SOCIAL IMPACT ASSESSMENT
EIA REPORT

PROPOSED TUTUKA PHOTOVOLTAIC (PV) SOLAR ENERGY FACILITY, NEAR STANDERTON

MPUMALANGA PROVINCE

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Executive Summary

Savannah Environmental (Pty) Ltd has been appointed by Eskom Holdings (SOC) Limited, to undertake an Environmental Impact Assessment (EIA) for the establishment of the proposed Tutuka Photovoltaic (PV) Solar Energy Facility and associated infrastructure. The proposed Tutuka Solar Energy Facility is situated approximately ~25km north east of Standerton within the Tutuka Power Station boundary, on Portion 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS. Two potential locations for the proposed Tutuka Solar Energy Facility have been proposed on different locations within Portions 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS.. The alternative site 1 will cover an area of approximately ~98.8ha and will have a generating capacity of 65.9MW. The alternative site 2 will cover an area of ~36ha and will have a generating capacity of up to 24MW. Grid connection will be to the Tutuka substation. The site falls within the Lekwa Local Municipality (LLM), which is located within the jurisdiction of the Gert Sibande District Municipality (GSDM) in the Mpumalanga Province.

The social impact assessment was undertaken by Candice Hunter of Savannah Environmental (with an independent external review by Dr Neville Bews) as a part of an EIA process. The purpose of the report is to assess the potential social impacts associated with the proposed development and to recommend ways 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 social impact assessment 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 Act 108 of 1996
- National Environmental Management Act 107 of 1998 (NEMA)
- National Energy Act (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:

- Mpumalanga Provincial Growth and Development Strategy (PGDS) (2004-2014)
- Mpumalanga Economic Growth and Development Path (2011)

District and Local Policies:

- Gert Sibande District Municipality Spatial Development Framework (2009)
- Gert Sibande District Municipality Integrated Development Plan (2015/2016)

» Lekwa Integrated Development Plan (IDP) (2013-2014)

Solar Energy Policies:

» Solar Energy Technology Roadmap (2013)

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 Gert Sibande District Municipality (GSDM) and the Dr Lekwa Local Municipality (LLM), in the Mpumalanga province. In summary, the area was found to have the following general characteristics:

» The population of the DM in 2011 was approximately 1 043 194 people, of which 115 662 people reside in the LLM.
» The majority of the local population belong to the Black African group and the most spoken language is Zulu in the LLM.
» 66.3% of the LLM 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 50.6% of the LLM population which puts pressure the EAP and local municipalities
» The female population is slightly more prominent in the LLM at 50.2%
» 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 high unemployment rate in the LM (25.9%) 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
» Poverty level and the percentage of the population falling within the low income level (60.9%) in the study area demonstrates the need for job creation; the demand for employment can be addressed (although marginally) through direct job creation during the construction and operation phase of the proposed development
» 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. Especially in the rural/farm areas where there's a need to expand basic services such as water, electricity and sanitation.
» The main industries in the LM include agriculture, mining, and power generation Standerton forms the largest urban settlement area within the local municipality.

The proposed development supports the social and economic development through enabling skills development and training in order to empower individuals and promote employment creation within the local area. The development would mainly focus on economic benefits to the area and introduce a new industry into the local economy.

Negative dimensions of impacts such as influx of jobseekers and pressure on the provision of basic services will be weighed in the social impact assessment during the EIA phase.

Social Impact Assessment

The environmental assessment framework for the assessment of impacts and the relevant criteria was 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 for the proposed development are presented in table 1 and table 2 below.

Table 1: Summary of social impacts during construction phase

CONSTRUCTION PHASE				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
Impact	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**
Positive Impacts				
Direct employment and skills development	Low	Medium	Low	Low
Economic multiplier effects	Low	Low	Low	low
Negative Impacts				
Safety and security risks	Low	Low	Low	Low
Impacts on daily living and movement patterns	Medium	Low	Low	Low
Pressure on economic and social infrastructure impacts from an in migration of people	Medium	Low	Low	Low
Nuisance impacts (noise & dust)	Low	Low	Low	Low

Table 2: Summary of social impacts during operation phase

OPERATION PHASE				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
Impact	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**
Positive Impacts				
Direct employment and skills development	Low	Medium	Low	Medium
Development of clean, renewable energy infrastructure	Medium	Medium	Medium	Medium
Negative Impacts				
Visual and sense of place impacts	Low	Low	Low	Low

Recommendations

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

» In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled are scarce commodities in the study area and could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen local endeavours to obtain jobs and provoke discontent as well as put pressure on the local services available. Local labour should be utilised to enhance the positive impact of employment creation in the area. Local businesses should be involved with the construction activities where possible. It is imperative that local labour be sourced to ensure that benefits accrue to the local communities. Preference should thus be given to the use of local labour during the construction and operational phases of the project as far as possible.
» Locals should also be allowed an opportunity to be included in a list of possible local suppliers and service providers, enhancing the multiplier effect. This aspect would

serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.

» Impacts associated with the construction period should be carefully mitigated to minimise any possible dust and noise pollution.
» Safety and security concerns should be taken into account during the planning and construction phases of the proposed project.

Overall Conclusion

The proposed Tutuka Solar Energy Facility and associated infrastructure is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the proposed Tutuka Solar Energy Facility alternative site 1 or alternative site 2 could be developed subject to the implementation of the recommended mitigation measures and management actions contained in the report. From the analysis of alternatives it can be concluded that the alternative site 1 could bring more positive socio-economic benefits to the local area in comparison to alternative site 2, if enhancement/ mitigation measures are implemented.

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List of Abbreviations

CNA	Community Needs Assessment
CSP	Concentrated Solar Power
DEA	Department of Environmental Affairs
DGDS	District Growth and Development Strategy
DM	District Municipality
EAP	Economically Active Population
EIA	Environmental Impact Assessment
EMF	Environmental management Framework
EMPr	Environmental Management Programme
EMZ	Environmental Management Zone
GDP	Gross Domestic Product
GSDM	Gert Sibande District Municipality
HA	Hectares
HD	Historically Disadvantaged
HDSA	Historically Disadvantaged South Africans
IDP	Integrated Development Plan
IPP	Independent Power Producer
KPA	Key Performance Area
kV	Kilovolts
LLM	Lekwa Local Municipality
LED	Local Economic Development
LM	Local Municipality
MEGP	Mpumalanga Economic Growth and Development Path
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
SEF	Solar Energy Facility
SEMP	Strategic Environmental Management Plan
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIPs	Strategic Infrastructure Projects
VIA	Visual Impact Assessment

1. Introduction

Savannah Environmental (Pty) Ltd has been appointed by Eskom Holdings (SOC) Limited, to undertake an Environmental Impact Assessment (EIA) for the establishment of the proposed Tutuka Photovoltaic (PV) Solar Energy Facility and associated infrastructure. The social impact assessment was undertaken by Candice Hunter of Savannah Environmental (with an independent external review by Dr Neville Bews) as a part of an EIA process. The proposed photovoltaic (PV) Solar Energy Facility and associated infrastructure infrastructure is situated approximately ~25km north east of Standerton within the Tutuka Power Station boundary, on Portion 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS. Two potential locations for the proposed Tutuka Solar Energy Facility have been proposed on different locations within Portions 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS.. The alternative site 1 will cover an area of approximately ~98.8ha and will have a generating capacity of 65.9MW. The alternative site 2 will cover an area of ~36ha and will have a generating capacity of up to 24MW. Grid connection will be to the Tutuka substation. The site falls within the Lekwa Local Municipality (LLM), which is located within the jurisdiction of the Gert Sibande District Municipality (GSDM) in the Mpumalanga Province. This report contains the findings of the social assessment for the EIA process.

1.1. Social Impact Assessment (SIA)

Social Impact Assessment (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 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 Social Impact Assessment (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: Reviewers report, declaration of independence and CV).

1.4. Declaration of Independence

A signed declaration of independence for Candice Hunter of Savannah Environmental is attached in Appendix D. Also see the signed declaration of independence of the external reviewer in Appendix E.

1.5. Project Overview

Project background and description:

Eskom has successfully installed PV systems at offices and parking lots within Eskom-owned property to promote renewable energy awareness and to diversify their own energy mix. Eskom aims to further reduce their self-consumption at their various owned or utilised sites by introducing Eskom's Ilanga PV Project Portfolio which aims to install 150 MW at their various power stations, offices and substations, which includes the proposed Tutuka Photovoltaic Solar Energy Facility. The solar PV facilities will promote the reduction of Eskom's carbon footprint and support the demand side management energy efficiency programme.

Eskom Holdings (SOC) Limited is proposing the establishment of a solar electricity generating facility and associated infrastructure. Infrastructure associated with the PV facility includes:

» Arrays of photovoltaic panels
» Mounting structures to support the PV panels
» Cabling between the project components
» Inverters/transformers enclosures
» An on-site substation or switching station

» A power line to facilitate the connection of the solar energy facility to the existing substation/ power line at the power station
» Internal access roads
» Buildings (which could include workshop area for maintenance and storage, and an on-site office).

The proposed Solar Energy Facility and associated infrastructure is planned to include several arrays of photovoltaic (PV) solar panels. The exact number and placement of photovoltaic cells and arrays will be finalised based on the outcome of the EIA.

Alternatives being assessed:

Two potential locations for the proposed Tutuka Solar Energy Facility have been proposed on different locations within Farm 1814. The alternative site 1 is located south of the Tutuka Power Station, covering an area of approximately ~98.8ha that will have a generating capacity of 65.9MW. The alternative site 2 is located south east of the Tutuka Power Station covering an area of ~36ha (the alternative site 2 will have a generating capacity of up to 24MW); refer to figure 1, the locality map for the location of the alternative sites.

Locality and size:

The Tutuka PV facility and associated infrastructure is proposed to be developed on Portions 4, 10 11 and 12 of Farm Pretorius Vley 374 IS, located approximately 25km north east of Standerton in the Mpumalanga Province. The alternative site 1 will have a generating capacity of 65.9MW and will cover an area of approximately ~98.8ha in extent. The alternative site 2 will have a generating capacity of 24MW and will cover an area of ~36ha in extent.

Construction phase:

» *Duration:* It is estimated that the construction of the proposed Solar Energy Facility and associated infrastructure for the alternative site 1 with 65.9MW component is expected to extend over a period of 18-24 months. The construction period for the alternative site 2 for the 24MW solar energy facility will be approximately 8-12months.
» *Capital expenditure:* In terms of business opportunities for local companies, capital expenditure during the construction phase will create business opportunities for the regional and local economy.
» *Employment opportunities and wages:* The alternative site 1 of 65.9MW is likely to create approximately 250-300 employment opportunities, depending on the final design. The alternative site 2 of 24MW facility will generate approximately 100-150 employment opportunities. Of this approximately 45% of the opportunities will be available to low-skilled workers (construction

labourers, security staff etc.), 22% will be available to semi-skilled workers (drivers, equipment operators etc.), and 33% will be available to skilled personnel (engineers, land surveyors, project managers etc.). 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:* Eskom has indicated that there will be opportunities for on-site skills development and training for the construction phase.

» *Labour accommodation:* According to information provided by Eskom, no on-site accommodation construction camp is envisaged. Given the relative proximity of the site to Standerton, the construction crew will be transported to the site by bus. Overnight site worker presence will be limited to security staff.

» *Transportation of components and equipment:* Transportation of project components and equipment to the site would be transported using vehicular / trucking transport. The existing access road is off the R38 located west to the site. The R38, R39 and the secondary roads to the site will be the primary roads used for transportation of project components and equipment.

Operational phase:

» *Duration:* PV panels are designed to be operational for at least 20-25 years.

» *Employment*: Full-time operational and maintenance crews would be required for the Solar Energy Facility. Based on information provided from the proponent, the 65.9MW Solar Energy Facility will create approximately ~0.67 jobs per MW during the operation phase. The number of full-time equivalent employees would be approximately 50 during the lifespan of the solar plant. The 24MW PV facility will create approximately 20 full-time employees for the lifespan of the development.

» *Skills development and training:* There will be opportunities for on-site skills development and training for the operation phase.

» *On-site presence*: PV panels are designed to operate continuously, unattended and with low maintenance. Regular monitoring and maintenance activities every few weeks would be required to ensure safe and consistent operation (i.e. A mobile team for maintenance such as, cleaning of solar panels and road and vegetation maintenance) for at least 20-25 years of operation.

Decommissioning phase:

The PV infrastructure is anticipated to have a lifespan of approximately 25 years. It is likely that the PV panels will be replaced with more modern technology at the end of their 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.

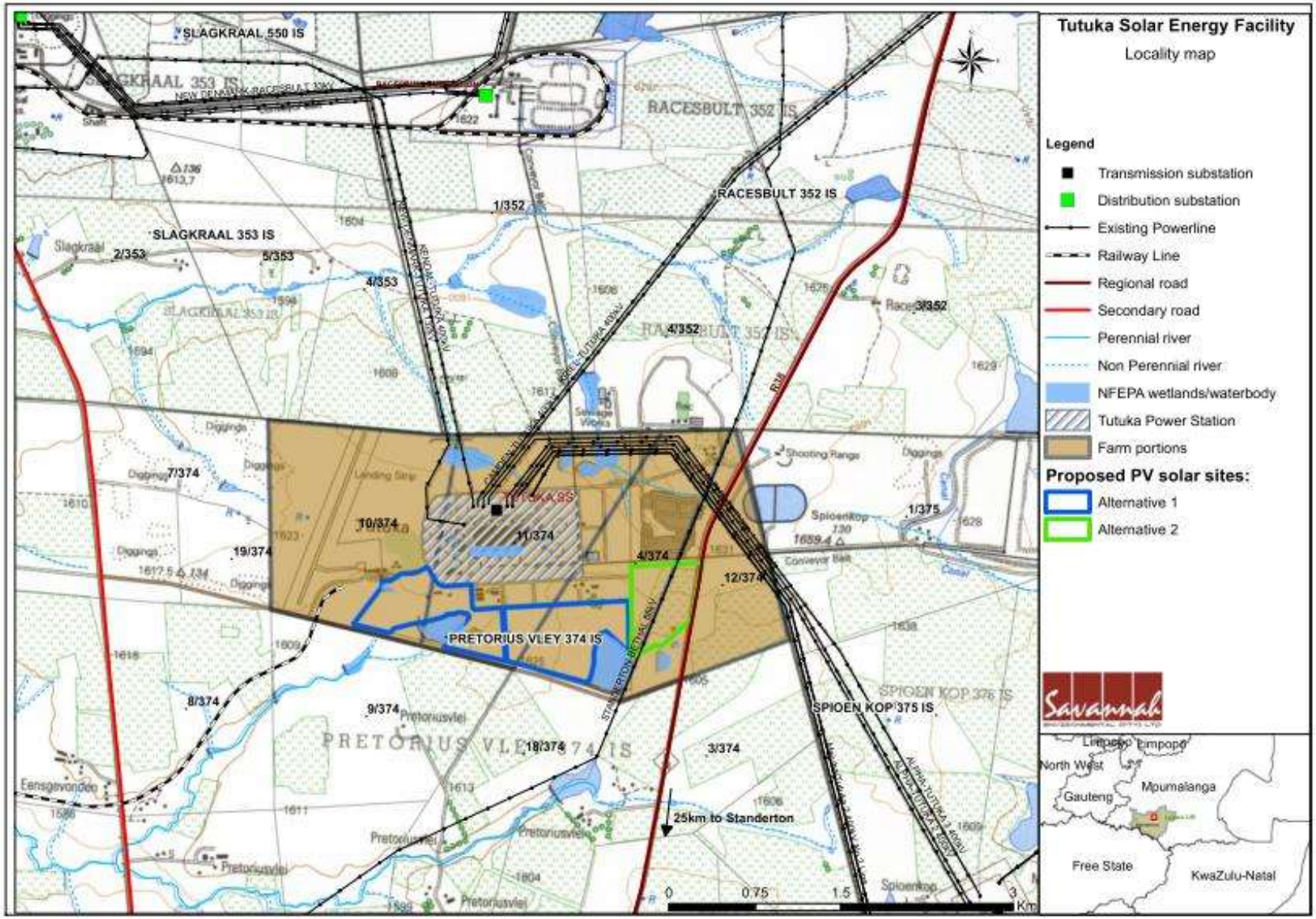

Figure 1: Location of the proposed alternative sites for the Tutuka Solar Energy Facility

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 (refer to Figure 2):

- » A site visit was undertaken during the week of 18-20 February 2015. Observations were also made while on site and within the study area. A description of the study area is available under Section 4.5.
- » Meetings were arranged and held with key representative stakeholders to collect primary social data. 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 municipality.
- » Consultations with key stakeholders took place on Thursday 19 February 2015. Numerous key stakeholders were visited personally or phoned. Where face-to-face meetings were not possible, email correspondence

and/ or telephonic discussions took place with as many stakeholders that could be reached. More than 15 telephone calls were made to stakeholders in the area 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 the stakeholders during the social consultation process (see appendix B).
- » Email correspondence took place with the key stakeholders that were willing to meet. 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 utilized for the semi-structured meetings (see minutes of meetings in Appendix C). 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.

Secondary data collection methods mostly centred on desktop study were gathered and analysed for the purpose of the study, in which the following documents were examined (refer to Figure 2):

- » Project maps
- » A desktop aerial study of the affected area through the use of the latest version of Google Earth 2015
- » The scoping report was reviewed to ensure that all the issues have been addressed at the EIA stage of the process
- » Review of the background information document (BID)
- » The Tutuka Solar Energy Facility stakeholder database
- » Review of data was primarily retrieved from Census data, 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.
- » Review of relevant guidelines, policies and plan frameworks in relation to the project and in relation to the area were utilised, as outlined in Section 3 of this report.
- » Other similar specialist studies were reviewed and relevant information has been fed into the SIA where there have been cross-cutting issues;

including the EIAs undertaken for previous solar energy facilities in 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 3). 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.

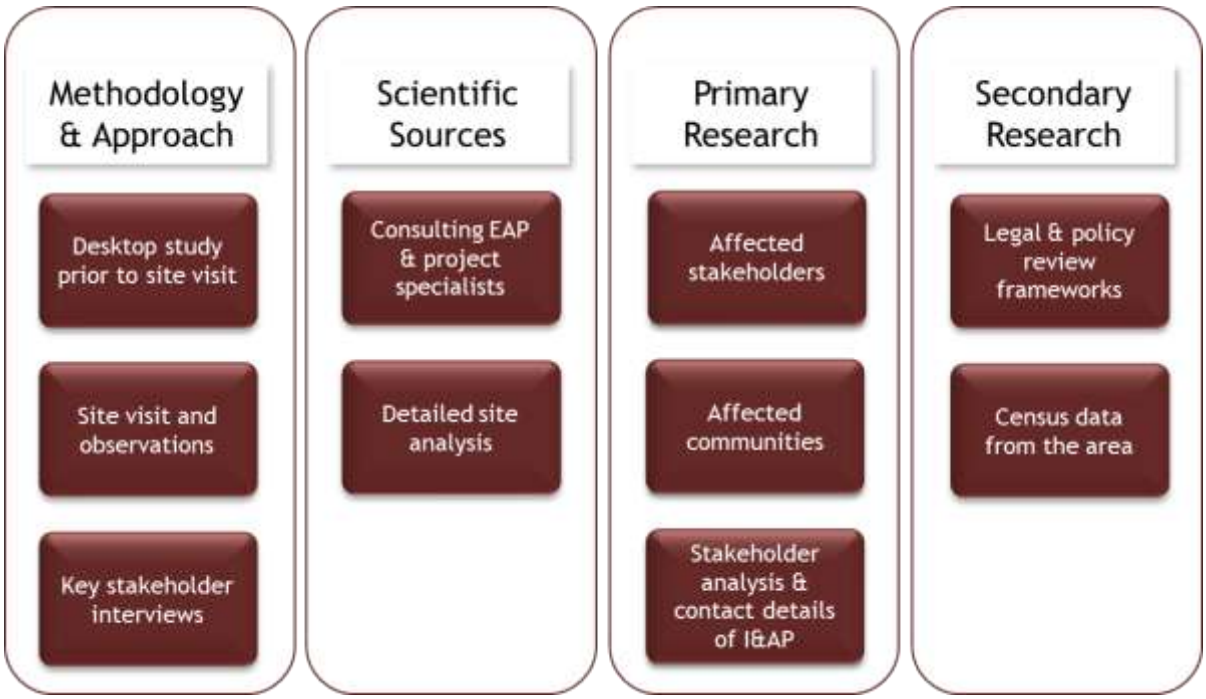

Figure 2: Research methodology and sources diagram

2.3. Public Participation Process

The process of stakeholder disclosure consultation is an ongoing overarching requirement that applies to the entire SIA process. The consultation was 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. 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. The Public Participation Process (PPP) played an important part in the EIA process. The communications during the PPP and written submission of comments have been reviewed. Issues raised through this process have been incorporated into the SIA where relevant. Where possible, the PPP and SIA processes have been integrated. The public participation process involves raising awareness of the proposed development to various stakeholders. It consists of providing information about the proposed project to all various interested and affected parties and providing an opportunity for these parties to raise any issues and/or concerns regarding the project. Relevant stakeholders are informed about the proposed project and thereafter are able to register and participate in the environmental impact assessment process.

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, positive and adverse impacts of the CSP Central Receiver Tower plant. Identification includes both technical view and stakeholder understanding and valuation of their social assets that will be affected by the project footprint. Social Impact Assessment methodology assists in 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 baseline profile of the study area, in addition to this the latest District and Local Municipality policies and plans were also 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 proponent 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 proponent, 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 Act 108 of 1996
- National Environmental Management Act 107 of 1998 (NEMA)
- National Energy Act (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:

- Mpumalanga Provincial Growth and Development Strategy (PGDS) (2004-2014)
- Mpumalanga Economic Growth and Development Path (2011)

District and Local Policies:

- Gert Sibande District Municipality Spatial Development Framework (2009)
- Gert Sibande District Municipality Integrated Development Plan (2015/2016)
- Lekwa Integrated Development Plan (IDP) (2013-2014)

Solar Energy Policies:

- Solar Energy Technology Roadmap (2013)

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 solar facility 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.

The Constitution 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 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.
- To encourage the involvement of communities and community organisations in the matter of local government.

The Constitution of South Africa 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 residents of the study area, and surrounding areas. The development will also promote a health environment through the provision of clean, renewable energy.

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 Notice (GN) R385, GN R386 and GN R387 of April 2006) defines 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.

The National Energy Act (2008)

The National Energy Act was promulgated in 2008 (Act No 34 of 2008). One of the objectives of the Act was 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.

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 create jobs in the local area as well as assist in creating a competitive infrastructure based on terms of energy contribution to the national grid.

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 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 renewable energy facility which will contribute to managing climate change impacts, supporting the emergency response capacity as well as assist in reducing greenhouse gas emission in a sustainable manner.

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 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 the advantages of renewable energy which include minimal environmental impacts in 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.

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

The White paper on renewable energy supplements the Governments 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 recognizes 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 White Paper on Energy Policy's position with respect to 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."*

This White Paper on Renewable Energy (November, 2003) 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, so far these have remained largely untapped. The White Paper on Renewable Energy sets a target of generating 10 000GWh from renewable energy sources. Therefore the policy supports the investment in renewable energy facilities sources at ensuring energy security through the diversification of supply.

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

The primary objective of the Integrated Resource Plan (IRP 2010) 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 2010 also serves as input to other planning functions, *inter alia* economic development, and funding, environmental and social policy formulation. The accuracy of the IRP 2010 is to be improved by regular reviews and updates, and a draft revised Plan is currently available for public comment. 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.

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 follow:

» *SIP 8: Green energy in support of the South African economy:*

Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities.

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.

Mpumalanga Provincial Growth and Development Strategy (PGDS) (2004-2014)

The PGDS 2004-2014 is the fundamental policy framework for the Mpumalanga Provincial Government. As a policy framework it sets the tone and pace for growth and development in the province. The new PGDS addresses the key and most fundamental issues of development spanning the social, economic and the political environment and was developed for the purpose of aligning the policies and strategies of all spheres of Government. The province has identified six priority areas of intervention. These priority areas have been identified primarily based on the social, economic and developmental needs of the province, namely;

» Economic Development:
  - Enhance provincial economic development to improve the quality of life for all
  - Prioritise the advancement of the second economy to address poverty and unemployment
» Development Infrastructure.
  - The development of multi-faceted infrastructure to address basic needs and improve the quality of life
» Social Development.
  - Attain high levels of social development that will ensure a well-educated citizenry that is healthy, safe and has access to sufficient recreational facilities
» Sustainable Environmental Development:
  - To ensure sustainable development and environmental management

- Good Governance:
  - Enhance and develop the institutional capacity of the public sector to ensure effective and efficient service delivery
  - Promote and enhance cooperative governance for integrated service delivery
  - Promote a culture of accountability and transparency in the public sector
  - Improved integrated service deliver through innovative and proactive practices
  - Strengthening of social partnership and community participation in development and service delivery
- Human Resource Development:
  - Invest in peoples skills to promote service delivery, economic growth and development
  - To position higher education institutions to meet the skills demand of the province
  - Improve access to and ensure quality education

The Mpumalanga PGDS emphasises the provinces priorities, some of which are aligned with the proposed development such as the need for economic development, addressing poverty, unemployment and human resource development. The proposed development will contribute towards economic growth; provide employment opportunities as well as skills development through the construction and operation phases of the development.

Mpumalanga Economic Growth and Development Path (MEGDP) (2011)

The primary objective of the Mpumalanga Economic Growth and Development Path (MEGDP) is to foster economic growth that creates jobs, reduce poverty and inequality in the Province. The Mpumalanga economic growth and development path has provided the following goals for the next ten years.

- According to the latest statistics, the unemployment rate in Mpumalanga is standing at approximately 28%. The Mpumalanga province is aiming at reducing the unemployment rate to 15% by 2020. This means that the province has to create approximately 719 000 jobs over a period of ten years.
- With regard to poverty, the province aims to increase the income level of 620 000 individuals above the poverty line by 2020.
- Increase the Human Development Index (HDI) from the current level of 0.50 to a higher level over the next ten years. The Province will increase the literacy level from the current 40 000 per annum individuals to 63 000 individuals per annum, increase the percentage of life expectancy from 51 years to 62 years.
- Relating to inequality, the Province will reduce the Gini-coefficient from 0.65 to 0.55 by 2020.

» For the province to realise these broad targets indicated above, the provincial economy has to grow at the rate of between 5 and 7 percent per annum.

The main economic sectors have been identified as key to spur economic growth and employment creation. The following job drivers will be utilised to secure a strong and sustainable growth in the next decade. Main economic drivers to support economic growth and employment creation are as follows:

a. Agriculture and forestry
   - The contribution of the agricultural sector to GDP by Mpumalanga has been declining in the past ten years or so and consequently shedding jobs in the process. This sector can grow through research to improved farming techniques, improved cultivars, higher productivity, and skills development, increase value adding and agro-processing.

b. Mining and energy:
   - Mining industry remains one of the important economic sectors in the Province for economic growth and job creation.
   - The generation of electricity through coal-fired power stations in South Africa takes place primarily in Mpumalanga. Eleven of the currently operational coal-fired power stations in the country are situated in Mpumalanga and contribute roughly 76% of the total electricity generated in South Africa. In addition, the three Eskom return-to-service (RTS) coal-fired power stations are also situated in Mpumalanga. This industry is also contributing directly and indirectly to economic growth and job creation.

c. Manufacturing and beneficiation
   - The manufacturing sector is also one of the largest contributors to the economy of Mpumalanga and is projected to remain the largest earner in the economy, followed by mining and quarrying and, community and government services, trade and finance.
   - Given the mineral resources that the Province is endowed with, investment in the manufacturing sector could increase its current capacity and contribute to economic growth and job creation, particularly if more focus could be given to beneficiation and agro-processing.

d. Tourism and cultural industries
   - These industries contribute meaningfully towards economic growth and job creation. The wealth of natural and cultural resources that Mpumalanga possesses provides it with a base upon which to develop a sustainable industry. This will include attractions such as the world renowned Kruger National Park with its diversity of wildlife, the world's 3rd largest canyon – Blyde River Canyon, the Bulembu Mountains, a diversity of flora and the worlds' oldest exposed rocks in Barberton, Wetlands and much more.

New economies:

With regard to the province as far as new economies are concerned, focus is placed on the green economy and Information, Communication and Technology.

» *The Green Economy:* The use of coal for energy production results in both the primary environmental impacts associated with the mining and removal of coal for use in coal fired power stations in the province, as well as the secondary impacts resulting from the burning of this coal for energy production. Coal intensive activities contribute to large-scale water and air pollution, including significant carbon dioxide emissions, which contribute to global warming. While energy is crucial for the socio-economic developmental objectives of the province, it is obvious that there has not been enough focus on renewable energy development as a key aspect of this developmental agenda. In order to adequately address the information gaps and to allow the province to meet its integrated energy needs for sustainable socio-economic development, there is a need for research to be conducted on a number of key areas with a view of developing an Integrated Renewable Energy Plan for the Province. This will include research work in areas such solar energy; biomass (bagasse; wood-waste (saw-dust, wood off-cuts, etc.) and putrescible waste (including municipal solid waste, abattoir waste) and Hydro-power. The work on Bio-fuels in the Province has already set the scene for extensive research for other sources of renewable energy.

The Mpumalanga economic growth and development path also discusses climate change and the green economy as one of the focus areas where government will a prioritise effort to support employment creation. The Industrial Development Corporation (IDC) estimates that 296 000 jobs can be created over a ten year period through investment in green energy alone. R11.7 billion will be invested in green energy. Government is developing an Integrated Resource Plan for energy that will have clear commitments on the level of green energy and renewable energy. A commitment must be made on procurement that favours the local industry. A higher level of skills will also be needed. Small business policies and regulation of the building industry will need to be considered.

The proposed development falls directly in line with the Mpumalanga provincial growth path with regards to employment creation in the renewable energy industry, the benefits it will bring to the local community as well as contributing towards diversifying the local economy towards a greener economy.

3.3. District and Local Municipality 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.

Gert Sibande District Municipality Spatial Development Framework (2009)

SDF firstly seeks to encourage rural – urban migration by providing subsidised services in key selected areas / nodes / economic clusters. Secondly, the SDF seeks to strengthen and supplement the functional economic strips / corridors characterising the District's space-economy, as well as developing industry specific economic clusters / activity areas. The following are the development principles to be achieved as part of the Spatial Development Framework for the Gert Sibande District Municipality (GSDM):

1. To actively protect, enhance and manage the natural environmental resources of the District, in order to ensure a sustainable equilibrium between biodiversity conservation, mining, manufacturing and industrial activities, agriculture, forestry, and tourism related activities within the District.
2. To optimally capitalize on the strategic location of the District and its five key economic strips / corridors, and to functionally link all towns and settlements to one another through establishing and maintaining a strategic road and rail network comprising internal and external linkages.
3. To utilise the existing natural environmental, cultural-historic and man-made activity areas within the District as Tourism Anchors and Nodes; and to develop and promote the eastern parts of the District (around route R33) as a Primary Tourism Corridor linking the Lowveld Tourism Precinct to the north (in Ehlanzeni), to the St Lucia Tourism Precinct located to the south of the District.
4. To promote forestry within and along the identified Primary Tourism Corridor.
5. To promote intensive and extensive commercial farming activities throughout the District, and to facilitate and concentrate subsistence farming activities within certain rural communities.
6. To unlock the development potential of existing towns through developing industry specific Special Economic Zones / Economic Clusters throughout the District, in line with the MPISF and the provincial LED Strategy and in accordance with the following sectors:
    a. Agricultural Cluster
    b. Forestry Cluster

c. Industrial Cluster

7. To facilitate and accommodate mining in the District in a sustainable manner in order to support local electricity generation and industrial development.
8. To establish a functional hierarchy of towns and settlements in the District, and to ensure equitable access to social infrastructure and the promotion of local economic development by way of Thusong Centres (Multi-Purpose Community Centres (MPCCs)).
9. To ensure that all communities have access to at least the minimum levels of service as enshrined in the Constitution.
10. To consolidate the urban structure of the District around the highest order centres by way of infill development and densification in Strategic Development Areas (SDAs).

Development Principles 1 to 9 highlighted the proposed future spatial structure of the District Municipality, as well as the major activity nodes/centres to be promoted as such. Issues and trends affecting the district include the occurrence of environmental degradation, a great deal of conflict also exists between mining, agricultural and tourism activities, over the use of land. More often than not the conflict results in the loss of valuable agricultural land, and land featuring high biodiversity and/or eco-tourism / conservation potential.

The proposed development is located within the Tutuka coal fired power station boundary. The proposed development will not compromise conservation potential or tourism potential within this area and therefore the project falls in line with the SDF.

Gert Sibande District Municipality Integrated Development Plan (2015/2016)

The vision of the District Municipality is as follows - Striving to Excel in Good Governance and Quality Infrastructure. The developmental objectives and strategies are presented by Key Performance Area (KPA) as listed below. Key Performance Areas include:

- KPA 1: Municipal Transformation and institutional Organizational Development
- KPA 2: Basic Service Delivery and Infrastructure Development
- KPA 3: Local Economic Development
- KPA 4: Municipal Financial Viability and Management
- KPA 5: Intergovernmental Relations, Good Governance and Public Participation
- KPA 6: Spatial Rationale and Municipal Planning Alignment

The GSDM and its constituent local municipalities face a number of backlog and developmental challenges. Over and above the infrastructural backlog, the District is faced with a high unemployment and poverty rate.

Local economic development is seen as one of the most important ways of decreasing poverty. The proposed development will stimulate local economic growth through job creations, diversifying the local industry and skills development which is in line with the IDP KPA 3

Lekwa Integrated Development Plan (IDP) (2013-2014)

The municipality identified a number of challenges and constraints which impact on the way the municipality functions and fulfils its mandate as per section 152 of the South African constitution. Challenges confronting the municipality include a declining revenue base and poor management of resources, inefficiencies that limit the manner in which the municipality interface with the communities, aging infrastructure due to truck haulage and deferred maintenance, structural inefficiencies that result in poor service delivery standards, low economic growth and high unemployment rate, vulnerable environmental assets and natural resources. To address the identified challenges the municipality has identified the **following long- term** strategic objectives which are known as the 5 LLM's;

- » LLM 1: Build local economies to create more employment, decent work & sustainable livelihoods
- » LLM 2: Improve service and broaden access to them
- » LLM 3: Promote more active community participation in local government
- » LLM 4: Ensure more effective, accountable and clean local government that works with
- » LLM 5: Build more united, non-racial, integrated and safer communities

Over the next five year term (short-term) the municipality will concentrate on the nine strategic focal areas outlined below:

1. *Equitable provision of services* (In the next five years the municipality will ensure that residents have equal access to services they are entitled to).
2. *Creation of integrated and sustainable human settlement* (The focus over the past has been on delivering basic needs and housing)
3. *Creation of a linked ecological open space*
4. *Delineation of an urban edge*
5. *Establishment of an efficient access and integrated mobility*
6. *Creation of a functional hierarchy* (development needs to be concentrated and directed to specific nodes and that higher densities should be encouraged)
7. *Financial and environmental sustainability*
8. *Effective and good governance*

9. *Boosting the local economy and job creation:* The municipality acknowledges that low economic growth and high unemployment rate are still prevalent and present a major challenge. These further translate to relatively high levels of poverty which is widespread within the LLM. High dependency ratio (11700 households living below poverty lines), Low literacy and education levels, a relatively high Gini coefficients or high levels of income inequality, labour dependency ratio, which indicates the number of persons that each economically active person has to support, is 3.88 prove some serious treats to the future development of the local economy. The main focus of the municipality is placed mainly on the following:
    - Promote and support sustainability of existing businesses.
    - Promote small and micro sized rural enterprises.
    - Tourism growth and promotion
    - Creation of job opportunities.
    - Industries to support SMME activities.
    - Improve skills development.
    - Increase the revenue potential of the Municipality.
    - Develop the business potential of the area.
    - Establish the municipality as one of preference for national and international visitors.

The municipality has a number of challenges; one of the main challenges includes low economic growth, high unemployment rate and poverty. The municipality has developed a number of long-term and short-term goals to address these challenges. In terms of the municipality's long-term objectives, the proposed development will contribute to LLM 1 through building the local economy by introducing a relatively new industry that will create employment opportunities, decent work and sustainable livelihoods. In terms of the short term objectives the project will be in line with the ninth strategic focal area through employment opportunities and contributing towards improving skills development.

3.4. Solar Energy Technology Roadmap 2013

Diffusion of renewable energy, generally, and solar technology, specifically, in South Africa is meant 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 17GW of 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.

3.5. Conclusion

The findings of the review of the relevant policies and documents pertaining to the energy sector therefore indicate that solar energy and the establishment of the Proposed Tutuka Solar Energy facility is supported at a national, provincial, and local level, and that the proposed project will contribute towards the various targets and policy aims.

4. Background information on the study area, proposed site and key stakeholder identification

The proposed solar energy facility is proposed to be established within the Tutuka Power Station boundary, which is located within the Lekwa Local Municipality (LLM), as part of the Gert Sibande District Municipality (GSDM) of the Mpumalanga Province. Grid connection will be to the Tutuka substation. This section will provide a brief overview of the study area, surrounding land uses and a description of the key stakeholders of the proposed development.

4.1. Mpumalanga Province

The Mpumalanga Province is bordered by Mozambique and Swaziland to the east and the Gauteng Province to the west. In the eastern region lies the southern half of the Kruger National Park. Mpumalanga is highly accessible, with a network of roads and railway connections, as well as a number of small airports, including the Kruger Mpumalanga International Airport. The Maputo Corridor links the province with Gauteng and Maputo in Mozambique.

Nelspruit (also known as Mbombela) is the capital, and the administrative and business hub of the Lowveld. Witbank (also known as eMalahleni) is the centre of the local coal-mining industry; Standerton in the south, is known for its large dairy industry; and Piet Retief in the southeast is a production area for tropical fruit and sugar.

Mpumalanga is rich in coal reserves, and is home to South Africa's major coal-fired power stations – three of which are the biggest in the southern hemisphere. Witbank, the biggest coal producer in Africa, is home to the country's two oil-from-coal plants. Mpumalanga produces about 80% of the country's coal and remains the largest production region for forestry and agriculture. The best-performing sectors in the province include mining, manufacturing and services. Tourism and agro-processing are potential growth sectors.

4.2. Gert Sibande District Municipality

Gert Sibande District Municipality (GSDM) is one of the three district municipalities in Mpumalanga. It is bounded by Gauteng Province to the west, Nkangala DM to the north, Swaziland and Ehlanzeni DM to the east, and Free State and KwaZulu-Natal to the south. Highways that pass through Gert Sibande District Municipality include the N11, which goes through to the N2 in KwaZulu-Natal, the N17 from Gauteng passing through to Swaziland, and the N3 from

Gauteng to KwaZulu-Natal. There are over 120 towns and villages in the district, which comprises of seven local municipalities:

- Albert Luthuli LM
- Dipaleseng LM
- Govan Mbeki LM
- Lekwa LM
- Mkhondo LM
- Msukaligwa LM
- Pixley ka Seme LM

Energy production (fuel and electricity) is the most significant economic activity. Food and timber production, as well as the tourism and recreation industries, are also important. An abundance of raw materials, suitable and available land for various developments, and a willing labour force create numerous opportunities for investment and growth.

Gert Sibande DM faces the challenge of a fragmented development pattern which is the result of past planning and the uneven distribution of mineral resources. The seven local municipalities also face the challenge of achieving an integrated development plan in a district of this size and complexity. The provision of adequate housing, clinics, schools and government services is hindered by the spatial nature of the area, low payment rates for services, the small tax base and little economic activity. Furthermore, people residing in rural areas do not own the land on which they live, which means they do not qualify to receive housing subsidies, which come with proper services.

4.3. Lekwa Local Municipality

Lekwa Local Municipality is one of seven municipalities within the Gert Sibande District Municipality in Mpumalanga province. It is located in the south-west of the Gert Sibande District Municipality, with immediate entrances to KwaZulu-Natal, Gauteng and Free State provinces. Standerton serves as an urban node, whilst Morgenzon, which is 45km north-east of Standerton, serves as a satellite node. Lekwa local Municipality is surrounded by the following local municipalities: Dr Pixley Ka Isaka Seme and Msukaligwa on the east, Dipaliseng on the west, and Govan Mbeki on the north. The south edge is bordered by Mpumelelo Local Municipality, which is in the northern part of the Free State province. The Lekwa Municipality lies on the large open plains of the Highveld region, which is characterised by tall grass, and it is traversed by the Vaal River, which flows in a western direction. The municipality is named after the Vaal River, which is commonly known as Lekwa (the Sesotho name for the Vaal River).

The area is primarily consisted of urban residential settlements, significant farmland communities and quite significant industrial communities in different areas and towns across the municipalities. The main areas are concentrated around Standerton, Sakhile, Rooikoppen, Sivukile, Azalea Thu-Thukani and Meyerville. Other areas include Stanfield Hill, Morgenzon and the outlying areas of rural Lekwa. Key features of the local municipality include:

- The Municipality is predominantly inhabited by following ethnic groups in the municipality: Zulu, Swati, Ndebele, Xhosa and Sotho and others.
- The major town within Lekwa Local Municipality is Standerton. The town provides services for the surrounding mines, agriculture, power stations and tourism industries.
- Vaal River transverses the municipal area and runs through Standerton.
- The R23 connects the municipal area to Johannesburg, Volksrust, Durban and Newcastle.
- Standerton is served by the national rail network which mainly transports coal with one passenger service route between Standerton and Richards Bay.
- Agriculture is the dominant land use in the municipality
- Agriculture, mining and power generation are the key economic contributors towards the economy of the area.

Lekwa Local Municipality has Standerton as its major urban node. Standerton is a large commercial and agricultural town lying on the banks of the Vaal River in Mpumalanga, which specialises in cattle, dairy, maize and poultry farming. Most of the semi-urban areas within the municipality may be defined as hubs in terms of the current Spatial Development Framework (SDF) definition which says that hubs are small urban centres which are located within the rural areas, often at the crossroads of two important roads or along one major road possibly in close proximity to a parallel running railway. They are fundamentally distribution centres for the rural areas providing a moderate range of services and economic activities. There are only two hubs in the municipal area, namely Thuthukani Village and Morgenzon. The proposed development is situated near the Thuthukani Village, the semi urban area /hub is described in more detail. Thuthukani is located some 18km North-East of Standerton and it began essentially as a workers village for the Tutuka Power Station which is situated about 3km east of the Village. It is divided into two main sections namely, the eastern section belonging to Eskom and the western section owned by New Denmark Mining Company (part of Amcoal Group). Recently the Lekwa local municipality approved about 500 low-cost housing units to be built on the southern section of the Eskom part of the village. This is the first phase of an eventual take-over of the village by the local municipality as already most of the land here belongs to Lekwa local municipality. The village presently has about

130 houses on freestanding stands and a further 60 cluster units. In terms of engineering infrastructure, the following summary is provided:

- » Sewerage: Currently there is water-borne sewerage supplying the village as well as the planned 500 housing units.
- » Potable water: Tutuka Power Station currently supplies the village with drinking water. It appears that in the meantime Eskom will remain the supplier of the service to the community of Thuthukani.

Future possibilities for Expansion: Given the location of the village in relation to other sub-regional economic activities, it appears the chances of the village expanding beyond its current form are quite slim. This is also indicated by the fact that there are currently about 118 serviced stands which cannot be developed due to lack of interest from the open market and this despite the relatively good living environment within the village itself.

4.4. Baseline Socio-Economic Environment

The purpose of the section is to provide an overview of the current socio-economic baseline environment and context in which the proposed project will take place within the Lekwa Local Municipality (LLM) in the Mpumalanga Province. This section of the report 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 dynamics as a background to the development of the project. The data presented in this section has been largely derived from the Mpumalanga Census 2011 Municipal Report, DM IDP 2015/2016, LM IDP 2013-2014, the Census Survey 2011 (Stats SA), as well as the local government handbook 2012.

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. Mpumalanga is the second-smallest province in South Africa after Gauteng with a surface area of only 76 495km^2; taking up 6.3% of South Africa's land area and with a population of just over 4-million people. The proposed development will be constructed in the GSDM within the LLM. The population of the GSDM in 2011 was approximately 1 043 194 people, of which 115 662 people reside in the LLM. The average annual population growth rate in the study area is estimated by comparing data from 2001 to 2011 (see table 3). The LM is a sparsely populated area of about 25 people per square km in comparison with the DM and the rest of Mpumalanga.

Table 3: Population statistics (Source: Census 2011)

Census 2011	Area (km^2)	Population total	Population density /km^2	Population growth rate % (2001 - 2011)
Mpumalanga Province	76 495 km^2	4 039 939	53 km^2	1.83
Gert Sibande DM	31 841 km^2	1 043 194	33 km^2	1.48
Lekwa LM	4 585 km^2	115 662	25 km^2	1.13

Over this period the GSDM experienced an average growth rate of 1.48% and a growth rate of 1.13% within the LM. The LM growth rate is notably lower than the average growth rate for the Mpumalanga Province.

Population groups and languages

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 4 demonstrates a comparison of the population and language distribution in the province, district municipality and local municipality.

Table 4: Population groups & language distribution (Source: Census 2011)

	Population groups				**Predominant languages**		
	Black African	*Coloured*	*Indian/ Asian*	*White*	*Zulu*	*SiSwati*	*Afrikaans*
Mpumalanga Province	90.6%	0.9%	0.6%	7.5%	24.1	27.7	4%
Gert Sibande DM	88.5%	1%	1%	9%	60.9%	13%	9.1%
Lekwa LM	84.1%	2.8%	1.2%	11.4%	66.2%	1.1	13.2%

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

» The most spoken language is Zulu at 66.2% followed by Afrikaans at 13.2%. This indicates that in addition to English, Zulu should also be used for communication processes throughout the project process
» The most dominant population group is Black Africans comprising 84.1% of the LLM population, see figure 3 below of the population distribution.

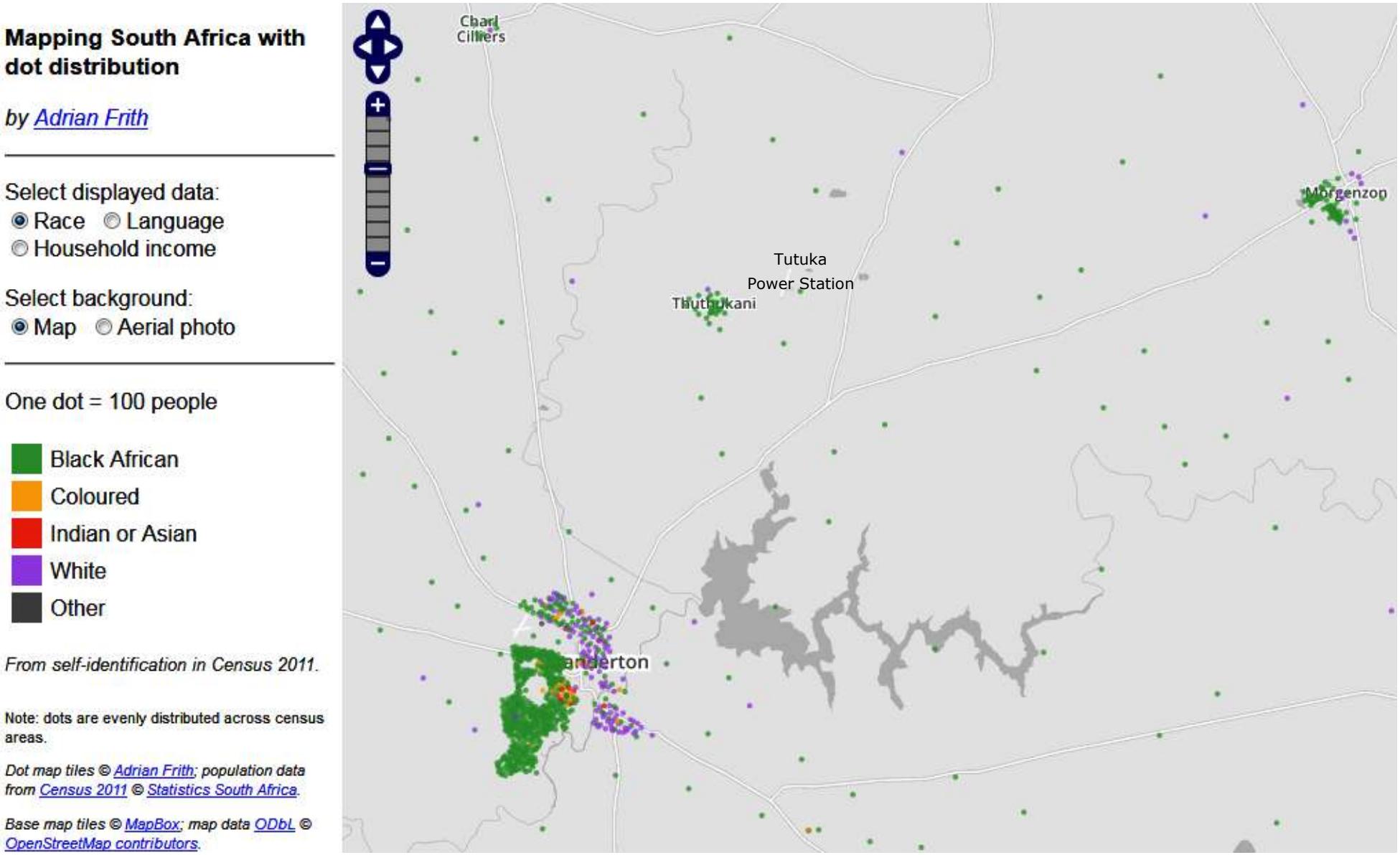

Figure 3: Distribution of population groups in the local area

Age composition and gender differentiation

The age structure of a population is extremely important for planning purposes. Table 5 indicates the age and gender profile of citizens at a provincial and municipal level.

Table 5: Age distribution (Source: Census 2011)

	AGE			Dependency Ratio %	GENDER	
	Age: 0-14	Age: 15-64	Age: 65+		Male	Female
Mpumalanga Province	31.2%	64.1%	4.6%	56%	48.9%	51.1%
Gert Sibande DM	31.5%	63.9%	4.5%	56.5%	49.3%	50.6%
Lekwa LM	28.6%	66.3%	5%	50.6%	49.8%	50.2%

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

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 municipalities 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 above, it is evident in the LM that:

- 66.3% of the LM population comprise the Economically Active Population (EAP)
- The dependency ratio is 50.6% of the LM population (half of the local population)

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.

Unemployment

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 6 demonstrates the unemployment rate in the study area.

Table 6: Distribution of population aged 15-64 years by employment status (Source: Census 2011)

	Employed	**Unemployed**	**Unemployment Rate**
Mpumalanga Province	945 417	442 017	31.9%
Gert Sibande DM	252 045	107 363	29.9%
Lekwa LM	33 334	11 637	25.9%

The LLM is largely populated by the potentially economically active population. In the LLM the unemployment rate is 25.9% and there are approximately 11 637 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.

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 7 indicates the household income levels of the residents in the DM.

Table 7: 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+)***
Lekwa LM	60.9%	33.8%	5.4%

It is evident that in the LLM has a high number of households that fall within a low income category (60.9%) and the low percentage of the households that fall within the middle and high income category. 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 60.9% 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 more focus on the quantity and quality of job opportunities.

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 8 demonstrates the level of education/skills availability in the study area.

Table 8: Education levels of 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**
Mpumalanga Province	14%	11.7%	4.1%	31.4%	28.9%	9.6%
Gert Sibande DM	13.3%	13%	4.4%	31.9%	27.9%	9.1%
Lekwa LM	11.2%	14.6%	4.6%	34%	25.1%	10.3%

The education levels in the area are generally low. Majority of the population aged 20 years and older in the municipality have only some secondary education or less (in the LLM this being 34% of the population). More than half of the local population are semi- skilled or unskilled (no schooling to some secondary). This reflects the rural nature of the region and relatively poor education levels. Only 25.1% of the LM have a matric and 10.3% 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.

Household trends

The number of households the GSDM is approximately 273 490 and approximately 31 071 households within the LLM. This equates to an average household size of 3.7 people in the GGSDM and 3.6 people in the LLM (see table 9). Majority of the population live in urbanized areas, in formal households.

Table 9: 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***
Mpumalanga Province	1 075 488	3.7	83%	4.4%	10%
Gert Sibande DM	273 490	3.7	72%	11%	17%
Lekwa LM	31 071	3.6	73%	1%	27%

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 10.

Table 10: 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**
Mpumalanga Province	45.1%	43.7%	71%	86.4%
Gert Sibande DM	67.1%	64.5%	81.2%	83.3%
Lekwa LM	86.5%	83%	90.5%	88.6%

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. Especially in the rural/farm areas where there's a need to expand basic services such as water, electricity and sanitation. Lekwa Local Municipality forms part of the areas that were spatially designated and distorted, the main challenge is on ensuring that rural communities also have the same rights and benefits as urban communities in terms of basic services.

Economic base

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 province, district and local municipality.

In 2009, the three largest contributors to the Mpumalanga provincial economy were manufacturing (20.1%), mining (18.6%) and community services (16.4%). The manufacturing sector dominated the district economy of Gert Sibande in 2009 with a 32.8% share. Gert Sibande District was the second largest contributor to the provincial economy. In 2009, Gert Sibande was the main contributor to Mpumalanga's manufacturing (54.8%) and agriculture sectors (41.3%). This manufacturing was almost entirely due to SASOL's activities in Govan Mbeki local municipality.

The main industries in the LLM include agriculture, mining and power generation. Standerton is the major urban node and is a large commercial and industrial town which specialises in cattle, dairy, maize and poultry farming. The main contributors to the local economy include Agriculture, forestry and fishing (30%), community, social and personal services (13%), and private households (12%).

Summary

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 DM and the LM. In summary, the area was found to have the following general characteristics:

- The population of the DM in 2011 was approximately 1 043 194 people, of which 115 662 people reside in the LLM.
- The majority of the local population belong to the Black African group and the most spoken language is Zulu in the LLM.
- 66.3% of the LLM 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 50.6% of the LLM population which puts pressure the EAP and local municipalities
- The female population is slightly more prominent in the LLM at 50.2%
- 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 high unemployment rate in the LM (25.9%) 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
- Poverty level and the percentage of the population falling within the low income level (60.9%) in the study area demonstrates the need for job creation; the demand for employment can be addressed (although marginally) through direct job creation during the construction and operation phase of the proposed development
- 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. Especially in the rural/farm areas where there's a need to expand basic services such as water, electricity and sanitation.
- The main industries in the LM include agriculture, mining, and power generation Standerton forms the largest urban settlement area within the local municipality.

Overall baseline conclusion

The proposed development supports the social and economic development through enabling skills development and training in order to empower individuals and promote

employment creation within the local area. The development would mainly focus on economic benefits to the area and introduce a new industry into the local economy. Negative dimensions of impacts such as influx of jobseekers and pressure on the provision of basic services will be weighed in the social impact assessment during the EIA phase.

4.5. Land use character of the proposed site and surrounding area

The alternative sites are located between Bethal and Standerton in the Mpumalanga Province within the boundary of the Tutuka Power Station. Majority of the land surrounding the study area comprises large agricultural areas. There is an industrial character in the area with the Tutuka Power Station; however the area is predominantly agricultural in character with large open spaces. Prominent features within or surrounding the study area includes (see figure 1):

- The Tutuka Power Station which is located within the same farm portion as the as the proposed study areas for the proposed development. The proposed site is located within the Tutuka coal fired power station boundary.
- A railway line is located on the west hand side of the study area (the railway line is predominantly utilised for industrial purposes)
- A transmission substation is located at the Tutuka Power Station, north of the study area
- Numerous electricity transmission lines are predominant features near the study area that feed into the Tutuka transmission substation
- The R38 regional road is located on the east hand side of the study area. The R38 lies on the eastern border of the alternative site for the proposed development
- There are farmsteads and agricultural farmlands surrounding the study area utilised for livestock and maize/soy bean farming.

Table 11: Land use in the study area

Farm Name	Type of Farming Community	Homesteads/Buildings	Land use
Impacted land- Portion 4, 11, 12 of Farm Pretorius Vley 374	Farm Owner- Eskom	None	Tutuka Power Station
Adjacent land- Farm Pretorius Vley 18/374	Farm Owner- Johannes Janse Van Rensberg	Homestead- Resides on Farm	Livestock and soy bean farming
Adjacent land- Farm Pretorius Vley 9/374	Farm Owner- Pieter Bosman	Homestead- Resides on Farm	Farming activities
Adjacent land- Farm Pretorius Vley 10/374	Farm Owner- Eskom Farm Tenant- Pieter Bosman	Buildings/dwellings	Farming activities
Adjacent land- Farm Slagkraal 4/353	Farm Owner- Eskom Farm Tenant- Pieter	None	Farming activities

	Bosman		
Adjacent land- Farm Racebult 1/352	Farm Owner- Conrad Steyn	Buildings near substation	Farming activities
Adjacent land- Farm Racebult 4/352	Farm Owner- Simon Riekert	None	Farming activities
Adjacent land- Farm Racebult 3/352	Farm Owner- Jan Schoonraad	Homesteads- Does not reside on Farm	Farming activities
Adjacent land- Farm Spioen Kop 1/375	Farm Owner- Eskom	Unknown	Farming activities

Figure 4: Tutuka Power Station & Alternative PV site 1 (Photo taken from the southern boundary of Farm Pretorius Vley 4/374)

Figure 5: Adjacent farmland south of Tutuka Power Station (Farm Pretorius Vley 18/374- homestead, livestock and crop farming activities)

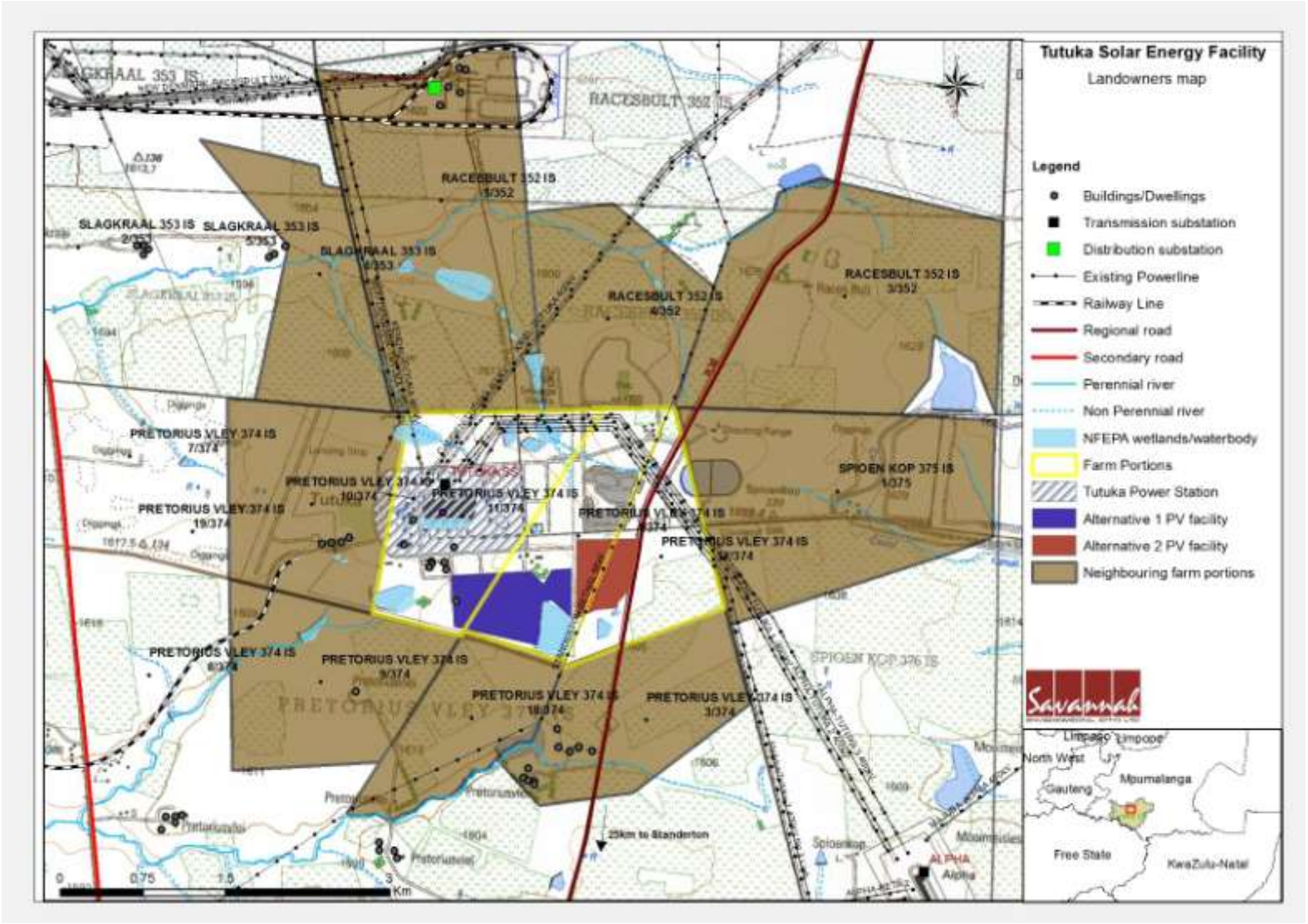

Figure 6: Tutuka solar energy facility landowners' map

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 7 below (as per Ilse Aucamp SIA methodology & Aucamp et al, 2011). There are direct and indirectly affected stakeholders to the proposed development. Directly affected stakeholders are sensitive social receptors that may potentially be affected by the proposed development; this relates to the locations of sensitive receptors. A sensitive receptor is an area or structure sensitive to a predicted social impact. Potentially sensitive receptors that might be impacted by the proposed development include dwellings and other sensitive properties such as schools, hospitals, places of worship and other community facilities that will be identified and discussed as part of the social EIA process.

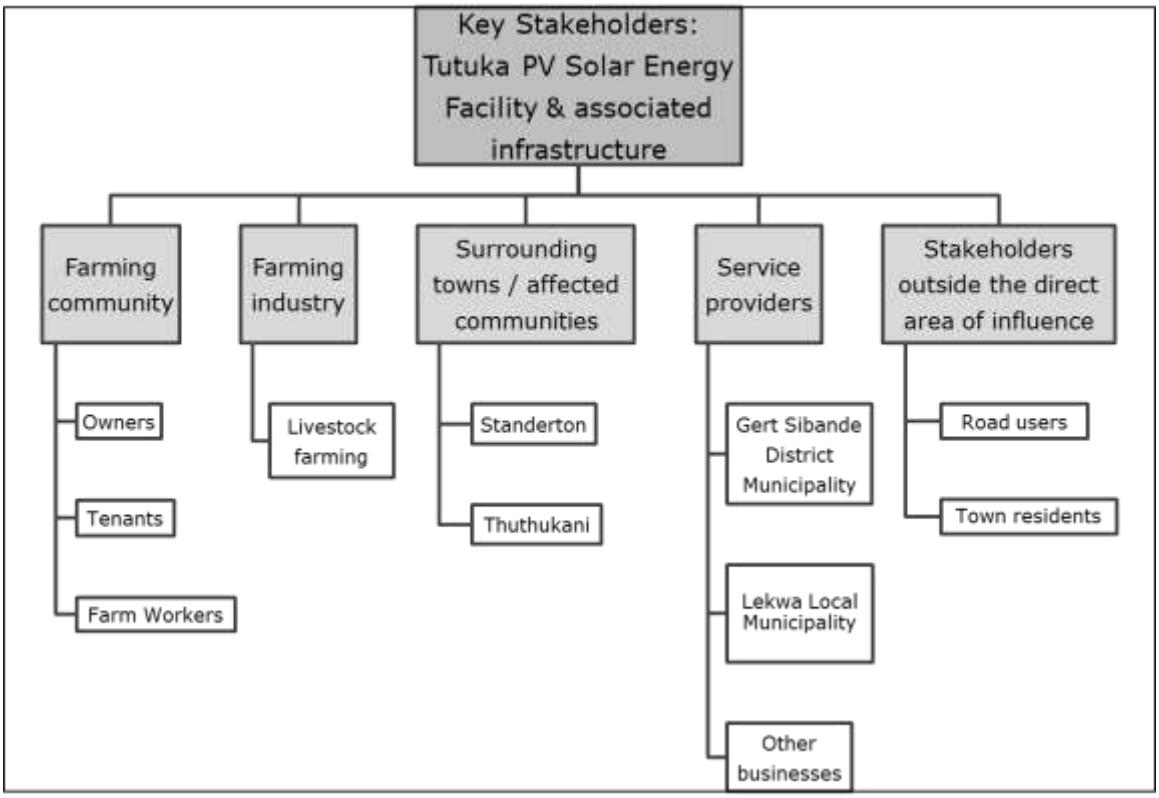

Figure 7: Key stakeholders associated with the proposed development

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 may also make a living from their properties. Farm tenants are people who rent the land and work 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 in the study area include farmers residing on their farm, workers living on the farms and tenants residing in farmhouses on the farms. The most sensitive farming community are those that are located directly adjacent to the proposed site.

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

» *Surrounding businesses / communities:* Standerton is the closest town to the proposed site located approximately 25km away. Standerton is a large

commercial and agricultural town lying on the banks of the Vaal River in Mpumalanga, which specialises in cattle, dairy, maize and poultry farming. There may be positive social impacts associated with the construction phase for the surrounding towns in terms of economic growth and development (economic opportunities such as employment opportunities and local procurement)

» *Service providers:* The major service providers which will be affected by the project include the surrounding municipalities and local businesses in the area. The local municipalities that will be directly impacted by the proposed development will be Lekwa Local Municipality (ward 12). The municipality will absorb a number of social impacts (positive and negative), impacts 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 (positive cumulative impacts).

» *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 R38 on a frequent basis as part of their daily or weekly movement patterns. As well as road users that utilise the secondary access road to access Tutuka Power Station or their farms. Construction vehicles and trucks will be utilising these roads during the construction phase of the development, which will increase the traffic and may increase the wear and tear on these roads. The development may also have an indirect effect on the town's local residents; with influx of in-migrants and marginal growth in the local economy.

5. Social Impact Assessment

This section provides a detailed description and assessment of the potential social impacts associated with the construction, operational and decommissioning phases of the proposed Solar Energy Facility.

5.1. Construction Phase

Impacts associated with the construction phase of a project are usually of a short duration, temporary in nature, but could have long-term effects on the surrounding social environment if not managed appropriately. The alternative site 1, 65.9MW component, is expected to extend over a period of 18-24 months. The construction period for the alternative site 2 for the 24MW solar energy facility will be approximately 8-12 months.

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. This is therefore a positive social impact. Although the exact number of employment opportunities has not been determined at this stage, it is estimated that during the construction phase approximately the 65.9MW solar energy facility on the alternative site 1 is likely to create approximately 250-300 employment opportunities, for approximately 18-24 months. The alternative site 2 with a generating capacity of 24MW solar energy facility will generate approximately 100-150 employment opportunities, for approximately 8-12months. However this number is likely to vary depending on the final designs of the proposed project. In terms of skills requirements, it is common that approximately 45% of the opportunities will be available to low-skilled workers (construction labourers, security staff etc.), 22% will be available to semi-skilled workers (drivers, equipment operators etc.), and 33% will be available to skilled personnel (engineers, land surveyors, project managers etc.). The total wage bill for the construction for the 65.9MW facility on the alternative site 1 is estimated to be in the region of R12 million. The wage bill for the alternative site 2 will be less, in the region of R6 million for the 24MW facility. 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.

The nearest town to the proposed sites is Standerton. The population of Standerton is approximately 43 966 people. According to the Ward Councillor from Ward 12 "unemployment and job creation is the biggest struggle. Creating economic opportunities for the local area is a challenge with the limited prospects available."

The Lekwa Local Municipality has an unemployment rate of 25.9%. There will be significant job opportunities available for low skilled (construction and security workers) and semi-skilled workers, which can be sourced from the local area. 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. 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 with the proposed development. More positive economic opportunities will come from the alternative site 1, as it is a 65.9MW development which means more employment opportunities will be available for a longer period of time in comparison to the alternative site 2. Employment opportunities for the proposed development will peak during construction phase and significantly decline during the operation phase.

Table 12: 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				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without enhancement	**With enhancement**	**Without enhancement**	**With enhancement**
Extent	Local- Regional (2)	Local- Regional (2)	Local- Regional (2)	Local- Regional (2)
Duration	Short term (2)	Short term (2)	Very short term (1)	Very short term (1)
Magnitude	Low (4)	Moderate (6)	Minor(2)	Low (4)
Probability	Probable (3)	Highly probable (4)	Probable (3)	Highly probable (4)
Significance	**Low (24)**	**Medium (40)**	**Low (15)**	**Low (28)**
Status (positive or negative)	Positive	Positive	Positive	Positive
Reversibility	N/A			
Irreplaceable loss of resources	N/A			
Can impacts be enhanced	Yes			
Enhancement measures: In order to enhance the local employment, skills development and business opportunities associated with the construction phase the following measures should be implemented:				

» It is recommended that local employment policy is adopted to maximise the opportunities made available to the local labour force. Eskom should make it a requirement for contractors to implement a 'locals first' policy, especially for semi and low skilled job categories. Enhance employment opportunities for the immediate local area, Ward 12, if this is not possible, then the broader focus areas should be considered for sourcing workers such as the Lekwa Local Municipality » In the recruitment selection process; a minimum percentage of women must be employed » It is recommended to set realistic local recruitment targets for the construction phase » Training and skills development programmes should be initiated prior to the commencement of the construction phase
Cumulative impacts Opportunity to upgrade and improve skills levels in the area
Residual impacts Improved pool of skills and experience in the local area

The impact for Alternative site 1 is therefore assessed to be positive; local and district in extent; temporary in duration; moderate in intensity and highly probable. The impact is assessed to be of medium significance to the decision making process.

The impact for Alternative site 2 is therefore assessed to be positive; local and district in extent; temporary in duration; low in intensity and highly probable. The impact is assessed to be of low 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 ~25km north east of Standerton. Given the relative proximity of the site to town, no on-site accommodation construction camp is envisaged. Off-site accommodation in the nearest town 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 total construction capital expenditure associated with the establishment of the 65.9MW Solar Energy Facility (alternative site 1) is estimated to be in the region of R1.6 billion for the Solar Energy Facility. The alternative site 2 is estimated to cost approximately R1 billion for the 24MW solar energy facility. In terms of business

opportunities for local companies, expenditure during the construction phase will create business opportunities for the regional and local economy. About 44% of the capital expenditure will be spent locally on goods and services required for the development of the Solar Energy Facility. In terms of business opportunities for local companies, expenditure during the construction phase will create business opportunities for the regional and local economy. The increase in demand for new materials and services in the nearby area may stimulate local business and local economic development (however locally sourced materials and services will be limited due to availability). There is likely to be a direct increase in industry and indirect increase in secondary businesses. The proponent or contractors should source services needed from the local area as much as possible. These necessities should be sourced from nearby town and local service providers.

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 enhance the opportunities for local area.

Table 13: 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				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without enhancement	**With enhancement**	**Without enhancement**	**With enhancement**
Extent	Local- regional (2)	Local- Regional (2)	Local- regional (2)	Local- Regional (2)
Duration	Short term (2)	Short term (2)	Very short term (1)	Very short term (1)
Magnitude	Low (4)	Moderate (6)	Minor (2)	Low (4)
Probability	Probable (3)	Probable (3)	Probable (3)	Probable (3)
Significance	**Low (24)**	**Low (30)**	**Low (15)**	**Low (21)**
Status (positive or negative)	Positive	Positive	Positive	Positive
Reversibility	N/A			
Irreplaceable loss of	N/A			

resources	
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 (Lekwa Local Municipality) » Eskom should develop a database of local companies, specifically Historically Disadvantaged (HD) which qualify as potential service providers (e.g. construction companies, catering 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 a suggestion to source as much good and services as possible from the local area; engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers where feasible	
Cumulative impacts Opportunity for local capital expenditure, potential for the local service sector	
Residual impacts Improved local service sector, growth in local business	

The impact for the Alternative site 1 is therefore assessed to be positive; local and district in extent; temporary in duration; moderate intensity; and highly probable. The impact is assessed to be of medium significance to the decision-making process.

The impact for the Alternative site 2 is therefore assessed to be positive; local and district in extent; temporary in duration; low intensity; and highly probable. The impact is assessed to be of low significance to the decision-making process.

5.1.3. Safety and security impacts

An increase in crime is often associated with construction activities. The perceived loss of security during the construction phase of the proposed project due to the influx of workers and/or outsiders to the area (as influxes of construction workers, newcomers or jobseekers are usually associated with an increase in crime), may have indirect effects, such as increased safety and security issues for neighbouring properties and damage to property, such as the 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. The alternative site 1 is likely to create approximately 250-300 employment opportunities (approximately 18-24 months). The alternative site 2 will generate approximately 100-150 employment opportunities (approximately

8-12 months). An influx of construction workers will be significantly more and for a longer period of time for the alternative site 1, therefore increasing the perceived safety and security risks in comparison to alternative site 2.

Apart from the construction crew that poses a potential increased risk there may also be an influx of people looking for economic opportunities (job seekers). Safety and security impacts are a reality in South Africa which needs to be addressed through appropriate mitigation measures. The adjacent landowners were interviewed and safety and security concerns were discussed; it was concluded that the adjacent landowners / tenants don't have concerns with safety and security as the site is located within the Tutuka Power Station boundary (see minutes of meetings in Appendix B), therefore the impact is assessed to be of low significance. Nevertheless, precautions will still need to put in place to limit any possible negative impacts associated with safety and security.

Table 14: 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				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without mitigation	**With mitigation**	**Without mitigation**	**With mitigation**
Extent	Local (2)	Local (2)	Local (2)	Local (2)
Duration	Short term (2)	Short term (2)	Very short term (1)	Very short term (1)
Magnitude	Low (4)	Low (4)	Minor (2)	Minor (2)
Probability	Probable (3)	Improbable (2)	Probable (3)	Improbable (2)
Significance	**Low(24)**	**Low (16)**	**Low (15)**	**Low (10)**
Status (positive or negative)	Negative	Negative	Negative	Negative
Reversibility	Yes			
Irreplaceable loss of resources	No			
Can impacts be mitigated	Yes			
Mitigation » Working hours should be kept between daylight hours during the construction phase, and/or as any deviation that is approved by the relevant authorities. » 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 period » Access in and out of the construction area should be strictly controlled by a security				

company » The appointed EPC contractor must appoint a security company and appropriate security procedures are to be implemented » 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. » A comprehensive employee induction programme would cover land access protocols, fire management and road safety. This must be addressed in the construction EMPr as the best practice. » A Community Liaison Officer should be appointed as a grievance mechanism. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process
Cumulative impacts Possible increase in crime levels (with influx of people) with subsequent possible economic losses
Residual impacts None anticipated

The impact of the Alternative site 1 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.

The impact of the Alternative site 2 is assessed to be negative; local in extent; temporary in duration; minor 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

An increase in traffic due to heavy vehicles could create 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 secondary access road is off the R38, the same access road that is utilized to access the Tutuka Power Station. This secondary road will be the primary access road to the proposed site. The primary roads that will be used for transportation of project components and equipment will be the R38 and the secondary road off the R38. There are regular daily movement patterns on the R38 and secondary road off the R38 from employees of Eskom that work at the Tutuka Power Station and adjacent landowners that utilize these roads to access their place of work. Increased traffic due to heavy vehicles could cause disruptions to the local

community and increase safety hazards. The use of local roads and transport systems may cause road deterioration and congestion.

An 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 R38 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 R38 and the access road would mainly be affected and the use of unroadworthy vehicles, drivers disobeying traffic rules and the obstruction of motorist's views will contribute to this potentially negative impact. Noise, vibrations, dust and visual pollution from heavy vehicle traffic during the construction phase could cause temporary disruptions in daily living, movement patterns and quality of life for local community. Due to the Alternative site 1 being a larger solar energy facility, there will be significantly more construction vehicles and traffic for a longer period of time comparison to the Alternative site 2. However, the adjacent landowners that we interviewed indicated that this would not a great concern as they are already used to the vehicle/truck movement from the Tutuka Power station. Therefore the impact is assessed to have a low significance.

Table 15: Assessment of impacts on daily living and movement patterns

Construction Phase				
Nature: Temporary increase in traffic disruptions and movement patterns during the construction phase				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without mitigation	**With mitigation**	**Without mitigation**	**With mitigation**
Extent	Local (1)	Local (1)	Local (1)	Local (1)
Duration	Short term (2)	Short term (2)	Very short term (1)	Very short term (1)
Magnitude	Moderate (6)	Moderate (6)	Low (4)	Low (4)
Probability	Highly Probable (4)	Probable (3)	Highly Probable (4)	Probable (3)
Significance	**Medium (36)**	**Low (27)**	**Low (24)**	**Low (18)**
Status (positive or negative)	Negative	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 road 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. » Avoid heavy vehicle activity during 'peak' hours (when people are driving to and from work) » The developer and engineering, procurement and construction (EPC) contractor's must ensure that any damage / wear and tear caused by construction related traffic to the roads is repaired » A comprehensive employee induction programme to cover land access protocols and road safety. This must be addressed in the construction EMPr as the best practice. » A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process
Cumulative impacts Possible increased traffic and traffic disruptions impacting local communities movement patterns and increased risks for road users
Residual impacts Non anticipated

The impact of the Alternative site 1 is assessed to be negative; local in extent; temporary in duration; moderate intensity and probable with mitigation measures. The impact is assessed to be of low significance to the decision making process.

The impact of the Alternative site 2 is assessed to be negative; local in extent; temporary in duration; low intensity and probable with mitigation measures. The impact is assessed to be of low significance to the decision making process.

5.1.5. Pressure on economic and social infrastructure impacts from an in-migration of people

The in-migration of people to the area as either non-local workforce of construction workers and/or jobseekers could result in pressure on economic and social infrastructure due to in-migration of construction workers and jobseekers and pressure on local population (rise in social conflicts and social dynamics). Influx of people into the area, especially by job seekers, could further lead to a temporary increase in the level of crime, cause social disruption and put pressure on basic services. Adverse impacts could occur if a large in-migrant workforce, culturally different from the local indigenous group, is brought in during construction. This influx of non-local work force could also strain the existing community infrastructure

and social services. The local municipalities already have a large indigence population that relies on free basic services from the municipality, which has constrained the municipalities' bulk infrastructure due to a lack of funding. The Town Planner of the Lekwa Local Municipality states that "the main struggles in the Lekwa local municipality are unemployment which is a big problem, we also have a backlog with basic service delivery and we have the challenge of availability of electricity in the area." The proposed development will create a range of employment possibilities and thus it will attract jobseekers. The Alternative site 1 (65.9MW PV facility) will create more job opportunities than the smaller proposed facility on Alternative site 2 (24MW PV facility). The 65.9MW facility will require a larger workforce which may attract more job seekers to the area as there will be more economic opportunity. 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. 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. Influx of in-migrants as either a non-local workforce or jobseekers could potentially create conflict between locals and outsides mainly due to difference in racial, cultural and ethnic composition. The high unemployment rates and expectations of job creation is already a source of competition among locals and could be exacerbated through outsiders coming into the area resulting in conflict. Another consequence of a bringing in an outside workforce is that they often remain in the area after completion of the project, thereby posing a negative long-term impact on services and infrastructure. Not only will jobseekers be an issue but if the proponent decides to bring in an outside workforce rather than employing people from the local area, it will create more conflicts, tensions and possible long-term impacts. Therefore wherever possible, it is encouraged that as many employees as possible are sourced from the local area. Also it is important that the tender document stipulates, if feasible, the use of local labour as far as possible to avoid the influx of job seekers.

Standerton is the closest town to the proposed site and is seen as sensitive social receptor and in-migrants (either bringing in an outside workforce or 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 and/or an outside workforce includes pressure on local municipal services and infrastructure such as sanitation, electricity, water, waste management, health facilities, transportation and availability of housing. Squatter 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 STD's and unwanted pregnancies. The proposed PV

facility 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 area first, Ward 12, and if availability of labour is limited then the search can be extended to the local municipality. The local municipality's population could fulfil the majority of the lower and semi-skilled employment opportunities that emerge.

The degree to which society is disrupted largely depends on the level of local employment achievable and in the case of this project a certain percentage of local labourers are expected to be sourced locally and the overall number of outsiders would not be significant to cause great disruption.

Table 16: Assessment of pressure on economic and social infrastructure from an in migration of people

Construction Phase				
Nature: Added pressure on economic and social infrastructure during construction as a result of in-migration of people				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without mitigation	**With mitigation**	**Without mitigation**	**With mitigation**
Extent	Local-regional (2)	Local- regional (2)	Local-regional (2)	Local- regional (2)
Duration	Short-term (2)	Short-term (2)	Very short-term (1)	Very short-term (1)
Magnitude	High Intensity (8)	Low (4)	Moderate (6)	Low (4)
Probability	Probable (3)	Improbable (2)	Probable (3)	Improbable (2)
Significance	**Medium (36)**	**Low (16)**	**Low (27)**	**Low (14)**
Status (positive or negative)	Negative	Negative	Negative	Negative
Reversibility	No			
Irreplaceable loss of resources	No			
Can impacts be mitigated	Yes			
Mitigation » A 'locals first' policy should be advertised for construction employment opportunities, especially for semi and low-skilled job categories, where feasible. Enhance employment opportunities for the immediate local area, Ward 12, if this is not possible, then the broader focus areas should be considered for sourcing employees				

such as the Lekwa Local Municipality » It is recommended that local employment policy is adopted to maximize the opportunities made available to the local labour force. » Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office located in town with a Community Liaison officer should be established to deal with jobseekers. » Have clear rules and regulations for access to the proposed site to control loitering. » A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process
Cumulative impacts » Additional pressure on infrastructure due to additional people in the area » Possible increase in criminal activities and economic losses in area for property owners
Residual impacts Possibility of outside workers remaining in the area after construction is completed and subsequent pressures on local infrastructure

The impact of the Alternative site 1 is assessed to be negative; local to regional 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.

The impact of the Alternative site 2 is assessed to be negative; local to regional 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 & dust)

Impacts associated with construction related activities include noise, dust and disruption to adjacent properties is a potential issue. Experience from other Solar Energy Facilities projects indicate that site clearing does increase the risk of dust being generated, which can in turn impact on adjacent properties. The potential impacts can be addressed by implementing effective mitigation measures. The movement of heavy construction vehicles during construction phase also has the potential to create noise, damage to roads and dust. The primary sources of noise during construction would be from the construction equipment and other sources of noise include vehicle traffic. Generation of dust would come from construction activities. Short-term increases in the use of local roads would occur during the construction period. Heavy equipment would most likely remain at the site for the construction period. The proposed site is located within the Tutuka coal fired power station boundary, so the impact will be less significant as it's located next to the coal fired power station. The

adjacent landowners/ tenants that were interviewed also indicated that these nuisance impacts would not be of concern during the construction phase (see minutes of meetings in Appendix B). The noise, dust and increased use of the local roads are expected to be negative but short term impact. Social impacts for Alternative site 1 and Alternative site 2 will be similar. The only significant differences of the alternative sites is that the construction phase will be longer for Alternative site 1 as the size of the solar energy facility is larger (65.9MW, 18-24 months of construction), therefore the negative construction impacts such as disruption from nuisance impacts (traffic, noise and dust during construction) would be experienced for a longer period of time in comparison to alternative site 2 (24MW, 8-12 months of construction). However, the proposed development is located within the Tutuka coal fired power station boundary and the surrounding landowners do not have any concerns in terms of nuisance impacts and safety and security impacts, therefore these impacts have low significance.

Table 17: Assessment of nuisance impacts

Construction Phase				
Nature: Nuisance impacts in terms of temporary increase in noise and dust, or the wear and tear on private farm roads for access to the site				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without mitigation	**With mitigation**	**Without mitigation**	**With mitigation**
Extent	Local (1)	Local (1)	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)	Very short-term (1)	Very short-term (1)
Magnitude	Minor (2)	Minor (2)	Minor (2)	Minor (2)
Probability	Probable (3)	Improbable (2)	Probable (3)	Improbable (2)
Significance	**Low (15)**	**Low (10)**	**Low (12)**	**Low (8)**
Status (positive or negative)	Negative	Negative	Negative	Negative
Reversibility	Yes			
Irreplaceable loss of resources	No			
Can impacts be mitigated	Yes			
Mitigation The potential impacts associated with construction and heavy vehicles can be effectively mitigated. The mitigation measures include: » Avoid heavy vehicle activity during 'peak' hours (when people are driving to and from work)				

» The contractor must ensure that damage caused by construction related traffic to the access roads is repaired before the completion of the construction phase. The costs associated with the repair must be borne by the contractor » Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers » Ensure that drivers adhere to speed limits » Ensure all vehicles are road worthy; drivers are qualified and are made aware of the potential noise and dust issues. » A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process
Cumulative impacts » If damage to roads is not repaired then this will affect other road users and result in higher maintenance costs for vehicles of road users » Other construction activities in area will heighten the nuisance impacts, such as noise, dust and wear and tear on roads.
Residual impacts Only damage to roads that are not fixed could affect road users

The impact of the Alternative site 1 is assessed to be negative; local in extent; temporary short term in duration; minor intensity and improbable with mitigation measures. The impact is assessed to be of low significance to the decision making process.

The impact of the Alternative site 2 is assessed to be negative; local in extent; temporary very short term in duration; minor intensity and improbable with mitigation measures. The impact is assessed to be of low significance to the decision making process.

5.2. Operation Phase

The solar energy facility will be operational for approximately 20-25years. The potential positive and negative impacts which could arise as a result of the operation of the Project include the following:

5.2.1. Direct employment and skills development

The operation phase (20-25years) of the proposed development will require a workforce and therefore direct employment will be generated. Although the exact number of construction workers is not confirmed at this stage, it is estimated that

approximately ~50 jobs will be generated during the operation phase for the 65.9MW facility and approximately ~20 jobs created for the 24MW facility. 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 Municipal area. The employees would include skilled engineers (specialised in both electrical and mechanical engineering) as well as less skilled services such as safety and security and engineering assistants. Routine activities would include operation of the solar facility to produce power, and regular monitoring and maintenance activities to ensure safe and consistent operation. Maintenance will be carried out throughout the lifetime of the solar energy facility. Typical activities during maintenance include washing solar panels routinely (in the evening) and vegetation control and maintenance. Employment opportunities will be created during the operation phase and is rated as positive impact although limited.

Table 18: Employment opportunities and skills development

Operational Phase				
Nature: The creation of employment opportunities and skills development opportunities during the operation phase for the country and local economy				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without enhancement	**With enhancement**	**Without enhancement**	**With enhancement**
Extent	Local- Regional (3)	Local- Regional (3)	Local- regional (3)	Local- Regional (3)
Duration	Long term (4)	Long term (4)	Long term (4)	Long term (4)
Magnitude	Low (4)	Low(4)	Minor (2)	Minor (2)
Probability	Probable (3)	Highly Probable (4)	Probable (3)	Highly Probable (4)
Significance	**Low (30)**	**Medium (40)**	**Low (27)**	**Medium (36)**
Status (positive or negative)	Positive	Positive	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 by the developer to maximise the project opportunities being made available to the local community. Enhance employment opportunities for the immediate local area, Ward 12, if this is not possible, then the broader focus areas should be considered for sourcing employees such as the Lekwa Local Municipality » The recruitment selection process should seek to promote gender equality and the				

employment of women wherever possible » The developer should establish vocational training programs for the local employees to promote the development of skills
Cumulative impacts Opportunity to upgrade and improve skills levels in the area
Residual impacts Improved pool of skills and experience in the local area

The impact of the Alternative site 1 is assessed to be positive; local to regional in extent; long term in duration; low intensity and highly probable with enhancement measures. The impact is assessed to be of medium significance to the decision making process.

The impact of the Alternative site 2 is assessed to be positive; local to regional in extent; long term in duration; minor intensity and highly probable with enhancement measures. 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 of GHG emission (ERC, 2004). The energy-intensive sectors of the economy emit carbon emissions that are higher than those of most developed economies. The use of solar radiation for power generation is considered a non-consumptive use of a natural resource which produces zero greenhouse gas 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, 1998). As most of the sources are indigenous 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 (ERC, 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.

Bringing in the renewable energy sector to the Lekwa economy may contribute to the diversification of the local economy and provide greater economic stability. The growth in the renewable energy sector could introduce skills and development into the area. The development of the solar energy facility could therefore add to the stability of the economy, and even though this proposed development is small scale in comparison to the overall potential of the sector, it could contribute to the local economy. The proposed 65.9MW facility or 24MW facility will help contribute to offset the total carbon emissions associated with energy generation in South Africa.

Table 19: Assessment of the development of clean, renewable energy infrastructure

Operational Phase				
Nature: Development of clean, renewable energy infrastructure				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without enhancement	**With enhancement**	**Without enhancement**	**With enhancement**
Extent	Local- Regional- National (4)	Local- Regional- National (4)	Local- Regional- National (4)	Local- Regional- National (4)
Duration	Long term (4)	Long term (4)	Long term (4)	Long term (4)
Magnitude	Low (4)	Low (4)	Minor (2)	Minor (2)
Probability	Highly probable (4)	Highly probable (4)	Highly probable (4)	Highly probable (4)
Significance	**Medium (48)**	**Medium (48)**	**Medium (40)**	**Medium (40)**
Status (positive or negative)	Positive	Positive	Positive	Positive
Reversibility	Yes			
Irreplaceable loss of resources	Yes (impact of climate change)			
Can impacts be enhanced	No			
Enhancement None anticipated				
Cumulative impacts Reduce carbon emissions through the use of renewable energy and contribute to reducing global warming				
Residual impacts Reduce carbon emissions through the use of renewable energy and contribute to reducing global warming				

The impact of the Alternative site 1 is assessed to be positive; local to national in extent; long term in duration; low intensity and highly probable with enhancement

measures. The impact is assessed to be of medium significance to the decision making process.

The impact of the Alternative site 2 is assessed to be positive; local to national in extent; long term in duration; minor intensity and highly probable with enhancement measures. The impact is assessed to be of medium significance to the decision making process.

5.2.3. 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 the demographics of the population that resides in the area and their perceptions regarding trade-offs. An impact on the sense of place is one that alters the visual landscape to such an extent that the user experiences the environment differently, and more specifically, in a less appealing or less positive light. The social impacts associated with the impact on sense of place relate to the change in the landscape character and visual impact of the proposed Solar Energy Facility.

The proposed development is located next to an industrial area, within the Tutuka coal fired power station boundary. The adjacent landowners / tenants are farmers that utilise the adjacent land for farming activities. The key stakeholders who were interviewed indicated that there won't be any anticipated visual issues from their side as is it located next to an industrial area next to the Tutuka Power Station which is already a visual disturbance and affects the areas sense of place. The Tutuka Power Station located next to the site, the power and transmission lines, roads and the substation are infrastructural and disrupting elements that currently affect visual resources in the immediate local area. There are no tourist attractions located adjacent to the property and therefore the anticipated impact on the areas visual quality and sense of place is expected to be of very low significance.

Table 20: 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 project				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without mitigation	**With mitigation**	**Without mitigation**	**With mitigation**

Extent	Local (1)	Local (1)	Local (1)	Local (1)
Duration	Long term (4)	Long term (4)	Long term (4)	Long term (4)
Magnitude	Low (4)	Low (4)	Minor (2)	Minor (2)
Probability	Improbable (2)	Improbable (2)	Improbable (2)	Improbable (2)
Significance	**Low (18)**	**Low (18)**	**Low (14)**	**Low (14)**
Status (positive or negative)	Negative	Negative	Negative	Negative
Reversibility	Yes			
Irreplaceable loss of resources	No			
Can impacts be mitigated	Yes			
Mitigation » Vegetation screening established if required.				
Cumulative impacts None anticipated				
Residual impacts None anticipated if the visual impact will be removed after decommissioning, provided the solar energy facility infrastructure is removed and the site is rehabilitated to its original (current) status.				

The impact of the Alternative site 1 is assessed to be negative; local in extent; long term; low intensity; and improbable. The impact is assessed to be of low significance to the decision-making process due to the proposed development being located next to the Tutuka Power Station.

The impact of the Alternative site 2 is assessed to be negative; local in extent; long term; minor intensity; and improbable. The impact is assessed to be of low significance to the decision-making process due to the proposed development being located next to the Tutuka Power Station.

5.3. 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 adjacent landowners who are directly affected, the communities within which they live, and the relevant local authorities. However, in the case of the proposed facility 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 for the Alternative site 1, 65.9MW solar energy facility (approximately ~50) and even less for the Alternative site 2, 24MW solar energy facility (approximately ~25), the social impacts at a community level associated with decommissioning are likely to be low. In addition, potential impacts associated with the decommissioning phase can be effectively managed with the implementation of a retrenchment and downscaling programme. With mitigation, the impacts are assessed to be Low.

Table 21: Social impacts associated with decommissioning

Nature: Social impacts associated with retrenchment including loss of jobs and source of income				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
	Without Mitigation	**With Mitigation**	**Without Mitigation**	**With Mitigation**
Extent	Local- district (2)	Local- district (2)	Local- district (2)	Local- district (2)
Duration	Short term (1)	Short Term (1)	Short term (1)	Short Term (1)
Magnitude	Low (4)	Low (4)	Minor (2)	Minor (2)
Probability	Highly Probable (4)	Probable (3)	Highly Probable (4)	Probable (3)
Significance	**Low (28)**	**Low (21)**	**Low (20)**	**Low (15)**
Status	Negative	Negative	Negative	Negative
Reversibility	Yes, assumes retrenchment packages are paid to all affected employees			
Irreplaceable loss of resources?	No			
Can impact be mitigated?	Yes			
Mitigation » The proponent should ensure that retrenchment packages are provided for all staff retrenched when the plant is decommissioned. » All structures and infrastructure associated with the proposed facility should be				

dismantled and transported off-site on decommissioning; » There should be a decommissioning/ rehabilitation fund established as part of the environmental management programme, allocated to rehabilitate disturbed areas.
Cumulative impacts Loss of jobs and associated loss of income etc. can impact on the local economy and other businesses. However, decommissioning can also create short term, temporary employment opportunities associated with dismantling etc.
Residual impacts Loss of jobs and associated loss of income, can impact on local economy and other businesses.

The impact of the Alternative site 1 is assessed to be negative short term; low intensity; and probable. The impact is assessed to be of low significance to the decision-making process.

The impact of the Alternative site 2 is assessed to be negative short term; minor intensity; and probable. The impact is assessed to be of low significance to the decision-making process.

5.4. Assessment of Alternatives

The SIA analysis of alternatives will focus on the Alternative site 1, Alternative site 2 and the no-go alternative. Social impacts, unlike most environmental impacts, are not site specific and occur in the communities surrounding the proposed site.

Alternative site 1 and Alternative site 2

Social impacts for Alternative site 1 and Alternative site 2 will be similar. The only significant differences is that the construction phase will be longer for Alternative site 1 as the size of the solar energy facility is larger (65.9MW), therefore the negative construction impacts such as disruption from nuisance impacts (traffic, noise and dust during construction) and safety and security impacts would be experienced for a longer period of time. However, the proposed development is located within the Tutuka coal fired power station boundary and the surrounding landowners that were contacted do not have concerns in terms of nuisance impacts and safety and security risks, therefore these impacts are neutral and have low significance. With the Alternative site 1 having a longer construction phase (18-24months for a 65.9MW facility) in comparison to the Alternative site 2 (8-12 months for a 24MW facility) more economic benefits will be experienced for a longer period of time such as; more employment opportunities, wages for a longer period, capital expenditure, skills development and economic multiplier benefits. Therefore these impacts are positive

and consequently the Alternative site 1 would represent more socio-economic opportunities for the local area.

No-go option

The impacts of pursuing the No-go option are both positive and negative as follows:

» The benefits would be that there is no disruption from, nuisance impacts (traffic, noise and dust during construction) and safety and security impacts. The impact is therefore neutral.
» There would also be an opportunity loss in terms of job creation, skills development and associated economic multipliers for the local economy.

Foregoing the proposed development would not necessarily compromise the development of renewable energy facilities in South Africa. However, the socio-economic benefits for local communities would be forfeited.

5.5. **Cumulative Impacts**

Cumulative impacts have been considered as part of this social impact assessment and identified where relevant. The proposed Tutuka Solar Energy Facility has the potential to result in significant positive cumulative impacts; specifically with the establishment of a number of Solar Energy Facilities in the vicinity of Lekwa Local Municipality will create a number of socio-economic opportunities for the area, which, in turn, will result in a positive social benefit. The positive cumulative impacts include creation of employment, skills development and training opportunities, and downstream business opportunities. Benefits to the local, regional and national economy through employment and procurement of services could be substantial should many renewable energy facilities proceed. This benefit will increase significantly should critical mass be reached that allows local companies to develop the necessary skills to support construction and maintenance activities and that allows for components of the renewable energy facilities to be manufactured in South Africa. Furthermore at municipal level, the cumulative impact could be positive and could incentivize operation and maintenance companies to centralize and expand their activities towards education and training.

Table 22: Cumulative impacts of employment opportunities, business opportunities and skills development

Nature: An increase in employment opportunities, skills development and business opportunities with the establishment of more than one solar energy facility		
	Without enhancement	**With enhancement**
Extent	Local- regional (3)	Local- Regional (3)

Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Highly Probable (4)
Significance	**Medium (33)**	**Medium (52)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources	N/A	
Can impacts be enhanced	Yes	
Enhancement The establishment of a number of solar energy facilities in the area does have the potential to have a positive cumulative impact on the area in the form of employment opportunities, skills development and business opportunities. 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.		
Cumulative impacts » Opportunity to upgrade and improve skills levels in the area » Cumulative impacts on local entrepreneurs in developing their businesses		
Residual impacts » Improved pool of skills and experience in the local area » Economic growth for small-scale entrepreneurs		

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

The potential impact of the proposed Tutuka Solar Energy Facility on the areas sense of place is likely to be low as it's located within the Tutuka coal fired power station boundary. The potential impact of numerous solar energy facilities in the area could be an issue that does need to be taken into consideration. With regard to the area, a number of solar energy facilities in the area could have an impact on the areas sense of place within the Local Municipality. The Environmental Authorities in the provinces however should be aware of the potential cumulative impacts when evaluating applications.

6. 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 the public participation process and face to face interviews with key stakeholders. The environmental assessment framework for 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 24 and 25 below.

Table 23: Summary of social impacts during construction phase

CONSTRUCTION PHASE				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
Impact	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**
Positive Impacts				
Direct employment and skills development	Low	Medium	Low	Low
Economic multiplier effects	Low	Low	Low	low
Negative Impacts				
Safety and security risks	Low	Low	Low	Low
Impacts on daily living and movement patterns	Medium	Low	Low	Low
Pressure on economic and social infrastructure impacts from an in migration of people	Medium	Low	Low	Low
Nuisance impacts (noise & dust)	Low	Low	Low	Low

Table 24: Summary of social impacts during operation phase

OPERATION PHASE				
	Alternative site 1 (65.9MW)		**Alternative site 2 (24MW)**	
Impact	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**	**Significance Without Mitigation/ enhancement**	**Significance With Mitigation/ enhancement**
Positive Impacts				
Direct employment and skills development	Low	Medium	Low	Medium
Development of clean, renewable energy infrastructure	Medium	Medium	Medium	Medium
Negative Impacts				
Visual and sense of place impacts	Low	Low	Low	Low

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 it 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 can be 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 PV 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 challenges created by climate change, represents a positive social benefit for society as a whole.

Recommendations

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

» In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled are scarce commodities in the study area and could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen local endeavours to obtain jobs and provoke discontent as well as put pressure on the local services available. Local labour should be utilised to enhance the positive impact of employment creation in the area. Local businesses should be involved with the construction activities where possible. It is imperative that local labour be sourced to ensure that benefits accrue to the local communities. Preference should thus be given to the use of local labour during the construction and operational phases of the project as far as possible.
» Locals should also be allowed an opportunity to be included in a list of possible local suppliers and service providers, enhancing the multiplier effect. This aspect would serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.
» Impacts associated with the construction period should be carefully mitigated to minimise any possible dust and noise pollution.
» Safety and security concerns should be taken into account during the planning and construction phases of the proposed project.

Overall Conclusion

The proposed Tutuka Solar Energy Facility and associated infrastructure is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the proposed Tutuka Solar Energy Facility alternative site 1 or alternative site 2 could be developed subject to the implementation of the recommended mitigation measures and management actions contained in the report. From the analysis of alternatives it can be concluded that the alternative site 1 could bring more positive socio-economic benefits to the local area in comparison to alternative site 2, if enhancement/ mitigation measures are implemented.

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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 Tutuka Solar Energy Facility 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**
» Employ local contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria		» The Proponent & EPC Contractors	» Pre-construction & construction phase
» Adopt a local employment policy to maximise the opportunities made available to the local labour force as far as possible (preference to Ward 12, then the Lekwa Local Municipality area)		» The Proponent & EPC Contractors	» Pre-construction & construction phase
» In the recruitment selection process; a minimum percentage of women must be employed		» EPC Contractors	» Pre-construction & construction phase
» Set realistic local recruitment targets for the construction phase (preference to Ward 12, then the Lekwa Local Municipality area)		» The Proponent & EPC Contractors	» Pre-construction & construction phase
» Training and skills development programmes to be initiated prior to the commencement of the construction phase		» The Proponent	» Pre-construction &

		construction phase
Performance Indicator	» Employment and business policy document that sets out local employment and targets completed before construction phase commences; » Employ as many semi and unskilled labour from the local area or local municipality as possible (Ward 12, Lekwa Local Municipality). » 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 Tutuka 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**
» A local procurement policy to be adopted to maximise the benefit to the local economy where feasible (Lekwa Local Municipality)	» The Proponent & EPC Contractor	» Pre-construction & construction phase
» 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 Proponent& EPC Contractor	» Pre-construction & construction phase
» Source as much goods and services as possible from the local area (Lekwa Local Municipality). Engage with local authorities	» The Proponent	» Pre-construction &

and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers where feasible		construction phase
Performance Indicator	» Local procurement policy is adopted » Local goods and services are purchased from local suppliers where feasible (Lekwa Local Municipality)	
Monitoring	» The developer must monitor 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 Tutuka 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 to be kept between 6am and 6pm as per the ECA during the construction phase, and/or as any deviation that is approved by the relevant authorities.	» EPC contractor	» Construction phase
» 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 period	» EPC contractor	» Pre-construction phase & Construction phase
» Access in and out of the construction camp should be strictly controlled by a security company	» EPC contractor	» Construction Phase
» The appointed EPC contractor must appoint a security company and appropriate security procedures are to be implemented	» 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
» Contractor must provide adequate firefighting	» EPC	» Pre-

equipment on site and provide firefighting training to selected construction staff.	contractor	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
» Method of communication should be implemented whereby local landowners can express any complaints or grievances with the construction process	» EPC Contractor	» Pre-construction phase & construction phase
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 » Security company appointed and security procedures implemented	
Monitoring	» The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase	

Impacts on daily living and movement patterns

OBJECTIVE: To avoid or reduce traffic disruptions and movement patterns of local community during the construction phase		
Project component/s	Construction of the proposed Tutuka Solar Energy Facility and associated infrastructure	
Potential Impact	Increase in traffic disruptions, safety hazards, and impacts on movement patterns of local community as well as impact on private property due to the upgrade of the existing road and heavy vehicle traffic in the local area	
Activity/risk source	Construction activities affecting daily living and movement patterns	
Mitigation: Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods	
Mitigation: Action/control	**Responsibility**	**Timeframe**
» 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
» Any damage / wear and tear caused by construction related traffic to the roads is repaired	» The Proponent & EPC contractor	» Construction phase
» Provide adequate and strategically placed traffic warning signs and control measures along the R38 and secondary roads to warn road users of the construction activities taking place, displaying road safety messages and speed limits for the duration of the construction phase. Traffic warning signs must also be well illuminated at night.	» EPC contractor	» Pre-construction phase & Construction phase
» A comprehensive employee induction programme to cover land access protocols and road safety. This must be addressed in the construction EMPr as the best practice.	» EPC contractor	» Construction phase
» Appoint a Community Liaison Officer and create method of communication whereby local community member can express any complaints or grievances	» EPC contractor	» Pre-construction phase & Construction phase
Performance Indicator	» Vehicles are roadworthy, inspected regularly and speed limits are adhered to » Traffic warning signs along R38 and secondary roads, also illuminated at night	
Monitoring	» The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase	

Pressure on economic and social infrastructure impacts from an in migration of people

OBJECTIVE: Reduce the pressure on economic and social infrastructure and social conflicts from an influx of a non-local workforce and jobseekers during the construction phase	
Project component/s	Construction of the Proposed Tutuka 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 a non-local workforce and jobseekers
Activity/risk source	Influx of migrant workers and 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
» Where possible, make it a requirement for contractors to implement a 'locals first' policy. Should be advertised for construction employment opportunities, especially for semi and low-skilled job categories (preference to Ward 12, then the Lekwa Local Municipality area). Enhance employment opportunities for the immediate local area, Ward 12, if this is not possible, then the broader focus areas should be considered for sourcing workers such as the Lekwa Local Municipality	» The proponent & EPC contractor	» Pre-construction & construction phase
» Tender document should stipulate the use of local labour as far as possible (preference to Ward 12, then the Lekwa Local Municipality area)	» 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.	» EPC contractor	» Pre-construction & construction phase
» Recruitment of temporary workers at the gates of the development should not be allowed. A recruitment office located in town with a Community Liaison officer should be established to deal with jobseekers.	» EPC contractor	» Pre-construction & construction phase
» Have clear rules and regulations for access to the proposed site to control loitering.	» EPC contractor	» Pre-construction & construction phase
» A Community Liaison Officer should be	» EPC	» Construction

appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process	contractor	phase
Performance Indicator	» Percentage of the workers employed in construction that come from local communities	
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes	

Nuisance impacts (Noise & dust)

OBJECTIVE: To avoid or minimise the potential impacts of noise and dust from construction activities during the construction phase		
Project component/s	Construction of the proposed Tutuka 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**
» The movement of heavy vehicles associated with the construction phase must be timed to avoid weekends and holiday periods, where feasible	» EPC Contractor	» Construction phase
» Ensure that damage caused by construction related traffic to the existing roads is repaired before the completion of the construction phase.	» EPC Contractor	» Construction phase
» Implement dust suppression measures for heavy vehicles such as wetting the roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers	» EPC Contractor	» Construction phase
» Ensure all vehicles are road worthy, drivers are qualified and are made aware of the potential noise and dust issues	» EPC Contractor	» Construction phase
» Ensure that drivers adhere to speed limits	» EPC	» Construction

	Contractor	phase
» A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process	» The Proponent & EPC contractor	» Pre-construction & construction phase
Performance Indicator	» Dust suppression measures implemented for all heavy vehicles that require such measures during the construction phase » Enforcement of strict speeding limits » Road worthy certificates in place for all vehicles » Community liaison officer available for community grievances and communication channel	
Monitoring	» The EPC contractor must monitor the indicators to ensure that they have been met for the construction phase	

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 Tutuka 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**
» Adopt a local employment policy to maximise the opportunities made available to the local labour force. (preference to Ward 12, then the Lekwa Local Municipality area)	» The Proponent & EPC contractor	» Operation phase
» The recruitment selection process should seek to promote gender equality and the employment of women wherever possible	» The Proponent & EPC contractor	» Operation phase
» Establish vocational training programs for the local labour force to promote the development of skills	» The Proponent	» Operation phase

Performance Indicator	» Percentage of workers that were employed from local communities (Ward 12 and within Lekwa Local Municipality area) » Number of people attending vocational training throughout the operation phase
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes

Visual and 'sense of place' impacts

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

Appendix B: I&AP Database, Key Stakeholders Contacted and Meeting Schedule

I&AP Database utilised:

- » The I&AP database was taken from the Public Participation Process and was utilised to reach key stakeholders to arrange meetings
- » See the I&AP Database as part of the Public Participation Process within the EIA appendices
- » Stakeholders that we were unable to reach telephonically were either emailed and/or if no email address was available a voice message was left on their phone
- » Contact numbers and email addresses aren't provided on the I&AP database due to confidentiality reasons

Meeting Schedule:

Key stakeholders were contacted and meeting arrangements were made with the following stakeholders during the social consultation process:

TUTUKA POWER STATION MEETINGS			
Thursday 19 February 2015:			
Meeting:	***Contact Person:***	***Date and Venue:***	***Notes***
Impacted Landowner Meeting & Site Visit (on Portion 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS)	Name: Ilse Coop (Eskom-Environmental Manager)	*Date:* Thursday 19 February 2015 *Time*: 08:30-09:30 *Address*: Tutuka Power Station	Meeting took place (see minutes and attendance register in Appendix B)
Lekwa Local Municipality- Municipal Manager	Name: J Sindane	*Date:* Thursday 19 February 2015 *Time*: 10:00-10:30 *Address*: C/O Mbonani Mayisela and Dr Bayers Naude Street Standerton 2430	Meeting took place (see minutes and attendance register in Appendix B)
Lekwa Local Municipality- Ward Councillor, Ward 14:	Name: Sechaba Mosia	*Date:* Thursday 19 February 2015 *Time*: 10:30-11:00 *Address*: C/O Mbonani Mayisela and Dr Bayers Naude Street Standerton 2430	Meeting took place (see minutes and attendance register in Appendix B)

Adjacent Landowner Meeting- Farm Racebult 3/352	Name: Jan Schoomraad	*Date:* Thursday 19 February 2015 *Time*: 12:00-12:30 *Address*: Farm Racebult 3/352	Meeting took place (see minutes and attendance register in Appendix B)
Adjacent Landowner Meeting- Pretorius Vley 3/374 (Standerton)	Name: Johannes Wilhelmus Janse Van Rensburg	*Date:* Thursday 19 February 2015 *Time*: 14:00-14:30 *Address*: Pretorius Vley 3/374 (Standerton)	Meeting took place (see minutes and attendance register in Appendix B)
I&AP Meeting	Name: Mr Van Zyl	*Date:* Thursday 19 February 2015 *Time*: 15:00-15:30 *Address*: Farm near Tutuka Power Station, surrounding landowner	Meeting took place (see minutes and attendance register in Appendix B)
Travel from Standerton (Tutuka) to Volksrust (Majuba) 16:00-17:30 (travel time 1hr30min) **Arrive in Volksrust 17:30** **OVERNIGHT STAY IN VOLKSRUST**			

Appendix C: Minutes of Meetings during SIA Stakeholder Consultation Process

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TUTUKA SOLAR ENERGY FACILITY

MPUMALANGA PROVINCE

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

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING
ESKOM- LANDOWNER MEETING & SITE VISIT
HELD ON
Thursday 19 February 2015 at 08:30

VENUE
Tutuka Power Station

Notes for the Record prepared by:
Savannah Environmental

MEETING:
PROPOSED TUTUKA SOLAR ENERGY FACILITY

Venue: Tutuka Power Station
Date: Thursday 19 February 2015
Time: 08:30-09:30

WELCOME AND INTRODUCTION

Candice Hunter welcomed the Ilse Coop the Environmental Manager from Eskom and introduced herself as the Social Consultant from Savannah Environmental. She noted that the development of the Tutuka Solar Energy Facility is being undertaken by Eskom and that Savannah Environmental has been appointed as the independent environmental consultancy to undertake the Environmental Impact Assessment (EIA) process for the Solar Energy Facility.

Candice Hunter thanked Ilse Coop for the opportunity to brief her about the proposed Solar Energy Facility near Standerton. She noted that the purpose of the meeting was to present the background of the project, provide an overview of the environmental assessment process and discuss any social issues or concerns with the proposed development and associated infrastructure.

MEETING ATTENDEES

Name	Organisation & Position
Ilse Coop	Eskom – Environmental Manager
Candice Hunter (CH)	Savannah Environmental – Social Consultant

APOLOGIES

None

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Candice Hunter presented the background and introduction to the project and the Environmental Impact Assessment process. She presented a map including the location of the proposed development.

DISCUSSION SESSION

Question / Comment	Response
CH: What activities are currently taking place on Eskom's land surrounding the proposed site?	*IC:* Currently Eskom leases the adjacent land to farmers that utilise the land for agricultural purposes. Agricultural activities include livestock farming and cultivated crops.
CH: Do you have the farmers contact details?	*IC:* Yes, I'll send you all their contact details. I'll also be meeting with the farmers next week to brief them about the solar project and other projects in the area.
CH: Do you have any questions or social concerns with the proposed development that you would like us to address in the EIA?	*IC:* No, we don't have any questions or concerns.

WAY FORWARD AND CLOSURE

In closing Candice Hunter noted that the EIA scoping report will be released in a few weeks into the public domain and the public will then have an opportunity to comment on the report. The comments received from review period will then be incorporated into the final EIA report. Candice Hunter thanked Ilse Coop for her inputs which were provided. The meeting ended at 09:30.

SAVANNAH ENVIRONMENTAL (PTY) LTD				ATTENDANCE REGISTER			
Project	Tutuka Solar Energy Facility			Meeting	Landowner meeting & site visit		
Date	19 Feb 2015	Time	08:30	Farm	Portion 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS	Venue	Tutuka Power Station

	Organisation	Name & Postal Address	Contact Details	Signature
1	Savannah Environmental	Candice Hunter	Tel : 011-656-3237	
		PO Box 148	Fax : 086-684-0547	
	Designation	Sunninghill	Cell :	
	Social Consultant	2157	E-mail : candice@savannahsa.com	
2	Ilse Eskom	Tutuka P/S. Ilse Coop Bethal/Standerton Rd.	Tel : 017-7499410	
			Fax :	
	Designation		Cell : 0604149308	
	Environmental manager.		E-mail : coop@eskom.co.za	
3			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
4			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
5			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TUTUKA SOLAR ENERGY FACILITY

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Sunninghill, 2157
Tel: 011 656 3237
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E-mail: candice@savannahsa.com

PUBLIC PARTICIPATION & SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING
LEKWA LOCAL MUNICIPLAITY
HELD ON
Thursday 19 February 2015 at 10:00

VENUE
C/O Mbonani Mayisela and Dr Bayers Naude Street, Standerton, 2430

Notes for the Record prepared by:
Savannah Environmental

MEETING:
PROPOSED TUTUKA SOLAR ENERGY FACILITY

Venue: Lekwa Local Municipality (Standerton)
Date: Thursday 19 February 2015
Time: 10:00-10:30

WELCOME AND INTRODUCTION

Candice Hunter welcomed all in attendance and introduced herself as the Social Consultant from Savannah Environmental. She noted that the development of the Tutuka Solar Energy Facility is being undertaken by Eskom and that Savannah Environmental has been appointed as the independent environmental consultancy to undertake the Environmental Impact Assessment (EIA) process for the solar energy facility.

Candice Hunter thanked all in attendance for the opportunity to brief them about the proposed Tutuka Solar Energy Facility near Standerton. She noted that the purpose of the meeting was to present the background of the project, provide an overview of the environmental assessment process and discuss any social issues or concerns regarding the proposed development and associated infrastructure.

MEETING ATTENDEES

Name	Organisation & Position
Itumeleng Mashishi (IM)	Lekwa Local Municipality – Town Planner
Matladi Thabitha (MT)	Lekwa Local Municipality- HOD (Development & Planning)
Candice Hunter (CH)	Savannah Environmental – Social Consultant

APOLOGIES

None

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Candice Hunter presented the background and introduction to the project and the Environmental Impact Assessment process. She presented a map including the location of the proposed development.

DISCUSSION SESSION

Question / Comment	Response
CH: What is the area zoned under where the site is located?	*MT:* Zoned under Agricultural
IM: Does the project fall within our jurisdiction only?	*CH:* Yes the project falls within the Lewka Local Municipality only, within ward 12.
CH: What are the main struggles/ problems of the local area/ municipality?	*MT:* Unemployment is a big problem, we have a backlog with basic service delivery; we also have the challenge of availability of electricity in the area. Will the electricity generated, supply the local area directly and assist us with the challenge we are currently facing? *CH:* Eskom aims to reduce their self-consumption at their various owned or utilised sites by introducing Eskom's Ilanga PV Project Portfolio which aims to install 150 MW at their various power stations, offices and substations, which includes the proposed Tutuka Photovoltaic Solar Energy Facility. The solar PV facilities will promote the reduction of Eskom's carbon footprint and support the demand side management energy efficiency programme.
IM: When do they intend starting the development?	*CH:* Eskom are still within the conception phase and still require relevant authorisations. Relevant timeframes of when the construction phase will commence will be announced at a later stage.
MT: How many employment opportunities will be created?	*CH:* There are two different sites that Eskom are looking into for the solar energy facility. The alternative site 1 will have a generating capacity of 65.9MW and will create approximately. 250-300 employment opportunities during construction phase (18-24months). The alternative site 2 will have a generating capacity of 24MW and will create approximately 100-150 employment opportunities during construction phase (8-12months).

Question / Comment	Response
CH: Do you have any questions or social concerns?	*IM:* No, I don't think we'll have any problems with the project, as long as it brings positive opportunities for the local area.

WAY FORWARD AND CLOSURE

In closing Candice Hunter noted that the Draft Scoping Report will be made available for the public review and comment in due course. The comments received during the review period will be incorporated into the Final Scoping Report. Candice Hunter thanked all in attendance for their inputs which were provided. The meeting ended at 10:30.

SAVANNAH ENVIRONMENTAL (PTY) LTD				ATTENDANCE REGISTER			
Project	Tutuka Solar Energy Facility			Meeting	Local Municipality Meeting		
Date	19 Feb 2015	Time	10:00	Stakeholder	Lekwa Local Municipality	Venue	Lekwa Local Municipality (Standerton)

	Organisation	Name & Postal Address	Contact Details	Signature
1	Savannah Environmental	Candice Hunter	Tel : 011-656-3237	
		PO Box 148	Fax : 086-684-0547	
	Designation	Sunninghill	Cell :	
	Social Consultant	2157	E-mail : candice@savannahsa.com	
2	LEKWA MUNICIPALITY	ITUMELENG MASHISHI	Tel : 017 712 9600	
		PO BOX 66	Fax :	
	Designation	STANDERTON	Cell : 073 834 6546	
	TOWN PLANNER	2430	E-mail : itu.mashishi@gmail.com	Mashi
3	LEKWA MUNICIPALITY	MATLADI THABITHA	Tel : 017 7129600	
			Fax : 017 712 9808	
	Designation		Cell : 074 320 9736	
	HOD: DEV & PLANNING		E-mail : thabsixteen@gmail.com	
4			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
5			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TUTUKA SOLAR ENERGY FACILITY

MPUMALANGA PROVINCE

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SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING
LEKWA LOCAL MUNICIPLAITY- WARD 12 COUNCILLOR
HELD ON
Thursday 19 February 2015 at 10:30

VENUE
C/O Mbonani Mayisela and Dr Bayers Naude Street, Standerton, 2430

Notes for the Record prepared by:
Savannah Environmental

MEETING:

PROPOSED TUTUKA SOLAR ENERGY FACILITY

Venue: Lekwa Local Municipality (Standerton)
Date: Thursday 19 February 2015
Time: 10:30-11:00

WELCOME AND INTRODUCTION

Candice Hunter welcomed the councillor and introduced herself as the Social Consultant from Savannah Environmental. She noted that the development of the Tutuka Solar Energy Facility is being undertaken by Eskom and that Savannah Environmental has been appointed as the independent environmental consultancy to undertake the Environmental Impact Assessment (EIA) process for the Solar Energy Facility.

Candice Hunter thanked the councillor for the opportunity to brief him about the proposed Solar Energy Facility near Standerton. She noted that the purpose of the meeting was to present the background of the project, provide an overview of the environmental assessment process and discuss any social issues or concerns with the proposed development and associated infrastructure.

MEETING ATTENDEES

Name	Organisation & Position
Sechaba Stephen Mosia (SSM)	Lekwa Local Municipality – Ward Councillor, Ward 12
Candice Hunter (CH)	Savannah Environmental – Social Consultant

APOLOGIES

None

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Candice Hunter presented the background and introduction to the project and the Environmental Impact Assessment process. She presented a map including the location of the proposed development.

DISCUSSION SESSION

Question / Comment	Response
CH: Just to confirm, does the Tutuka Power Station fall within your jurisdiction (ward 12)?	*SSM:* Yes.
CH: What are the main struggles/ problems in your ward?	*MT:* Unemployment and job creation is the biggest struggle. Creating economic opportunities for the local area is a challenge with the limited prospects available.
SSM: How many employment opportunities will be created with this development?	*CH:* There are two different sites that Eskom are looking into for the solar energy facility. The alternative site 1 will have a generating capacity of 65.9MW and will create approximately. 250-300 employment opportunities during construction phase (18-24months). The alternative site 2 will have a generating capacity of 24MW and will create approximately 100-150 employment opportunities during construction phase (8-12months).
SSM: Our area is very desperate for employment opportunities, it is what we struggle with the most	*CH:* Noted
SSM: When do they intend starting the development?	*CH:* Eskom are still within the conception phase and still require relevant authorisations. Relevant timeframes of when the construction phase will commence will be announced at a later stage.
SSM: In terms of small business development, are there any possibilities of subcontracting from the local area?	*CH:* Yes, contracting work will be available for local people and businesses through a tender process. The extent of opportunities will be determined at a later stage.
SSM: I'll be having a consultative meeting with the public in two weeks' time, so I will take them through the project so that they can be aware of the possible opportunities.	*CH:* Savannah will be holding a public meeting within the next few weeks, could we combine the process of organising the public meeting together to address the project to public? *SSM:* Yes it would be great to be

Question / Comment	Response
	involved and help organise the public meeting. As soon as Savannah is ready, let me know and then we can start interacting with the public and make the necessary arrangements.
CH: Do you have any questions or social concerns?	*IM:* No concerns, I am very positive about the project and I think this project will bring much needed economic opportunities to the local people and to the municipality at large.

WAY FORWARD AND CLOSURE

In closing Candice Hunter noted that the EIA scoping report will be released into the public domain within the next few weeks and the public will then have an opportunity to comment on the report. The comments received from review period will then be incorporated into the final EIA report. Candice Hunter thanked the councillor for his inputs which were provided. The meeting ended at 11:00.

SAVANNAH ENVIRONMENTAL (PTY) LTD				ATTENDANCE REGISTER			
Project	Tutuka Solar Energy Facility			Meeting	Local Municipality Meeting- Ward Councillor 12		
Date	19 Feb 2015	Time	10:30	Stakeholder	Lekwa Local Municipality	Venue	NAUDE STREET, STANDERTON

	Organisation	Name & Postal Address	Contact Details	Signature
1	Savannah Environmental	Candice Hunter	Tel : 011-656-3237	
		PO Box 148	Fax : 086-684-0547	
	Designation	Sunninghill	Cell :	
	Social Consultant	2157	E-mail : candice@savannahsa.com	
2	LEKWA LOCAL MUNICIPALITY	SECHABA STEPHEN MOSIA	Tel : 017 712 9600	
		P.O. BOX 186	Fax : 017 712 6505	
	Designation	THUTHUKANI	Cell : 072 605 5491	
	WARD COUNCILLOR(12)	2434	E-mail : motsimass@gmail.com	
3			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
4			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
5			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TUTUKA SOLAR ENERGY FACILITY

MPUMALANGA PROVINCE

Savannah Environmental (Pty) Ltd
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E-mail: candice@savannahsa.com

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING ADJACENT LANDOWNER- JAN SCHOONRAAD (FARM RACEBULT 3/352)

HELD ON

Thursday 19 February 2015 at 12:00

VENUE

Farm Racebult 3/352

Notes for the Record prepared by:
Savannah Environmental

MEETING:

PROPOSED TUTUKA SOLAR ENERGY FACILITY

Venue: Farm Racebult 3/352
Date: Thursday 19 February 2015
Time: 12:00-12:30

WELCOME AND INTRODUCTION

Candice Hunter welcomed Jan Schoonraad and introduced herself as the Social Consultant from Savannah Environmental. She noted that the development of the Tutuka Solar Energy Facility is being undertaken by Eskom and that Savannah Environmental has been appointed as the independent environmental consultancy to undertake the Environmental Impact Assessment (EIA) process for the Solar Energy Facility.

Candice Hunter thanked Jan for the opportunity to brief him about the proposed Solar Energy Facility near Standerton. She noted that the purpose of the meeting was to present the background of the project, provide an overview of the environmental assessment process and discuss any social issues or concerns with the proposed development and associated infrastructure.

MEETING ATTENDEES

Name	Organisation & Position
Jan Schoonraad (JS)	Adjacent Landowner– Farm Racebult 3/352 (Farmer)
Candice Hunter (CH)	Savannah Environmental – Social Consultant

APOLOGIES

None

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Candice Hunter presented the background and introduction to the project and the Environmental Impact Assessment process. She presented a map including the location of the proposed development.

DISCUSSION SESSION

Question / Comment	Response
CH: Do you lease or own farm Racebult 3/352?	*JS:* I own farm Racebult 3/352.
CH: What activities are currently taking place on your farm Racebult 3/352?	*JS:* Primarily I farm maize & soy beans with some livestock farming.
CH: Do you reside on the farm Racebult 3/352? How many buildings or dwellings are located on the farm?	*JS*: I don't live on the farm yet, I live in Standerton. I have a second home on the farm that I use on weekends. The other old sandstone house near the road I'm going to convert into a house to live in permanently in a couple of years' time but at this stage I don't live on the farm. I'm only on the farm during the day during the week for farming.
CH: Do you have any social concerns in terms of noise, dust, safety and security issues and visual impact concerns with the proposed development?	*JS:* No, none of those issues will impact me as my farm is located quite far away. I don't have any concerns with this project.
JS: When do they intend starting the development?	*CH:* Eskom are still within the conception phase and still require relevant authorisations. Relevant timeframes of when the construction phase will commence will be announced at a later stage.
CH: Do you know who owns or leases farms Racebult 1/352 & 1/352 and Farm Spoien Kop 1/357?	*JS:* Conrad Steyn leases Farm Spioen Kop 1/357 (east of Tutuka Power Station) from Eskom. Simon Riekert leases Farm Racebult 4/352 & 1/352 (north of Tutuka Power station) from eskom. I will send you their contact information.
CH: Do you have any questions or social concerns?	*IM:* Don't concern me; I don't have any issues with the project. It is quite a distance away from my farm so I won't be affected by the project. Only concern me if they need more space for solar energy facilities as I have land available.

WAY FORWARD AND CLOSURE

In closing Candice Hunter noted that the EIA scoping report will be released into the public domain within the next few weeks and the public will then have an opportunity to comment on the report. The comments received from review period will then be incorporated into the final EIA report. Candice Hunter thanked the Mr Schoonraad for his inputs which were provided. The meeting ended at 11:00.

SAVANNAH ENVIRONMENTAL (PTY) LTD				ATTENDANCE REGISTER			
Project	Tutuka Solar Energy Facility			Meeting	Adjacent Landowner- Jan Schoonraad		
Date	19 Feb 2015	Time	12:00	Farm	RACEBULT 3/352	Venue	RACEBUT 3/352

	Organisation	Name & Postal Address	Contact Details	Signature
1	Savannah Environmental	Candice Hunter	Tel : 011-656-3237	
		PO Box 148	Fax : 086-684-0547	
	Designation	Sunninghill	Cell :	
	Social Consultant	2157	E-mail : candice@savannahsa.com	
2	FARMER	J.P. SCHOONRAAD	Tel : —	
		POSBUS 192	Fax : —	
	Designation	STANDERTON	Cell : 083-441-2503	
	FARMER	2430	E-mail : JSCHOONRAAD@GMAIL.CO.ZA	
3			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
4			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
5			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TUTUKA SOLAR ENERGY FACILITY

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SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING
ADJACENT LANDOWNER- JOHANNES VAN RENSBURG
HELD ON
Thursday 19 February 2015 at 14:00

VENUE
Farm Pretorius Vley 3/374

Notes for the Record prepared by:
Savannah Environmental

MEETING:
PROPOSED TUTUKA SOLAR ENERGY FACILITY

Venue: Farm Pretorius Vley 3/374
Date: Thursday 19 February 2015
Time: 14:00-14:30

WELCOME AND INTRODUCTION

Candice Hunter welcomed Johannes van Rensburg and introduced herself as the Social Consultant from Savannah Environmental. She noted that the development of the Tutuka Solar Energy Facility is being undertaken by Eskom and that Savannah Environmental has been appointed as the independent environmental consultancy to undertake the Environmental Impact Assessment (EIA) process for the Solar Energy Facility.

Candice Hunter thanked Johannes for the opportunity to brief him about the proposed Solar Energy Facility near Standerton. She noted that the purpose of the meeting was to present the background of the project, provide an overview of the environmental assessment process and discuss any social issues or concerns with the proposed development and associated infrastructure.

MEETING ATTENDEES

Name	Organisation & Position
Johannes van Rensburg (JvR)	Adjacent Landowner– Farm Pretorius Vley 3/374 & 18/374 (Farmer)
Candice Hunter (CH)	Savannah Environmental – Social Consultant

APOLOGIES

None

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Candice Hunter presented the background and introduction to the project and the Environmental Impact Assessment process. She presented a map including the location of the proposed development.

DISCUSSION SESSION

Question / Comment	Response
CH: Do you lease or own farms Pretorius Vley 3/374 & 18/374?	*JvR:* I own both those farms.
CH: What activities are currently taking place on your farms?	*JvR:* Primarily it's maize & soy bean farming as well as livestock farming.
CH: Do you reside on the farm? How many buildings or dwellings are located on the farm?	*JvR*: Yes we stay on Farm Pretorius Vley 3/374. One farmhouse.
CH: Do you have any social concerns in terms of noise, dust, safety and security issues and visual impact concerns with the proposed development?	*JvR:* No, it's not really going to influence the farmers. Those impacts won't be a problem for us.
JvR: When do they intend starting the development?	*CH:* Eskom are still within the conception phase and still require relevant authorisations. Relevant timeframes of when the construction phase will commence will be announced at a later stage.
CH: Do you know who leases farm Pretoius Vley 10/374 and farm Slagkraal 4/353 from Eskom?	*JvR:* Yes, Pieter Bosman leases those farms from Eskom. (Contact details were provided and Pieter Bosman was contacted telephonically and briefed about the project)
JvR: Are there any possibilities Eskom will subcontract from the local businesses?	*CH:* Yes, contracting work will be available for local people and businesses through a tender process. The extent of opportunities will be determined at a later stage.
CH: Do you have any other questions or social concerns?	*JvR:* I don't have any concerns with the project. The country needs more electricity and clean energy. The ash from the power station might influence the solar facility negatively. Also we get a lot of hail in the area that might damage the solar panels.

WAY FORWARD AND CLOSURE

In closing Candice Hunter noted that the EIA scoping report will be released into the public domain within the next few weeks and the public will then have an opportunity to comment on the report. The comments received from review period will then be incorporated into the final EIA report. Candice Hunter thanked Johannes for his inputs which were provided. The meeting ended at 14:30.

SAVANNAH ENVIRONMENTAL (PTY) LTD				ATTENDANCE REGISTER			
Project	Tutuka Solar Energy Facility			Meeting	Adjacent Landowner- Johannes Wilhelmus Janse Van Rensburg		
Date	19 Feb 2015	Time	14:00	Farm	PRETORIUS VLEY 3/374 & 18/374	Venue	PRETORIUSVLEY 3/374

	Organisation	Name & Postal Address	Contact Details	Signature
1	Savannah Environmental **Designation** Social Consultant	Candice Hunter PO Box 148 Sunninghill 2157	**Tel** : 011-656-3237 **Fax** : 086-684-0547 **Cell** : **E-mail** : candice@savannahsa.com	
2	FARMER **Designation**	JOHNNY VAN RENSBURG Box 790 STANDERTON 2430	**Tel** : 017 712 4294 **Fax** : **Cell** : 0823268624 **E-mail** : jwjvrensburg@gmail.com	
3	**Designation**		**Tel** : **Fax** : **Cell** : **E-mail** :	
4	**Designation**		**Tel** : **Fax** : **Cell** : **E-mail** :	
5	**Designation**		**Tel** : **Fax** : **Cell** : **E-mail** :	

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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E-mail: candice@savannahsa.com

SOCIAL IMPACT ASSESSMENT (SIA) PROCESS

NOTES OF THE MEETING
I&AP- Mr Van Zyl
HELD ON
Thursday 19 February 2015 at 15:00

VENUE
Farm near Tutuka Power Station

Notes for the Record prepared by:
Savannah Environmental

MEETING:

PROPOSED TUTUKA SOLAR ENERGY FACILITY

Venue: Farm near Tutuka Power Station
Date: Thursday 19 February 2015
Time: 15:00-15:30

WELCOME AND INTRODUCTION

Candice Hunter welcomed Mr Van Zyl and introduced herself as the Social Consultant from Savannah Environmental. She noted that the development of the Tutuka Solar Energy Facility is being undertaken by Eskom and that Savannah Environmental has been appointed as the independent environmental consultancy to undertake the Environmental Impact Assessment (EIA) process for the Solar Energy Facility.

Candice Hunter thanked Mr Van Zyl for the opportunity to brief him about the proposed Solar Energy Facility near Standerton. She noted that the purpose of the meeting was to present the background of the project, provide an overview of the environmental assessment process and discuss any social issues or concerns with the proposed development and associated infrastructure.

MEETING ATTENDEES

Name	Organisation & Position
Mr Van Zyl (VZ)	I&AP- Farmer near Tutuka Power Station
Candice Hunter (CH)	Savannah Environmental – Social Consultant

APOLOGIES

None

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Candice Hunter presented the background and introduction to the project and the Environmental Impact Assessment process. She presented a map including the location of the proposed development.

DISCUSSION SESSION

Question / Comment	Response
CH: The project is located near the Tutuka Power station. There are two different sites that Eskom are looking into for the solar energy facility. The alternative site 1 will have a generating capacity of 65.9MW that will cover 98.6ha; the duration of the construction phase will be 18-24months. The alternative site 2 will have a generating capacity of 24MW and will cover 36ha in extent; the construction phase will be approximately 8-12months.	*VZ:* Noted
CH: What activities are currently taking place on your farm or in the area?	*VZ:* Primarily we farm maize and soybeans as well as livestock farming. There are underground mining activities in the area north of the Power Station.
CH: Do you have any social concerns with the project in terms of traffic, noise, dust, safety and security issues with labour force in the area and/or visual impact concerns from the proposed development?	*VZ:* No, I don't have any concerns.
VZ: When do they intend starting the development?	*CH:* Eskom are still within the conception phase and still require relevant authorisations. Relevant timeframes of when the construction phase will commence will be announced at a later stage.
VZ: Are there any possibilities Eskom will subcontract from the local businesses?	*CH:* Yes, contracting work will be available for local people and businesses through a tender process. The extent of opportunities will be determined at a later stage.
CH: Do you have any other questions or social concerns?	*VZ:* I don't have any concerns with the project. I support the development as renewable energy sources are needed in South Africa. I would like to be added onto your database to be notified of the project progress. *CH:* We will add you to our

Question / Comment	Response
	database.

WAY FORWARD AND CLOSURE

In closing Candice Hunter noted that the EIA scoping report will be released into the public domain within the next few weeks and the public will then have an opportunity to comment on the report. The comments received from review period will then be incorporated into the final EIA report. Candice Hunter thanked Johannes for his inputs which were provided. The meeting ended at 15:30.

SAVANNAH ENVIRONMENTAL (PTY) LTD				ATTENDANCE REGISTER			
Project	Tutuka Solar Energy Facility			Meeting	I & AP – Abraham Van Zyl		
Date	19 Feb 2015	Time	15:00	Farm	N/A (LANDOWNER IN LOCAL AREA)	Venue	NEAR STANDERTON / TUTUKA POWER STATION

	Organisation	Name & Postal Address	Contact Details	Signature
1	Savannah Environmental	Candice Hunter	Tel : 011-656-3237	
		PO Box 148	Fax : 086-684-0547	
	Designation	Sunninghill	Cell :	
	Social Consultant	2157	E-mail : candice@savannahsa.com	
2	Farmer	Barend van Zyl	Tel :	
		PO BOX 1775	Fax :	
	Designation	Standerton	Cell : 082 457 9032	
		2430	E-mail : barendvanzyl@gmail	
3			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
4			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	
5			Tel :	
			Fax :	
	Designation		Cell :	
			E-mail :	

Appendix D: Declaration of Independence

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, 2010

PROJECT TITLE

Proposed Tutuka Solar Energy Facility

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 special

Savannah Environmental (Pty) Ltd

Name of company (if applicable):

May 2015

Date:

Appendix E: External Reviewer's Report, Declaration of Independence and CV

External Reviewer's Report:

Dr. Neville Bews & Associates
Social Impact Assessors
Committed to building high trust environments
P. O. Box 145412
Bracken Gardens
Alberton
South Africa
1452

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

URL: http://www.socialassessment.co.za/

14 June 2015

Savannah Environmental (Pty) Ltd
P.O. Box 148
Sunninghill
2191

Review of the Social Impact Assessment Report for the Proposed Tutuka PV Solar Energy Facility and associated infrastructure near Standerton in the Mpumalanga Province.

Savannah Environmental (Pty) Ltd compiled the abovementioned Social Impact Assessment Specialist Report and appointed Dr Neville Bews to review the report. The review was concluded on 14 June 2015 and the following comments are made.

1. The proposed project is suitably described.
2. Appropriate methodology and assessment criteria are applied throughout the study.
3. Appropriate legislative guidelines were considered in compiling the report.
4. Adequate background information is provided.
5. The baseline description of the study area is satisfactory.
6. Stakeholders are adequately identified and consulted.

7. The report adequately identifies and addresses the social issues associated with the construction and operational phases of the proposed project.
8. The "No-go Option" is considered.

It can be concluded in considering the SIA in totality that the process and assessment followed was adequate providing a fair indication of the social impacts likely to arise as a result of the project.

Regards

Dr Neville Bews (D Litt et Phil)

External Reviewer's Declaration of Independence:

Peer review of the Social Impact Assessment for the Proposed Tutuka Photovoltaic (PV) Solar Energy Facility and associated infrastructure, situated approximately ~25km north east of Standerton within the Tutuka Power Station boundary, on Portion 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS.

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, specifically in connection with the review of the SIA Report: Proposed Tutuka Photovoltaic (PV) Solar Energy Facility and associated infrastructure, situated approximately ~25km north east of Standerton within the Tutuka Power Station boundary, on Portion 4, 10, 11 and 12 of Farm Pretorius Vley 374 IS.

Signed:  Date: 28 April 2015

External reviewer's CV:

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 Power line 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.