development
- Access to basic services is generally greater in the KHLM than at a district and provincial level demonstrating that service delivery is generally more accessible.

According to the //Khara Hais IDP 2012-2017 with regards to the socio-economic characteristics of the local population, the employment rate for the Municipality is relatively high, with as much as 75% of people of working age who are actively

seeking employment. The majority of the employed population is found in elementary occupations, which require little or no skills. This is also reflected in the low education levels of the local population, with as much as 12% of the population aged 20 years and older having no form of education whatsoever. This, to some extent, constrains the development potential of the Municipality in the development of more advanced industries. The level of employment and type of occupations taken up by the population of the Municipality also directly affects their income levels.

4.4.11. Socio-Economic Spin-Offs

According to WWF (2015), renewable energy projects under the Renewable Energy Independent Power Producer Procurement (REIPPP) Programme are obliged to make a real contribution to local economic development in the area. These requirements have to be fulfilled within a 50km radius of the project site and renewable energy companies are obliged to engage with the development opportunities and needs of communities around the project site. Awarded projects are required to spend a certain amount of their generated revenue on Socio-Economic Development (SED) and Enterprise Development (ED) and share ownership in the project company with local communities. These criteria, as well as the creation of a specific number of jobs, are incentivised through awarding higher scoring to projects that realise such criteria within a 50km radius to the project site during the evaluation process. Additionally, projects add value to the local economy through targeted procurement from local businesses. Job creation requirements target national and local citizens. Between 12% and 20% of the people employed on each project have to be residents of local communities located within 50km of the project site. Only "in the event that there are no residential areas or villages within 50km from the project site (are project developers allowed to source workers) in the nearest residential areas or villages to the project site" (DoE 2011). The DoE indicates that the programme offers great potential to realise positive socio economic outcomes- such as job creation, local ownership, socio-economic development and enterprise development. The project's direct area of influence will extend to a 50km radius from the proposed site. The closest urban area to the proposed site within the project's direct area of influence (within 50km radius) includes Upington, the closest smaller settlements include Dagbreek, Karos and Leerkrans.

4.4.12. Overall baseline conclusion

The proposed development supports the social and economic development through enabling skills development and creating temporary employment opportunities within the local area. The development would mainly focus on economic benefits to the area. Negative dimensions of impacts such as influx of jobseekers into the area putting

pressure on the provision of basic services and poverty level will be weighed in the impact assessment during the EIA phase.

4.5. Land use character of the study area

The Karoshoek Solar Valley Development and associated infrastructure (power line, access road & water pipeline) is located approximately 30 km east of Upington within the Khara Hais Local Municipality in the Northern Cape. Smaller settlements such as Dagbreek, Karos and Leerkrans are located near the study area. The Ilanga CSP 5 project is proposed on Portion 3 of the Farm Matjiesrivier 41.

The primary land use in the immediate local area is livestock farming which includes sheep farming, cattle farming and goat farming within the larger farms to the south of the N10. There is also intensive grape cultivation activities that take place along the banks of the Orange River. Livestock farming mainly takes place on the larger, privately owned farms. The majority of the area is sparsely populated and consists of wide-open landscapes. The study area has a rural character with little development outside of Upington. The population distribution is concentrated in and around small towns along the Orange River, other farming homesteads are scattered around the area. The authorised Ilanga CSP 1 Parabolic Trough plant is currently under construction within the Karoshoek Solar Valley Site, which is located on Lot 944 Karos Settlement (see Figure 8).

Adjacent properties surrounding the proposed site are mainly privately owned farmlands. Livestock farming is the primary land use and majority of the area has a low number of farmsteads that are sparsely populated. Farmsteads occur within the surrounding area and adjacent farms, there are no farmsteads located on the impacted farms. Table 14 below provides an overview of the activities of the adjacent farmlands to the study area.

Table 14: Overview of adjacent properties

Farm Name & Portion	**Landowner**	**Are there any Homesteads/ Buildings on the farm**	**Any residents living on farm (i.e. farm workers, tenants, landowner)**	**Current activities taking place on the farm (sheep farming etc.)**
Matjiesrivier RE/41	Ela Swanepoel	Yes, located along the northern boundary, near the N10	Tenants	There are tenants on the farm, they currently farm livestock. The owner indicated that the tenants may leave when their contract expires. The contract may be extended; this will be discussed with developers (Emvelo

Farm Name & Portion	**Landowner**	**Are there any Homesteads/ Buildings on the farm**	**Any residents living on farm (i.e. farm workers, tenants, landowner)**	**Current activities taking place on the farm (sheep farming etc.)**
				(Pty) Ltd) that are currently in the process of purchasing the farm.
Matjesrivier 3/41	Odiweb	No	No	There are three authorised solar facilities located on the farm. The farm is planned to be utilised for solar energy developments.
Lof 944 Karos Sett 944	Odiweb	No	No	Currently the farm is owned by the Karoshoek Solar Valley Developers. The construction of Ilanga 1 CSP facility is currently underway.
Trooiplaps Pan RE/53	Future Labour Solutions CC	Yes, second home (utilised on weekends or with clients)	Yes, farm workers	The farm is utilised for game farming and leisure activities such as hunting. The owner bought the farm in 2014 and utilises the farm for hunting trips (for clients) and for the sense of nature.
Trooiplaps Pan 4/53	Mr Maree	Yes, a farm house that was built in 1800's. Utilised as a second home. Located approxiametly 10km south of the proposed site.	Yes, 2 farm workers	The farm is leased to tenants who currently utilise the farm for livestock grazing (mainly cattle). EIAs are currently being undertaken for solar energy developments on the farm.
Trooilaps Pan 17/53	Marius Spangenberg	No	No	The farm is utilised for livestock farming.
ERF 943 Karos 944	Ellewee van Zyl	Yes	The landowner and his family currently reside on the farm.	The farm is utilised for livestock and game farming activities.
Rooidraai RE/49	Ellewee van Zyl	No	No	The farm is utilised for livestock and game farming activities

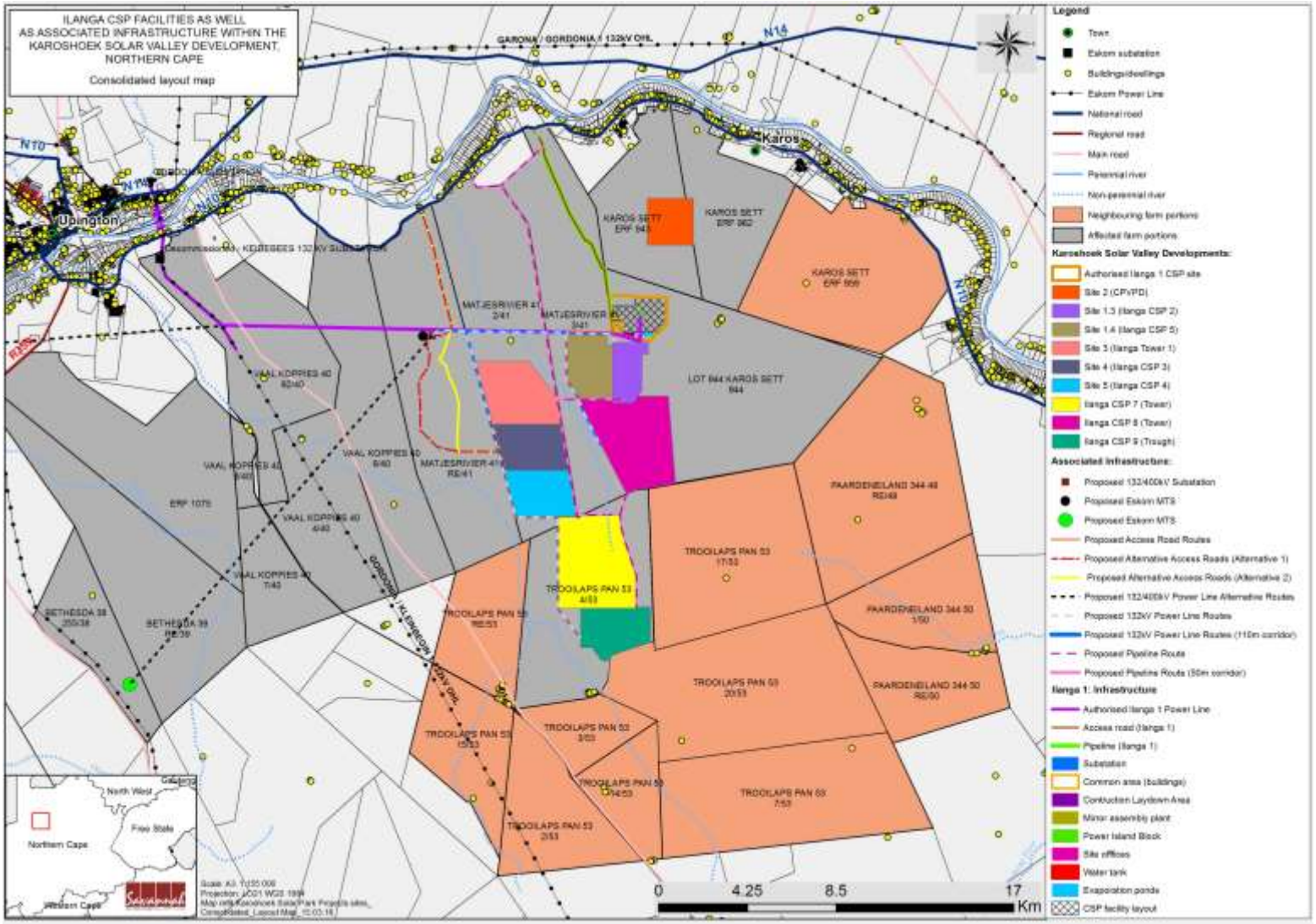

Figure 8: Impacted and adjacent landowners for the Karoshoek Solar Valley Development (see Site 1.4- Ilanga CSP 5)

4.6. Stakeholder Identification

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 direct or indirect stakeholders and may include organisations, institutions, groups of people or individuals, and can be at any level or position in society, from the international to the national, regional, household level (Farnke & Guidero, 2012). Stakeholders are those who need to be considered and whose participation and support are crucial to achieving the success of project goals.

Stakeholder analysis involves identifying the key stakeholders in the project. The first step in the process of stakeholder analysis is stakeholder identification; determining who the project stakeholders are, 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 affected and in what way. The key stakeholders in the proposed project have been identified, grouped / sub grouped and demonstrated in Figure 9 below (as per Ilse Aucamp SIA methodology & Aucamp et al, 2011). Direct and indirect stakeholders are sensitive social receptors that may potentially be affected by the proposed development. The key stakeholders include but are not limited to the following:

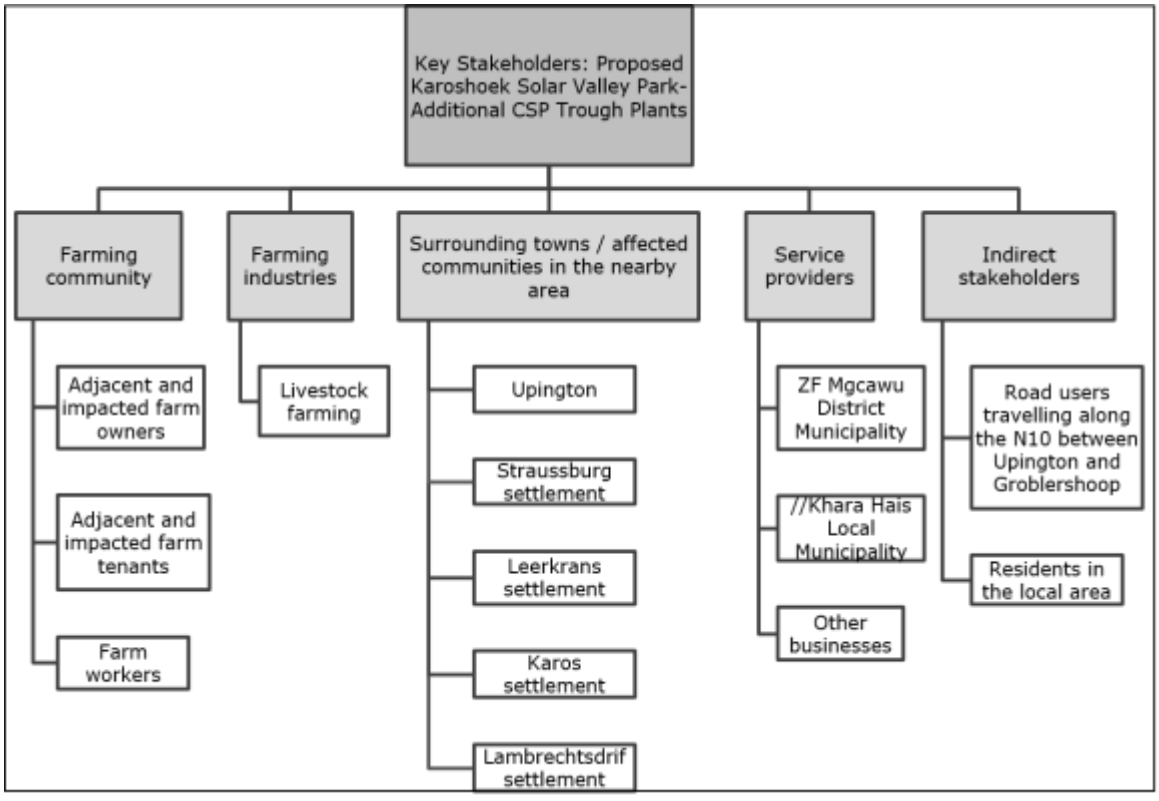

Figure 9: Key stakeholders associated with the proposed development

A description of each of the stakeholders groups in relation to the proposed development is discussed in the section below:

» *Farming community:* the farming community have been grouped into three categories, namely- farm owners, farm tenants and farm workers. Farm owners include farmers who own the land and make a living from their properties. Farm tenants are people who rent the land and work on the land for income. Lastly the farm workers, people who work and may also live on the farms (farm workers and their families). The farming community consists of the larger farms in the study area.

» *Farming industry:* There are potentially vulnerable farming activities in the study area. The primary agricultural activity is livestock and game farming. Impacts that may arise include stock theft and poaching from an increase of in-migrants in the area (especially during the construction phase).

» *Surrounding towns / affected communities:* Upington is the closest town to the proposed site located approximately 25km away. Smaller settlements such as Dagbreek, Karos and Leerkrans situated along the N10 are in close proximity to the project site. Another "informal settlement" namely Ntsikelelo (Staussburg) is located approximately 10km from the site. Lambrechtsdrif settlement is also a small settlement located approximately 26km south east from the site within the //Khara Hais Local Municipality. Residents in these towns may be positively and/or negatively affected by the proposed development (mainly temporarily). Employment opportunities will be available for the proposed development and it is probable that some of the labour will be sourced from the local area; this will be a positive impact for the local community.

» *Service providers:* The major service providers which will be affected by the project include the district and local municipalities and local businesses in the area. The local municipality that will be directly impacted by the proposed development will be //Khara Hais Local Municipality (Ward 14). The municipality will absorb a number of social impacts (positive and negative), which may relate to a marginal influx of people coming into the area, since they will be responsible to deliver services to people residing within their municipal area. There are a number of local businesses in the area that could benefit from the proposed development in terms of an increase in demand for goods and services.

» *Stakeholders outside the direct area of influence:* There are a number of stakeholders that reside outside the direct area of influence but who may be marginally affected by the project. These include road users that use the N10,

N10 and local gravel roads on a frequent basis as part of their daily or weekly movement patterns. Construction vehicles and trucks will be utilising these roads during the construction phase, which will increase the traffic, create traffic disruptions and may increase the wear and tear on these roads.

5. SOCIAL IMPACT ASSESSMENT

This section provides a detailed description and assessment of the potential social impacts associated with the construction, operation and decommissioning phases of the proposed solar facility and associated infrastructure. Cumulative impacts are assessed within Section 5.3.

5.1. Construction Phase

Impacts associated with the construction phase of the project are usually of a short duration (approximately 12-14 months) and temporary in nature, but could have long-term effects on the surrounding social environment if not managed appropriately.

5.1.1. Direct employment and skills development

The construction of the proposed project will require a workforce and therefore direct employment will be generated. The proposed development will create employment opportunities for the local community. It is estimated that during the construction phase (for the period of approximately 12-14 months) approximately ~250-350 employment opportunities will be generated for the Ilanga CSP 5 project. In terms of skills requirements, it is common that highly skilled or skilled labour such as engineers, technical staff and project managers will constitute about 15% of the work force; skilled staff would typically be required to operate machinery and will constitute about 25% of employees, while unskilled staff such as construction and security workers will constitute about 60% of the work force. Employment opportunities for the proposed development will peak during the construction phase and significantly decline during the operation phase. The estimated wage bill for the construction for the additional 50MW trough plant is estimated to be in the region of R35-50 million (2016 rand value).

Under the REIPPP Programme, developers are obliged to make a real contribution to local economic development that is to be fulfilled within a 50km radius of the project site (WWF, 2015). Awarded projects are required to employ between 12% and 20% of residents from local communities (located within 50km of the project site). Only "in the event that there are no residential areas or villages within 50km from the project site (are project developers allowed to source workers) in the nearest residential areas or villages to the project site" (DoE 2011). The proponent has indicated that approximately 40% (primarily low-skilled and semi-skilled workers) of the labour force will be sourced from the local area which is more than the stipulated requirements under the REIPPP Programme. The DoE specifies that the REIPPP programme offers great potential to realise positive socio economic outcomes- such as job creation, local

ownership, SED and ED. The project's direct area of influence will extend to a 50km radius from the proposed site. The urban area located within the 50km radius includes Upington and the smaller settlements include, Dagbreek, Karos and Leerkrans.

There will be significant job opportunities available for low skilled (construction, security, and maintenance workers) and semi-skilled workers, which can be sourced from the local area. The proponent has indicated that approximately ~100-140 low-skilled and semi-skilled opportunities are likely to be available to the local labour force. Construction workers could be sourced from the nearest local settlements and towns such as Upington, Dagbreek, Karos and Leerkrans. It could be expected that some of the workers from outside the local area would form part of the construction team. Local labour should be sourced from within the 50km radius first and if need be extend the search to the ZFMDM or nationally. Adverse impacts could occur if a large in-migrant workforce, culturally different from the local communities within local area are employed and brought in during the construction phase. While the local labour pool may be qualified for less-skilled jobs, often local 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.

The developer will need to demonstrate a commitment to local employment targets in order to maximise the opportunities and benefits for members of the local community. It is likely that an Engineering, Procurement and Construction (EPC) contractor will be appointed by the developer who will hire the necessary employees. The applicant has indicated that training will also be provided to employees during the construction phase of the proposed development. Specific skills training for local communities have the opportunity to develop local employee potential. 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.

Table 15: Impact assessment on direct employment opportunities and skills development

Construction Phase		
Nature: The creation of employment opportunities and skills development opportunities during the construction phase for the country and local economy		
	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	
Irreplaceable loss of resources	N/A	
Can impacts be enhanced	Yes	
Enhancement measures: » If possible, efforts should be made to employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria. » It is recommended that local employment policy is adopted to maximise the opportunities made available to the local labour force (sourced from nearest towns/settlements). » The recruitment selection process should seek to promote gender equality and the employment of women wherever possible » Where feasible, training and skills development programmes should be initiated prior to the commencement of the construction phase » 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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained by the Contractor and monitored by the ECO to record all complaints and queries relating to the project and the action taken to resolve the issue.		
Residual impacts » Improved pool of skills and experience in the local area » Economic growth for small-scale entrepreneurs » Temporary employment during construction phase will result in jobs losses and struggles for local construction workers to find new employment opportunities post construction.		

The impact is therefore assessed to be positive, local and regional in extent, temporary in duration, of moderate intensity, and highly probable with enhancement measures implemented. The impact is assessed to be of **medium significance** to the decision making process.

5.1.2. Economic multiplier effects

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. The site is located approximately 30km east of Upington in the Northern Cape Province. Given the relative proximity of the site to Upington, the proponent has indicated that no on-site accommodation is envisaged for the construction phase. Employees will be sourced from the local areas (where possible) and those who have been sourced out of town will be transported to and from site for the duration of the construction phase from their place of residence. Off-site accommodation in the nearest towns would 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, safety equipment, ablution, accommodation, transportation and other goods.

The construction capital expenditure that will be spent on local goods and services associated with the establishment of the solar energy facility is estimated to be in the region of R1 billion (2016 rand value). 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 may be limited due to availability). There is likely to be a direct increase in industry and indirect increase in secondary businesses.

Also the injection of income into the area in the form of wages will represent an opportunity for the local economy and businesses in the area. Through the stimulation of employment and income is the creation of new demand within the local and regional economies. With increased income comes additional income for expenditure on goods and services supplied. The intention is to maximise local labour employment opportunities, this is likely to have a positive impact on local communities and have downstream impacts on household income, education and other social aspects. The implementation of the enhancement measures below can increase the opportunities for local area.

Table 16: Economic multiplier effects impact assessment

Construction Phase		
Nature: Significance of the impact from the economic multiplier effects from the use of local goods and services		
	Without enhancement	**With enhancement**
Extent	Local- Regional (4)	Local- Regional (4)
Duration	Short term (2)	Short term (2)
Magnitude	Minor (2)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Low (24)**	**Medium (30)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources	N/A	
Can impacts be enhanced	Yes	
Enhancement » It is recommended that a local procurement policy is adopted by the developer to maximise the benefit to the local economy » Where feasible, the developer should create a database of local companies, specifically Historically Disadvantaged (HD) which qualify as potential service providers (e.g.		

construction companies, waste collection companies, security companies etc.) prior to the commencement of the tender process for construction contractors; these companies should be notified of the tender process and invited to bid for project-related work where applicable » It is recommended that good and services are sourced from the local area as much as possible; engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible.
Residual impacts Improved local service sector, growth in local business

The impact is assessed to be positive; local to regional in extent; temporary in duration; moderate intensity; and highly probable. The impact is assessed to be of a **low-medium significance** to the decision-making process.

5.1.3. Influx of jobseekers

The proposed development will create a range of employment possibilities and thus this will attract jobseekers. An influx of people looking for economic opportunities could result in pressure on economic and social infrastructure on the local population (rise in social conflicts and change in social dynamics). Influx of jobseekers into the area, could lead to a temporary increase in the level of crime, cause social disruption and put pressure on basic services. Influx of jobseekers could potentially create conflict between locals and outsiders mainly due to difference in racial, cultural and ethnic compositions. The high unemployment rates and expectations of job creation is already a potential source of competition among locals and could be exacerbated through outsiders coming into the area resulting in conflict. A further negative impact that could result due to an inflow of jobseekers is that local unemployment levels could rise due to an oversupply of an available workforce, particularly with respect to semi and unskilled workers.

The towns and settlements located the closest to the study area (i.e. Upington, Dagbreek, Karos and Leerkrans) is seen as a sensitive social receptor and jobseekers coming into the area could put pressure on social infrastructure; create social problems, tensions and conflicts. The impact associated with in-migration of jobseeker includes pressure on local services and infrastructure. This includes municipal services such as sanitation, electricity, water, waste management, health facilities, transportation and availability of housing. Informal settlements may develop near towns to accommodate jobseekers. It is very difficult to control the influx of people into an area, especially in a country where there's high levels of unemployment. An influx of jobseekers to an area often results in an increase in prostitution activities and temporary sexual relations with locals; this could result in the spreading of HIV/Aids and STDs and unwanted pregnancies. The proposed solar development disrupting societies largely depends on the level of local employment achievable and clearly

stipulating a local employment regime to limit outsiders coming into the area. Employment opportunities can be sourced from the surrounding local towns and settlements first, i.e. Upington, Dagbreek, Karos and Leerkrans, if availability of labour is limited then extend search to the KHLM and ZFMDM. The KHLM population (93 494 people) could fulfil the majority of the lower and semi-skilled employment opportunities that emerge from the proposed development.

Table 17: Assessment of impacts from influx of jobseekers in the local area

Construction Phase		
Nature: Added pressure on economic and social infrastructure and increase in social conflicts during construction as a result of in-migration of jobseekers		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (2)
Duration	Short-term (2)	Short-term (2)
Magnitude	Low (4)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	**Low (24)**	**Low (18)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be mitigated	Yes	

Mitigation

» It is recommended that local employment policy is adopted to maximize the opportunities made available to the local labour force.
» A 'locals first' policy should be adopted for construction employment opportunities, especially for semi and low-skilled job categories. Enhance employment opportunities for the immediate local area; Upington, Dagbreek, Karos and Leerkrans, and if this is not possible, then the broader focus areas should be considered for sourcing workers such as KHLM and ZFMDM.
» Tender document should stipulate the use of local labour as far as possible.
» Prior to construction commencing representatives from the local community (e.g. ward councillor, surrounding landowners) should be informed of details of the construction schedule and exact size of the workforce.
» Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office should be established by the contractor in a nearby town to deal with jobseekers.
» A security company is to be appointed and appropriate security procedures to be implemented.
» Establish procedures for the control and removal of loiterers at the construction site.
» A comprehensive employee induction programme should address issues such as HIV/ AIDS and sexually transmitted diseases. The induction should also address a code of conduct for employees that would align with community values.
» 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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained by the Contractor and

monitored by the ECO to record all complaints and queries relating to the project and the action taken to resolve the issue.
Residual impacts Possibility of outside workers remaining in the area after construction is completed and subsequent pressures on local infrastructure and services.

The impact is assessed to be negative; local in extent; temporary in duration; moderate intensity; and improbable with mitigation measures. The impact is assessed to be of **low significance** to the decision-making process.

5.1.4. Impacts on daily living and movement patterns (traffic impacts)

With the additional 50MW CSP trough facility, that is to form part of the already authorised site, the number of construction vehicles and heavy vehicles will increase slightly. This could slightly increase short-term disruptions and safety hazards for current road users. Transportation of project components and equipment to the proposed site will be transported using vehicular / trucking transport. The existing gravel access road will be located off the N10 located approximately 20km east of Upington. The existing access road is located approximately 20km long and traverses the adjacent farm Matjiesrivier RE/41 (the developer is in the process of purchasing this farm, the farm is currently utilised for livestock farming); this will be the main access road used to access the proposed site. The primary roads that will be used for transportation of project components and equipment will be the N10 and the secondary existing gravel access road that is off the N10. A slight increase in traffic due to construction vehicles and heavy vehicles could cause disruptions to road users and increase safety hazards. The use of local roads and transport systems may cause road deterioration and congestion. A slight increase of traffic from the rise in construction vehicles is a safety concern for other road users and local communities in the area. The existing gravel access road off the N10 has a low frequency use and is primarily only utilised by the local farmers to access the farm. The adjacent landowner of Farm Matjiesrivier RE/41 has indicated that the land is currently leased to a farmer who utilises that land for livestock farming (he doesn't reside on the farm). However the tenant may leave when the contract expires. The contract may be extended, depending on process of the developers (FG Emvelo (Pty) Ltd) purchasing the farm. If the development becomes a preferred bidder the landowner has indicated that the farming activities will discontinue. Therefore the traffic disruptions won't impact any of the farming activities on the impacted sites.

The developer has indicated that the number of construction vehicle trips per day would be in the region of ~15-20 trips. There will be an increase in the movement of people during the construction phase. Low and semi-skilled workers will likely be transported to site with busses. Noise, vibrations, dust and

visual pollution from construction vehicles and heavy vehicle traffic during the construction phase could cause temporary disruptions in daily living, movement patterns and quality of life for local community members. There are only a few and sparsely populated homesteads or residents living in the nearby area, which reduces this impact.

In terms of national roads involved, the expectation is that the proponent should consult with the relevant roads agency to ensure that they do not contribute to the deterioration of roads without taking some responsibility for repairing the impact that their construction vehicles may have on the road during construction phase.

Table 18: Assessment of impact on daily living and movement patterns

Construction Phase		
Nature: Impacts from an increase in traffic disruptions and movement patterns during the construction phase		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (2)
Duration	Short term (2)	Short term (2)
Magnitude	Low (4)	Minor (2)
Probability	Probable (3)	Improbable (2)
Significance	**Medium (24)**	**Low (12)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be mitigated	Yes	
Mitigation » All vehicles must be road worthy and drivers must be qualified, obey traffic rules, follow speed limits and made aware of the potential safety issues. » Heavy vehicles should be inspected regularly to ensure their road safety worthiness. » Implement penalties for reckless driving for the drivers of heavy vehicles as a way to enforce compliance to traffic rules. » The developer and engineering, procurement and construction (EPC) contractors must ensure that there is a dedicated safe entrance to the site, and an access control point at the entrance gate off the N10 on Farm Matjesrivier RE/41. » The developer and engineering, procurement and construction (EPC) contractor's must ensure that the fencing or entrance gates along the access road must either be maintained in the present condition, improved upon or repaired if disturbed due to project activities. » The developer and engineering, procurement and construction (EPC) contractor's responsibility to ensure roads utilised are either maintained in the present condition or upgraded if disturbed due to project activities. » A comprehensive employee induction programme must be implemented to cover land access protocols and road safety. » 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. The EPC contractor should appoint a		

designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained by the Contractor and monitored by the ECO to record all complaints and queries relating to the project and the action taken to resolve the issue.
Residual impacts None anticipated

The impact is assessed to be negative; local in extent; temporary in duration; low intensity and improbable with mitigation measures. The impact is assessed to be of **low significance** to the decision making process.

5.1.5. Safety and security impacts

The perceived decline of security during the construction phase of the proposed project due to the influx of workers and/ or outsiders to the area (as influx of newcomers or jobseekers are usually associated with an increase in crime) may have indirect effects, such as increased safety and security risk for neighbouring properties and damage to property, increased risk of veld fire, stock theft, crime and so forth. The perception exists that construction related activities (influx of jobseekers, and construction workers and so forth) is a contributor to increased criminal activities in an area. Safety and security impacts are a reality in South Africa which needs to be addressed through appropriate mitigation and management measures. All of the farms in the study area are utilised for livestock farming and/or game farming, therefore the development coming into the rural area may expose these farming activities to potential stock theft and poaching. There are no residents living in or near the proposed site. The study area is currently utilised for livestock farming.

The impacted and adjacent farm owners utilise their farms for livestock farming. There are also minor game farming activities on nearby farms as well as the Ilanga solar project under development on the adjacent property. The influx of construction workers and people coming into the area does increase the risk of stock theft and poaching.

It is viable for the appointed EPC contractor to implement appropriate security measures. It is therefore recommended that the appointed EPC contractor takes these points into consideration and it is important that a security company is appointed and appropriate security procedures and measures implemented.

A slight increase of traffic from the rise in construction vehicles is a potential safety concern for road users and local communities in the area. The movement of construction related activities crossing over the N10 does have the potential to increase the risk for road users. Also with wear and tear on roads that is not maintained / repaired; the safety risk also increases. The N10 and the access

road would mainly be affected and the use of un-roadworthy vehicles, drivers disobeying traffic rules and the obstruction of motorist's views will contribute to this potentially negative impact.

Table 19: Assessment of safety and security impacts

Construction Phase		
Nature: Temporary increase in safety and security concerns associated with the influx of people during the construction phase		
	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Improbable (2)	Very improbable (1)
Significance	**Low (27)**	**Low (14)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be mitigated	Yes	

Mitigation

» Working hours should be kept within daylight hours during the construction phase, and/or as any deviation that is approved by the surrounding landowners.
» The perimeter of the construction site should be appropriately secured. The fencing of the site should be maintained throughout the construction periods.
» The appointed EPC contractor must appoint a security company and appropriate security procedures and measures are to be implemented.
» Access in and out of the site should be strictly controlled by a security company.
» Provide workers with identity tags and prohibit the access of unauthorized people to the construction site.
» The contractor must ensure that open fires on the site for heating, smoking or cooking are not allowed except in designated areas.
» Contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.
» The developer and engineering, procurement and construction (EPC) contractors must ensure that any damage / wear and tear to the roads caused by construction related traffic/ project activities are repaired
» Provision of adequate and strategically placed traffic warning signs and control measures along the access road and N10 to warn road users of the construction activities taking place and displaying road safety messages and speed limits. Warning signs must be visible at all times.
» A comprehensive employee induction programme, covering land access protocols, fire management and road safety. This must be addressed in the construction EMPr as the best practice.
» All vehicles must be road worthy and drivers must be qualified and made aware of the potential road safety issues and follow the speed limits.
» The contractor should have personnel trained in first aid on site to deal with smaller incidents that require medical attention.
» 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. The EPC contractor should appoint a designated staff member to implement grievance procedure and address issues and complaints.
Residual impacts None anticipated.

The impact is assessed to be negative; local in extent; temporary in duration; low intensity and improbable with mitigation measures. The impact is assessed to be of **low significance** to the decision making process.

5.1.6. Nuisance Impacts (noise and dust)

Impacts associated with construction related activities include noise, dust and disruption or damage to adjacent properties is a potential issue. Experience from construction of other solar energy facilities in the area indicate that site clearing and construction vehicles traveling on gravel roads does increase the risk of dust and noise being generated, which can in turn impact on adjacent properties. The potential impacts can be addressed by implementing effective mitigation measures. The primary sources of noise during construction would be from the construction equipment and other sources of noise include vehicle/truck traffic, and general construction activities. Noises 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 gravel access road. With the in-migration of people and construction workers into the area, this will also increase noise impacts. This impact will negatively impact social sensitive receptors. The immediate local area is sparsely populated with few homesteads near the proposed site and the area is primarily utilised for livestock farming.

The movement of heavy construction vehicles along the existing gravel access has the potential to generate dust pollution. The nuisance impacts from the construction activities of the additional 50MW CSP facility are expected to be negative however have a low significance.

Table 20: Assessment of nuisance impacts (noise and dust)

Construction Phase		
Nature: Nuisance impacts in terms of a temporary increase in noise and dust		
	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	Minor (2)	Small (1)
Probability	Probable (3)	Probable (3)
Significance	**Low (15)**	**Low (12)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	

Irreplaceable loss of resources	No
Can impacts be mitigated	Yes
Mitigation » Dust suppression measures must be implemented on a regular basis along the gravel access road and on the proposed site. » Vehicles used to transport sand and building materials must be fitted with tarpaulins or covers when travelling on roads. » Speed limits must be imposed on internal roads to limit dust generation » Ensure all vehicles are roadworthy, drivers are qualified and are made aware of the potential noise and dust issues. » 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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained by the Contractor and monitored by the ECO to record all complaints and queries relating to the project and the action taken to resolve the issue.	
Residual impacts Damage to roads that is not fixed could affect road users.	

The impact is assessed to be negative; local in extent; temporary in duration; low intensity; and probable. The impact is assessed to be of **low significance** to the decision-making process.

5.2. Operation Phase

The solar energy facility is designed to be operational for at least ~20-25 years. The potential positive and negative social impacts which could arise as a result of the operation of the proposed project include the following:

5.2.1. Direct employment and skills development

The operation phase of the project will require a workforce and therefore direct employment will be generated. Although the exact number of permanent workers is not confirmed at this stage, it is estimated that approximately ~12-25 jobs will be generated for the lifetime of the project (approximately ~20-25 years). Given that solar energy facilities are relatively new in South Africa, a number of highly skilled personnel may need to be recruited from outside the local area. These employees would include skilled engineers (specialised 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. Routine activities would include operation of the solar energy facility to produce power, and regular monitoring and maintenance activities to ensure safe and consistent operation. Maintenance will be carried out throughout the lifespan of the solar energy facility and associated infrastructure. Typical activities during maintenance include washing troughs routinely (in the evening)

and vegetation control and maintenance around the solar energy facility and along the power line route. Employment opportunities will be created during the operation phase and this is rated as positive impact although limited.

It should be encouraged that as many as possible employees be sourced from within the local municipal pool and if the relevant skills are not available then these should be sought out on a regional/ national basis. The proponent will need to demonstrate a commitment to local employment targets in order to maximise the opportunities and benefits for members of the local community. The proponent has indicated that approximately 30% of the labour force during the operation phase will be sourced from the local area. The focus for employment should be on local people, including women; this will have a maximum positive long-term impact (and if there is sufficient transfer of skills the positive impact can be extended). As the employment opportunities generated during the operation phase are more permanent and sustainable in the long run, as opposed to those generated during the construction phase (which are only temporary), sourcing of local labour during this phase will have long term beneficial impact. The applicant has indicated that training will also be provided to employees. Training 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.

Table 21: Employment opportunities and skills development

Operation Phase		
Nature: The creation of employment opportunities and skills development opportunities during the operation phase for the country and local economy		
	Without enhancement	**With enhancement**
Extent	Local- Regional (2)	Local- Regional (2)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Low (4)
Probability	Highly probable (4)	Highly probable (4)
Significance	**Medium (32)**	**Medium (40)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources	N/A	
Can impacts be enhanced	Yes	
Enhancement » It is recommended that a local employment policy is adopted to maximise the opportunities made available to the local community. » The recruitment selection process should seek to promote gender equality and the employment of women wherever possible. » Vocational training programs for employees should be established to promote the development of skills.		
Residual impacts		

Improved pool of skills and experience in the local area

The impact is assessed to be positive; local to regional in extent; long-term; moderate intensity and is highly probable. The impact is assessed to be of **medium significance** to the decision-making process.

5.2.2. Development of clean, renewable energy infrastructure

Energy production has been and still is one of the main pivots of the social and economic development of South Africa. South Africa currently relies on coal-generated energy to meet its energy needs. Almost 72% of South Africa's primary energy is from coal, over half used to generate electricity and a quarter used for synfuels production. South Africa's carbon emissions are higher than those of most developed countries partly because of the energy-intensive sectors which rely heavily on low quality coal. Use of low quality coals is the main contributor to GHG emission. The energy-intensive sectors of the economy emit carbon emissions that are higher than those of most developed economies. The use of solar irradiation for power generation is considered a non-consumptive use of a natural resource which produces zero GHG emissions. The generation of renewable energy will contribute to South Africa's electricity market. The advancement of renewable energy is a priority for South Africa. The government considers the use of renewable energy as a contribution to sustainable development (White Paper on Renewable Energy). As most of the sources are local and naturally available, its use will strengthen energy security as it will not be subjected to disruption by international crisis. Furthermore, recent policy highlights the desirability of clean, green energy and solar generated energy will play a significant role in reaching these quotas (Energy Research Centre UCT, 2004). Given South Africa's reliance on Eskom as a power utility, the benefits associated with an Independent Power Producer based on renewable energy are regarded as an important contribution.

Increasing the contribution of the renewable energy sector to the local economy may contribute to the diversification of the local economy and provide greater economic stability. The growth in the solar energy sector could introduce skills and development into the area. The development of a solar energy facility could therefore add to the stability of the economy, and even though this project is small scale in comparison to the overall potential of the sector, it could contribute to the local economy. The overall contribution to South Africa's total energy requirements of the proposed solar energy facility plant is small; however, the 150MW facility (i.e. authorised facility and additional 50MW proposed) will help contribute to offset the total carbon emissions associated with energy generation in South Africa.

Table 22: Assessment of the development of clean, renewable energy infrastructure

Operational Phase		
Nature: Development of clean, renewable energy infrastructure		
	Without enhancement	**With enhancement**
Extent	Local- Regional- National (4)	Local- Regional- National (4)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Minor (2)
Probability	Highly probable (4)	Highly probable (4)
Significance	**Medium (40)**	**Medium (40)**
Status (positive or negative)	Positive	Positive
Reversibility	Yes	
Irreplaceable loss of resources	Yes (impact of climate change)	
Can impacts be enhanced	No	
Enhancement None anticipated		
Residual impacts » Reduce carbon emissions through the use of renewable energy and contribute to reducing global warming » Contribution towards security of electricity supply		

The impact is assessed to be positive; local to national in extent; long term; minor intensity; and highly probable. The impact is assessed to be of **medium positive significance** to the decision-making process.

5.2.3. Benefits associated with REIPPP socio-economic development plans and community trust

According the Department of Energy (DoE) renewable energy projects under the Renewable Energy Independent Power Producer Procurement programme (REIPPPP) are obliged to make a real contribution to local economic development in the area. Awarded projects are required to spend a certain amount of their generated revenue on Socio-Economic Development (SED) and Enterprise Development (ED) and share ownership in the project company with local communities (DoE, 2011).

The developer is required establish a community trust funded by revenue generated from the sale of energy. The community trust will generate a reliable and steady income stream over a 20 year period. The trust will be used to fund development initiatives in the area and support local economic and community development. As the community trust will run for the entire operational phase of 20 years, it allows the local municipality and communities to undertake long term planning. This provides opportunities for positive benefits to the local area.

However these benefits can be enhanced. Consultations took place with key local authorities from the KHLM and the Ward Councillor for Ward 14. A few issues were raised from past experiences with the solar energy developments coming into the area. The key issues that the relevant authorities are facing include external workforces being brought into the area, social responsibilities not being met properly and a lack of communication with the relevant local authorities in terms of the community trust and socio-economic development plans. It is important for the developers to engage and communicate with the local municipality so that the municipality can provide guidance on what's required in the local area for socio-economic development plans. It is also important that the correct representatives are appointed to be part of the community trust. The solar energy developments are supported by the local authorities and it was noted that these developments have the potential to bring in more positive impacts to the local area however the issue raised need to be addressed with new developments coming into the area. Socio-economic spin-offs from the proposed development could contribute to better infrastructure provision and educational investment in the local areas.

An in-depth community needs assessment (CNA) will need to be carried out at a later stage to make sure that the real needs of communities are addressed (in line with the local government) and the correct representatives of the community are appointed to run the community trust; in order to significantly contribute towards local economic growth, SED and ED.

Table 23: Assessment of the benefits associated with REIPPPP- SED and ED programmes and community trust

Operational Phase		
Nature: Benefits to the local area from SED/ ED programmes and community trust from REIPPPP social responsibilities		
	Without enhancement	**With enhancement**
Extent	Local (2)	Local (2)
Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Highly probable (4)
Significance	**Low (30)**	**Medium (48)**
Status (positive or negative)	Positive	Positive
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be enhanced	No	
Enhancement » An in-depth community needs assessment (CNA) will need to be carried out to make sure that the real needs of communities are addressed (in line with the local government) and the correct representatives of the community are appointed to run the		

community trust » Engagement and involvement of the local municipality (KGLM) with social responsibility plans must be undertaken.
Residual impacts Improvements in local communities through socio-economic development and enterprise development

The impact is assessed to be positive; local in extent; long term; moderate intensity; and highly probable. The impact is assessed to be of **medium positive significance** to the decision-making process.

5.2.4. Visual impact and sense of place impacts

The sense of place is developed over time as the community embraces the surrounding environment, becomes familiar with its physical properties, and creates its own history. The sense of place is created through the interaction of various characteristics of the environment, including atmosphere, visual resources, aesthetics, climate, lifestyle, culture and heritage. Importantly though it is a subjective matter and is dependent on community perceptions.

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 from the proposed solar energy facility and associated infrastructure.

The area around Upington has been identified by the Department of Environmental Affairs as a REDZ 7. These zones have been put forward in order to focus development and inform planning. In addition, the provincial government has identified a Solar Corridor within this area within which solar development is planned in terms of the Provincial SDF.

The adjacent landowners are farmers that utilise the adjacent land for livestock / game farming activities. According to the VIA, the development of the proposed additional 50MW capacity of Ilanga CSP 5 within the Karoshoek Solar Valley Development will not significantly alter the visual impact associated with the development of parabolic trough facility on the already authorized site. The visibility of proposed extended capacity of Ilanga CSP 5 will fall within the extent of impact associated with currently authorised site. As receptors are some distance from the facility (minimum 5km) and because partial views of the facility are only likely to be possible, the additional impact associated with the proposed additional capacity is unlikely to significantly add to visual impacts. The

anticipated impact from the additional 50MW CSP facility on the areas visual quality and sense of place is expected to be low.

Table 24: Visual impact and impacts on sense of place assessment

Operational Phase		
Nature: Visual impacts and sense of place impacts associated with the operation phase of the solar energy facility and associated infrastructure		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (2)
Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Minor (2)
Probability	Improbable (2)	Improbable (2)
Significance	**Low (20)**	**Low (16)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be mitigated	Yes	
Mitigation » Implement mitigation measures and recommendations proposed by the visual specialist as part of the VIA.		
Residual impacts None anticipated if the visual impact will be removed after decommissioning, provided the site is rehabilitated to its original (current) status.		

The impact is assessed to be negative; local in extent; long term; low intensity; and probable. The impact is assessed to be of **low significance** to the decision-making process, however review of the VIA should be acknowledged and recommendations implemented.

5.2.5. Impacts associated with the loss of agricultural land for livestock grazing

Direct occupation of land by the proposed solar energy facility has the effect of taking the impacted land out of agricultural production, through the occupation of the site by the footprint of the facility (approximately ~200ha for the 50MW extension). The study area is located within an agricultural zone mainly focussed along the Orange River. Currently the site and surrounding study area has limited potential for cultivation as a result of the nature of the soils and limited water availability, and is utilised for livestock and cattle grazing. The additional 50MW facility will be constructed over an area of approximately ~200ha. The activities associated with the operation phase will result in a loss of farmland available for grazing for the operation period of 20-25 years. However, the impacted landowner has noted that the grazing activities will still take place on

the other portions of the farm that aren't occupied by the solar energy facility. Therefore the solar energy development will not interfere with livestock farming operations, and thereby the impact is assessed to be of low significance.

Table 25: Impact assessment of the loss of agricultural land for livestock grazing

Operation Phase		
Nature: Impacts associated with loss of farmland available for livestock grazing due to occupation of land by the solar energy facility		
	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Long-term (4)	Long-term (4)
Magnitude	Minor (2)	Minor (2)
Probability	Highly probable (4)	Highly probable (4)
Significance	**Low (28)**	**Low (28)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources	At footprint for the duration of the operation phase of the solar energy facility	
Can impacts be mitigated	No	
Mitigation None anticipated		
Residual impacts Overall loss of farmland, income and change in livelihood		

The impact is assessed to be negative; local in extent; long-term; low intensity; and probable. The impact is assessed to be of **low significance** to the decision-making process.

5.3. Cumulative Impacts

Possible cumulative impacts as a result of other similar projects and associated infrastructure in the area could have cumulative negative and positive impacts for the local community. Cumulative impacts have been considered as part of the social impact assessment and identified where relevant. The cumulative impacts of the project are related to the construction and operation phases. The proposed additional 50MW CSP trough facility for Ilanga CSP 5 project is located within less than 10km from other renewable energy facilities. The impact of solar facilities on the landscape is considered to be a key issue in certain parts of South Africa where there is a growing number of solar energy facility applications. Portions of the Northern Cape, including the proposed development area, are earmarked as potential solar energy hubs (Northern Cape PSDF 2012). There are a number of projects proposed and authorised projects in the vicinity of the Karoshoek Solar Valley Site, within the ZF Mgcawu District.

The Karoshoek Solar Valley Development falls within the identified geographical area most suitable for the rollout of the development of solar energy projects within the Northern Cape Province as identified by the provincial SDF. This implies that projects of the same nature will be consolidated in one area creating a node, and ultimately aiming to reduce the potential for cumulative impacts associated with such developments when spatially fragmented. It is also important to note that it is unlikely that all proposed renewable energy facilities located in the region will be built due to capacity constraints on the Eskom grid and the limits placed on renewable energy targets. The cumulative impacts for the proposed Ilanga CSP 5 project facility have been assessed to be acceptable. Table 26 below lists the known solar projects in the area (also see Figure 10 below).

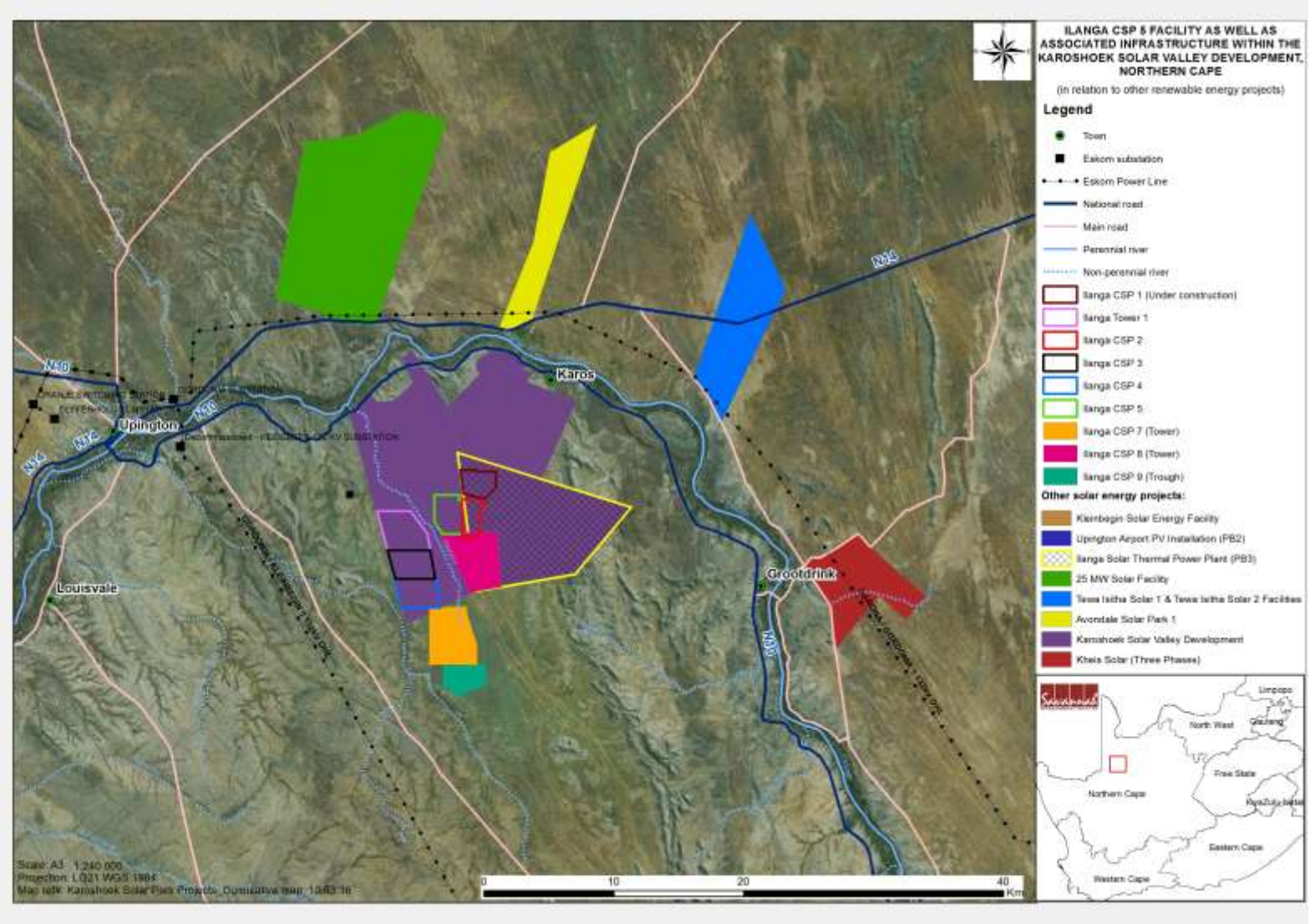

Figure 10: Location of the proposed Ilanga CSP 5 additional 50MW trough plant in the Northern Cape Province

Table 26: Other solar projects/ developments within 25-30km from the study area

Project Name	DEA Ref. No	Location	Approximate distance from the Karoshoek Solar Valley Project development site	Project Status
Ilanga Solar Thermal Power Plant	12/12/20/2056	Lot 944 Karos Settlement	Within the Karoshoek Solar Valley development site	Preferred Bidder Round 3; under construction
Karoshoek Solar Valley Development	14/12/16/3/3/2/289 14/12/16/3/3/2/290 14/12/16/3/3/2/291 14/12/16/3/3/2/292 14/12/16/3/3/2/293 14/12/16/3/3/2/294 14/12/16/3/3/2/295 14/12/16/3/3/2/296 14/12/16/3/3/2/297 14/12/16/3/3/2/298 14/12/16/3/3/2/299	Matjesriver RE and 2/41, Annashoek 3/41, Karos 956 and Lot 944 Karos Settlement	All within the Karoshoek Solar Valley development site	Received Authorisation
25MW Solar Energy Facility, North-East Of Upington, NC Province	12/12/20/2169	Remaining Extent of the Farm 418	20km north	Received Authorisation
Upington Airport PV Solar Energy Facility	12/12/20/2146	Upington International Airport	25km north west	Preferred Bidder Round 2; construction completed
Kheis Solar Phase 3 phases	14/12/16/3/3/2/569 14/12/16/3/3/2/570 14/12/16/3/3/2/571	Portion 7 and Portion 9 of the Farm Namakwari 656	30km south east	Received Authorisation
Albany Solar Energy Facility	14/12/16/3/3/2/639	Remainder of Farm Albany 405	25km north east	In Process
Avondale Solar Park 1	14/12/16/3/3/2/618	Portion 1 of the Farm Avondale No. 410	20km north	In Process

It is clear from the above that there is a concentration of solar facilities in the broader area around Upington. This is considered to be in line with Provincial and National Planning for solar energy development (in terms of the NC SDF and the REDZ). The potential for significant cumulative impacts is however likely to be high. This could result in positive permanent impacts on the economy, business development, employment and education in the area and the province. It may also result in some negative impacts such as influx jobseekers and change the landscape and areas sense of place. However the cumulative impacts for the proposed additional 50MW CSP trough facility for Ilanga CSP 5 project have been assessed to be acceptable (as detailed below).

5.3.1. Cumulative impacts from employment, skills and business opportunities

The proposed Ilanga CSP 5 project 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 incentivize operation and maintenance companies to centralise and expand their activities towards education and training more closely to the projects. Cumulative impacts on local entrepreneurs will be positive and assist in developing their businesses further. Also renewable energy projects under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) are obliged to make a real contribution to local economic development in the area. Awarded projects are required to spend a certain amount of their generated revenue on Socio-Economic Development (SED) and Enterprise Development (ED) and share ownership in the project company with local communities. The additional impact associated with the proposed additional 50MW CSP capacity is likely to have minor positive impact on the local economy.

Table 27: Cumulative impacts of employment opportunities, business opportunities and skills development

Nature: An increase in employment opportunities, skills development, SED and business

opportunities with the establishment of more than one solar energy facility		
	Cumulative Impact with Proposed Project	**Cumulative Impact without Proposed Project**
Extent	Local- Regional (3)	Local- regional (3)
Duration	Long term (4)	Long term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Medium (39)**	**Medium (33)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources	N/A	
Can impacts be enhanced	Yes	
Confidence in findings	High	
Enhancement The establishment of a number of solar energy facilities 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/ED. 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.		

The impact is assessed to be positive; local to regional in extent; long-term; moderate intensity and highly probable. The overall impact is likely to have a **medium positive significance** to the local area.

5.3.2. Cumulative impacts with large scale in-migration of people

The development of large-scale solar projects in the local area will likely draw a large number of labour, businesses and jobseekers to the area. If the local labour force cannot be sourced locally or the local labour pool is inadequate for the solar energy projects, outside labour will likely move to the area to fill the gap. The area may experience an influx of new residents who may move to the area looking for job opportunities; which will have effects on the existing population during the construction periods that could entail problems of housing, sanitation, water usage and solid waste disposal. Employment for a solar energy facility peaks during construction and significantly declines during operation; since solar energy facilities need relatively few workers while in operation, solar facilities will not create long-term boomtowns. Though there may be an influx of workers during construction, these workers are largely temporary. Rapid population growth is a common experience in rural towns near new large development projects. Towns with larger populations (greater than 1 000 individuals) and with developed services will likely experience greater rates of population growth than areas without developed services. In relation to the area, the towns that are sensitive receptors will be Upington and the smaller

settlements nearby. With the influx of new individuals, secondary industries in the town may also begin to grow, more individuals will move to the area to fill these secondary positions. The impact of this on services and resources is likely to impact the current communities and increase the pressure on local municipalities to meet the basic needs of these potential new communities. The poor communities are likely to be the most vulnerable to loss of service provision and suffer the negative impact of large scale in-migration. There is potential for the influx of migrants to significantly change the local receiving environment and this is likely to have a permanent impact in the region. If more than one solar energy facility is under construction at any one time, then the impacts from in-migration of people is likely to have more of a negative impact on the local area. It is very difficult to control an influx of people into an area, especially in a country where unemployment rates are high.

Table 28: Cumulative impacts with large-scale in-migration of people

Construction & Operational Phase		
Nature: Negative impacts and change to the local economy with an in-migration of labourers, businesses and jobseekers to the area.		
	Cumulative Impact with Proposed Project	**Cumulative Impact without Proposed Project**
Extent	Local (3)	Local (3)
Duration	Long term (4)	Long term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Medium (39)**	**Medium (33)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources	No	
Can impacts be mitigated	Yes	
Confidence in findings	Medium	
Mitigation » Develop a recruitment policy/ process (to be implemented by contractors), which will source labour locally, where feasible. » Working together with government agencies to ensure service provision is in line with the development needs of the local area. » Forming joint ventures with community organisations, through Trusts, which can provide local communities with benefits, such as employment opportunities and services.		

The impact is assessed to be negative; local to regional in extent; long-term; moderate intensity and probable. The overall impact is likely to have a **medium negative significance** to the local area.

5.3.3. Cumulative impacts on the sense of place and landscape

The visual impact of solar energy facilities (PV and CSP) is likely to change the immediate landscape of the area. The cumulative impact of other solar energy projects in the area could alter the nature of the visual landscape. The potential impact of solar facilities on the landscape is an issue that does need to be taken into consideration, specifically given the growing number of solar energy facility applications in the Northern Cape Province. There are a number of proposed solar energy facilities in the nearby area, which will have a significant impact on the areas sense of place. With regards to the area, more solar energy facilities could be proposed in the future. The Environmental Authorities in the Province should therefore be aware of the potential cumulative impacts when evaluating applications.

According to the VIA, the area around Upington has been identified by the Department of Environmental Affairs as a REDZ 7. These zones have been put forward in order to focus development and inform planning. In addition, the provincial government has identified a Solar Corridor within this area within which solar development is planned in terms of the Provincial SDF. In the Upington area this has resulted in numerous solar energy project applications. This focus is likely to transform the general landscape character of the area. The development of the proposed additional 50MW capacity of Ilanga CSP 5 within the Karoshoek Solar Valley Development will not significantly alter the visual impact associated with the development of parabolic trough facilities on already authorized sites. The visibility of proposed extended capacity of Ilanga CSP 5 will fall within the extent of impact associated with currently authorised sites. As receptors are some distance from the facility (minimum 5km) and because partial views of the facility are only likely to be possible, the additional impact associated with the proposed additional capacity is unlikely to significantly add to cumulative visual impacts.

Table 29: Cumulative visual impacts and impacts on sense of place assessment

Operational Phase		
Nature: Visual impacts and change in the sense of place impacts associated with the establishment of more than one solar energy facility in the area		
	Cumulative Impact with Proposed Project	**Cumulative Impact without Proposed Project**
Extent	Local (2)	Local (2)
Duration	Long term (4)	Long term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Medium (36)**	**Medium (30)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	

Irreplaceable loss of resources	No
Can impacts be mitigated	No
Mitigation » Implement mitigation measures and recommendations proposed by the visual specialist as part of the VIA.	

The impact is assessed to be negative; local to regional in extent; long-term; moderate intensity and probable. The overall impact is likely to have a **medium negative significance** to the local area.

6. DECOMMISSIONING PHASE

Typically, the major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income. This has implications for the households who are directly affected, the communities within which they live, and the relevant local authorities. However, in the case of the proposed development the decommissioning phase is likely to involve the disassembly and replacement of the existing components with more modern technology. This is likely to take place in 20 - 25 years post commissioning. The decommissioning phase is therefore likely to create additional, construction type jobs, as opposed to the job losses typically associated with decommissioning however for a limited period of time.

Given the relatively small number of people employed during the operation phase (~15-25), the social impacts at a community level associated with decommissioning are likely to be limited. In addition, potential impacts associated with the decommissioning phase can be effectively managed with the implementation of a retrenchment and downscaling programme.

Table 30: Social impacts associated with decommissioning

Nature: Social impacts associated with retrenchment including loss of jobs and source of income		
	Without Mitigation	**With Mitigation**
Extent	Local (2)	Local (2)
Duration	Short term (1)	Short Term (1)
Magnitude	Low (4)	Minor (2)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	**Low (28)**	**Low (20)**
Status	Negative	Negative
Reversibility	No	
Irreplaceable loss of resources?	No	
Can impact be mitigated?	Yes	
Mitigation » Implementation of a retrenchment and downscaling programme » All structures and infrastructure associated with the proposed development should be dismantled, removed and transported off-site on decommissioning; & the landscape rehabilitated/ re-vegetated.		
Residual impacts Loss of jobs and associated loss of income, can impact on local economy and other businesses.		

The impact is assessed to be negative; local in extent; short term; low intensity; and highly probable. The impact is assessed to be of **low significance** to the decision-making process.

7. ASSESSMENT OF IMPACTS FOR THE NO-GO OPTION:

The impacts of pursuing the No-go Option are both positive and negative for the additional 50MW CSP trough facility are as follows:

» The benefits would be that there would less disruption from, nuisance impacts (noise and dust during construction) and safety and security impacts as duration of the construction phase would be less. The impact is therefore neutral.
» There would be an opportunity loss in terms of additional job creation, skills development and associated economic business opportunities for the local economy.

Foregoing the proposed additional 50MW CSP facility would not necessarily compromise the Ilanga CSP 5 development or the development of renewable energy facilities in South Africa. However, the socio-economic benefits for local communities would be forfeited.

8. CONCLUSION AND RECOMMENDATIONS

The SIA has primarily focused on the collection of primary data to identify and assess social issues and potential social impacts. Secondary data was collected and presented in a literature review and primary data was collected through consultations with key stakeholder and the public participation process. The environmental assessment framework for the assessment of impacts and the relevant criteria were applied to evaluate the significance of the potential impacts. A summary of the potential positive and negative impacts identified in the SIA for the construction and operation phase are presented in Tables 31 and 32 below and a summary of the cumulative social impacts is also provided in Table 33.

Table 31: Summary of social impacts during construction phase

CONSTRUCTION PHASE		
Impact	**Significance without Mitigation/ enhancement**	**Significance with Mitigation/ enhancement**
Positive Impacts		
Direct employment and skills development	Medium (36)	Medium (44)
Economic multiplier effects	Low (24)	Medium (30)
Negative Impacts		
Influx of jobseekers	Low (24)	Low (18)

Impacts on daily living and movement patterns (traffic impacts)	Low (24)	Low (12)
Safety and security risks	Low (27)	Low (14)
Nuisance impact (noise and dust)	Low (15)	Low (12)

Table 32: Summary of social impacts during operation phase

OPERATION PHASE		
Impact	**Significance without Mitigation/ enhancement**	**Significance with Mitigation/ enhancement**
Positive Impacts		
Direct employment and skills development	Medium (32)	Medium (40)
Development of clean, renewable energy infrastructure	Medium (40)	Medium (40)
Benefits associated with REIPPP socio-economic development plans and community trust	Medium (30)	Medium (48)
Negative Impacts		
Visual and sense of place impacts	Low (20)	Low (16)
Impacts associated with the loss of agricultural land for grazing	Low (28)	Low (28)

Table 33: Summary of cumulative social impacts

CUMULATIVE IMPACTS		
Cumulative Impact	**Cumulative Contribution of Proposed Project**	**Cumulative Impact without Proposed Project**
Positive Cumulative Impacts		
Cumulative impacts from employment, skills and business opportunities	Medium (39)	Medium (33)
Negative Cumulative Impacts		
Cumulative impacts with large-scale in-migration of people	Medium (39)	Medium (33)

Cumulative impacts on the sense of place and landscape	Medium (36)	Medium (30)

Key findings

From a social perspective it is concluded that the project is supported, but that mitigation measures should be implemented and adhered to. Positive and negative social impacts have been identified. The assessment of the key issues indicated that there are no negative impacts that can be classified as fatal flaws and which are of such significance that they cannot be successfully mitigated. Positive impacts could be enhanced by implementing appropriate enhancement measures and through careful planning. Based on the social assessment, the following general conclusions and findings have been made:

» The potential negative social impacts associated with the construction phase are typical of construction related projects and not just focussed on the construction of CSP facilities (these relate to influx of non-local workforce and jobseekers, intrusion and disturbance impacts, safety and security) and could be reduced with the implementation of the mitigation measures proposed.
» Employment opportunities will be created in the construction and operation phase and the impact is rated as positive even if only a small number of individuals benefit in this regard.
» The proposed project could assist the local economy in creating entrepreneurial development, especially if local business could be involved in the provision of general material and services during the construction and operational phases.
» Capacity building and skills training among employees are critical and would be highly beneficial to those involved, especially if they receive portable skills to enable them to also find work elsewhere and in other sectors.
» The proposed development also represents an investment in infrastructure for the generation of clean, renewable energy, which, given the increased awareness of climate change, represents a positive social benefit for society as a whole.
» The proposed additional 50MW to the authorised project will therefore not result in any other social impacts that were not considered in the original application for authorisation.

Recommendations

The following recommendations are made on the basis of the SIA and a thorough review of the concerns and suggestions raised by stakeholders and interested and affected parties during the stakeholder engagement process. The proposed mitigation measures should be implemented to limit the negative impacts and enhance the

positive impacts. Based on the social assessment, the following recommendations are made:

» The EPC contractor should appoint a designated staff member to assist with the management of social impacts and to deal with any community issues.
» In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled in the study area could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen local endeavours to obtain jobs and provoke discontent as well as put pressure on the local services available. It is imperative 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 activities where possible. Local procurement of labour and services/products would greatly benefit the community during the construction and operational phases of the project.
» Local procurement of services and equipment where possible in order to enhance the multiplier effect. This would serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.
» Involve the community in the process as far as possible (encourage co-operative decision making and partnerships with local entrepreneurs).
» Implement mitigation measures to reduce and avoid negative impacts.
» Employ mitigation measures to minimise the dust pollution and damage to existing roads and fences / gates.
» 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.

Overall Conclusion

The proposed Ilanga CSP 5 project and associated infrastructure is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the project could be developed subject to the implementation of the recommended mitigation measures and management actions contained in the SIA report.

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APPENDIX A: SIA ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)-

Construction Phase

Direct employment and skills development

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

Project component/s	Construction of the proposed project and associated infrastructure
Potential Impact	The opportunities and benefits associated with the creation of local employment and skills development to be maximised.
Activity/risk source	» Construction procurement practice employed by the EPC contractor » Developers investment plan
Enhancement: Target/Objective	The developer should aim to employ as many low-skilled and semi-skilled workers from the local area as possible. This should also be made a requirement for all contractors.

Enhancement: Action/control	**Responsibility**	**Timeframe**
If possible, employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria	The Developer & EPC Contractor	Pre-construction & construction phase
It is recommended that a local employment policy is adopted to maximise the opportunities made available to the local labour force (sourced from nearest towns/settlements)	The Developer & EPC Contractor	Pre-construction & construction phase
The recruitment selection process should seek to promote gender equality and the employment of women wherever possible	EPC Contractor	Pre-construction & construction phase
Where feasible, training and skills development programmes are to be initiated prior to the commencement of the construction phase	The Developer	Pre-construction & construction phase
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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained, by the Contractor to record all complaints and queries relating to the project and the action taken to resolve the issue.	EPC Contractor	Pre-construction & construction phase

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

Economic multiplier effects

OBJECTIVE: Maximise the local economic multiplier effect during construction phase

Project component/s	Construction of the proposed solar energy facility and associated infrastructure
Potential Impact	Potential local economic benefits
Activity/risk source	Developers procurement plan
Enhancement: Target/Objective	Increase the procurement of goods and services especially within the local economy

Enhancement: Action/control	Responsibility	Timeframe
It is recommended that a local procurement policy is to be adopted to maximise the benefits to the local economy	The Developer & EPC Contractor	Pre-construction & construction phase
Where feasible, develop a database of local companies, specifically Historically Disadvantaged (HD) 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 Developer& EPC Contractor	Pre-construction & construction phase
Where feasible, 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	The Developer	Pre-construction & construction phase

Performance Indicator	» Local procurement policy is adopted » Local goods and services are purchased from local suppliers where feasible
Monitoring	» The developer must monitor indicators listed above to ensure that they have been met for the construction phase

Impacts from an influx of jobseekers

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

Project component/s	Construction of the proposed solar energy facility and associated infrastructure
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 should be advertised for construction employment opportunities, especially for semi and low-skilled job categories.	The Developer & EPC contractor	Pre-construction & construction phase
Tender document should stipulate the use of local labour as far as possible	EPC contractor	Pre-construction & construction phase
Prior to construction commencing representatives from the local community (e.g. ward councillor, surrounding landowners) should be informed of details of the construction schedule and exact size of the workforce.	The Developer & EPC contractor	Pre-construction & construction phase
Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office should be established by the contractor in a nearby town to deal with jobseekers.	EPC contractor	Pre-construction & construction phase
Have clear rules and regulations for access to the proposed site.	EPC contractor	Pre-construction & construction phase
Local community organisations and policing forums / neighbourhood watches must be informed of construction times and the duration of the construction phase. Also establish procedures for the	The Developer & EPC contractor	Pre-construction phase & Construction phase

Mitigation: Action/control	Responsibility	Timeframe
control and removal of loiters at the construction site		
Security company to be appointed and appropriate security procedures to be implemented	The Developer & EPC contractor	Pre-construction phase & Construction phase

Performance Indicator	» Ensure 'locals first' policy is adopted/advertised » Ensure no recruitment takes place on site » Control/removal of loiters
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes

Impacts on daily living and movement patterns

OBJECTIVE: To avoid or reduce impacts on farm infrastructure (fences, gates and roads) and to avoid traffic disruptions and movement patterns of local community during the construction phase

Project component/s	Construction of the proposed solar energy facility and associated infrastructure
Potential Impact	Increase in traffic disruptions, safety hazards, and impacts on farm infrastructure and impacts movement patterns of local community
Activity/risk source	Construction activities affecting farm infrastructure and daily living and movement patterns
Mitigation: Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods and / or properties

Mitigation: Action/control	Responsibility	Timeframe
All vehicles must be road worthy and drivers must be qualified, obey traffic rules, follow speed limits and made aware of the potential road safety issues.	EPC contractor	Pre-construction phase & Construction phase
Heavy vehicles should be inspected regularly to ensure their road safety worthiness.	EPC contractor	Construction phase
Implement penalties for reckless driving for the drivers of heavy vehicles as a way to enforce compliance to traffic rules.	EPC contractor	Construction phase
The developer and engineering, procurement and construction (EPC) contractors must ensure that there is a dedicated access and an access control point at the entrance gate off the N10 on Farm Matjesrivier RE/41.	EPC contractor	Construction phase
Infrastructure such as fencing and/or gates along	The Developer &	Construction

Mitigation: Action/control	Responsibility	Timeframe
access route must be maintained in the present condition or repaired if disturbed due to project activities	EPC contractor	phase
A comprehensive employee induction programme to cover land access protocols and road safety.	The Developer & EPC contractor	Pre-construction phase & Construction phase
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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be maintained, by the Contractor and monitored by the ECO, to record all complaints and queries relating to the project and the action taken to resolve the issue.	EPC Contractors	Pre-construction & construction phase

Performance Indicator	» Vehicles are roadworthy, inspected regularly and speed limits are adhered to » Roads and electric fencing are maintained or improved upon if disturbed from project activities
Monitoring	» The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase

Safety and security impacts

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

Project component/s	Construction of the proposed solar energy facility and associated infrastructure
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 should be kept to daylight hours during the construction phase, and/or as any deviation that is approved by the surrounding landowners.	EPC contractor	Construction phase

Mitigation: Action/control	Responsibility	Timeframe
The perimeter of the construction site should be appropriately secured to prevent any unauthorised access to the site; the fencing of the site should be maintained throughout the construction periods.	EPC contractor	Pre-construction phase & Construction phase
A security company is to be appointed and appropriate security procedures are to be implemented.	EPC contractor	Construction Phase
Access in and out of the site should be strictly controlled by a security company.	EPC contractor	Construction Phase
Provide workers with identity tags and prohibit the access of unauthorized people to the construction site.	EPC contractor	Construction Phase
Open fires on the site for heating, smoking or cooking are not allowed, except in designated areas.	EPC contractor	Construction phase
Provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.	EPC contractor	Pre-construction phase & Construction phase
A comprehensive employee induction programme to be developed and utilised to cover land access protocols, fire management and road safety	EPC contractor	Pre-construction phase & Construction phase
Ensure roads utilised are either maintained in the present condition or restored if disturbed from project activities	The Developer & EPC contractor	Construction phase
Provision of adequate and strategically placed traffic warning signs and control measures along the access road and N10 to warn road users of the construction activities taking place and displaying road safety messages and speed limits. Warning signs must be visible at all times.	EPC contractor	Construction phase
Have a personal trained in first aid on site to deal with smaller incidents that require medical attention	EPC Contractor	Pre-construction phase & construction phase
All vehicles must be road worthy and drivers must be qualified and made aware of the potential road safety issues and follow the speed limits.	EPC Contractor	Pre-construction phase & construction phase
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. The EPC contractor should appoint a designated staff member to implement grievance procedures and address issues and complaints. A Public Complaints register must be	EPC Contractor	Pre-construction & construction phase

Mitigation: Action/control	Responsibility	Timeframe
maintained, by the Contractor and monitored by the ECO, to record all complaints and queries relating to the project and the action taken to resolve the issue.		

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

Nuisance impacts (Noise and dust)

OBJECTIVE: To avoid or minimise the potential impacts of noise and dust from construction activities during the construction phase

Project component/s	Construction of the proposed solar energy facility and associated infrastructure
Potential Impact	Heavy vehicles and construction activities can generate noise and dust impacts.
Activity/risk source	Construction activities
Mitigation: Target/Objective	To avoid and or minimise the potential noise and dust impacts associated with construction activities

Mitigation: Action/control	Responsibility	Timeframe
Implement appropriate dust suppression measures on a regular basis along the gravel access road and on the proposed site.	EPC Contractor	Construction phase
Vehicles used to transport sand and building materials must be fitted with tarpaulins or covers when travelling on national roads.	EPC Contractor	Construction phase
Ensure all vehicles are road worthy, drivers are qualified and are made aware of the potential noise and dust issues	EPC Contractor	Construction phase
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. The EPC contractor should appoint a designated staff member to implement grievance	EPC Contractor	Pre-construction & construction phase

Mitigation: Action/control	Responsibility	Timeframe
procedures and address issues and complaints. A Public Complaints register must be maintained by the Contractor and monitored by the ECO to record all complaints and queries relating to the project and the action taken to resolve the issue.		

Performance Indicator	» Dust suppression measures implemented for all heavy vehicles and construction vehicles that require such measures during the construction phase » Grievance mechanism and communication channel procedures
Monitoring	» The EPC contractor must monitor the indicators to ensure that they have been met for the construction phase

Operation Phase:

Direct employment and skills development during operation phase

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

Project component/s	Operation and maintenance of the proposed solar energy facility and associated infrastructure
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
It is recommended that local employment policy is adopted to maximise the opportunities made available to the local community.	The Developer & EPC contractor	Operation phase
The recruitment selection process should seek to promote gender equality and the employment of women wherever possible	The Developer & EPC contractor	Operation phase
Establish vocational training programs for the local labour force to promote the development of skills	The Developer	Operation phase

Performance Indicator	» Percentage of workers that were employed from local communities » Number of people attending vocational training on an annual basis
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes

Benefits associated with REIPPP socio-economic development plans and community trust

OBJECTIVE: Maximise benefits for local communities associated with socio-economic development plans and community trust

Project component/s	Operation and maintenance of the proposed solar energy facility and associated infrastructure
Potential Impact	Loss of socio-economic opportunities for local area
Activity/risk source	Operation of the CSP facility and associated infrastructure
Mitigation: Target/Objective	Maximise local community benefits in the local economy

Mitigation: Action/control	Responsibility	Timeframe
An in-depth community needs assessment (CNA) will need to be carried out to make sure that the real needs of communities are addressed (in line with the local government) and the correct representatives of the community are appointed to run the community trust	The Developer	Pre-Operation phase
Engagement and involvement of the local municipality with regards to social responsibility plans	The Developer	Pre-Operation phase

Performance Indicator	» Community needs assessment » Engage and involvement of the local municipality
Monitoring	» The developer must keep a record of key stakeholders consultations that took place with the local municipality and key community members

APPENDIX B: MINUTES OF MEETINGS DURING SIA STAKEHOLDER CONSULTATION PROCESS

Below are the minutes of the meetings that were undertaken during the social stakeholder consultation process.

Note: There are numerous projects that are planned to form part of the Karoshoek Solar Valley. The proposed establishment of the Ilanga CSP 5 project as well as other proposed developments from Emvelo (Pty) Ltd were discussed in the SIA stakeholder meetings (see Figure 11).

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: POWER LINE LANDOWNER (FARM VAAL KOPPIES 8/40 & 62/40)

HELD ON:
MONDAY 15 FEBRUARY 2016

VENUE:
UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

Venue: Upington
Date: Monday 15 February 2016
Time: 11:00

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Nestor Sterling Strauss (NS)	Power line landowner of Farm Vaal Koppies 62/40 & 8/40 (Newhaven Trust – Trustee)
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Are you the owner of Farm Vaal Koppies 62/40 and Vaal Koppies 8/40?	NS: Yes
CH: What activities are currently taking place on your farm?	NS: Cattle and livestock farming activities. Game are present on the farm, but the game are not in close proximity to the proposed powerline route.
CH: Do you currently reside on your farm?	NS: No.
CH: Are there any tenants and/or any farm workers residing on any of the Farms?	NS: Only one farm worker resides on the farm that looks after the cattle.
NS: Who will be developing these projects?	CH: FG Emvelo (Pty) Ltd, an independent power developer of concentrating solar power plants, is in the process of investigating additional CSP facilities immediately adjacent to the authorised sites (1.3, 1.4, 3, 4 & 5) and associated infrastructure (power line, access road & water pipeline). Emvelo Eco Projects (Pty) Ltd is in the process of investigating the three new CSP facilities of up to 150MW each and associated infrastructure. These projects are all to form part of the Karoshoek Solar Valley Development.
CH: Is your farm fenced and fully secure?	NS: Yes. The outside and inside fences are between 1.4 - 1.5m high.
CH: Are there any sensitive features on your property that may be impacted by the power line that need to be taken into consideration? (historical features, dwellings, wetlands)	NS: There are other proposed solar projects located close to the proposed power line route on the farm. One is authorised and will bid and the other one might receive authorisation before the end of the year.
NS: Do you have a specific crossing for the	CH: The power line route has not been

Question / Comment	Response
powerline?	finalised at this stage. The power line route may change. However you will be notified and consulted on any of the changes.
CH: Do you foresee any of the proposed developments or power line having an effect / impact on your farming activities or property?	NS: My biggest concern would be where the powerline will be crossing the farm and fences. There would need to be a gate for the developers to access the servitude. It is important that this gate is closed at all times for the safety of the livestock. This poses a threat to the game and livestock located in that area of the farm. CH: Noted.
CH: Do have any other concerns with the proposed developments and associated infrastructure in terms of noise, dust, traffic and visual implications etc.?	NS: No, however the developers would need to be in contact with me regarding the servitude and necessary agreements would need to be established. CH: Noted

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 11:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM TROOILAPS PAN 7/53)

HELD ON: MONDAY 15 FEBRUARY 2016

VENUE: UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

Venue: **Upington**
Date: **Monday 15 February 2016**
Time: **12:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Theuns Eksteen (TE)	Adjacent landowner- T.J. Eksteen- Boerdery BK (Farm Trooilaps Pan 7/53)
Candice Hunter (CH)	Savannah Environmental –Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
TE: How will these towers influence the rainfall in the surrounding area, as well as on my farm? The concentrated heat from the towers cause a dry spell in the surrounding area.	CH: I would have to consult with the EAP and the specialists to determine how we can address this concern.
CH: What activities are currently taking place on your farm?	TE: Mainly livestock farming activities.
CH: Do you reside on your farm?	TE: No.
CH: Do have any concerns with the proposed solar developments in terms of safety & security, noise, dust, increase in traffic, movement of people and visual impacts?	TE: No. The projects are located too far from my farm to be impacted by these issues.
CH: Is your farm fenced and fully secure?	TE: Yes.
CH: Are there any tenants and/or any farm workers residing on any of the farm?	TE: No.
CH: Do you have any other questions or concerns with the proposed developments?	TE: Just how the projects will affect the rainfall in the area.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She

thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 13:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: DWS

HELD ON: MONDAY 15 FEBRUARY 2016

VENUE: LOUISVALE ROAD, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Louisval Road, Upington**
Date: **Monday 15 February 2016**
Time: **14:00**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Shaun Cloete (SC)	Department of Water and Sanitation
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
SC: Has the draft scoping report been sent to our offices?	CH: I will follow up with my colleagues and get back to you.
SC: When are the developer planning to BID the project? Are all three projects going to be bid?	CH: Yes, they plan on bidding these projects in the next bidding round at the end of this year (Bidding round five).
SC: They will require a non-binding water availability letter. This needs to be applied for as part of the bid requirements. They will also need the acknowledgement of receipt of the water use license.	CH: Noted.
SC: How much water (water volumes) will be required during construction and operation phases?	CH: Approximately ~240 000m^3/annum of water will be required during the 30 to 36-month construction for each facility. Approximately ~300 000 to 400 000m^3/annum of water will be required during the operations phase. Separate water use licences will be applied for each facility
SC: The Department of Water and Sanitation will need the designs for the evaporation ponds.	CH: Noted.
SC: Will access roads / pipelines / power lines cross drainage lines? The developer should avoid construction near drainage lines. Please note that we require a 100m buffer around the drainage lines and not 32m.	CH: An ephemeral drainage line, flowing in an east to west direction was identified, bordering the northern section of the proposed development footprint area. This drainage line connects to a larger drainage system to the west of the site (flowing in a south to north direction). A small tributary of the smaller drainage system extend into small portion of the proposed development

Question / Comment	Response
	footprint area (to the north). Section 21(c) & (i) will be applied for as required. They will be building a new access road for the three projects.
SC: Will the water reservoir be constructed or will it be a steel container? This will be relevant for the water use license.	CH: I will confirm the reservoir details and get back to you.
SC: Will the waste water be heated?	CH: I will confirm if the waste water will be heated and get back to you.
SC: The developer should make sure what kind of toilet facilities will they use. During the operation phase, will they use concrete septic tanks or small process plant which treats the effluent and reuses it? This should also be included in the water use license.	CH: Portable toilets will be used during the construction phase and a septic tank for operation phase.
SC: They will need a groundwater (geohydrological) report for the water use license.	CH: Noted.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 15:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM TROOILAPS PAN RE/53)

HELD ON: MONDAY 15 FEBRUARY 2016

VENUE: 66 MARK STREET, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **66 Mark Street, Upington**
Date: **Monday 15 February 2016**
Time: **15:00**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Johan van der Merwe (JvdM)	Adjacent landowner- Farm Trooilaps Pan RE/53 (Future Labour Solutions cc – Member)
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: What activities are currently taking place on your farm?	JvdM: Game farming activities.
CH: Do you live on the Farm?	JvdM: No. We have a home on the farm, we use it on weekends.
JvdM: The main reason we have the farm is to take our clients there for hunting trips and for the sense of nature. The towers will have a visual impact on the natural aspect of the area.	CH: Noted.
CH: How long have you had this farm for?	JvdM: For two and a half years
JvdM: Where will the water come from?	CH: The developer is looking at abstracting the water from the Orange River via a pipeline that will be approximately 4-6km long.
CH: Is you farm completely fenced off? Do you have any concerns regarding safety and security of your game?	JvdM: Yes that is also a concern. The fences do not prohibit theft.
JvdM: Why were these specific areas chosen for the solar developments?	CH: The proposed sites are chosen to avoid known sensitivities in the selected area such as drainage lines, koppies and sand dunes. Furthermore, the area is located within a designated Renewable Energy Development Zone (REDZ).
CH: There are no cultivated or irrigated areas on your farm?	JvdM: No.
CH: Are there any sensitive features like power lines, telephone poles etc.	JvdM: No.
CH: Are there any other features on your farm that you feel might be impacted?	JvdM: The main concern would be the visual impacts and the impact these developments would have on the areas sense of place. We

Question / Comment	Response
	go out to the farm to get away from the city and developments, we go there for the natural aspect. These developments will negatively affect the game farming and hunting activities that we have on the farm.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 16:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM EZELFONTEIN 1/50)

HELD ON: MONDAY 15 FEBRUARY 2016

VENUE: UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
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E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Upington**
Date: **Monday 15 February 2016**
Time: **16:00**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
André Burger (AB)	Adjacent Landowner- Ezelfontein 1/50
Jaco Burger (JB)	Adjacent Landowner- Ezelfontein 1/50
Koos Burger (KB)	Adjacent Landowner- Ezelfontein 1/50
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: What activities are currently taking place on your farm?	JB: Livestock (only cattle) farming.
CH: Do you live on the Farm Ezelfontein 1/50?	JB: No.
CH: Is your farm completely fenced off?	JB: Yes.
JB: There is a mountainous area on the farm which will block off most of the visual impacts caused by the tower facilities.	CH: Noted.
JB: How do the impacted landowners feel about the projects?	CH: Emvelo Eco Projects are in the process of either buying or leasing the farms where the solar facilities will be located.
JB: Will the developer be leasing all the farms on which the proposed power line traverses?	CH: They will only lease the areas on the farms that the power line servitude covers.
JB: Can the developer force the landowners to sell their farms?	CH: No.
CH: Do have any concerns with the proposed solar developments in terms of safety & security, noise, dust, traffic and visual impacts?	JB: No, I think the mountainous area between our farm and the developments will block out most of the impacts.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She

thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 17:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING:

POWER LINE LANDOWNER (FARMs VAAL KOPPIES 7/40 AND 4/40)

HELD ON:
WEDNESDAY 17 FEBRUARY 2016

VENUE:
62 MARK STREET, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **62 Mark Street, Upington**
Date: **Wednesday 17 February 2016**
Time: **15:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
J.J. Eksteen (JE)	Power Line Landowner of Farm Vaal Koppies 7/40 and 4/40
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Do you Own Farm Vaal Koppies 4/40 and Farm Vaal Koppies 7/40?	JE: Yes
CH: What activities are currently taking place on your farm?	JE: Livestock (cattle) farming.
CH: Do you live on the farm? Are there any tenants and / any farm workers residing on the farm?	JE: No.
JE: What is the next step in the environmental assessment process?	CH: A separate EIA process will be undertaken for the power line route. Once the EIA process has commenced, the specialists will need access your farm. However the client will be in contact with you to arrange the agreements with regards to the servitude.
CH: Are there any issues that you have with the power line?	JE: There is a concern is terms of aesthetics. Especially if the developer requires a road along the power line route.
JE: It is important that the developers contact me so that we can come up with an agreement.	CH: Noted.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She

thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 16:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: //KHARA-HAIS LOCAL MUNICIPALITY – WARD COUNCILLOR WARD 14

HELD ON:
THURSDAY 18 FEBRUARY 2016

VENUE:
KALAHARI MALL, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
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E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Kalahari Mall, Upington**
Date: **Thursday 18 February 2016**
Time: **08:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Dirk Ambraal (DA)	//Khara-Hais Local Municipality
William Malo (WM)	//Khara-Hais Local Municipality
James Moya (JM)	//Khara-Hais Local Municipality – Ward Councillor Ward 14
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
JM: In terms of local employment opportunities, please explain how the 50km radius works?	CH: These projects will fall under the DoE's REIPPP in South Africa. The DoE stipulated that a certain percentage of employment opportunities have to be sourced from the local area. The local area can be defined as the area within a 50km radius from the development. It would be beneficial to employ people that are as close as possible to the project.
JM: What is the plan in terms of safety on the road? Especially referring to the curve in the road. Can you give us an expected date for the realignment of the N10 road? The roads used for Site 3, 4 and 5 also need safety in place.	CH: The developer is in the process retrieving the relevant authorisations and licenses required for the realignment of the portion of the N10 road. I will follow up with the developers and let you know when they plan on commencing the construction of the realignment of the N10.
CH: What are the main struggles/ problems in your ward?	JM: Unemployment and job creation is the biggest struggle. Creating economic opportunities for the local area is a challenge with the limited prospects available.
CH: How have things been with sourcing local people for employment for other solar developments?	JM: To ensure that no conflict arises, we make sure that people are sourced from all four communities. My request to Savannah Environmental is that Emvelo Eco Projects should recognize ward leaders and keep them involved in the process as these leaders can assist with solving social conflicts.

Question / Comment	Response
JM: Please let the ward leaders know when they are planning to start the developments. It is important that the developer and contractors contact me and involve me throughout the entire labour process; as I know what labour is available in Ward 14 and can assist in controlling social conflicts. The main thing is utilising as much labour as possible from Ward 14 as well as source other services and materials required for the project from ward 14 in order to benefit the local community as far as possible.	CH: Noted.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 09:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING:

//KHARA-HAIS LOCAL MUNICIPALITY – MUNICIPAL MANAGER REPRESENTATIVE

HELD ON:
THURSDAY 18 FEBRUARY 2016

VENUE:
MARK STREET, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Mark Street, Upington**
Date: **Thursday 18 February 2016**
Time: **09:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
G. Bessergn (Representative of the Municipal Manager) (GB)	//Khara-Hais Local Municipality – Municipal Manager Representative
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
GB: Thank you for explaining the proposed projects. I will pass this information onto the Municipal Manager. However, I will advise that you set up another meeting so that you explain the project in detail to the municipal manager in person.	CH: Noted

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 10:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING:
DENC & DAFF

HELD ON:
THURSDAY 18 FEBRUARY 2016

VENUE:
LOUISVALE ROAD, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
Tel: 011 656 3237
Fax: 086 684 0547
E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Louisvale Road, Upington**
Date: **Thursday 18 February 2016**
Time: **10:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Samantha De La Fontaine (SF)	DENC - Ecologist
Jacoline Mans (JM)	DAFF – Chief Forester
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
JM: The Scoping Report stated that impacts can be mitigated by search and rescue of trees (*Boscia* species). Such a recommendation is not practically feasible. The species have the deepest recorded root depth of all woody species in the world and cannot be transplanted with much success. The specialist will need to make another recommendation.	CH: Noted.
JM: The department is concerned about the cumulative impacts. The scoping report indicated that 11 projects will form part of the larger Karoshoek Solar Valley Development, this will have high cumulative impacts. We have already gone through the process of licence application for the Karoshoek development and the number of protected trees to be impacted was highly under-estimated. We were requested to amend the licence to increase the number of protected plant species (almost double the numbers). One project alone is already close to that threshold of 2000 protected tree species and if that threshold is exceeded it might trigger a biodiversity offset. As the Karoshoek developments increase, DAFF will be looking at the bigger picture. The developers must be proactive and budget for some kind of offset. The offsets needs to be discussed with DAFF as well as provincial nature conservation. It is definitely necessary to	CH: Noted.

Question / Comment	Response
appoint an offset specialist. SF: The developer underestimated the number of protected species for Ilanga 1, and they applied for an amendment and the amount increased from 1 000 to over 3 000. I did mention this as a condition in the first permit that cumulative impacts will be looked at for additional phases. Offsets will definitely be triggered in the future phases.	
SF: Will there only be one power line from the entire project to the Eskom Substation. Too many power lines can have an impact on birds.	CH: A power line for the Ilanga 1 project has been authorised. The developers are proposing a second power line that is be required for the rest of the solar developments that form part of the Karoshoek Solar Valley Development.
SF: Why aren't the using the already authorised power line for the three proposed projects.	CH: I would need to confirm this reason with the developer and get back to you, I assume it's due to capacity limits.
JM: Will they be using the same water abstraction point from Ilanga 1 for these projects?	CH: They are proposing a pipeline that will be approximately 4-6km long that will abstract water from the Orange River at a different abstraction point. JM: The vegetation type along the Orange river is considered vulnerable and thus it would be preferred if the developer can use the same abstraction point. The report (CSP 7) stated that the vegetation type supports the rare and protected *Euclea pseudebenus* which was not mentioned in the Ecology report. Kindly note *E. pseudebenus* is listed as 'protected' under the NFA and may not be damaged or disturbed without a NFA License. This needs to be confirmed during the site visit for the EIA phase and included when applying for a Forest Act Licence.
JM: How many developers are there?	CH: Emvelo (Pty) Ltd are the developers for the Karoshoek Solar Valley Development.
JM: We strongly disagree with the statement that states that the cumulative impacts on protected trees "will likely be regarded as low".	CH: Noted.
SF: The area is quite pristine, and the amount of	CH: Noted.

Question / Comment	Response
trees to be impacted will increase substantially. Yes, the development is situated within a RED zone, but the RED zones was developed based on desktop study and not ground-truthing.	
SF: Are all the properties leased from the landowners?	CH: Emvelo (Pty) Ltd currently own Farm Matjesriver 3/41 and Farm Lof 944 Karos Settlement. Emvelo are in process of purchasing Farm Matjesrivier 2/41 and Farm Matjesrivier RE/41. Farm Trooilpas Pan 4/53 is planned to be leased from the farm owner.
JM: I have submitted my comments in writing to Savannah Environmental. Please can these be incorporated and addressed. SF: I will submit my comments in writing to Savannah Environmental.	CH: Noted.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 11:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER – TROOILAPS PAN 15/53

HELD ON: THURSDAY 18 FEBRUARY 2016

VENUE: TROOILAPS PAN 15/53

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Trooilaps Pan 15/53**
Date: **Thursday 18 February 2016**
Time: **11:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Jacobus Spangenberg (JS)	Adjacent Landowner – Trooilaps Pan 15/53
Marietjie Spangenberg (MS)	Adjacent Landowner – Trooilaps Pan 15/53
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Do you own farm Trooilaps Pan 15/53?	JS: Yes.
CH: What activities are currently taking place on your farm? Do you have any cultivated land?	JS: Cattle, sheep and a little bit of game farming activities. No cultivated land.
CH: Do you live on the farm?	JS: Yes, we currently reside on the farm.
CH: Are there any tenants and / or any farm workers residing on any of the farms?	JS: Only two farm workers reside on the farm.
MS: Has the developer bought the land where the projects are located or do they only lease the land?	CH: Emvelo (Pty) Ltd currently own Farm Matjesriver 3/41 and Farm Lof 944 Karos Settlement. Emvelo are in process of purchasing Farm Matjesrivier 2/41 and Farm Matjesrivier RE/41. Farm Trooilpas Pan 4/53 is planned to be leased from the farm owner.
CH: Do have any concerns with the proposed solar developments in terms of safety & security, noise, dust, traffic, movement of people and visual impacts?	JS: Not at this stage. We'll have a look at the BID and the reports on Savannahs website and then submit our comments if we have any. CH: Noted

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She

thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 12:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

Savannah Environmental (Pty) Ltd
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SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING:
!KHEIS LOCAL MUNICIPALITY – MUNICIPAL MANAGER

HELD ON:
THURSDAY 18 FEBRUARY 2016

VENUE:
97 ORANJE STREET, GROBLERSHOOP

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **97 Oranje Street, Groblershoop**
Date: **Thursday 18 February 2016**
Time: **14:00**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Teresa Scheepers (TS)	!Kheis Local Municipality – Municipal Manager
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
TS: When are they planning to bid the projects?	CH: The projects are planned to bid in the next bidding round (bid round five) at the end of this year.
TS: Will the access roads be tarred?	CH: Yes.
TS: The towers will be visible for only certain parts of the road. The dust won't really have an effect on a lot of people. The operational phase will have high visual impacts from the towers.	CH: Noted.
TS: Will there be an on-site camp for employees?	CH: No, there won't be a labour camp. As many as possible local people are planned to be hired, especially unskilled and semi-skilled from the local area.
CH: What are the challenges you face regarding the already authorised projects and solar developments?	TS: The influx of people will cause pressure on the municipality as well as on the developing of the area. This will also lead to people that are employed only for a short while and will then be dependent on the municipality. It is important to link the development with education, so that at least some of the local people can find permanent employment afterwards. CH: Noted.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah

Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 14:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: !KHEIS LOCAL MUNICIPALITY – WARD COUNCILLORS WARD 1 & 2

HELD ON: THURSDAY 18 FEBRUARY 2016

VENUE: 97 ORANJE STREET, GROBLERSHOOP

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **97 Oranje Street, Groblershoop**
Date: **Thursday 18 February 2016**
Time: **15:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Andries Diergaardt (AD)	!Kheis Local Municipality – Ward Councillor Ward 1
Samuel Esau (SE)	!Kheis Local Municipality – Ward Councillor Ward 2
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Employment opportunities will be created primarily during the construction phase of each project. Less employment opportunities will be created during the project's operational phase. The REIPPP Programme requires project developers to meet certain socio-economic development commitments including job creation within local communities. The project is obliged to spend a percentage of the revenue generated from the development over the 20 year operation period on socio-economic development and community upliftment. A community trust will be established as an institutional arrangement which would determine the best ways to spend the funds allocated for socio-economic development within the selected communities. Currently, the projects are planned to be bid into the next round of the Department of Energy's REIPPP Programme which is anticipated to be at the end of this year.	SE: Noted
SE: Will only one ward benefit, or will the entire !Kheis Municipality benefit?	CH: Employment opportunities and socio-economic development opportunities will be available for the local communities within a 50km radius from the project area.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 16:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM TROOILAPS PAN 20/53)

HELD ON: THURSDAY 18 FEBRUARY 2016

VENUE: CARPEDIEM FARM

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Carpediem Farm**
Date: **Thursday 18 February 2016**
Time: **16:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Gog van der Colff (GC)	Adjacent Landowner – Trooilaps Pan 20/53
Johan van der Colff (JC)	Adjacent Landowner – Trooilaps Pan 20/53
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: What activities are currently taking place on your farm?	GC: Exotic game farming activities take place on the Farm, right next to where CSP 9 is located. With the developments proposed to be located so close to where the game are located, this will increase the risk of theft and poaching.
CH: How long have you owned the additional piece of land that was bought from the Maree's?	GC: Approximately 2 years.
CH: Do you live on the Farm?	JC: No.
GC: What road are they planning to use to access the site?	CH: They are planning to build a road from the N10 along Farm Matjesrivier 2/41.
JC: How long does it take to develop these projects?	CH: The construction phase for each facility is approximately 36 months for each CSP facility.
CH: Do have any concerns with the proposed solar developments in terms of safety & security, noise, dust, traffic and visual?	JC: We breed exotic game. With the increase in movement, the possibility of theft would also increase. Because of this, the insurance won't cover the animals or the insurance would increase and become unaffordable. The noise and dust would also impact the animals. These animals are very sensitive to noise, dust and movements. These developments will have a big impact on our exotic game farming activities.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 17:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM ERF 943 KAROS SETTLEMENT AND ROOIDRAAI RE/49)

HELD ON THURSDAY 18 FEBRUARY 2016

VENUE ERF 943 KAROS SETTLEMENT

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Erf 943 Karos Settlement**
Date: **Thursday 18 February 2016**
Time: **17:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Ellewee van Zyl (EvZ)	Adjacent landowner – Erf 943 Karos Settlement and Rooidraai RE/49
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
EvZ: Dust from the construction of Ilanga 1 already has an impact on us as the wind blows the dust towards our farm. The new projects will increase this dust impact.	CH: Noted.
CH: Is there anyone living on your farms?	EvZ: We are living on Farm Erf 943 Karos on top of a koppie.
CH: What activities are currently taking place on your farm?	EvZ: We have livestock and game farming activities on both farms (Farm ERF 943 Karos and Farm Rooidraai RE/49).
EvZ: Will there definitely be an increase in traffic.	CH: Yes. The construction phase will bring in a number of trucks and construction vehicles for the duration of the construction phase, which is approximately 36 months per CSP facility
EvZ: Will the developer change the position of fences?	CH: No. Your fencing won't be affected by the developments. But the Emvelo Eco Projects will fence off each CSP area.
EvZ: Will the temperature in the area increase from the solar developments? Will this affect the rain?	CH: There is currently no scientific evidence to prove whether CSP developments will impact rainfall.
CH: Do have any concerns with the proposed solar developments in terms of safety & security, noise, dust, traffic and visual impacts?	EvZ: Dust is currently the biggest issue that will affect us. These developments will also have a visual impact as the CSP tower facilities are visible from many kilometers away.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 18:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM TROOILAPS PAN 2/53, 3/53, 8/53 AND 14/53)

HELD ON
FRIDAY 19 FEBRUARY 2016

VENUE
KALAHARI MALL

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Sunninghill, 2157
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Kalahari Mall**
Date: **Friday 159February 2016**
Time: **08:00**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Johan Steenkamp (JS)	Adjacent Landowner – Trooilaps Pan 2/53, 3/53, 8/53 and 14/53
Ronel Steenkamp (RS)	Adjacent Landowner – Trooilaps Pan 2/53, 3/53, 8/53 and 14/53

Name	Organisation & Position
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Do you live on the farm?	JS: Yes, I am living on the farm.
CH: What activities are currently taking place on your farm?	JS: Livestock farming and a small amount of game.
JS: How will the developer access the project sites? Will they definitely build their own road?	CH: Yes, they will be building a new access road from the N10 onto Farm Matjesrivier RE/41 to access the sites.
CH: Is your farm completely fenced off?	JS: Yes. However this development will bring a number of people into the rural area and therefore increase the risk of theft.
JS: What are the chances of the developer extending the projects?	CH: This will have to be confirmed by the developer and agreements would need to be made with the relevant landowners.
JS: Myself and farmers in the area have four major concerns with the proposed developments; 1. Water- these developments impacting the farmers water supply 2. Safety and security – increasing the risk of theft and poaching 3. Roads- deteriorating the existing roads 4. The CSP towers will also have a visual impact and impact the areas sense of place.	CH: Noted. The water will be abstracted from the Orange River and not borehole water. A new access road will be developed off the N10 on Farm Matjesrivier RE/41.
RS: Do the landowners have a choice between	CH: Yes. The developer will need to

Question / Comment	Response
leasing and selling of their farms?	negotiate with the landowners.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 08:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: POWER LINE LANDOWNER (FARM VAAL KOPPIES 6/40)

HELD ON: FRIDAY 18 FEBRUARY 2016

VENUE: KALAHARI MALL

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Kalahari Mall**
Date: **Friday 19 February 2016**
Time: **08:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Danie Strauss (DS)	Power line landowner – Vaal Koppies 6/40
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Do you or anyone else live on the farm?	DS: No.
CH: What activities are currently taking place on your farm?	DS: I had livestock on the farm which were all stolen. Currently I'm leasing it out the farmland.
DS: Will there be a servitude for the proposed power line? Will the pay for the servitude?	CH: Yes there will be a servitude and they will pay for it.
DS: When will the developer contact me regarding the power line?	CH: They will be in contact with you soon.
CH: Do have any concerns with the proposed solar developments and power line in terms of safety & security, noise, dust, traffic and visual impacts?	DS: No, I do not have any issues.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 09:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: IMPACTED LANDOWNER (FARM MATJESRIVIER 2/41)

HELD ON: FRIDAY 19 FEBRUARY 2016

VENUE: 7 SCHRODER STREET

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **7 Schroder Street**
Date: **Friday 19 February 2016**
Time: **09:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Sonya Hofmann (SH)	Impacted Landowner – Matjesrivier 2/41
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Do you own Farm Matjesrivier 2/41?	*SH:* Yes, however we are currently still in the process of selling the farm to Emvelo (Pty) Ltd, the developers of the Karoshoek Solar valley Development.
CH: Do you live on the farm?	*SH:* We don't live on the farm; we reside in Upington and we use the land for farming.
CH: What farming activities are currently taking place on your farm?	*SH:* Mostly used for sheep and cattle farming. Also grape farming.
CH: Do you have any social concerns with the project in terms of traffic disruptions, noise, dust, safety and security issues and/or any other impacts that you may be concerned about from the proposed development?	*SH:* No, I have no concerns or problems with the proposed developments.
SH: When do they intend starting the developments?	*CH:* Relevant timeframes of when the construction phase will commence will be announced at a later stage.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She

thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 10:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: ADJACENT LANDOWNER (FARM TROOILAPS PAN 17/53)

HELD ON: FRIDAY 19 FEBRUARY 2016

VENUE: SCHRODER STREET, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
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E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Schroder Street, Upington**
Date: **Friday 19 February 2016**
Time: **13:00**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Marius Spangenberg (MS)	Adjacent Landowner – Trooilaps Pan 17/53
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: What activities are currently taking place on your farm?	JBM: Livestock farming.
CH: Does anyone living on the farm?	JBM: No.
CH: Do you foresee any of the developments having an effect / impact on your farming activities or properties?	JBM: No. The farm is currently in a trust. So I will need to discuss these developments with the other trustees as well.
JBM: There is a ridge/dunes within site CSP 9 that might prohibit some of the development.	CH: This will be investigated further during the EIA phase.
CH: Do you have any social concerns with the project in terms of traffic disruptions, noise, dust, safety and security issues and/or any other impacts that you may be concerned about from the proposed development?	CH: No, my only concern is the access road to my farm which is located along the border of Farm Trooilaps Pan 4/53 and Farm Trooilaps Pan 20/53. As long as the access road is still available and the project won't impact on the road it should be fine. Will the access road to CSP 9 also be the access road off the N10? CH: Yes, the main access road for all the Karoshoek Solar Valley Developments will be located off the N10 and pass through Farm Matjesrivier RE/41.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah

Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 13:30.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: IMPACTED LANDOWNER (FARM MATJESRIVIER RE/41)

HELD ON: FRIDAY 19 FEBRUARY 2016

VENUE: MARK STREET, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
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E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Mark Street, Upington**
Date: **Friday 19 February 2016**
Time: **11:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Ella Swanepoel (ES)	Impacted Landowner – Matjesrivier RE/41
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: What activities are currently taking place on your farm?	ES: There are tenants on the farm, they currently farm livestock. They will leave by the end of the month when their contract expires. The contract may be extended, but this will need to be discussed with developers (Emvelo) that are in the process of purchasing the farm.
ES: How far are you with the environmental process?	CH: We've just started with the EIA process and have completed the scoping phase.
ES: Will the local community benefit?	CH: Yes, in terms of local employment opportunities and socio-economic development.
ES: Where will the electricity generated go to?	CH: The purpose of each proposed CSP facility will be to export the generated power into the Eskom national electricity grid.
ES: How high will the tower facilities be?	CH: Approximately 270m high each.
ES: Are you doing the same studies for all the projects?	CH: The linear infrastructure will be under a separate application process and will have separate EIA or BA studies undertaken for those projects.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah

Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 12:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING: IMPACTED LANDOWNER (FARM TROOILAPS PAN 4/53)

HELD ON FRIDAY 19 FEBRUARY 2016

VENUE BMW, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
Address: PO Box 148
Sunninghill, 2157
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E-mail: gabriele@savannahsa.com

Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **BMW, Upington**
Date: **Friday 19 February 2016**
Time: **10:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Jacob Barend Maree (JBM)	Impacted Landowner – T.N. Howorth (TNH) Trustee
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
CH: Is there anyone living on the farm?	MS: No. But there is a farmhouse on the farm. Two boreholes are situated close to the farm house, and another borehole further away. The farm house was built in the 1800's and still has its original structure. CH: Due to the farmhouse being older than 60 years, the heritage specialist will be informed of this and a buffer area will need to be established around the house.
CH: What activities are currently taking place on your farm?	MS: We have tenants that uses the farm for livestock farming (mainly cattle).
What will happen to the livestock activities when the projects commence?	The cattle will be sold just before they start developing these projects. The tenant has agreed to this and also currently leases at least 4 other farms for livestock farming.
CH: Do the tenants live on the farm? Are there farm workers that live on the farm?	MS: No. There are only two farm workers that live on the farm.
CH: Are the developers leasing the land from you for the developments?	MS: Yes.
MS: When will be the next bidding round take place?	CH: Bidding round five will be towards the end of this year, between August and October 2016.
CH: Do you foresee any of the developments having an impact on your farming activities or properties?	MS: No. I have no problem with the developments

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 13:00.

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED KAROSHOEK SOLAR VALLEY DEVELOPMENTS, NORTHERN CAPE PROVINCE

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING:

ADJACENT LANDOWNER (FARM EZELFONTEIN RE/50)

HELD ON:

FRIDAY 19 FEBRUARY 2016

VENUE:

FARM EZELFONTEIN RE/50, UPINGTON

Savannah Environmental (Pty) Ltd
Contact: **Gabriele Wood**
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Sunninghill, 2157
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Notes for the Record prepared by:
Savannah Environmental
Please address any comments to Gabriele Wood at the above address.

KAROSHOEK SOLAR VALLEY DEVELOPMENT, NORTHERN CAPE PROVINCE

Venue: **Farm Ezelfontein RE/50, Upington**
Date: **Friday 19 February 2016**
Time: **14:30**

WELCOME AND INTRODUCTION

Candice Hunter of Savannah Environmental welcomed all in attendance and introduced herself as the Social Consultant for the Environmental Impact Assessment (EIA) processes being undertaken for the proposed developments that are to form part the Karoshoek Solar Valley, including:

» Three (3) new concentrating solar power (CSP) facilities (known as Ilanga CSP 7, Ilanga CSP 8 and Ilanga CSP 9) that are planned to be developed by Emvelo Eco Projects (Pty) Ltd.
» Additional CSP facilities located immediately adjacent to the authorised CSP sites (1.3, 1.4, 3, 4 & 5) as well as associated infrastructures (power line, access road & water pipeline) are to be developed by FG Emvelo (Pty) Ltd.

Ms Hunter noted that the proposed projects are located approximately 30km east of Upington which falls within the jurisdiction of the Khara Hais Local Municipality and !Kheis Local Municipality, which both form part of the ZF Mgcawu District Municipality.

She stated that the purpose of each proposed CSP facility will be to export the generated power into the Eskom electricity grid. The projects are proposed to be bid into the Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement (REIPPP) Programme.

Ms Hunter thanked the members of the meeting for the opportunity to brief them about the proposed projects. She noted that the purpose of the meeting was to present the background of the projects, provide an overview of the environmental assessment processes and discuss any potential social issues and concerns with the proposed developments.

MEETING ATTENDEES

Name	Organisation & Position
Nonnie van Vuuren (NvV)	Adjacent Landowner- Farm Ezelfontein RE/50
Waldo Nel (WN)	Adjacent Landowner- Farm Ezelfontein RE/50
Elizabeth Nel (EN)	Adjacent Landowner- Farm Ezelfontein RE/50
Candice Hunter (CH)	Savannah Environmental - Social Consultant

APOLOGIES

None

PROJECT BACKGROUND

Candice Hunter discussed the background and introduction to the project and provided an overview of the potential social impacts of the projects. A Background Information Document (BID) and a consolidated map including the location of the proposed developments were presented (see Appendix D).

DISCUSSION SESSION

Question / Comment	Response
NvV: What access road will they use to access the proposed sites?	CH: The access road will be located off the N10 and traverse Farm Matjesrivier RE/41.
CH: What activities are currently taking place on your farm?	WN: Only livestock farming.
CH: Does anyone live on the farm?	WN: We live on the farm, as well as a few farm workers.
CH: Does anyone leases any part of your farm?	WN: No.
WN: Is there a possibility for the developments to extend to the east in the direction of our farm?	CH: The sand dunes and drainage lines that are located on Farm Lot 944 Karos Settlement and Farm Trooilaps Pan 17/53 would prevent any new developments in that area. The developer would need to have an agreement with the landowners of Trooilaps Pan 20/53 if they would want to develop any solar facilities on their farm.
WN: How long will it be before construction would start?	CH: A couple of years. We are currently in the Scoping phase of the EIA process.
NvV: Would the EIA process start again if another client wants to develop on the property?	CH: Yes a new EIA process would be undertaken, however agreements would first need to be in place with the relevant landowners.
WN: Will these CSP developments increase temperature in the area and reduce rainfall in nearby areas?	CH: There is no scientific evidence available that proves this.
NvV: Will the power generated be for the local community?	CH: The generated electricity will feed back into the national grid.
NvV: Will the workers be travelling every	CH: Yes they will be transported by buses

Question / Comment	Response
day to the site or will there be a labour camp? There is a concern of theft in the area.	to the site every day. They won't be a labour camp. There will be measures put in place to control access onto the sites.
NvV: Once the project has commenced, and then an issue comes up, is there something in place so that the landowners may object and stop the construction?	CH: Yes, a grievance mechanism will be put in place. A Community Liaison Officer will be appointed. A method of communication will be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the processes.
CH: Is your property fenced off and secured?	WN: Yes.
NvV: Do they need to use local people for employment or do they bring people into the area?	CH: A certain percentage of the employees would need to be sourced from the local area. Primarily low skilled and semi-skilled personal will come from the local area, skilled personnel may need to be brought into the area.
CH: Do have any concerns with the proposed solar developments in terms of safety and security, noise, dust, traffic and visual impacts?	NvV: There is a mountainous area between our farm and the proposed developments so I do not think these developments will have much of an impact on us.

WAY FORWARD AND CLOSURE

In closing Candice noted that the EIA Reports will be made available for public review in the next few weeks and that Interested and Affected Parties could submit their written comments on the EIA process and proposed projects to Savannah Environmental. She noted that the comments received would be included in the EIA Reports that will be submitted to the Department of Environmental Affairs. She thanked the meeting attendees for availing themselves for the meeting. The meeting was closed at 15:00. beaming

APPENDIX C: CONSOLIDATED LANDOWNERS MAP PRESNETED AT STAKEHOLDER MEETINGS

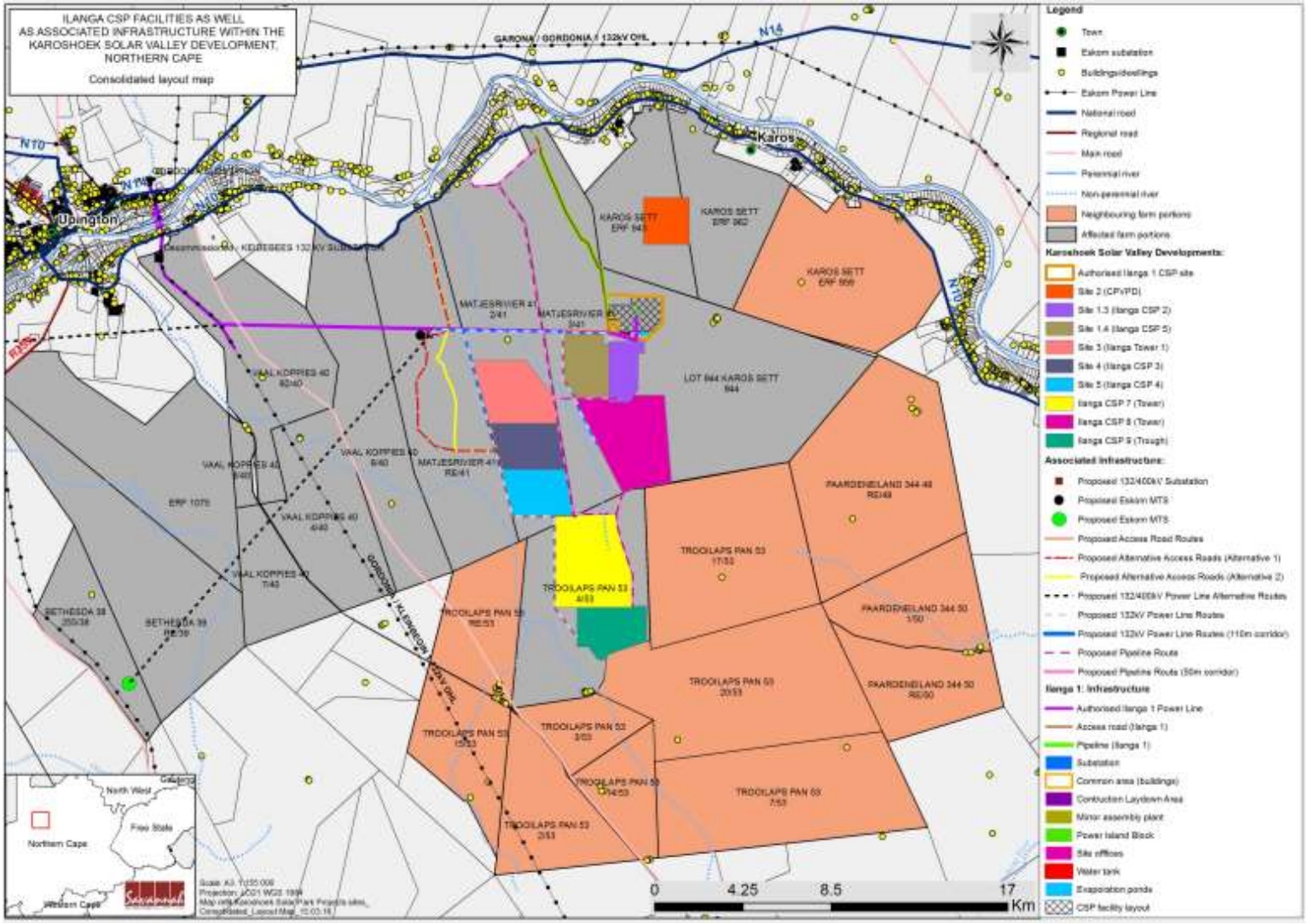

Figure 11: Consolidated map of the Ilanga CSP facilities and associated infrastructure within the Karoshoek Solar Valley Development

APPENDIX D: DECLARATION OF INDEPENDENCE AND CV

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

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

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

PROJECT TITLE

Proposed establishment of the Ilanga CSP 5 project and associated infrastructure, Northern Cape Province

Specialist:	Candice Hunter		
Contact person:	Candice Hunter		
Postal address:	PO Box 148, Sunninghill		
Postal code:	2157	Cell:	
Telephone:	*(011) 656 3237*	Fax:	*086 684 0547*
E-mail:	candice@savannahsa.com		
Professional affiliation(s) (if any)			

Project Consultant:	Savannah Environmental (Pty) Ltd		
Contact person:	Jo-Anne Thomas / Karen Jodas		
Postal address:	PO Box 148, Sunninghill		
Postal code:	2157	Cell:	
Telephone:	*(011) 656 3237*	Fax:	*086 684 0547*
E-mail:	Joanne@savannahsa.com / Karen@savannahsa.com		

4.2 The specialist appointed in terms of the Regulations_

I, Candice Hunter ,

declare that --

General declaration:

» I act as the independent specialists in this application
» I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
» I declare that there are no circumstances that may compromise my objectivity in performing such work;
» I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
» I will comply with the Act, regulations and all other applicable legislation;
» I have no, and will not engage in, conflicting interests in the undertaking of the activity;
» I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
» **all the particulars furnished by me in this form are true and correct; and**
» **I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of section 24F of the Act.**

Signature of the specialist:

Savannah Environmental (Pty) Ltd

Name of company (if applicable):

08 April 2016

Date:

SIA SPECIALIST CV:

CURRICULUM VITAE
CANDICE HUNTER

Profession	:	Social Consultant
Specialisation	:	Social Impact Assessments (SIA)
Years' experience	:	2 years and 3 months

KEY RESPONSIBILITIES

Specific responsibilities as a Social Consultant involve conducting field research; socio-economic surveys; the management and analysis of data; undertaking stakeholder engagement and communication processes; socio-economic baseline data analyses and conducting general social research for a variety of projects. This includes managing and coordinating the Social Impact Assessment (SIA) processes and compiling SIA reports in line with the countries guidelines and legislation.

SKILLS BASE AND CORE COMPETENCIES

» Social Impact Assessments (SIA)
» EIA Legislation
» Data gathering and analysis
» Qualitative and quantitative social research
» Field research and socio-economic surveys
» Baseline socio-economic data analyses
» Stakeholder engagement
» Public participation process
» Communication and community facilitation
» Report writing and review
» Project administration

EDUCATION AND PROFESSIONAL STATUS

Degrees:

M. A. Environmental Management: University of Johannesburg (2013)

B.A. Honours Tourism Development (Cum Laude): University of Johannesburg (2010)

Courses:

Advanced Certificate in Social Impact Assessment (SIA) (Cum Laude): University of Johannesburg (2013)

Certificate in Global Reporting Initiative (GRI), Sustainability Reporting Process: Environmental & Sustainable Solutions CC (2012)

Publications:

Hunter, C. & Mearns, K. (2015). Assessing the sustainability reporting of selected tourism companies listed on the Johannesburg Stock Exchange (JSE). *African Journal of Hospitality, Tourism and Leisure, 4(1): 1-18.* Publication URL: http://www.ajhtl.com/uploads/7/1/6/3/7163688/article_51_vol.4__1__2015.pdf

EMPLOYMENT

January 2014 – Current:
Savannah Environmental (Pty) Ltd: Social Consultant

February 2011 – January 2013:
University of Johannesburg: Department of Geography, Environmental and Energy Studies & School of Tourism and Hospitality (STH): Student and Research Assistant.

PROJECT EXPERIENCE

Social Impact Assessment Reports:
January 2014: Specialist SIA study for the proposed Gihon Solar Energy Facility & Associated Infrastructure Located near Bela-Bela, Limpopo Province (for Networx SA)
March 2014: Specialist social scoping study for the proposed Exheredo Photovoltaic (PV) Solar Energy Facility and associated infrastructure located near Kenhardt, Northern Cape Province (for Kotulo Tsatsi Energy (Pty) Ltd)
May 2014: Specialist social scoping study for the proposed Wolmaransstad Municipality Solar Energy Facility and associated infrastructure near Wolmaransstad, North West Province (for Bluewave Capital (Pty) Ltd)
July 2014: Specialist SIA study for the proposed Newcastle Solar Energy Facility near Newcastle, KwaZulu Natal (for Building Energy SpA)
July 2014: Specialist SIA study for the proposed Pongola Solar Energy Facility near Pongola, KwaZulu Natal (for Building Energy SpA)
July 2014: Specialist SIA study for the proposed Senekal 1 Solar Energy Facility near Mkuze, KwaZulu Natal (for Building Energy SpA)
July 2014: Specialist SIA study for the proposed Senekal 2 Solar Energy Facility near Mkuze, KwaZulu Natal (for Building Energy SpA)
October 2014: Specialist SIA study for the proposed Kotulo Tsatsi Energy Concentrated Solar Power (CSP) Tower Plant 3 facility and associated infrastructure located near Kenhardt, Northern Cape Province (for Kotulo Tsatsi Energy (Pty) Ltd)
November 2014: Specialist social scoping study for the proposed Lethabo Solar Energy Facility and associated infrastructure near Sasolburg, Free State Province (for Eskom Holdings (SOC) Limited)
November 2014: Specialist social scoping study for the proposed Majuba Solar Energy Facility and associated infrastructure near Amesforort, Mpumalanga Province (for Eskom Holdings (SOC) Limited)
November 2014: Specialist social scoping study for the proposed Tutuka Solar Energy Facility and associated infrastructure near Standerton, Mpumalanga Province (for Eskom Holdings (SOC) Limited)
December 2014: Specialist social scoping study for the proposed 120MW CPV Facility and associated infrastructure near Upington, Northern Cape Province (for Lambrius Energy (Pty) Ltd)

Social Impact Assessment Reports:

February 2015: Specialist SIA study for the proposed realignment of the N10 to facilitate access to the Ilanga CSP Facility site, east of Upington, Northern Cape Province (for SANRL)
March 2015: Specialist social scoping study for the proposed Beaufort West Solar Power Plant 1 near Beaufort West, Western Cape Province (for Beaufort West Solar Company 1 (Pty) Ltd)
March 2015: Specialist social scoping study for the proposed Beaufort West Solar Power Plant 2 near Beaufort West, Western Cape Province (for Beaufort West Solar Company 2 (Pty) Ltd)
March 2015: Specialist social scoping study for the proposed Beaufort West Solar Power Plant 3 near Beaufort West, Western Cape Province (for Beaufort West Solar Company 3 (Pty) Ltd)
June 2015: Specialist social scoping report for the proposed Buffels Solar 1 and Solar 2 Solar Energy Facilities, near Orkney, North West Province (for Kabi Solar (Pty) Ltd)
July 2015: Specialist SIA study for the proposed Lethabo Solar Energy Facility and associated infrastructure near Sasolburg, Free State Province (for Eskom Holdings (SOC) Limited)
July 2015: Specialist SIA study for the proposed Majuba Solar Energy Facility and associated infrastructure near Amesforort, Mpumalanga Province (for Eskom Holdings (SOC) Limited)
July 2015: Specialist SIA study for the proposed Tutuka Solar Energy Facility and associated infrastructure near Standerton, Mpumalanga Province (for Eskom Holdings (SOC) Limited)
August 2015: Specialist social scoping report for the proposed Paulputs CSP Tower Facility and associated infrastructure, near Pofadder, Northern Cape Province (for Abengoa Solar Power South Africa (Pty) Ltd)
September 2015: Specialist SIA study for the proposed AEP Bloemsmond Solar 1 and Solar 2 PV Facilities, near Upington, Northern Cape Province (for AEP Bloemsmond Solar 1 (Pty) Ltd)
October 2015: Specialist social scoping report for the proposed Woodhouse Solar 1 and Woodhouse Solar 2 PV Facilities, near Vryburg, North West Province (for Genesis Woodhouse Solar 1 (Pty) Ltd and Genesis Woodhouse Solar 2 (Pty) Ltd)
October 2015: Specialist social scoping report for the proposed Saldanha Bay Netwrok Strengthening Project, Western Cape Province (for Eskom Holdings SOC Limited)
October 2015: Specialist social scoping report for the proposed Karoshoek Solar Valley Park- Additional CSP Facilities, near Upington, Northern Cape Province (for FG Emvelo (Pty) Ltd)
November 2015: Specialist social scoping report for the proposed Sol Invictus Solar Development and associated infrastructure near Aggeneys, Northern Cape Province (for Building Energy (Pty) Ltd)
November 2015: Specialist social scoping report for the proposed Orkney Solar Development and associated infrastructure near Orkney, North West Province (for Genesis Orkney Solar (Pty) Ltd)
November 2015: Specialist social scoping report for the proposed Gas to Power Plant on a site withnin the Richards Bay Industrial Development Zone, KwaZulu Natal Province (for Richards Bay Gas to Power 2 (Pty) Ltd)

December 2015: Specialist social scoping report for the proposed Noupoort Concentrated Solar Power (CSP) Project and associated infrastructure near Noupoort, Northern Cape Province (for Cresco Energy (Pty) Ltd)
December 2015: Specialist social scoping study for the proposed Beaufort West PV 1 and PV 2 and associated infrastructure near Beaufort West, Western Cape Province (for Turquoise Hive Solar (Pty) Ltd)
December 2015: Specialist social scoping study for the proposed Metals Industrial Cluster and associated infrastructure near Kuruman, Northern Cape Province (for the Northern Cape Department of Economic Development and Tourism)
December 2015: Specialist social scoping study for the proposed Karoshoek Solar Valley Development- Additional CSP Tower Plant, near Upington, Northern Cape Province (for FG Emvelo (Pty) Ltd)
December 2015: Specialist social scoping study for the proposed Karoshoek Solar Valley Development- Additional CSP Trough Plant, near Upington, Northern Cape Province (for FG Emvelo (Pty) Ltd)
December 2015: Specialist social scoping study for the proposed Ilanga CSP 7 and 8 facilities and associated infrastructure within the Karoshoek Solar Valley Development, near Upington, Northern Cape Province (for Emvelo Eco Projects (Pty) Ltd)
December 2015: Specialist social scoping study for the proposed Ilanga CSP 9 facility and associated infrastructure within the Karoshoek Solar Valley Development, near Upington, Northern Cape Province (for Emvelo Eco Projects (Pty) Ltd)
January 2016: Specialist social scoping study for the proposed Semonkong Wind Farm near Semonkong, Lesotho (for Sun Clean Energy Technologies (Pty) Ltd)
Other Projects:
June 2014: Screening and pre-feasibility report- Site assessment for the proposed Wind Energy Facility near Van Reenen, KwaZulu Natal and Free State Provinces (for 4Green Development SA)
October 2015: Environmental, Social and Governance (ESG) Due Diligence- Development of the Hilton Garden Inn by United African Group, Windhoek, Namibia (for Vantage Capital)
September 2015 - February 2016: Preparation, Development and Gazetting of the Environmental Implementation Plan (EIP) 2015-2020. (for Gauteng Department of Agriculture and Rural Development)

APPENDIX E: EXTERNAL REVIEWER'S REPORT AND CV

Dr. Neville Bews & Associates
Social Impact Assessors

Committed to building high trust environments

P. O. Box 145412
Bracken Gardens
Alberton
South Africa
1452
URL: http://www.socialassessment.co.za/

Tel: +27 11 867-0462
Fax: +27 86 621-8345
Mobile: +27 82 557-3489
Skype: neville.bews
Email: bewsco@netactive.co.za

11 April, 2016

Attention: Candice Hunter

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 the Proposed Ilanga CSP 5 Project, near Upington, Northern Cape Province

Having reviewed the above report I find that in essence it provides a description of the project and the social environment within which the project will unfold. It also provides an indication of the social impacts that are likely to arise as a result of the proposed project and suggests appropriate optimisation and mitigation measure.

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 for the Proposed Ilanga CSP 5 Project, located on Portion 3 of the Farm Matjiesrivier 41, approximately 30 km east of Upington within the Khara Hais Local Municipality, Northern Cape Province.

Signed:  Date: 11 April 2016

Ilanga CSP 5 Project		
Appendix 6: Specialist reports	**Check**	**Comment**
A specialist report prepared in terms of these Regulations must contain-		
(a) details of-		
(i) the specialist who prepared the report; and	Section 1.3 Page 16	
(ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	Section 1.3 Page 16 & Appendix D & E	
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Appendices D & E	
(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.2 Page 15	Addressed under "Terms of Reference"
(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 Page 21-28	
(f) the specific identified sensitivity of the site related to the activity and its associated structures and infrastructure;	Section 4. Pages 47-74	
(g) an identification of any areas to be avoided, including buffers;	None	
(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;	Figure 1 Page 20 Figure 6 Page 54 Figure 7 Page 53 Figure 8 Page 63 Figure 10 Page 88 Figure 11 Page 195	

(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 2.5 Page 28	
(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;	Sections 5, 6, 7 & 8 Pages 67-106	
(k) any mitigation measures for inclusion in the EMPr;	Sections 5 & 6 Pages 67-103. Appendix A	
(I) any conditions for inclusion in the environmental authorisation;	None	
(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	Section 8 Pages 103-106	
(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 5, 6, 7 & 8 Pages 67-106	See mitigation measures, key findings and recommendations.
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	Sections 2.3 Page 25 & 4.6 Page 64	See Table 5 Page 22 & Appendix B.
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Appendix B	
(q) any other information requested by the competent authority.	None	

EXTERNAL REVIEWER'S CV:

NEVILLE BEWS
CURRICULUM VITAE

Details and Experience of Independent Consultant

Qualifications:
University of South Africa: B.A. (Honours) – 1984
Henley Management College, United Kingdom: The Henley Post-Graduate Certificate in Management – 1997
Rand Afrikaans University: M.A. (cum laude) – 1999
Rand Afrikaans University: D. Litt. et Phil. – 2000

Projects:
The SIA for the Gautrain Rapid Rail Link; The impact assessment for the Australian – South African sports development programme; SIA for Kumba Resources, Sishen South Project; Evaluation of a Centre for Violence Against Women for The United Nations Office on Drugs and Crime; SIAs for the following Exxaro Resources Ltd.'s mines, Leeuwpan Coal Mine Delmas, Glen Douglas Dolomite Mine Henley-on-Klip, Grootegeluk Open Cast Coal Mine Lephalale; SIA for the South African National Road Agency Limited (SANRAL) on Gauteng Freeway Improvement Project (GFIP); SIA for SANRAL on the N2 Wild Coast Toll Highway; Research into research outputs of the University for the University of Johannesburg; SIA for Waterfall Wedge housing and business development in Midrand Gauteng; SIA for the Environmental Management Plan for Sedibeng District Municipality; Social and Labour Plan for the Belfast Project on behalf of Exxaro Resources Ltd; SIA for the Transnet New Multi-Product Pipeline (Commercial Farmers) on behalf of Golder Associates Africa (Pty) Ltd; SIA for the Proposed Vale Moatize Power Plant Project in Mozambique on behalf of Golder Associates Africa (Pty) Ltd; SIA for Kumba Resources Ltd.'s proposed Dingleton Resettlement Project at Sishen Iron Ore Mine on behalf of Water for Africa (Pty) Ltd; SIA for Gold Fields West Wits Project for EcoPartners; SIA for the Belfast Project for Exxaro Resources Ltd; SIA for Eskom Holdings Ltd.'s Proposed Ubertas 88/11kV Substation on behalf of KV3 Engineers (Pty) Ltd; SIA for the Mokolo and Crocodile River (West) Water Augmentation Project (MCWAP) for the Department of Water Affairs on behalf of Nemai Consulting and the Trans Caledonian Water Authority; Assisted Octagon Consulting with the SIA for Eskom's Nuclear 1 Power Plant on behalf of Arcus GIBB Engineering & Science. SIA for the 150MW Photovoltaic Power Plant and Associated Infrastructure for Italgest Energy (Pty) Ltd, on behalf of Kalahari Survey Solutions cc. SIA for Eskom Holdings Limited, Transmission Division's Neptune-Poseidon 400kV Power Line on behalf of Nemai Consulting. Ncwabeni Off-Channel Storage Dam for security of water supply in Umzumbe, KwaZulu-Natal. Social Impact assessment for Eskom Holdings

Limited, Transmission Division, Forskor-Merensky 275kV±130km Powerline and Associated Substation Works in Limpopo Province. Social impact assessment for the proposed infilling of the Model Yacht Pond at Blue Lagoon, Stiebel Place, Durban. ABC Prieska Solar Project; Proposed 75 MWp Photovoltaic Power Plant and its associated infrastructure on a portion of the remaining extent of ERF 1 Prieska, Northern Cape. Sekoko Wayland Iron Ore, Molemole Local Municipalities in Limpopo Province. Langpan Chrome Mine, Thabazimbi, Limpopo; Jozini Nodal Expansion Implementation Project, KwaZulu-Natal, on behalf of Nemai Consulting; SIA for Glen Douglas Dolomite Burning Project, Midvaal Gauteng, on behalf of Afrimat Limited; SIA for Lyttelton Dolomite mine Dolomite Burning Project, Marble Hall Limpopo on behalf of Afrimat Limited. Tubatse Strengthening Phase 1 – Senakangwedi B Integration for Eskom Transmission on behalf of Nsovo Environmental Consulting; Department of Water and Sanitation, South Africa (2014). Environmental Impact Assessment for the Mzimvubu Water Project: Social Impact Assessment DWS Report No: P WMA 12/T30/00/5314/7.

Regularly lecture in the Department of Sociology at the University of Johannesburg and collaborated with Prof. Henk Becker of Utrecht University, the Netherlands, in a joint lecture to present the Social Impact Assessment Masters course via video link between the Netherlands and South Africa and regularly lecture on this course. Presented papers on Social Impact Assessments at both national and international seminars. Published on both a national and international level.

Affiliation:
The International Association for Impact Assessment Southern Africa.

Registered on the database for scientific peer review of iSimangaliso GEF project outputs.