SOCIAL IMPACT ASSESSMENT
FOR THE
GROOTPOORT 75MW-100MW PV FACILITY
IN THE
FREE STATE PROVINCE, SOUTH AFRICA

PREPARED BY KNOWLEDGE PELE on behalf of

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INTRODUCTION AND LOCATION

The developers propose to build a solar PV power plant with an installed capacity of up to 100MW, which would amount to approximately 150,000 MW-hours of electricity generated, annually. This facility will be built on a farm in Luckhof, Letsemeng Municipality, Free State, South Africa. The farm is 740 hectares in size. The power plant will occupy 250 hectares. The land to be occupied by the power plant is currently used for grazing for livestock. The livestock will be relocated to a different portion of the remaining 490 hectares. The developers intend to submit the project into the Department of Energy's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). Should it be successful, the project will be awarded a 20-year license to supply power onto the national grid.

Knowledge Pele was appointed to execute the social impact assessment on the basis of its experience as a leading social research firm in the renewable energy sector.

DESCRIPTION OF PROPOSED PHOTO VOLTAIC FACILITY

The facility will have an installed capacity of up to 100MW. It is anticipated to take 18 months (max) to construct and to be operational for 20 years from commercial operating date. It will require 300 workers to construct and will have a standing staff of 50 people during its 20-year operations and maintenance phase. The facility will be comprised of the following standard features, also known as key equipment:

1. Solar Modules
2. Mounting systems
3. Inverters & delivery cabinets

APPROACH TO THE STUDY

The approach to 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 international best practice. The key activities in the SIA process embodied in the guidelines include:

- Describing and obtaining an understanding of the proposed intervention (type, scale, location), the settlements and communities likely to be affected by the proposed project
- Collecting baseline data on the current social and economic environment;
- Identifying the key potential social issues associated with the proposed project.

- Assessing and documenting the significance of social impacts associated with the proposed intervention
- Identifying alternatives and mitigation measures

The study therefore involved:

- Review of demographic data from Census Survey and other available sources;
- Review of relevant planning and policy framework for the area;
- Review of information from similar studies;
- Review of documented government experience and expectations associated with solar energy projects.
- Community survey involving 94 local community members as respondents.

KEY FINDINGS

On aggregate, the project will have a positive social impact. Based on an assessment of needs as expressed through policies, plans and community survey, it is clear that the local economy requires a catalyst for growth and development. Similarly, the national economy requires new power generation facilities that can increase electricity supply for economic growth without damaging the environment. A solar power plant addresses all these needs. More specifically, this power plant will contribute to the following positive outcomes:

- Job creation
- Enterprise growth
- Socio-economic development (by virtue of REIPPPP compliance requirements)
- Local economic growth through enterprise development

FIT WITH POLICY AND PLANNING

The following policy and planning documents were referred to in determining the validity of the proposed facility and its potential impact at all levels: local, provincial and national.

- National Energy Act (No. 34 of 2008)
- National White Paper on Renewable Energy (2003)
- National Integrated Resource Plan for Electricity (2010, 2013 draft)
- Renewable Energy Independent Power Producer Programme RFP (2015)
- National Development Plan (2013)
- Free State Provincial Growth And Development Strategy (NCPSDF) (Aug 2012)
- Regional Sector Skills Plan, Free State and Free State Region (Sep 2013)

- Provincial Renewable Energy Strategy (2015)
- Xhariep District Municipality Integrated Development Plan 2015/16
- Renosterberg Local Municipality Integrated Development Plan 2014/15 (draft)
- Letsemeng Local Municipality Integrated Development Plan 2014/15
- Kopanong Local Municiaplity Integrated Development Plan 2014/15

Potential positive impacts- throughout project life

- Creation of employment
- Supplier development
- Local economic growth
- Infrastructure development
- Increased household incomes
- Diversification of local economy

Potential negative impacts

Impact	Significance No Mitigation	Significance With Mitigation
Damage to infrastructure	Medium	Low
Presence of construction workers	Medium	Low
Loss of farm labour to power plant	Low	Low
Loss of farmland	Low	Low
Veld Fires	Low	Low

OPERATION PHASE

Impact	Significance No Mitigation	Significance With Mitigation
Damage to infrastructure	Medium	Low
Presence of construction workers	Medium	Low
Loss of farm labour to power plant	Low	Low
Loss of farmland	Low	Low
Veld Fires	Low	Low

DECOMMISIONING PHASE

Impact	Significance No Mitigation	Significance With Mitigation
Damage to infrastructure	Medium	Low
Presence of construction workers	Medium	Low
Loss of farm labour to power plant	Low	Low
Loss of farmland	Medium	Low
Veld Fires	Low	Low

CONCLUSIONS AND RECOMMENDATIONS

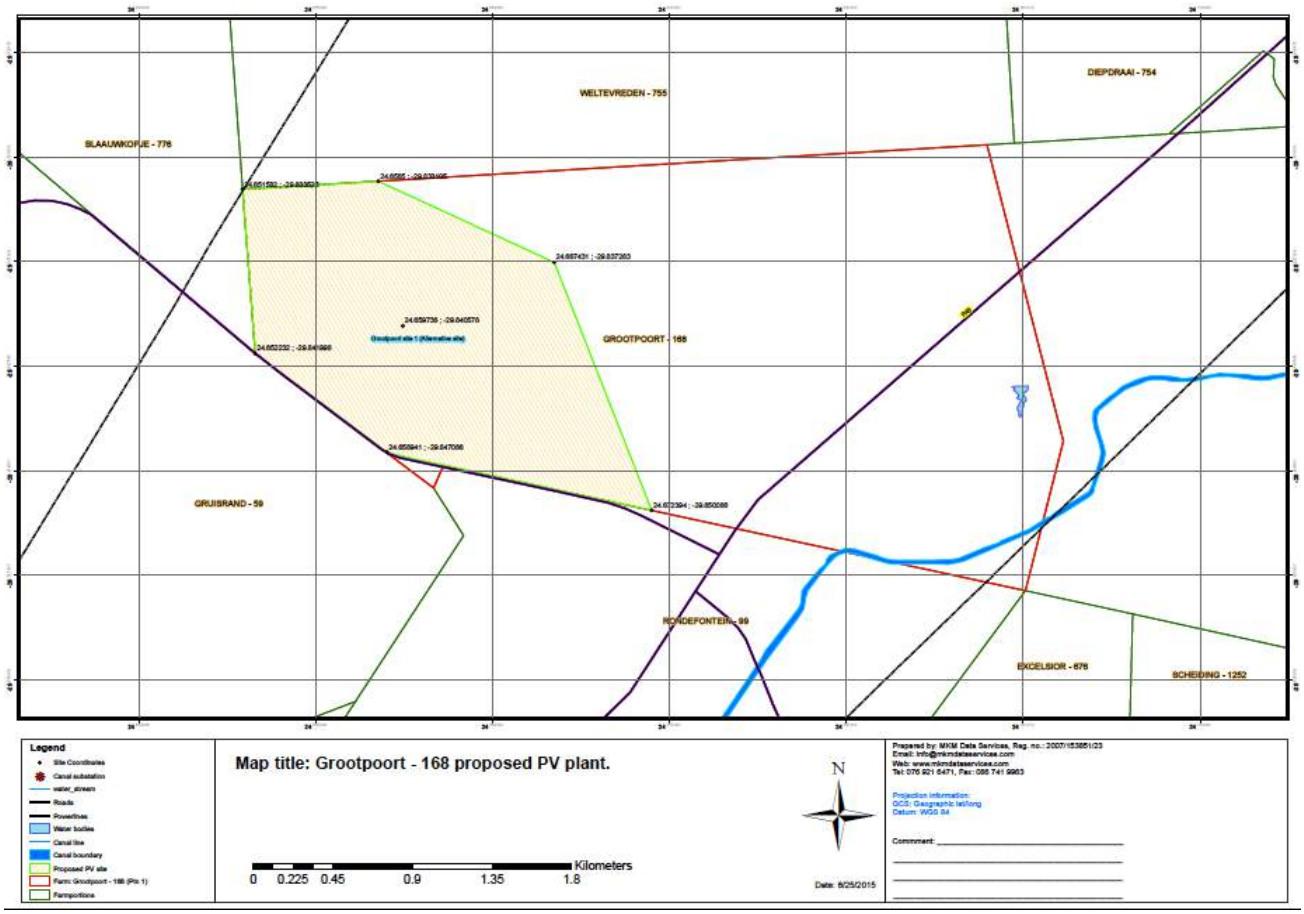
The No Development option does not have any impact. However, given the developmental agenda of both the country and the local area, failure to develop is to deny improvements in the wellbeing of households and the growth of the economy. The No Development option is particularly undesirable because the project's potentially negative impacts are largely small and are all manageable. Therefore, because the project's positive impacts heavily outweigh the negative impacts, it is recommended that it be permitted.

IMPACT STATEMENT

The following positive impacts are noted as the primary case for approving the project:

- Up to 100MW to be supplied to the national grid.
- 350 jobs to be created.
- At least 50% of the jobs created to be for local community members.
- Skills transfer from foreign to local staff.
- At least 40% of the total project value to be procured from South African businesses.
- At least 0.6% of annual revenue to be dedicated to local enterprise development.
-At least 1% of annual revenue to be dedicated to local socio-economic development.

LOCATION: SITE LAYOUT IMAGE



DESCRIPTION OF PROPOSED PHOTOVOLTAIC FACILITY

- Location: Luckhof, Letsemeng Municipality, Free State, South Africa,
- Technology: Photovoltaic
- Modules: Minimum 277,632
- Size: Up to 100 MW installed capacity (proposed)
- Electricity Production: Approx. 150,000 MW-hours annually
- Power Purchaser: Min. 20-year government supported PPA with Eskom
- EPC Contractor: TBD after Prefer Bidder status is granted under REIPPPP

1.1 INTRODUCTION

Knowledge Pele was appointed by Environics as the lead consultant to manage the Social Impact Assessment (SIA) process for the establishment of the proposed Grootpoort PV Facility in the Free State Province in South Africa.

This report contains the findings of the SIA undertaken as part of the broader Environmental Impact Assessment (EIA) process.

1.2. TERMS OF REFERENCE

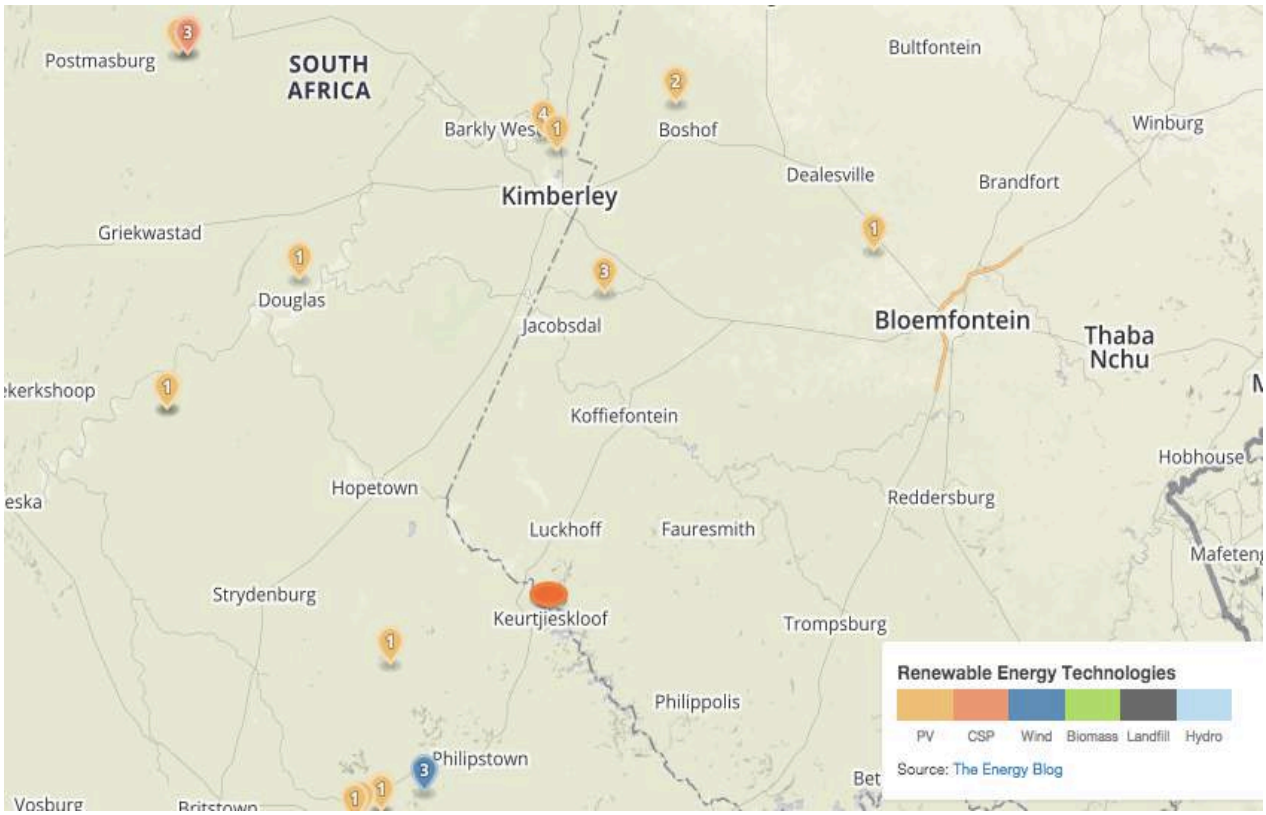
The terms of reference for the SIA require:

- A description of the environment that may be affected by the activity and the manner in which the environment may be affected by the proposed facility;
- A description and assessment of the potential social issues associated with the proposed facility;
- Identification of enhancement and mitigation aimed at maximising opportunities and avoiding and or reducing negative impacts.

1.3 PROJECT LOCATION

The proposed Grootpoort PV Facility (GPVF) is within the Letsemeng Local Municipality, which forms part of the larger Xhariep District Municiplaity in the Free State Province. The GPVF is located within rural/agricultural area of the western Free State, bordering the Free State Province. The next towns are Petrusville, to the south and Luckhof, in the north. The communities that will fall under the project's development mandate also include:

- Jacobsdal
- Dithake
- Koffifeontein
- Ratanag
- The village of Vanderkloof



Picture 1: Map of project site and surrounding REIPPPP projects (Source: EnergyBlog, accessed 22/10/15)

SITE IMAGES

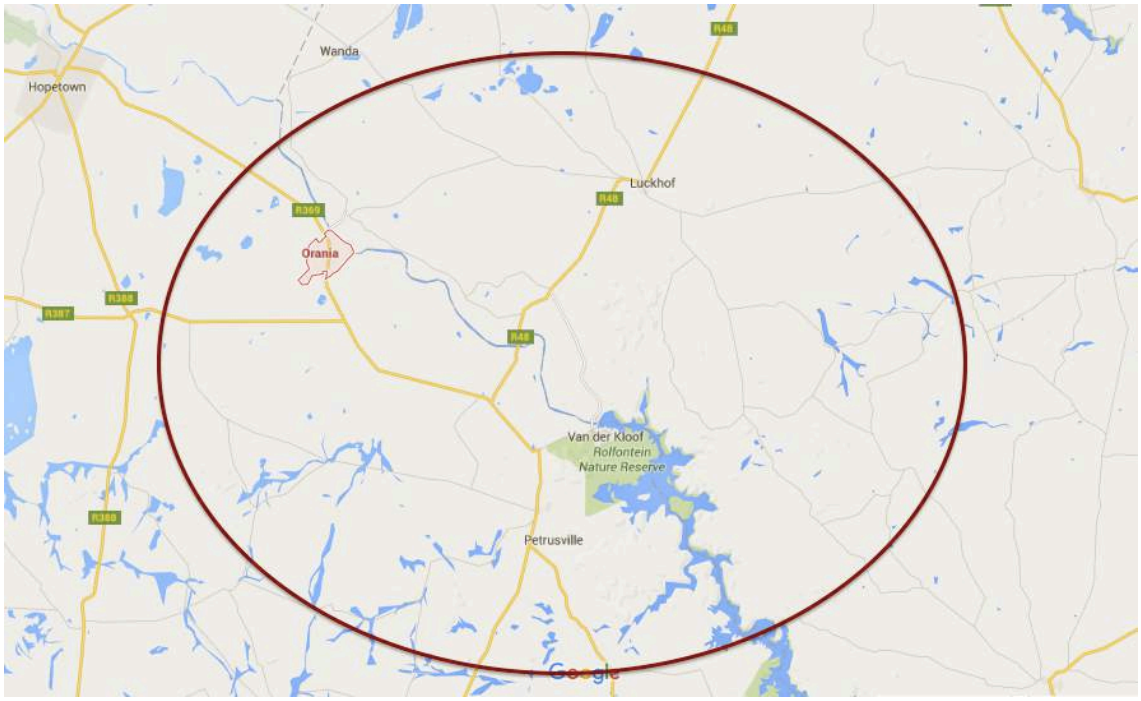
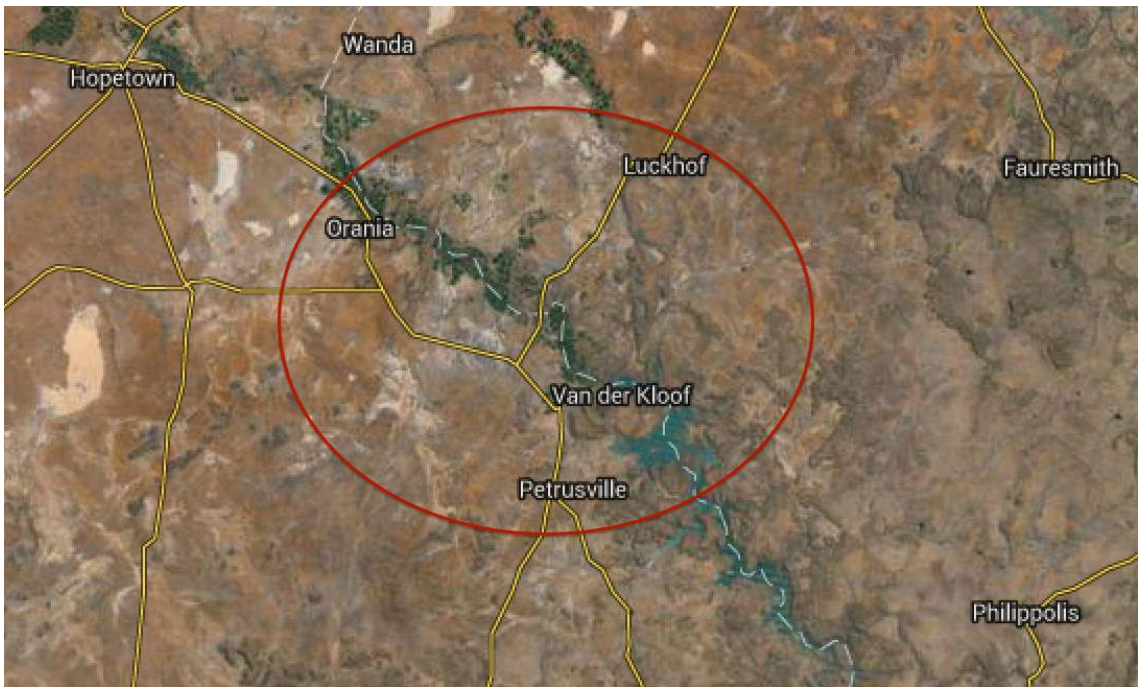


Figure 2: The proposed site and 50km radius of the Grootpoort PV Facility



1.4 PROJECT DESCRIPTION

The project's main features are as follows:

- Location: Luckhof, Letsemeng Municipality, Free State, South Africa,
- Technology: Photovoltaic
- Number of Modules: minimum 277,632
- Size: proposed Up to 100 MW installed capacity
- Electricity Production: Approx. 150,000 MW-hours, annually
- Intended Power Purchaser: min. 20-year government-supported PPA with Eskom
- Construction and Operations Contractors: To Be Determined post Preferred Bidder status
- During the 20+ year operating life, the project will expend in excess of ZAR1.8 billion on operations and maintenance costs.

This site has been selected because it meets these critical requirements:

- Availability of existing infrastructure (roads, water) and electrical grid with sufficient spare capacity, to allow injection without any grid reinforcements.
- High solar irradiation levels and land availability to develop.
- Appropriate zoning and environmental considerations.
- Relatively level land with no or limited gradient.
- No significant shading from vegetation, hills or structures.
- No fatal flaws on the soil condition, agricultural potential or land claims.
- In the proximity of a settlement, town or village so that the Socio-economic development (SED) and Enterprise Development (ED) initiatives reach the groups it was intended for.

The project's Economic Development impact has been forecast as follows:

- 85% of the RSA Based Employees will be RSA Citizens.
- 65% of the RSA Based Employees will be Black Citizens.
- 47% of the Skilled Employees will be Skilled Black Citizens.
- 15% of the RSA Based Employees will be Citizens from Local Communities.
- A minimum of 60% of the Total Project Value will be Local Content Spend.
- At least 70% of the project value will be spent on recognized BBBEE compliant vendors, including small enterprises and women-owned vendors.
- The project will invest at least 2,1% of annual revenues in enterprise and socio-economic development initiatives, aimed at stimulating local economic growth.

1.5 APPROACH TO STUDY

The approach to 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 international best practice. The key activities in the SIA process embodied in the guidelines include:

- Describing and obtaining an understanding of the proposed intervention (type, scale, location), the settlements and communities likely to be affected by the proposed project
- Collecting baseline data on the current social and economic environment;
- Identifying the key potential social issues associated with the proposed project.
- Assessing and documenting the significance of social impacts associated with the proposed intervention.
- Identifying alternatives and mitigation measures

The study therefore involved:

- Review of demographic data from Census Survey and other available sources;
- Review of relevant planning and policy framework for the area;
- Review of information from similar studies;
- Review of documented government experience and expectations associated with solar energy projects.

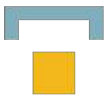
The identification of potential social issues associated with the proposed solar energy facility is based on primary and secondary information about the area and visits to the relevant communities and town by field workers/members of the SIA study team. Annex A contains a list of the secondary information reviewed and interviews conducted. Annex B summarises the assessment methodology used to assign significance ratings to the assessment process.

1.5.1 DEFINITION OF SOCIAL IMPACTS

Social impacts can be defined as "The consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community, organisation or society level. Some social impacts are felt by the body as a physical reality, while other social impacts are perceptual or emotional" (Vanclay, 2002).

When considering social impacts it is important to recognise that social change is a natural and on-going process (Burdge, 1995). However, it is also important to recognise and understand that policies, plans, programmes and/or projects implemented by government departments and/or private institutions have the potential to influence and alter both the ***rate*** and ***direction*** of social change. Many social impacts are not in themselves "impacts" but change process that may lead to social impacts (Vanclay, 2002). For example the influx of temporary construction workers is in itself not a social impact. However, their presence can result in range of social impacts, such as increase in antisocial behaviour. The approach adopted by Vanclay stresses the importance of understanding the processes that can result in social impacts. It is therefore critical for social assessment specialists to think through the complex causal mechanisms that produce social impacts. By following impact pathways, or causal chains, and specifically, by thinking about interactions that are likely to be caused, the full range of impacts can be identified (Vanclay, 2002).

An SIA should therefore enable the authorities, project proponents, individuals, communities and organisations to understand and be in a position to identify and anticipate the potential social consequences of the implementation of a proposed policy, programme, plan or project. The SIA process should alert communities and individuals to the proposed project and possible social impacts, while at the same time allowing them to assess the implications and identify potential alternatives. The assessment process should also alert proponents and planners to the likelihood and nature of social impacts and enable them to anticipate and predict these impacts in advance so that the findings and recommendations of the assessment are incorporated into and inform the planning and decision-making process.



However, the issue of social impacts is complicated by the way in which different people from different cultural, ethic, religious, gender, and educational backgrounds etc view the world. This is referred to as the "social construct of reality". The social construct of reality informs people's worldview and the way in which they react to changes.

1.5.2 TIMING OF SOCIAL IMPACT

Social impacts vary in both time and space. In terms of timing, all projects and policies go through a series of phases, usually starting with initial planning, followed by implementation (construction), operation, and finally closure (decommissioning). The activities, and hence the type and duration of the social impacts associated with each of these phases are likely to differ.

1.6 ASSUMPTIONS AND LIMITATIONS

1.6.1 ASSUMPTIONS

- It is assumed that the project site identified fulfills the requirements for a suitable site to install a photovoltaic project with the outlined specifications.
- It is assumed that national and provincial energy policies support the proposed project.

1.6.2 LIMITATIONS

- The socio-economic data presented in this study is largely based on Census information and data and research conducted or contracted by other levels of government. The quality of this data is compromised by the limitations associated with the Census data collection process.
- The census data is supported through additional data. The study draws primary data collected in three towns/villages located in close proximity to the proposed project site. This additional information was collected through a survey of the communities within a 50km radius of the site. Limitation associated with this data include:
    - A small sample size of 94.
    - Lack of qualitative data to support quantitative findings.

1.7 SPECIALIST DETAILS

Knowledge Pele is a 100% Black-owned, private company (registration number: 2013/039680/07) that specialises in socio-economic research, economic development planning & advisory, development programme design and implementation as well as community trust management. Based in Johannesburg, South Africa, Knowledge Pele has established itself as an expert on the conditions, needs and assets of communities that are linked to independent power generation facilities.

KP's key differentiator is its ability to understand and translate, the following issues pertaining to the development of under-privileged communities:

1. Socio-economic Needs
2. Social Risks
3. Stakeholders
4. Expectations
5. Assets & Capabilities

KP has conducted research on behalf of and advised IPPs since 2011. Its client base is thus comprised of IPPs that have been successful across all the REIPPPP bidding rounds. KP also implements development programmes in energy communities, which ensures a comprehensive understanding of the how to drive positive social impact.

PROFILE AND GEOGRAPHY1.8 DECLARATION OF INDEPENDENCE

This confirms that Knowledge Pele, the specialist consultants responsible for undertaking this study are independent and have no vested or financial interest in the proposed GPVF being either approved or rejected.

1.9 REPORT STRUCTURE

The report is organised into six sections:

- Section 1: Introduction;
- Section 2: Policy and Planning
- Section 3: Overview of the study area;
- Section 5: Assessment of key social issues;
- Section 6: Key Findings and recommendations.

SECTION 2: POLICY AND PLANNING

2.1 INTRODUCTION OF POLICY AND PLANNING

This section introduces the relevant policies on various levels of government and their content. Relevant policy content is contained in the National White Paper on Renewable Energy, National Energy Act, Integrated Resources Plan for Electricity and the National Development Plan (NDP).

The National Energy Regulator of South Africa (NERSA) and the Department of Energy (DOE) govern the energy sector's regulatory framework. Critical stakeholders further include the national utility Eskom, National Treasury, Department of Trade and Industry and the Department of Economic Development.

2.2 NATIONAL ENERGY POLICY

2.2.1 THE NATIONAL WHITE PAPER ON RENEWABLE ENERGY

In 1998, the White Paper on Energy Policy for South Africa (December 1998) identifies renewable energy as a future commercial opportunity for the country.
"Government policy is based on an understanding that renewables are energy sources in their own right, are not limited to small-scale and remote applications, and have significant medium and long-term commercial potential".

The document argues that the abundant renewable energy resources have an important role to play in promoting sustainable energy security going forward.
"Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future".

2.2.2 NATIONAL ENERGY ACT

Government promulgated the National Energy Act in 2008 (Act No 34 of 2008). Next to other objectives, the Act sets out to promote diversity of supply of energy and energy sources. The preamble makes direct reference to this objective, emphasizing the importance of 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).

2.2.3 INTEGRATED RESOURCE PLAN FOR ELECTRICITY

The latest, promulgated Integrated Resource Plan was written in 2010. An updated version was released in 2013 for public comment. Both versions support the procurement of renewable energy. The 2010 version allocates 17.8 GW to renewables by 2030. The 2013 version stipulates that 2.2 GW shall be integrated into the grid, on an annual basis.

2.2.4 NATIONAL DEVELOPMENT PLAN

The National Development Plan, which was adopted by government, makes a various suggestions for the enhancement of energy and electricity infrastructure. The NDP, published in 2013, specifically supports the procurement of renewable energy. It stipulates a goal of a minimum of 20 GW to be procured by 2030.

2.3 PROVINCIAL PLANNING AND POLICY

The study site is located in the Free State Province. Relevant policy and planning documents on provincial level include:

- Free State Provincial Spatial Development Framework , Phase 3/3rd Draft Report (2013)
- Housing Development Agency, Free State: Informal settlements Status (2013)
- Free State Overview of Provincial Revenue and Expenditure 2012/13 (2013)

Relevant policy and planning documents on district level include:

- Xhariep Integrated Development Plan 2012-2017
- Dr Pixeley ka Seme District Municipality's Integrated Development Plan (2015/2016)

Further, this section outlines the Free State experience with renewable energy to date.

2.3.1 FREE STATE ENERGY POLICY AND PLANNING CONTEXT

The Free State has not yet published a strategic document on renewable energy. However, the Free State has significant solar and hydro resources and therefore potential to attract renewable energy investments (Department of Energy 2015). "Projects in the pipeline for this sector include the manufacturing of solar water geysers and the manufacturing of solar-modules and solar panels assembly facility" (http://www.fdc.co.za/about-the-free-state/energy).

2.4 DISTRICT LEVEL ENERGY PLANNING AND SPATIAL POLICY CONTEXT

The Xhariep District Municipality's Integrated Development Plan for 2012-17 outlines the key characteristics of the area as well as socio-economic considerations. The Xhariep Municipality falls within the summer rainfall area, but has low rainfall compared to other parts of the Province.

Xhariep is located in the southern part of the Free State Province and I the least populated district in the province. An estimated number of 164 000 people reside in the Xhariep municipal area. The number is, with a rate of 2.21%, slowly growing. The Free State's slow population growth rate (0.1%) is attributed to a declining economy (in particular mining and agriculture), impacts of HIV and AIDS and people moving to other parts of the country.

Xhariep's population is young, with 69% of its residents being under the age of 35. Key issues affecting the young population, identified through the IDP consultation process, include high school drop-out and youth unemployment rates, teenage pregnancies and HIV infections, alcohol and substance abuse, lacking life and technical skills and limited access to funding for SMME's.

In this challenging economic context, poverty is a major concern in Xhariep. In 2007, 63.88% of survey respondents reported to have no income, while 27.79% earned between R1 and R1000 per month.

The scarcely populated district municipality is challenged to service the large area with equal quality services. The urban nodes experience higher level of service than the rural parts of the district. In order to improve rural service delivery, enhanced roads and public transport are required.

Xhariep identified agriculture and farming, winery, mining, tourism and SSME development as key economic sectors for future development. Emerging farmers shall be supported, access to finance improved, the coordination of local economic development enhanced and inter-governmental and departmental cooperation fostered.

2.4.1 Neighbouring Dr Pixeley ka Seme district characteristics

The neighbouring Dr Pixeley ke Seme district, located within the Northern Cape Pronvince, has major transport roads crossing including the national roads N1, N9, N10 and N12. The Orange River flows through the district and the Xhariep, Vanderkloof and Boegoeberg Dam are located within the area.

Farms along the riverbanks and dams engage in intensive crop farming. Other agricultural activities include small stock farming, wheat maize and lucerne. Due to irrigation farming along the water resources in the district, further agricultural produce includes peanuts, grapes, dry beans, soya beans, potatoes, olives, pop corn, pecan nuts and cotton. Tourism and game farming are economically important as well. The economy is also influenced by light industry and some mining activity.

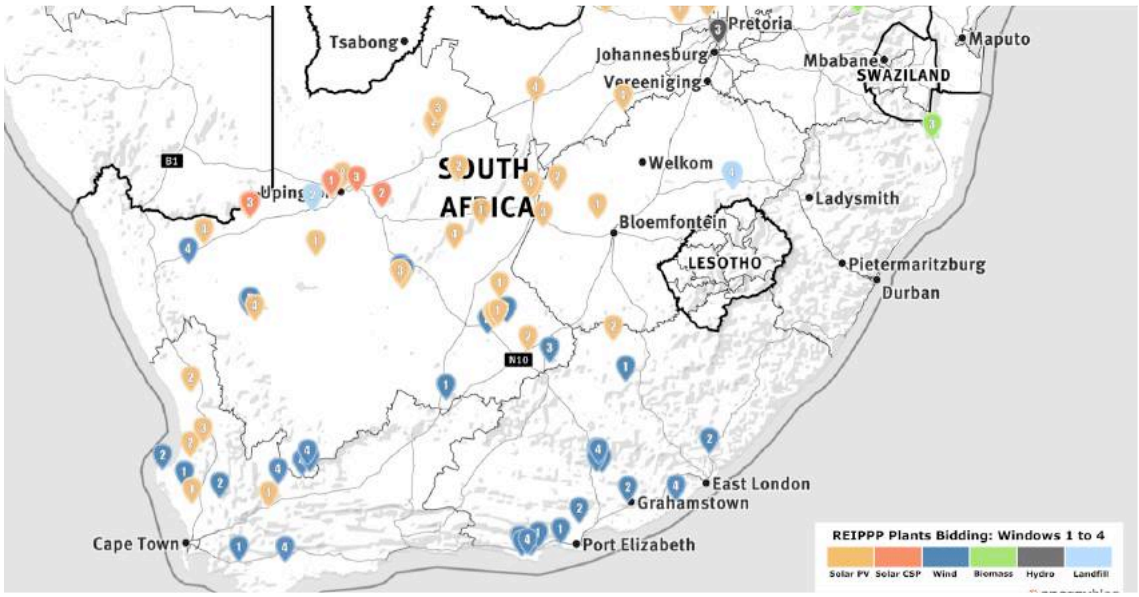
The unemployment rate for the district is 28.3% (Census 2011), but assumed to be even higher in recent years. Of the people that work, 39% are employed in the agricultural sector and 23.2% in commercial services. Job creation is a policy priority. “Given the magnititude of poverty (43.5%) and development deficit in the district, the Xhariep District municipality has vowed to do everything in its power to create jobs.”

The identified development challenges for the region include: lack of diversification of the district economy, lack of investment in the region, lack of employment opportunities, lack of skills, lack of entrepreneurship, small number of SMME's active in the region, underutilization of the regions natural resources and economic opportunities and lack of water for irrigation farming.

The IDP identifies manufacturing, agro-processing, mining and semi-precious stones as growth opportunities. Renewable energy and in particular solar energy is another important influence to further diversify the local economy.

2.4.1 RENEWABLE ENERGY IN THE DISTRICT

The Department of Energy launched the Renewable Energy Independent Power Producer Procurement Programme (RE IPPPP) in 2011. Four bidding rounds have been completed to date. The map from the EnergyBlog shows the geographic location of projects.



Picture 2: Map of utility-scale renewable energy projects across the country (Source: EnergyBlog)

While the Free State currently hosts 5 of the current 92 approved REIPPPP projects, none of these are located in the Xhariep District Municipal area (Department of Energy 2015). "The green economic solar zone in the Xhariep district was expected to result in the establishment of the Xhariep Solar Park, harnessing the solar radiation in the southern part of the Free State" (Republic of South Africa, 2014). In early 2016, project finance was still a challenge.

"The Xhariep region has the second best solar-radiation index after Upington in the Northern Cape. It provides the opportunity to harness the natural sun power and to generate electricity. This positions the Xhariep region as an ideal location for the development of concentrated solar power and photovoltaic solar power-generation technologies" (http://www.fdc.co.za/about-the-free-state/energy).

SECTION 3: OVERVIEW OF THE STUDY AREA

3.1 INTRODUCTION TO OVERVIEW OF STUDY AREA

This section outlines the relevant administrative context as well as the provincial socio economic and municipal contexts. It closes with a description of the local context of the immediate surrounding of the proposed PV Facility site.

3.2 ADMINISTRATIVE CONTEXT OF STUDY AREA

The study area surrounding the proposed project site is located within the Letsemeng Local Municipality. The Letsemeng Municipality is part of the greater Xhariep District of the Free State. The district comprises another three municipalities.

Picture 3 Xhariep District Municipality on national map (Wikipedia)

Figure 1 Xharip District Municipality (Xhariep IDP 2014)

3.3. PROVINCIAL SOCIO-ECONOMIC CONTEXT

The proposed PV Facility is located within the Letsemeng Municipality of the Free State Province of South Africa. The Free State is with a population of around 2.6 mil and a total area of 129 825 square kilometres, the third largest province in the country. The Province comprises four District Municipalities: Xhariep, Thabo Mofutsanyana, Fezile Dabi and Lejweleputswa District Municipality. The Mangaung Metropolitan Area also belongs to the Free State Province.

3.3.1 POVERTY AND EMPLOYMENT IN THE FREE STATE

The Provincial Spatial Development Framework indicates that the Province's high poverty levels are a major concern. The percentage of Free State people living below the poverty line lies at 41.2% in 2011 (Stats SA, 2014). "The high levels of poverty, low incomes and an increase in inequality in income distribution make it difficult for many people to have access to basic services" (FSGDS, 2012).

The province's unemployment rate is higher than the national average. Certain areas within the Free State have very high unemployment levels. Of particular importance to this study is the fact that the Xhariep district, which is hosting the proposed Grootpoort PV Facility site, has the lowest unemployment rate within the province.

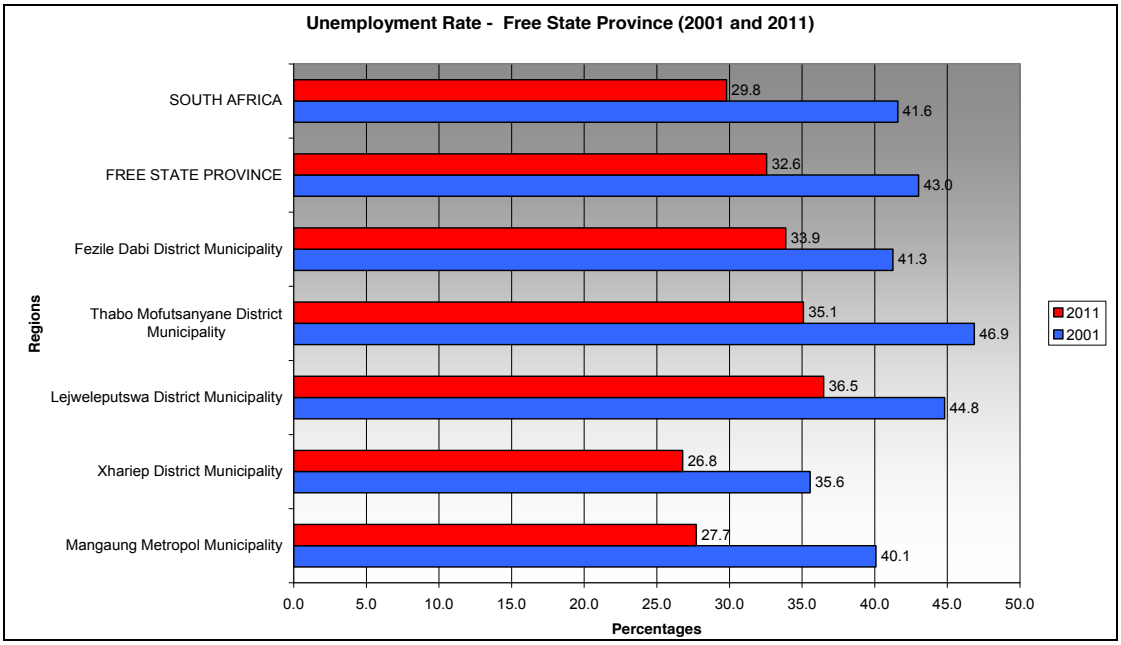


Figure 2 Employment in the Free State (Stats SA 2011)

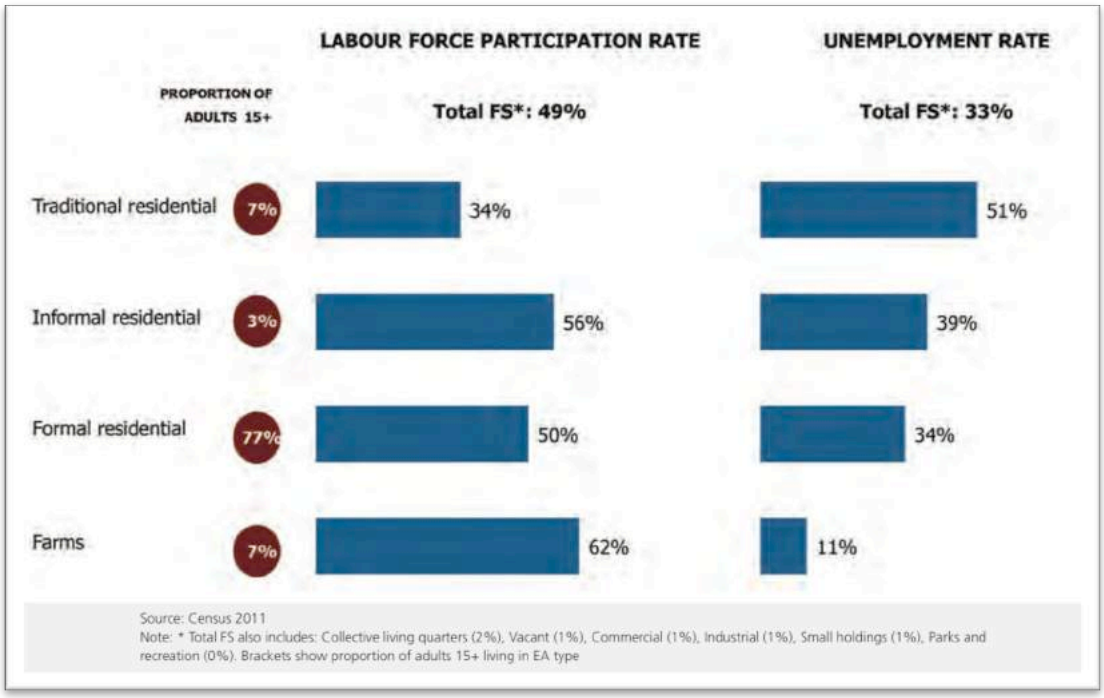
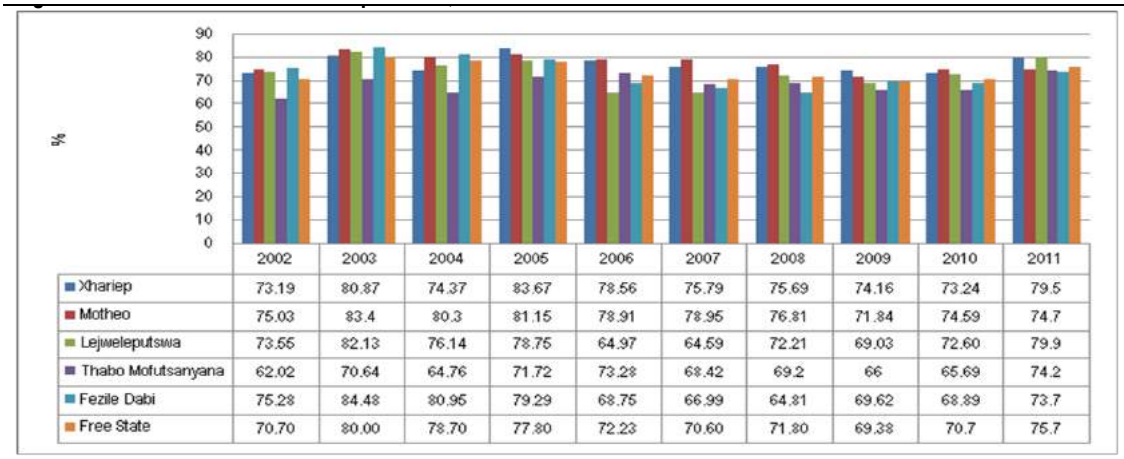


Figure 3 Adults Ages 15+ in the Free State: Labour force participation rates and unemployment rates by type of enumeration area (Housing Development Agency 2013)

3.3.2 EDUCATION AND HEALTH IN THE FREE STATE

The Free State education data reflects trends in respect of literacy, learner educator ratio, school attendance and graduation.

The literacy rate in the Free State lies at 80 in 2010, which is a clear improvement from 64% in 1994. The Free State has seen farming schools close in the past years. The learner educator ratio however has remained below the national average (27.6 compared with 30.3 in 2011) (School Realities cited in Overview of Provincial Revenue and Expenditure, 2012/13). It is further reported that the majority of learners attends school, while the proportion has slightly decreased from 92.5 to 90.9% (Stats SA, Community Survey, 2007 cited in Overview of Provincial Revenue and Expenditure, 2012/13). More learners are passing Grade 12. The rate improved from 70.7% in 2010 to 75.7% in 2011. However, the quality of education is questioned. In this context, Figure 3 details the development of the matric pass rate over time per district.



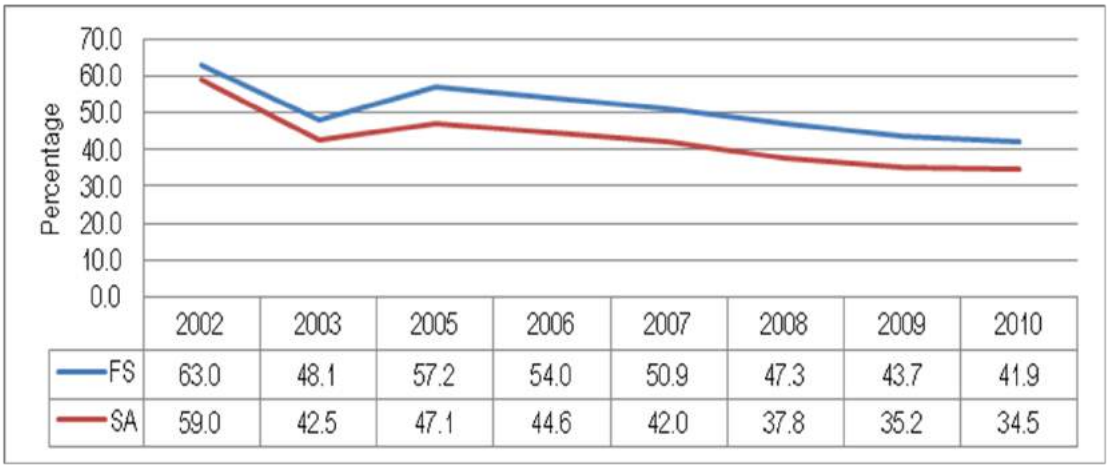
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Xhariep	73.19	80.87	74.37	83.67	78.56	75.79	75.69	74.16	73.24	79.5
Motheo	75.03	83.4	80.3	81.15	78.91	78.95	76.81	71.84	74.59	74.7
Lejweleputswa	73.55	82.13	76.14	78.75	64.97	64.59	72.21	69.03	72.60	79.9
Thabo Mofutsanyana	62.02	70.64	64.76	71.72	73.28	68.42	69.2	66	65.69	74.2
Fezile Dabi	75.28	84.48	80.95	79.29	68.75	66.99	64.81	69.62	68.89	73.7
Free State	70.70	80.00	78.70	77.80	72.23	70.60	71.80	69.38	70.7	75.7

Source: Free State Department of Education, 2011.

Figure 4, 2002-2011 Free State matric district pass rate

Health indicators include child mortality, life expectancy and HIV prevalence.

The infant mortality rate in the Free State is above the national average. Child mortality therefore remains a challenge even though the Province managed to reduce the rate by 33.3% over the past eight years.

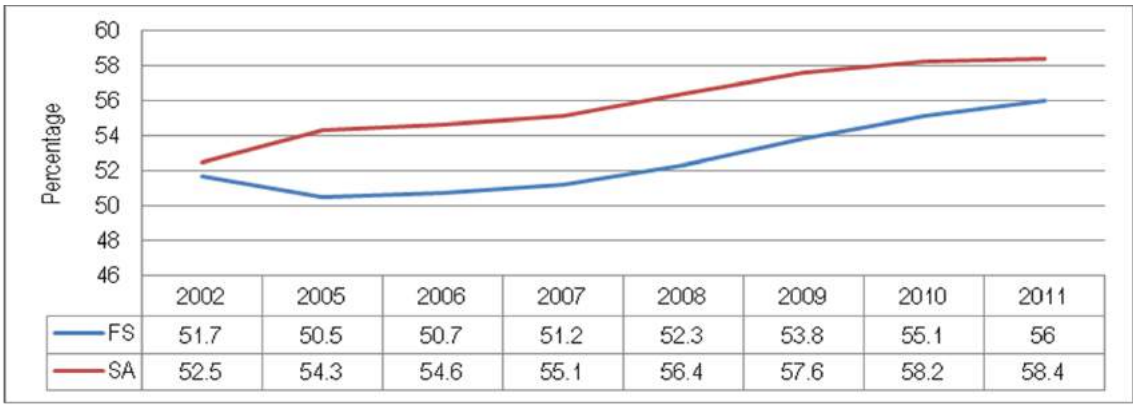


	2002	2003	2005	2006	2007	2008	2009	2010
FS	63.0	48.1	57.2	54.0	50.9	47.3	43.7	41.9
SA	59.0	42.5	47.1	44.6	42.0	37.8	35.2	34.5

Source: Health Systems Trust, 2012

Figure 5 Infant Mortality Rate (Death under 1 year per 1.000 live births), Free State and SA, 2002-2010

The life expectancy in the Free State is below the national average., but has increased and is following the national trend over the past years. In 2011, life expectancy in the Province was reported with 56 years.

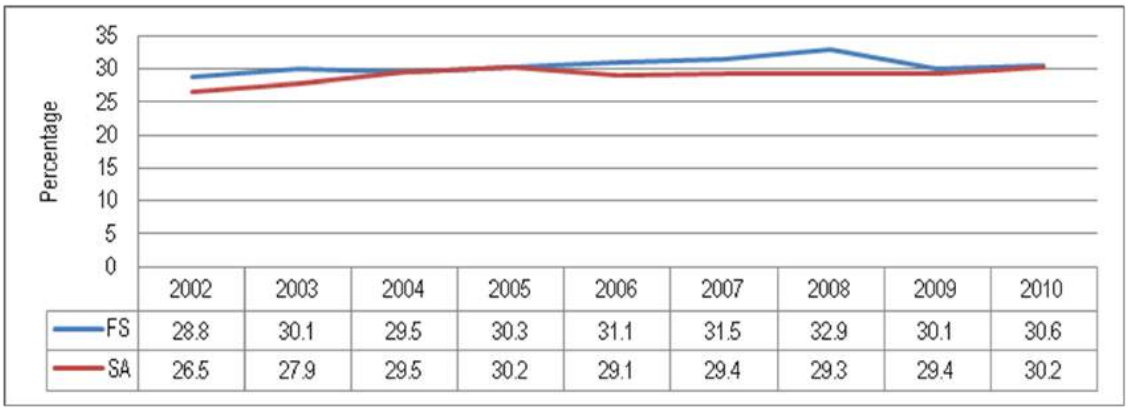


	2002	2005	2006	2007	2008	2009	2010	2011
FS	51.7	50.5	50.7	51.2	52.3	53.8	55.1	56
SA	52.5	54.3	54.6	55.1	56.4	57.6	58.2	58.4

Source: Health Systems Trust, 2012

Figure 6 Life expectancy at Birth in Free State Province and SA, 2002-2011

The HIV prevalence in the Free State has increased between 2002 and 2010, as it did nationally.



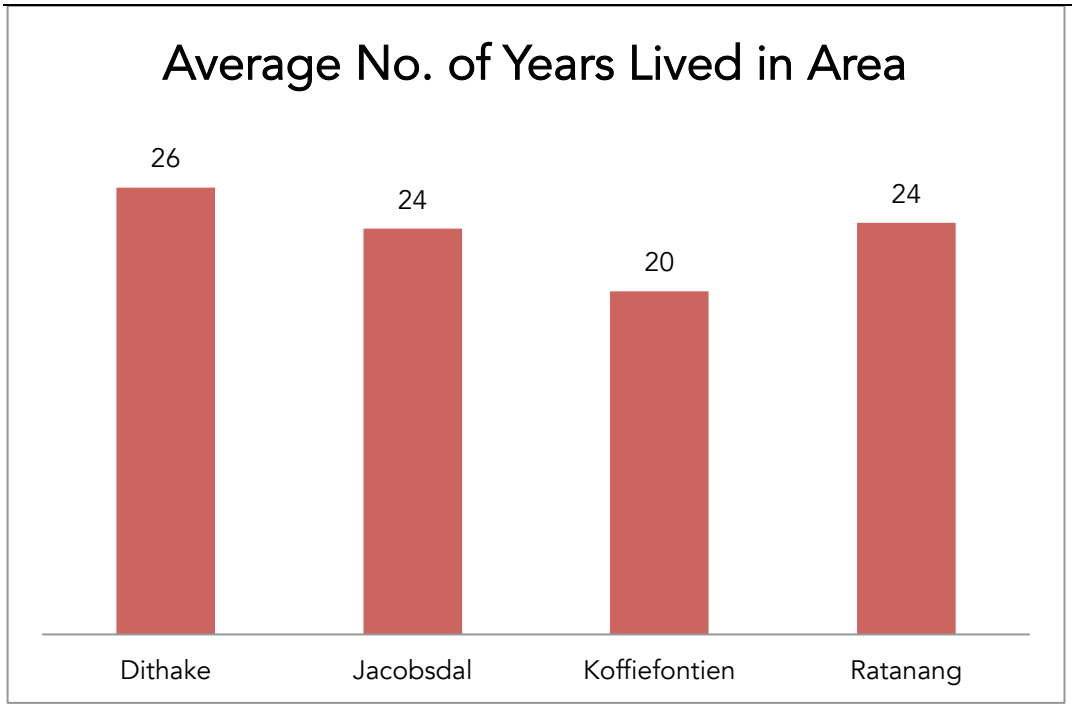
	2002	2003	2004	2005	2006	2007	2008	2009	2010
FS	28.8	30.1	29.5	30.3	31.1	31.5	32.9	30.1	30.6
SA	26.5	27.9	29.5	30.2	29.1	29.4	29.3	29.4	30.2

Source: Health Systems Trust, 2012

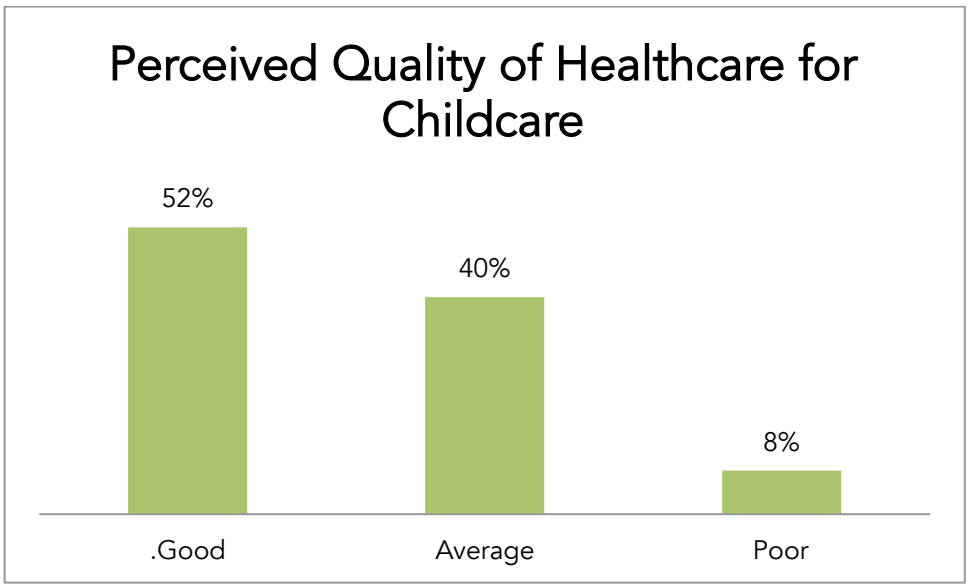
Figure 7 HIV prevalence (per cent) (Antenatal), Free State and SA, 2002-2010

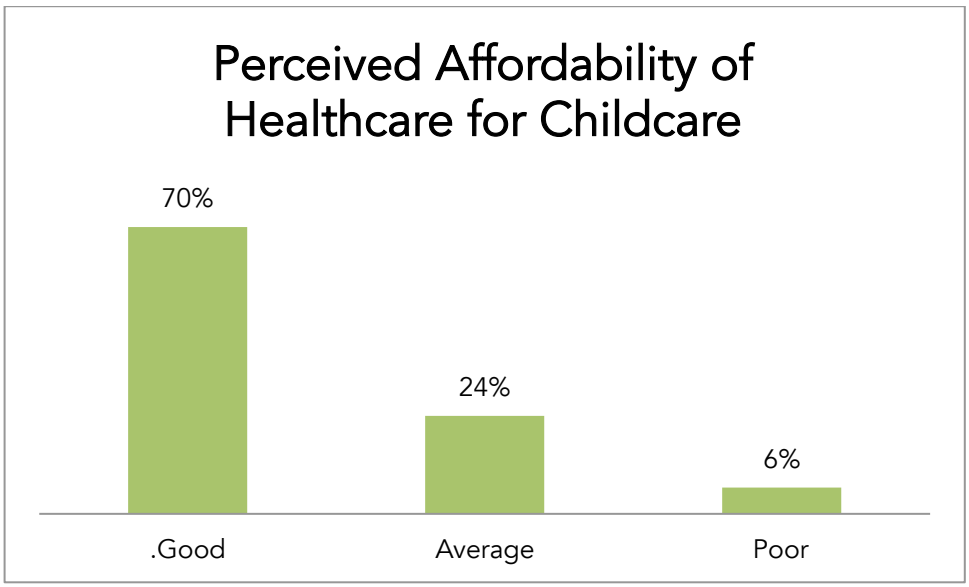
Based on the survey conducted by Knowledge Pele, we also have deeper insights into the development challenges faced by the communities. Below is a breakdown of the number of people surveyed per community.

KP SURVEY PARTICIPANTS



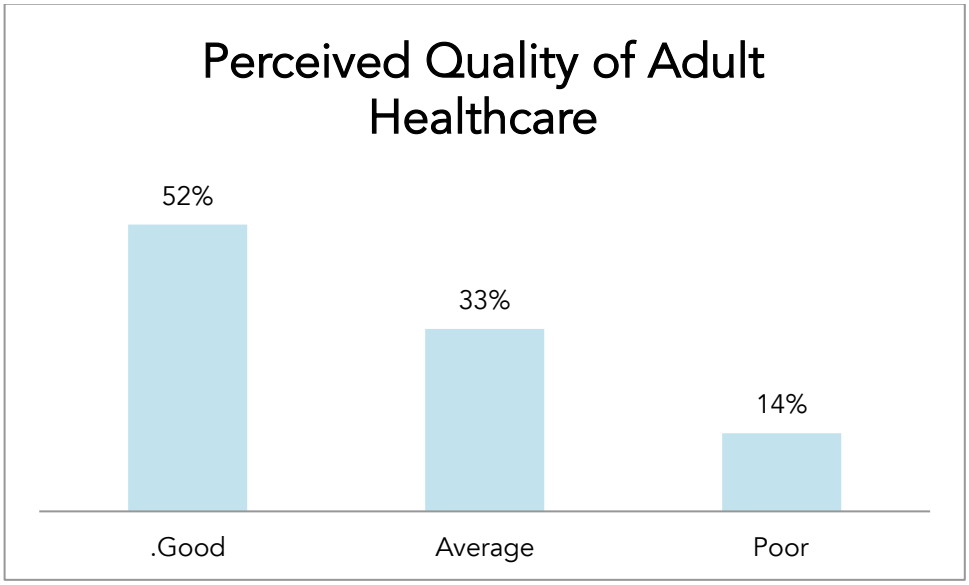
The survey respondents were asked to rate the quality and affordability of health and education services. It is important for the project to develop a deep understanding of these critical welfare elements as they impact the quality of the labour force, but more critically, provide insight into potential SED and ED investment areas.

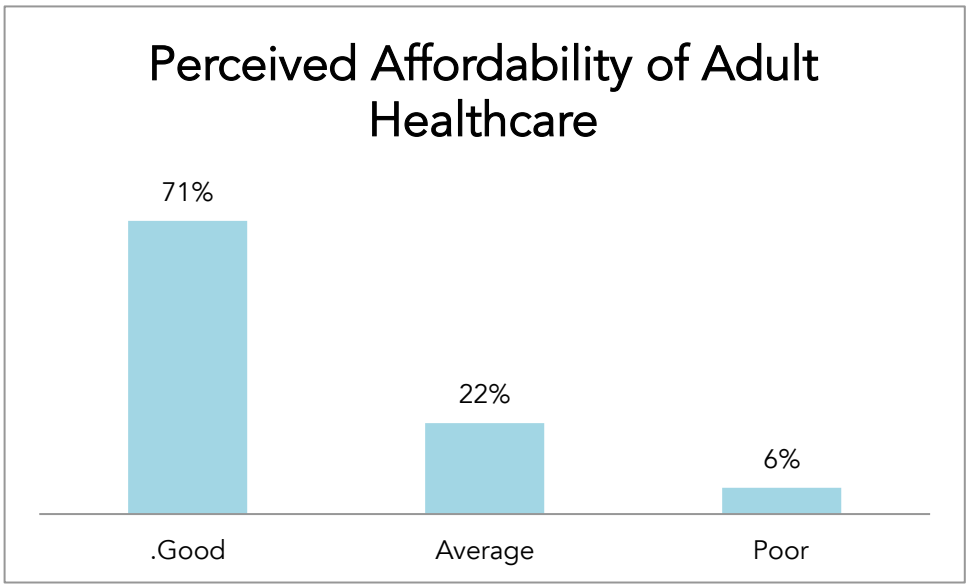




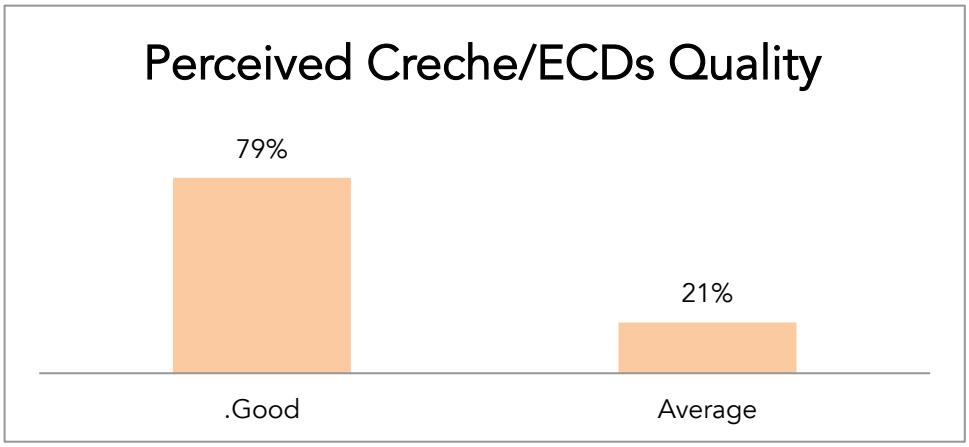
Based on the above, it is reasonable to deduce that the biggest challenge with respect to healthcare for children is quality rather than cost.

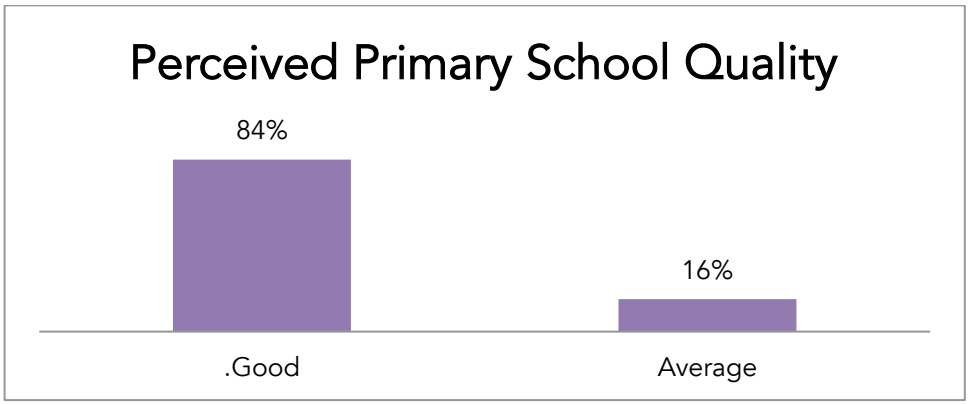
KP SURVEY RESULTS: QUALITY AND AFFORDABILITY OF ADULT HEALTHCARE

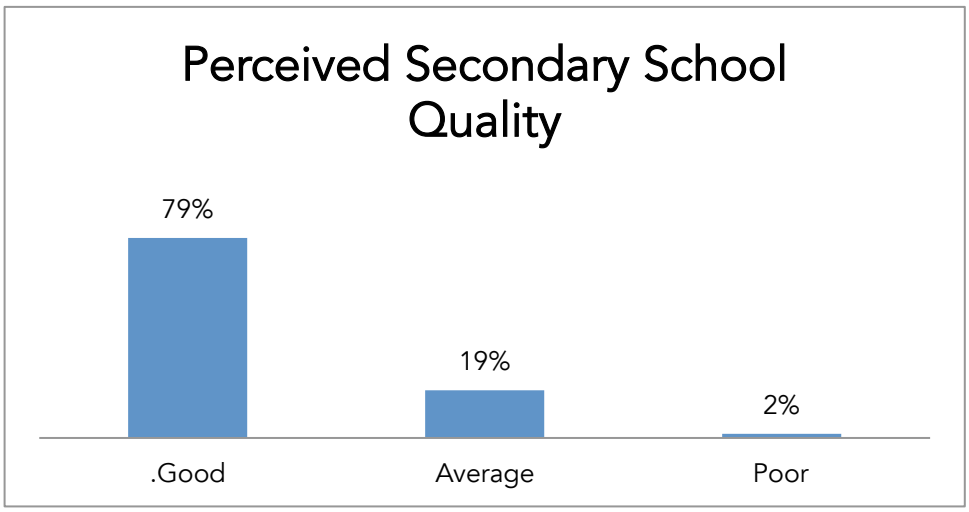




Similarly, adult health care requires a quality upgrade.



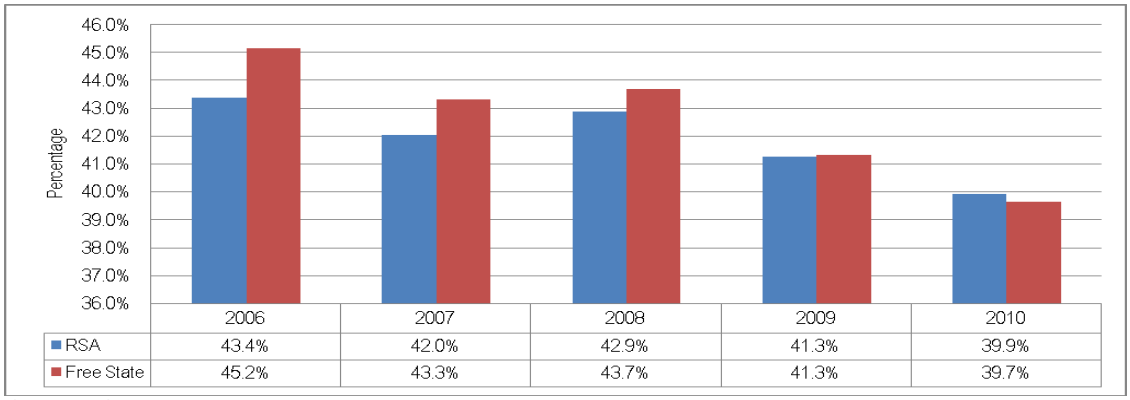




The data demonstrates a discrepancy between the community's perceived quality of education and the known quality of South Africa's educational outcomes. This may present challenges should the project have to justify why locals do not qualify for employment. It may also make investing in education a challenge as the community does not perceive this as a priority.

3.3.3 SERVICES STANDARDS IN THE FREE STATE

Poverty in the Free State has declined, as it has nationally, between 2002 and 2010. In the Free State, the percentage of people living in poverty fell from 45.2% in 2006 down to 39.7% in 2010. The increased level of service provision is stated as driver of this change (Overview of Provincial Revenue and Expenditure, 2012/13).



	2006	2007	2008	2009	2010
RSA	43.4%	42.0%	42.9%	41.3%	39.9%
Free State	45.2%	43.3%	43.7%	41.3%	39.7%

Source: Global Insight, REX 2011

Figure 8 Percentage of people living in poverty, Free State and SA, 2006-2010

The percentage of people living in formal dwellings has increased, from 67% in 2001 to 81% in 2011.

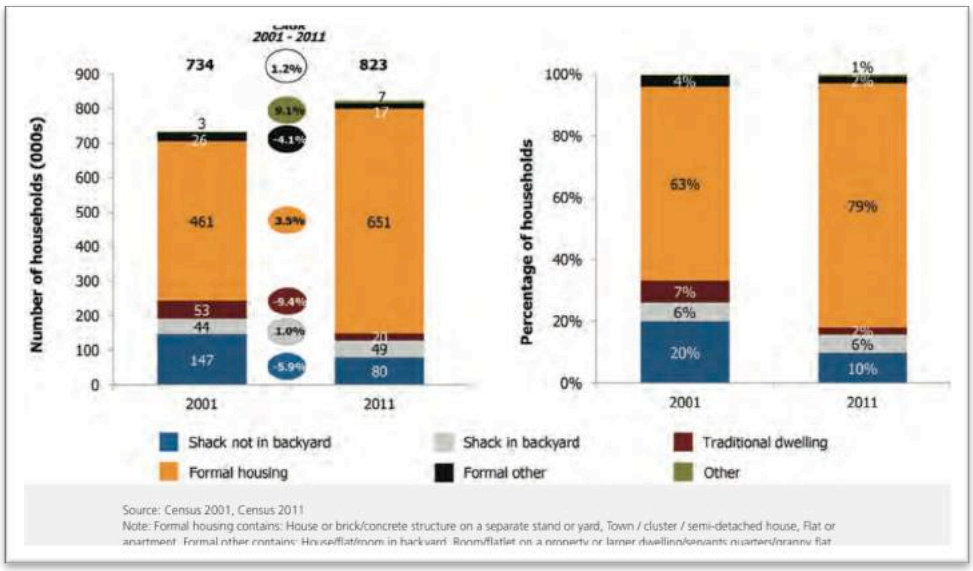


Figure 9 Type of main dwelling in the Free State (Housing Development Agency 2013)

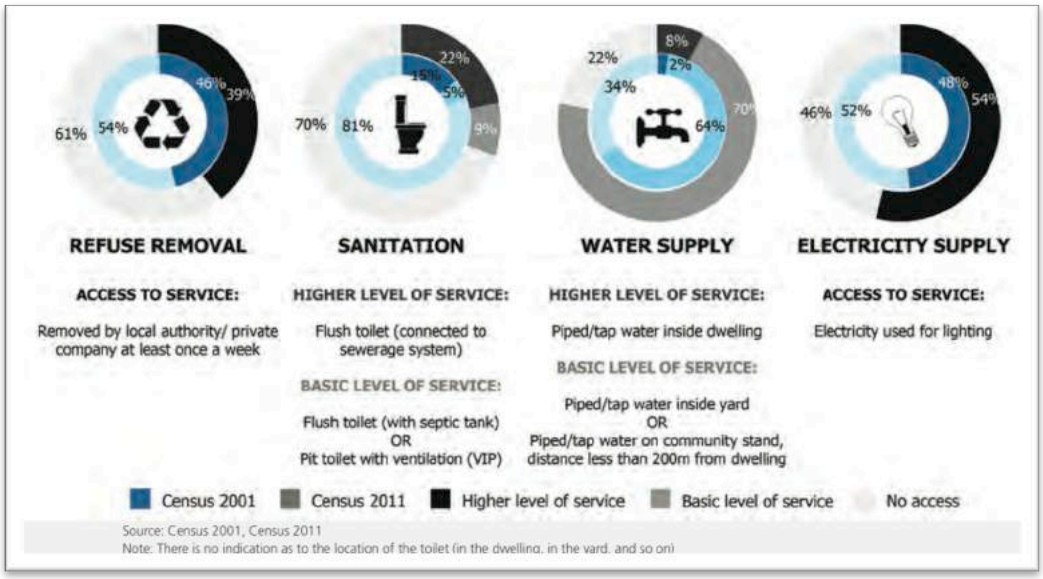
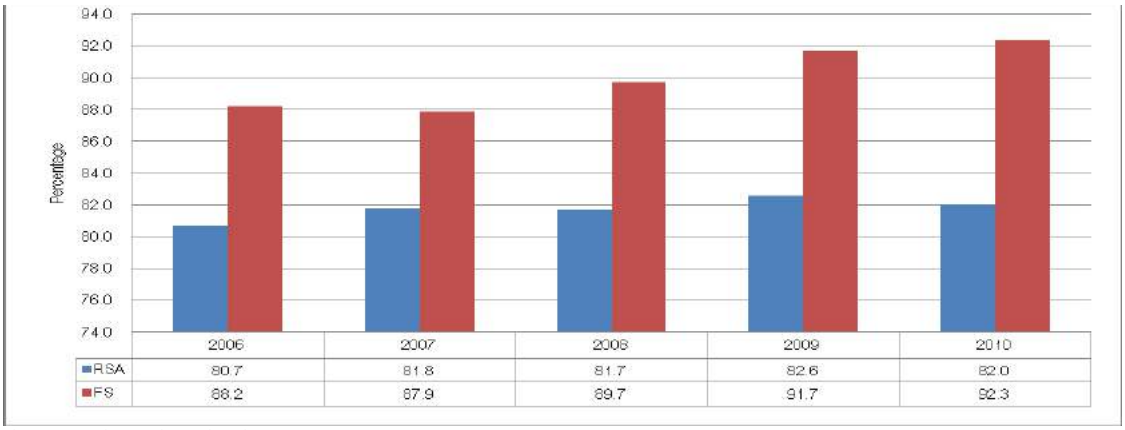


Figure 10 Access to services in the Free State (Housing Development Agency 2013)



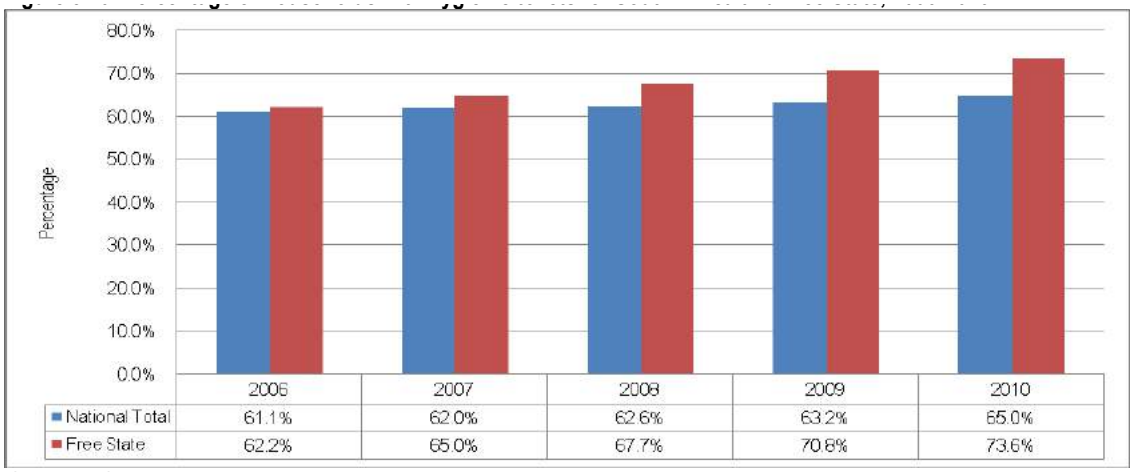
Source: StatsSA, GHS 2010

Figure 11 Percentage of households connected to the mains electricity supply, Free State and SA, 2006-2010

National Total						
	Piped water inside dwelling	Piped water in yard	Communal piped water: less than 200m from dwelling (At RDP-level)	Communal piped water: more than 200m from dwelling (Below RDP)	No formal piped water	Total
2006	5,308,170	3,492,589	1,200,367	1,532,293	1,486,590	13,020,008
2007	5,761,149	3,433,692	1,135,720	1,499,969	1,430,977	13,261,508
2008	5,935,582	3,421,066	1,132,020	1,514,397	1,399,893	13,402,959
2009	5,906,292	3,486,688	1,224,117	1,456,406	1,361,735	13,435,237
2010	5,833,831	3,556,048	1,268,897	1,407,178	1,350,873	13,416,826
Free State						
2006	309,486	385,940	45,408	58,945	23,286	823,065
2007	364,906	362,492	38,212	45,540	21,296	832,445
2008	395,725	352,906	32,746	32,999	19,970	834,347
2009	400,088	356,844	29,375	23,123	20,156	829,587
2010	382,563	370,926	29,469	20,305	17,621	820,884

Source: Global Insight, REX 2011

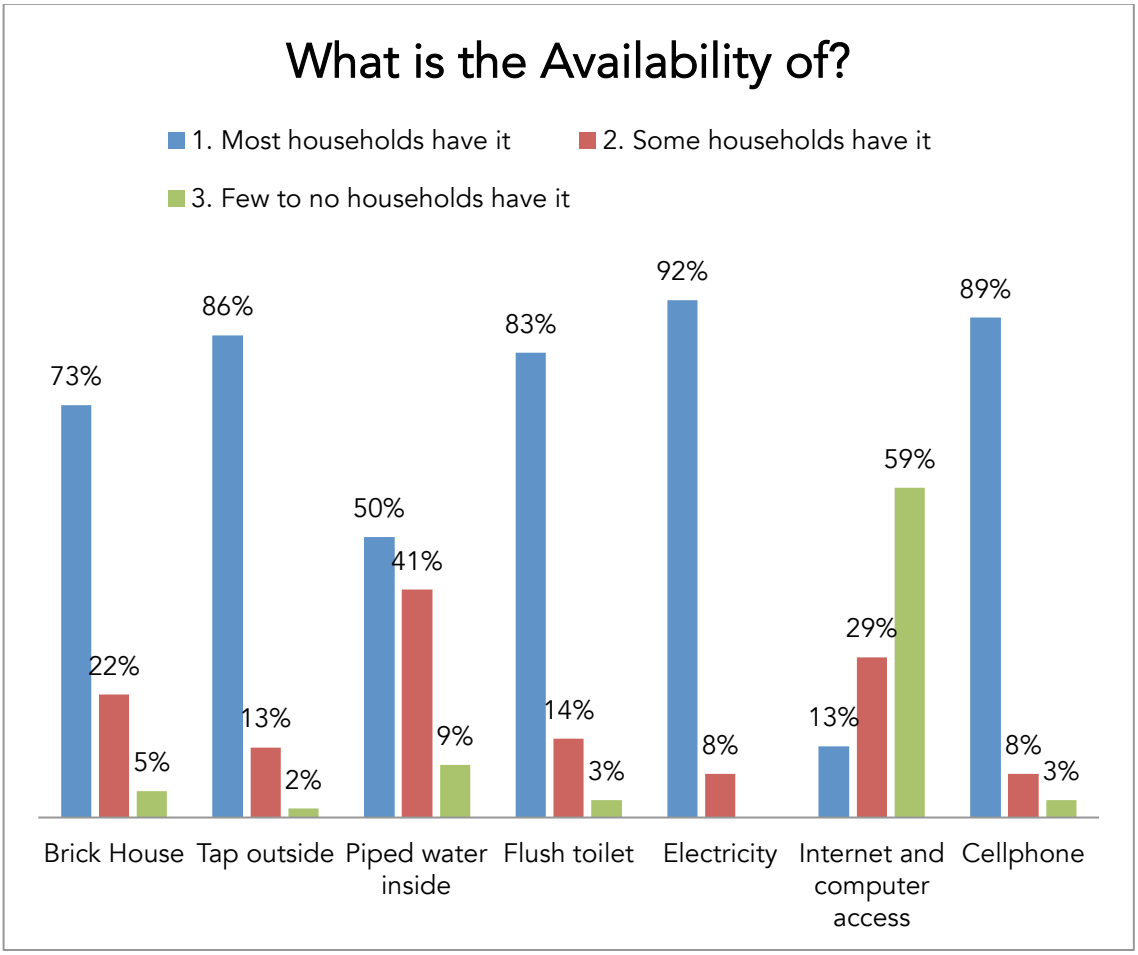
Figure 12 Household by level of access to water, Free State and SA, 2006-2010



Source: Global Insight, REX 2011

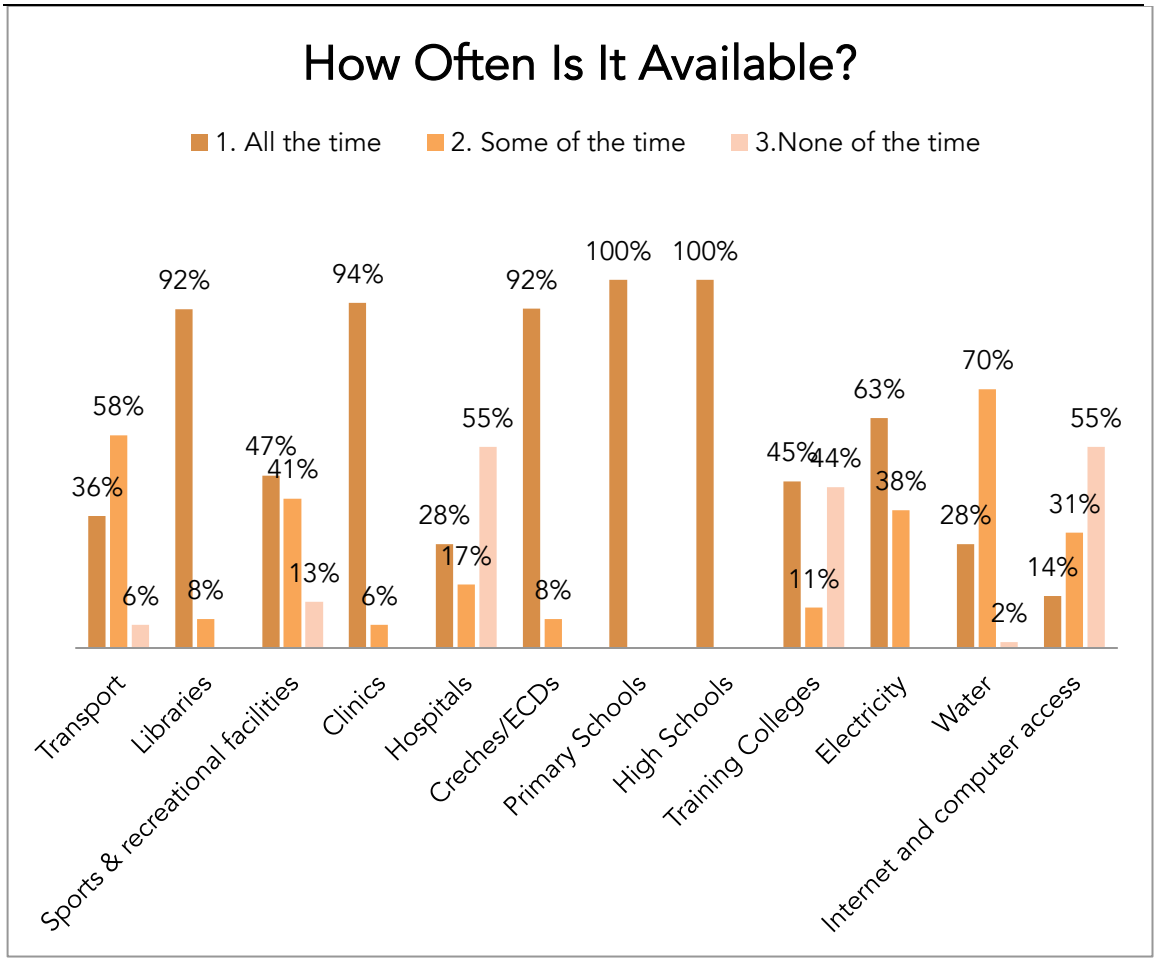
Figure 13 Percentage of households with hygienic toilets, Free State and SA, 2006-2010

KP SURVEY RESULTS: PERCEPTIONS OF SERVICES- ACCESS & QUALITY



From the above, it is clear that households are mostly in need of the following household infrastructure:

1. Internet and computer access
2. Piped water
3. Brick housing



From the above, it is clear that the services that are not consistently available are, in order of need:

4. Hospitals
5. Training Colleges (post-matric)
6. Internet and computer access
7. Water
8. Electricity
9. Transport

3.3.4 ECONOMIC OPPORTUNITY IN THE FREE STATE

The PGDS sees long-term sustainable economic growth and development as understood fundamental to overcome poverty. Key sectors to achieve growth include agriculture and agro-processing, fishing and mariculture, mining and mineral processing, transport, manufacturing and tourism.

3.4 PROPOSED PROJECT AREA

The proposed project area is located within the Free State's Xhariep district. The Grootpoort PV Facility project site lies within the Letsemeng Municipal area. Two further municipalities are located in close proximity, including the Renosterberg and Kopanong Municipalities, both of which form part of the Northern Cape. This sub-section briefly introduces the three municipalities.

3.4.1 LETSEMENG LOCAL MUNICIPALITY

The Letsemeng municipality is located in the Free State Province and comprises five towns, including Koffiefontein, Jacobsdal, Petrusburg and Luckhoff.

Picture 4 Boundaries of the Letsemeng Municipality (Source: Google maps)

According to the 2014/15 Integrated Development Plan (IDP), the "Letsemeng Municipals economy is characterized by the following:

• Mining and agricultural sector are the largest contributor to the local economy;

• The decline in the agricultural sector over the recent years has had an adverse effect on the employment potential of the rural areas;

• Luckhoff has the highest unemployment rate;

• De Beers Mines contributes major part to the local economy before it was closed;

By virtue of its geographic location the Municipality provides itself as a natural transportation route for people travelling to destinations such as Bloemfontein since two of the major national roads, namely N12 and N8 passing through the Municipality. "

POPULATION

Letsemeng municipality consists of six wards. The municipality's population consists of 11 242 households and comprises a total of 38 628 persons.

Geography	Gender		Total
	Male	Female	
DC16: Xhariep	**71658**	**74600**	**146259**
FS161: Letsemeng	**19852**	**18777**	**38628**
Ratanang	2052	2179	4231
Jacobsdal	1761	1743	3504
Riet Rivier	542	483	1026
Petrusburg	4101	4334	8435
Oppermans	427	444	871
Koffiefontein	5089	5313	10402
Luckhoff	1795	1904	3699

Figure 14 Population distribution by gender and geography in Letsemeng Municipality (Source: StatsSA 2011 in IDP 2014/15)

INCOME AND EMPLOYMENT

According to the IDP 2014/15, the unemployment across Letsemeng averages at 22.3% (expanded definition). The highest unemployment figures are found in Luckhoff. Household income is low, with 10.2 of households within the "no Income" category, 7.4% have less than R10 000 and 23.9% annually less than R19 601.

Figure 3: Employment status of population aged between 15 and 64 years by gender and geography

Geography	Employed			Unemployed			Not Economically Active			Unemployment Rate		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
FS:161: Letsemeng	5928	3236	9164	1170	1454	2624	6036	7227	13263	16.5	31.0	26.8
Koffiefontein	1192	736	1928	331	396	726	1672	2255	3928	21.7	35.0	27.4
Ratanang	488	386	874	138	129	268	606	833	1439	22.0	25.0	23.5
Jacobsdal	474	292	766	151	138	289	537	691	1228	24.2	32.1	27.4
Riet Rivier	289	102	391	3	6	9	83	191	274	1.0	5.6	2.3
Petrusburg	1172	758	1931	357	492	848	1066	1417	2484	23.3	39.4	30.5
Oppermans	121	72	194	32	36	68	120	167	287	20.9	33.3	26.0
Luckhoff	327	201	528	126	133	259	578	797	135	27.8	39.8	32.9

EDUCATION AND HEALTH

Of the entire municipal population, 17.7% have no schooling and 18.9% have higher education. The matric competency rate is reported to have improved by 0.7% between 2001 and 2011.

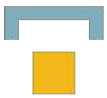
SERVICE STANDARDS

Of all households, 83.2% reside in formal dwellings and 72.8% or all households are serviced with sewer connections. Refuse is removed from 68% of households and piped water is available in 92.8%. Access to electricity is installed for 92.8% of households.

3.4.2 RENOSTERBERG LOCAL MUNICIPALITY

The Renosterberg Municipality comprises three tows: Petrusville, Philipstown and Vanderkloof. The municipality orders the Orange River. Vanderkloof is a resort town at the river.

Picture 5 Boundaries of the Renosterberg Municipality (Source: Google maps)



3.4.3 KOPANONG LOCAL MUNICIPALITY.

The Kopanong Local Municiaplity is situated within the Free State in the Xharip District Municipality. It comprises nine towns including Bethulie, Edenburg, Fauresmith, Gariepdam, Jagersfontein, Phillipolis, Springfontein, Reddersburg and Trompsburg.

Picture 6 Boundaries of the Kopenang Municipality (Source: Google maps)

Population

According to the 2011 Census the Kopanong Municipality has a population of 49 171 persons.

- Of the entire municipal population, 29.70% is under age of 15, 63.50% are between the ages 15 and 64 and 6.80% are above the age of 65.
- Income and employment
- Of the entire municipal population, 27% are officially unemployed while the youth unemployment rate lies at 33.60%.

EDUCATION AND HEALTH

The municipal population is unschooled by 13.40%, 6.40% of the people has higher education and matric is completed by 20.70% of the population.

Service standards

Of all households in the municipal area, 82.10% have flush toilets connected to sewerage, 76.50% weekly refuse removal and 46.70% piped water inside their dwelling. Electricity for lighting is presence in 92.60% of the houses.

Table 1 Geography and type of dwelling in Kopanong Municipality (Source: Census 2011, as cited in IDP 2015/16)

GEOGRAPHY	HOUSEHOLDS					PERCENTAGES				
	Formal dwelling	Informal dwelling	Traditional dwelling	Other	Total	Formal dwelling	Informal dwelling	Traditional dwelling	Other	Total
Reddersburg	1403	69	1	1	1474	95.1	4.7	0.1	0.1	100.0
Bethulie	1802	141	6	3	1952	92.3	7.2	0.3	0.1	100.0
Edenburg	1591	376	5	10	1981	80.3	19.0	0.2	0.5	100.0
Trompsburg	1420	192	1	1	1615	87.9	11.9	0.1	0.1	100.0
Philippolis	1091	49	4	2	1146	95.2	4.3	0.3	0.2	100.0
Jagersfontein	1859	71	3	3	1935	96.1	3.7	0.2	0.1	100.0
Fauresmith	974	212	3	3	1193	81.7	17.8	0.3	0.3	100.0
Gariepdam	405	6	6	45	462	87.7	1.4	1.2	9.7	100.0
Springfontein	1095	77	4	4	1180	92.8	6.5	0.3	0.4	100.0
Rolfontein	-	-	-	-	-	-	-	-	-	-
Waterkloof	3	-	-	-	3	100.0	-	-	-	100.0
Gariep Dam Nature Reserve	-	-	-	-	-	-	-	-	-	-
Kopanong NU	2648	20	24	8	2700	98.1	0.7	0.9	0.3	100.0
FS162: Kopanong	**14293**	**1213**	**57**	**80**	**15643**	**91.4**	**7.8**	**0.4**	**0.5**	**100.0**
DC16: XHARIEP	**39528**	**5446**	**181**	**212**	**45368**	**87.1**	**12.0**	**0.4**	**0.5**	**100.0**

Data Source: *Statistics South Africa, Census 2011*

3.5 LOCAL CONTEXT AND SURROUNDING LAND USES

Key features of Portion 1 of the farm Grootpoort 168, Registration Division Fauresmith, Free State Province

Plate 1: The site (taken towards the north)

Plate 2: The site (taken towards the north-east)

Plate 3: The site (taken towards the east)

Plate 4: The site (taken towards the south-east)

Plate 5: The site (taken towards the south)

Plate 6: The site (taken towards the south-west)

Plate 7: The site (taken towards the west)

Plate 8: The site (taken towards the north-west)

Plate 9: Gravel access road (taken towards the south-east)

Plate 10: Site Access

Plate 11: Vegetation on site

Plate 12: Drainage lines situated in the north western portion of the site

Plate 13: Drainage lines situated in the north western portion of the site

SECTION 4: ASSESSMENT OF KEY SOCIAL ISSUES AND IMPACT

4.1 INTRODUCTION

Section four outlines the key social issues identified during the SIA. The identification of social issues is based on the review of project information, experience of the lead-author within the Free State Province and experience with similar projects across the province and country. The study further draws on qualitative information collected in the process of surveying over 100 individuals living the respective communities.

This report assumes that the proposed project fulfils all technical requirements.

4.2 IDENTIFICATION OF KEY SOCIAL ISSUES

The identified key social issues are discussed in the following. They are divided into policy and planning related and local and site-specific issues. Local and site-specific issues are further divided into construction and operational related issues.

4.3 POLICY AND PLANNING ISSUES

As per section 1.5, the assessment of social impacts associated with the proposed Grootpoort PV Facility requires consideration of existing policies and planning documents. To this extend, the following key documents have been reviewed:

- National Energy Act
- National White Paper on Renewable Energy
- National Integrated Resource Plan for Electricity
- National Development Plan
- Free State Provincial Growth And Development Strategy (NCPSDF) (Aug 2012)
- Regional Sector Skills Plan, Free State and Free State Region (Sep 2013)
- Provincial Renewable Energy Strategy (2015)
- Xhariep Ka Seme District Municipality Integrated Development Plan 2015/16
- Renosterberg Local Municipality Integrated Development Plan 2014/15 (draft)
- Letsemeng Local Municipality Integrated Development Plan 2014/15
- Kopanong Local Municiaplity Integrated Development Plan 2014/15

The district level IDP reports about the substantial experience the district and within three of its local municipalities have made with the construction and operation of solar energy projects in the context of the REIPPPP. The IDP reports the associated social impact to be mainly positive and actively supports further investments into solar energy projects within the districts boundaries.

The review finds that national and local policies and plans strongly support solar energy and its further development. It is therefore the opinion of the author that the establishment of the proposed Grootpoort PV Facility is support by national, provincial and local policies and planning documents.

4.4 SOCIAL IMPACTS ASSOCIATED WITH THE CONSTRUCTION PHASE

The construction phase is associated with the following key potential positive and negative social issues.

Potential positive impacts

- Creation of employment and business opportunities
- Opportunity for skills development and on-site training
- Increased economic activity due to higher population volumes
- Growth in small enterprise revenues as a function of supplying needs of higher-earning labour force

Potential negative impacts

- Impacts associated with the presence of construction workers on site
- Impacts associated with the presence of non-local and foreign workers in the project surroundings
- Influx of job seekers to the area
- Loss of farm labour to the construction of the PV facility

CRITERIA FOR ASSESSING IMPACTS[1]

1. Nature of the impact - This is an appraisal of the type of effect the activity would have on the affected environment. This description should include what is being affected and how.
2. Extent - Here it should be indicated whether the impact will be:
    a. Local extending only as far as the activity;
    b. Will be limited to the site and its immediate surroundings;
    c. Will have an impact on the region;
    d. Will have an impact on a national scale; and/or
    e. Will have an impact across international borders.
3. Duration - Here it should be indicated whether the lifetime of the impact will be:
    a. Short term (e.g. 0 – 5 years);
    b. Medium term (e.g. 5 – 15 years);
    c. Long term (where the impact will cease after the operational life of the activity, either because of natural process or by human intervention); or permanent where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
4. Intensity – Here it should be established whether the impact is destructive or benign and should be indicated as:
    a. Low, where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected;
    b. Medium, where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and high, where natural, cultural or social functions or processes are altered to the extent that it will temporarily or permanently cease.
5. Probability – This should describe the likelihood of the impact actually occurring indicated as:
    a. Improbable,(where the possibility of the impact to materialize is very low either because of design or historic experience);
    b. Probable, (where there is a distinct possibility that the impact will occur);
    c. Highly probable, (where it is most likely that the impact will occur); or definite,(where the impact will occur regardless of any prevention measures).
6. Significance – The significance of impacts can be determined through a synthesis of the aspects produced in terms of their nature, duration, intensity, extent and probability and can be described as:
    a. low, (where it will not have an influence on the decision);

[1] Source: Adapted from the criteria provided by Department of Environmental Affairs and Tourism,1998

b. medium, (where it should have an influence on the decision unless it is mitigated{; or
c. high,(where it would influence the decision regardless of any possible mitigation).

4.4.1 CREATION OF EMPLOYMENT AND BUSINESS OPPORTUNITIES

The construction phase is expected to extend over a period of: 18 months

The Project is intended to create: 300 construction related jobs

The Project is intended to create: 50 operations related jobs per annum

- 85% of the RSA Based Employees will be RSA Citizens
- 65% of the RSA Based Employees will be Black Citizens
- 47% of the Skilled Employees will be Skilled Black Citizens
- 15% of the of the RSA Based Employees will be Citizens from Local Communities.

Assuming an average monthly salary of R 5 000 for unskilled, R 12 000 for semi-skilled and R 30 000 for skilled workers, the total wage bill is estimated to be in the region of R4 150 000 million per annum (2012 values). The injection of income into the area in the form of wages will represent a significant opportunity for the local economy and businesses in the towns and communities in proximity to the project site.

SKILLS AVAILABLE AND REQUIRED

	Number	Required (R) from local community
Project Manager	2	No
Construction Manager	2	No
Lead Engineer System Design	2	No
Lead Engineer Civil	2	No
Lead Engineer HV / Grid Connection	2	No
Site Area preparation work	2	Yes
Road	4	Yes
Fences	5	Yes
Base foundation for Cabins	3	Yes
Trenching for MV, LV (AC,DC) and Data cables	7	Yes
Installation of foundation	12	Yes
Installation of supporting structure	12	Yes
Installation of PV modules	9	Yes
Solar cables & DC cables	8	Yes

String boxes and LV cables	3	Yes
Inverter cabins including MV&LV panels & switchgears & AUX transformer	3	Yes
MV cables	3	Yes
Lightning protection system, video surveillance and intrusion detection system	5	Yes
Assembling and test of the overall equipment	3	Yes

Table 2: Impact assessment of employment creation and business opportunities during the construction phase

Nature: Creation of employment and business opportunities during the construction phase		
	Without Mitigation	**With Enhancement**
Extent- Localness	Local – Regional	Local – Regional
Duration	Short Term	Short Term
Magnitude	Low	Low
Probability	Highly probable	Highly probable
Significance	Medium	Medium
Status	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impact be enhanced?	Yes	
Enhancement : See below		
Cumulative impacts: Opportunity to up-grade and improve skills levels in the area.		
Residual impacts: Improved pool of skills and experience in the local area.		

ASSESSMENT OF NO-GO OPTION

The potential employment and economic benefits associated with the construction of the proposed solar project would be forgone. The potential opportunity costs in terms of the capital expenditure, employment, skills development, and opportunities for local business are therefore regarded as a negative.

RECOMMENDED ENHANCEMENT MEASURES

In order to enhance local employment and business opportunities associated with the construction phase the following measures should be implemented:

- A register of local labour should be created with the assistance of local authorities but not solely reliant on them.
- A register of local businesses should be created with the assistance of local authorities but not solely reliant on them.
- Al opportunities to business and labour should be advertised on open, public platforms.
- All potential employees and businesses to be educated on the short-term nature of the engagement and therefore importance of using the opportunity to access new and different opportunities elsewhere.
- Each contract, both labour and service contracts, should incorporate a clear learning path to ensure that locals grow in a quantifiable manner through interactions with the project.

EMPLOYMENT CREATION

- Before the construction phase commences the proponent and its contractors should meet with representatives from the Renosterberg, Letsemeng and Kopanong Local Municipalities to establish the existence of a skills database for the area. If such as database exists it should be made available to the contractors appointed for the construction phase.
- The local authorities, community representatives, and organisations on the interested and affected party database should be informed of the final decision regarding the project and the potential job opportunities for locals and the employment procedures that the proponent intends following for the construction phase.
- Where feasible, training and skills development programmes for locals should be initiated prior to the initiation of the construction phase.
- The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.

- Where reasonable and practical the contractors appointed by the proponent should appoint local contractors and implement a 'locals first' policy, especially for semi and low-skilled job categories. However, due to the low skills levels in the area, the majority of skilled posts are likely to be filled by people from outside the area.
- Where feasible, efforts should be made to employ local contactors that are compliant with Black Economic Empowerment (BEE) criteria;

  Business opportunities
- The proponent should seek to develop a database of local companies, specifically BEE companies, 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 feasible and required, the identified local companies should be prepared for the tender opportunities through appropriate support measures and training;
- The three municipalities, in conjunction with the local Chamber of Commerce and representatives from the local hospitality industry, should identify strategies aimed at maximising the potential benefits associated with the project. Note that while preference to local employees and companies is recommended, it is recognised that a competitive tender process may not guarantee the employment of local labour for the construction phase.

4.4.2 OPPORTUNITIES FOR SKILLS DEVELOPMENT AND ON-SITE TRAINING

The proposed energy project provides additional opportunities for skills development and on-site training in the following areas:

1. Site Area preparation work
2. Road
3. Fences
4. Base foundation for Cabins
5. Trenching for MV, LV (AC,DC) and Data cables
6. Installation of foundation

7. Installation of supporting structure
8. Installation of FV modules
9. Solar cables & DC cables
10. String boxes and LV cables
11. Inverter cabins including MV&LV panels & switchgears & AUX transformer
12. MV cables
13. Lightning protection system, video surveillance and intrusion detection system
14. Assembling and test of the overall equipment

RECOMMENDED ENHANCEMENT MEASURES

In order to enhance opportunities for skills development and on-site training associated with the construction phase the following measures should be implemented:

- On the job training for all new employees.
- Employee matching: matching skilled employees to unskilled for structured learning.
- Emphasis on skills transfer between foreign and local employees.
- Skills development tracking through progress measured at beginning and end of individual contract cycles.
- Post-employment tracking to determine impact of skills attained during employment.

4.4.3 PRESENCE OF NON-LOCAL AND FOREIGN CONSTRUCTION WORKERS IN THE AREA

The presence of construction workers in the area, in particular if they relocated into the area from other parts of South Africa, the continent or even overseas, poses a potential risk to social cohesion and dynamics amongst people living in the area. Family structures and social networks are possibly influenced by the influx of construction workers to the area.
The social behaviour and general conduct of these workers as well as that of the local population determines the realized impact. Potential risks include:

- An increase in alcohol and drug use;
- An increase in crime levels;
- An increase in teenage and unwanted pregnancies;

- An increase in prostitution; and
- An increase in sexually transmitted diseases (STDs).

While the potential threat posed by construction workers to the community as a whole is likely to be low, the impact on individual members who are affected by the presence of construction workers has the potential to be high.

Nature: Potential harmful impacts on family structures and social networks associated with the presence of non-local and foreign construction workers in the project surrounding local communities and towns[2]		
	Without Mitigation	With Mitigation
Extent	Local	Local
Duration	Medium Term for community as a whole Long term-permanent for individuals who may be affected by pregnancy and STD's etc.	Medium Term for community as a whole Long term-permanent for individuals who may be affected by pregnancy and STD's etc.
Magnitude	Low for the community as a whole High-Very High for specific individuals who may be affected by pregnancy and STD's etc.	Low for community as a whole High-Very High for specific individuals who may be affected by pregnancy and STD's etc.
Probability	Probable	Probable
Significance	Low for the community as a whole Moderate-High for specific individuals who may be affected by pregnancy and STD's etc.	Low for the community as a whole Moderate-High for specific individuals who may be affected by pregnancy and STD's etc.
Status	Negative	Negative
Reversibility	No in case of HIV and AIDS	No in case of HIV and AIDS
Irreplaceable loss of resources?	Yes, if people contract HIV/AIDS. Human capital plays a critical role in	

[2] **Common Effects Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

	communities that rely on farming for their livelihoods	
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated	
Mitigation: See below		
Cumulative impacts: Impacts on family and community relations that may, in some cases, persist for a long period. Also in cases where unplanned / unwanted pregnancies occur or members of the community are infected by an STD, specifically HIV and or AIDS, the impacts may be permanent and have long term to permanent cumulative impacts on the affected individuals and/or their families and the community. The development of other solar energy projects in the area may exacerbate these impacts.		
Residual impacts: Community members affected by STDs etc. and associated impact on local community and burden services etc.		

ASSESSMENT OF NO-GO OPTION

There is no impact as it maintains the current status quo. However, the potential positive impacts on the local economy associated with additional spending by construction workers in the local economy would be lost.

RECOMMENDED MITIGATION MEASURES

The potential risks associated with construction workers can be mitigated. The aspects that should be covered include, on site[3]:

- Where possible, the proponent should make it a requirement for contractors to implement a 'locals first' policy for construction jobs, specifically semi and low- skilled job categories. This will reduce the potential impact that this category of worker could have on local family and social networks;

[3] Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

- The proponent should consider the establishment of a Monitoring Forum (MF) for the construction phase. The MF should be established before the construction phase commences and should include key stakeholders, including representatives from the local community, local councillors, farmers, and the contractor. The role of the MF would be to monitor the construction phase and the implementation of the recommended mitigation measures. The MF should also be briefed on the potential risks to the local community associated with construction workers;
- The proponent and the contractors should, in consultation with representatives from the MF, develop a Code of Conduct for the construction phase. The code should identify what types of behaviour and activities by construction workers are not permitted. Construction workers that breach the code of good conduct should be dismissed. All dismissals must comply with the South African labour legislation;
- The proponent and the contractors should ensure that all workers on-site have equal access and rights to any programmes offered and facilities provided for the entertainment and benefit of workers.

In the project-surrounding local communities and town:

- The proponent and the contractor should implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase;
- The proponent and the contractor should communicate the conditions of employment, in particular the temporality of employment to the residents of the area, using appropriate structures and communication processes.
- The proponent and the contractor, in collaboration with the established MF, should identify appropriate and feasible strategies to support a positive social integration of the construction workers in their roles as temporary residents of the area. Such strategies should target specific interests and exchanges, fostering skills and knowledge amongst participants through for example sport, musical or language activities.
- The movement of construction workers on and off the site should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis;

- The contractor should make necessary arrangements to enable workers from outside the area to return home over weekends and or on a regular basis during the 18-24 month construction phase. This would reduce the risk posed by non- local construction workers to local family structures and social networks;
- No construction workers, with the exception of security personnel, will be permitted to stay overnight on the site.

4.4.5 LOSS OF FARM LABOUR TO THE CONSTRUCTION OF THE PV FACILITY

Typically in areas with a scarcity of skilled workers and/or a shortage of people available to work, employers compete for employees. Experience made on other renewable energy projects, including solar energy projects in South Africa indicated that they entice workers with attractive salaries. This can lead to a migration of workers from one employer to another. In a rural South African context, like this project area, this can entail people resigning or not returning (in case of seasonal jobs) to they usual employer. These employers are most often farms and factories.

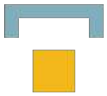
This might impact farmers as well as farm workers and respective dependents. Farmers risk loosing employees to the proposed Grootpoort PV Facility, for temporary or permanent employment. The likelihood of this is determined by the actual amount of jobs available on-site, the level of education and skills and appropriateness of these to qualify job seekers for employment on-site, wages offered by competing employers as well as practicalities involved including transport available to reach the solar energy site and working conditions.
Positive impact might occur on the workers that do commerce working or change to work on the solar energy site. They might gain skills and work experience allowing them to pursue a different career afterwards.

Nature: Potential impact on local farmers associated with loss of farm labour to the construction phase[4]		
	Without Mitigation	With Mitigation
Duration	Medium Term (Assumed that farm labour can be replaced)	Medium Term (Assumed that farm labour can be replaced)
Magnitude	Low	Low
Probability	Probable	Probable
Significance	Low	Low
Status	Negative	Negative
Reversibility	Yes, if farm workers return of are replaced	Yes, if farm workers return of are replaced
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated	
Mitigation: See below		
Cumulative impacts: Impacts on farm operations due to loss of experienced farm labour		
Residual impacts: Increase in unemployment amongst local farm workers who are not rehired once construction worker comes to an end. On positive side, may result in increased skills for local farm workers and improve their economic mobility.		

ASSESSMENT OF NO-GO OPTION

There is no impact as it maintains the current status quo given ease of labour replacement.

[4] **Common Effects Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)



RECOMMENDED ENHANCEMENT MEASURES

e proponent can liaise with the local farmer and bigger employers to inform and discuss the possible competition for workers as well as associated timelines. Direct measures to prevent workers to change jobs are not possible to be implemented, beyond possibly identified strategies to coordinate the need for workers with the existing employers.

- Workers on the other hand shall be informed about the temporary employment opportunity and incentivised to focus on skills enhancement for future.

4.4.6 INCREASED RISK OF STOCK THEFT, POACHING AND DAMAGE TO FARM INFRASTRUCTURE

- The construction phase lends itself to a high degree of stock theft. In this case, stock refers to both livestock and construction stock.
- Such damages foreseen include damages to infrastructure such as gates, barns and irrigation systems where relevant.
- The most severe stock losses would be a result of negligence on the part of the construction company as well as poor security.
- In particular, it is anticipated that December will be the most vulnerable construction month due to the construction holiday.
- The social impacts are thus adverse to the extent that local community members may participate in criminal activity during the construction phase.
- However, these impacts can be ameliorated through sound health & safety practices as well as the presence of 24-hour security on the site.

Nature: Potential impact on local farmers associated with Increased risk of stock theft, poaching and damage to farm infrastructure [5]		
	Without Mitigation	With Mitigation
Duration	Short term	Short term
Magnitude	Medium	Low

[5] **Common Effects Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

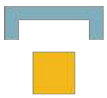
Probability	Probable	Unlikely
Significance	Medium	Low
Status	Negative	Negative
Reversibility	NA	NA
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated.	
Mitigation: See below		
Cumulative impacts: Impacts on farm operations due to loss of experienced farm labour		
Residual impacts: Increase in unemployment amongst local farm workers who are not rehired once construction worker comes to an end. On positive side, may result in increased skills for local farm workers and improve their economic mobility.		

ASSESSMENT OF NO-GO OPTION

Assuming the no-go scenario, land owners as well as the project company would suffer extensive losses based on the severity of theft. The key mitigant for this is 24-hour on-site security. Additionally, the parties should take out insurance contracts to cover the potential losses.

RECOMMENDED ENHANCEMENT MEASURES

- 24 hour security
- Insurance contracts



4.4.7 SAFETY AND SECURITY RISK FOR LOCAL FARMERS

- The construction phase, due to increased traffic in the broader area may lend itself to greater security risks.
- However, given that the bulk of the labour force will be drawn from local community, the risk of crime as a result of labour influx is consistent with the norm.
- Other local farmers may be impacted by the project through any damages to infrastructure, including:
    - Water supply
    - Electricity networks
    - Roads

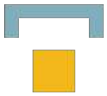
Nature: Potential impact on safety of local farmers		
	Without Mitigation	With Mitigation
Duration	Low	Low
Magnitude	Low	Low
Probability	Unlikely	Unlikely
Significance	Low	Low
Status	Negative	Negative
Reversibility	No	No
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated.	
Mitigation: See below		
Cumulative impacts: Minimal		
Residual impacts: Delays in repairing damaged infrastructure may result in temporary unrest.		

ASSESSMENT OF NO-GO OPTION

All existing infrastructure remains as is, without any damage or improvements as a result of the project's likely investments.

RECOMMENDED ENHANCEMENT MEASURES

It is critical to ensure that the project company can be held liable for any infrastructure damage that is directly linked to construction. In this way, they will assume a greater level of responsibility and claims can be duly made against them in cases of neglect.



4.4.8 INCREASED RISK OF VELD FIRES

'The presence of construction workers and construction-related activities on the site poses an increased risk of veld fires that in turn pose a threat to the livestock, wildlife, and farmsteads in the area. In the process, farm infrastructure may also be damaged or destroyed and human lives threatened. All of the landowners interviewed identified that veld fires were an issue of concern. In this regard all of the farms in the area are dependent on grazing and any loss of grazing due to a fire would therefore impact negatively on the livelihoods of the affected farmers. The potential risk of veld fires is likely to be higher during the dry, winter months.[6]'

Nature: Potential impact on veld fires due to construction phase[7]		
	Without Mitigation	With Mitigation
Duration	Short Term	Short Term
Magnitude	Medium	Medium
Probability	Unlikely	Unlikely
Significance	Medium	Medium
Status	Negative	Negative
Reversibility	Yes, if adjacent farms are suitably compensated for losses	Yes, if adjacent farms are suitably compensated for losses
Irreplaceable loss of resources?	Potentially	Potentially
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated	
Mitigation: See below		
Cumulative impacts: If fire spreads to neighbouring properties, the effects will be compounded.		

[6] Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

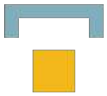
[7] **Generic Effects Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

ASSESSMENT OF NO-GO OPTION

There is least risk in the no-go scenario, however it does not completely ameliorate against the risk of fire owing to its fundamentally seasonal nature.

RECOMMENDED ENHANCEMENT MEASURES

The landowner and project company should insure against fires to then compensate for any losses suffered by both themselves and neighbouring farms.



4.4.9 IMPACTS ASSOCIATED WITH MOVEMENT OF CONSTRUCTION VEHICLES

- Large construction vehicles will invariably create noise, dust and disruptions to traffic on the main roads leading to the site.
- The most severe adverse effects can be damage to tarred roads.
- Additionally, neglect on the part of drivers can result in traffic accidents.
- The SIA notes that movement between communities is low due to an under-developed transport system and therefore would foresee a low probability of community members being endangered as a result of the construction traffic.

Nature: Potential impact on local farmers associated with vehicle movements during construction phase[8]		
	Without Mitigation	With Mitigation
Duration	Short Term	Short Term
Magnitude	Medium	Low
Probability	Probable	Probable
Significance	Low	Low
Status	Negative	Negative
Reversibility	Yes, if project company is held liable	Yes, if project company is held liable
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated	
Mitigation: See below		
Cumulative impacts: Impacts on farm operations due to damaged infrastructure		
Residual impacts: Impacts may extend to neighbouring farmers if not adequately contained		

[8] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

ASSESSMENT OF NO-GO OPTION

The no-go option is optimal for preserving infrastructure in current form, however it does not result in any upgrades and therefore presents no additional benefit.

RECOMMENDED ENHANCEMENT MEASURES

It is critical to ensure that the project company can be held liable for any infrastructure damage that is directly linked to construction. In this way, they will assume a greater level of responsibility and claims can be duly made against them in cases of neglect.

4.4.10 DAMAGE TO AND LOSS OF FARMLAND

Erecting a 20-year power generation facility on the site may result in the long-term loss of farming and/ grazing land on a plot of this nature. In this case, the following pertains:

- Currently, the landowner uses the plot designated for the power plant for the grazing requirements of livestock.
- The total size of his property is 740 hectares.
- The project will occupy 250 hectares.
- Should the project go ahead, the farmer will have sufficient land to move the livestock to a different area of the farm for grazing.

Nature: Potential impact on local farmers associated with damage to and loss of farm land to the construction phase[9]		
	Without Mitigation	With Mitigation
Duration	Long Term	Long Term
Magnitude	Low	Low
Probability	Probable	Probable
Significance	Low	Low
Status	Negative	Negative
Reversibility	Yes, at decommissioning of the power plant	Yes, at decommissioning of the power plant
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, per the current plan to move livestock.	
Mitigation: See below		
Cumulative impacts: Livestock population to be managed by farmer to avoid future problems.		
Residual impacts: Possible loss of income from livestock farming should farmer be unable to grow the business due to power plant's land use. However, the rental generated from the power plant will certainly outweigh any revenue lost from livestock.		

[9] **Generic Effects Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

ASSESSMENT OF NO-GO OPTION

No go results in continued livestock farming, without interruption.

RECOMMENDED ENHANCEMENT MEASURES

Moving the livestock to a different grazing site as planned, will ameliorate all risks.

4.5 SOCIAL ISSUES ASSOCIATED WITH THE OPERATION PHASE

The operational phase is associated with the following key potential positive and negative social issues.

Potential positive impacts:

- Creation of employment and business opportunities.
- Benefits associated with the additional funding available for socio-economic and/or enterprise development measures;
- Benefits associated with the establishment of a legal entity representing allocated beneficiary community (such as a community trust);
- Impact on tourism;
- The establishment of renewable energy infrastructure.

Potential negative impacts:

- The visual impacts and associated impact on sense of place;
- Potential impact on tourism;
- Influx of job seekers to the area;
- Loss of farm labour.

4.5.1 CREATION OF EMPLOYMENT AND BUSINESS OPPORTUNITIES

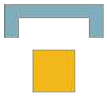
The power plant's 20-year license provides the perfect platform for long-term employment creation and business development through procurement. As a result, it has the potential to sustain a large number of families and critically, to catalyse additional industries in order to sustain the development gains, post decommissioning.

The power plant is anticipated to employ 50 people per annum during its operations phase. These people are likely to be employed through 3 key contractors, businesses which will grow as a result of doing business with the power plant: landscaping; security and cleaning.

Nature: Creation of employment and business opportunities during the Operations phase		
	Without Mitigation	**With Enhancement**
Extent- Localness	Local – Regional	Local – Regional
Duration	Short Term	Short Term
Magnitude	Low	Low
Probability	Highly probable	Highly probable
Significance	Medium	Medium
Status	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impact be enhanced?	Yes	
Enhancement : See below		
Cumulative impacts: Opportunity to up-grade and improve skills levels in the area.		
Residual impacts: Improved pool of skills and experience in the local area.		

ASSESSMENT OF NO-GO OPTION

No-go is undesirable as it denies the opportunity a clear development opportunity.



4.5.2 BENEFITS ASSOCIATED WITH THE ADDITIONAL FUNDING AVAILABLE FOR SOCIO-ECONOMIC AND/OR ENTERPRISE DEVELOPMENT MEASURES

The community will receive annual funds towards the following causes:

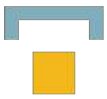
- Health
- Education
- Employment creation
- Enterprise support

Nature: Potential impact on community owing to SED and ED funding [10]		
	Without Mitigation	With Mitigation
Duration	Long-term	Long-term
Magnitude	High	High
Probability	Probable	Probable
Significance	High	High
Status	Positive	Positive
Reversibility	NA	NA
Irreplaceable loss of resources?	NA	NA
Can impact be mitigated?	NA	
Mitigation: See below		
Cumulative impacts: The community can invest in long-term development projects from dividends earned		
Residual impacts: The community will gain administrative autonomy in determining their own development trajectory		

ASSESSMENT OF NO-GO OPTION

No-go is undesirable as it denies the opportunity a clear development opportunity.

[10] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)



4.5.3 BENEFITS ASSOCIATED WITH THE ESTABLISHMENT OF A LEGAL ENTITY REPRESENTING ALLOCATED BENEFICIARY COMMUNITY

The community will benefit tremendously should it become a shareholder in the facility as a result of its proximity to the site. As a shareholder, it will be entitled to dividends yet protected from the fiduciary pitfalls that would otherwise result from mismanagement. In this way, the community will score

Nature: Potential impact on community owing to establishment of community trust [11]		
	Without Mitigation	With Mitigation
Duration	Long-term	Long-term
Magnitude	High	High
Probability	Probable	Probable
Significance	High	High
Status	Positive	Positive
Reversibility	NA	NA
Irreplaceable loss of resources?	NA	NA
Can impact be mitigated?	NA	
Mitigation: See below		
Cumulative impacts: The community can invest in long-term development projects from dividends earned		
Residual impacts: The community will gain administrative autonomy in determining their own development trajectory		

ASSESSMENT OF NO-GO OPTION

No-go is undesirable as it denies the opportunity a clear development opportunity.

[11] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

4.5.5 ESTABLISHMENT OF RENEWABLE ENERGY INFRASTRUCTURE

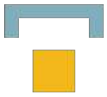
- The renewable energy infrastructure places this project at the heart of the national strategy to increase power supply as well as reduce power generation impacts on climate.
- The power plant's location also uniquely connects the local community to skills for this sector, thus improving their employability.

Nature: Potential impact of establishing renewable energy infrastructure[12]		
	Without Mitigation	With Mitigation
Duration	Long-term	Long-term
Magnitude	High	High
Probability	Probable	Probable
Significance	High	High
Status	Negative	Negative
Reversibility	Yes, if power plant is decommissioned without long-term strategy	No, if SED/ED funds are used to spur on development
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated	
Mitigation: NA		
Cumulative impacts: The community will acquire financial and human capital through establishment of power plant		
Residual impacts: Creation of energy-related businesses and other local service providers foor O&M needs.		

ASSESSMENT OF NO-GO OPTION

The no-go option is highly undesirable as it denies the community and country, a lucrative development opportunity.

[12] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)



4.5.6 THE VISUAL IMPACTS AND ASSOCIATED IMPACT ON SENSE OF PLACE

The solar panels and related parts will have an impact on the appearance of the landscape. However, given that these ground-mounted panels will not be very high, the impact will be low if not negligible.

Nature: Potential impact on the visual landscape[13]		
	Without Mitigation	With Mitigation
Duration	Long Term	Long Term
Magnitude	Low	Low
Probability	Probable	Probable
Significance	Low	Low
Status	Negligible	Negligible
Reversibility	Yes, at decommissioning	Yes, at decommissioning
Irreplaceable loss of resources?	No	No
Can impact be mitigated?	Yes, to some degree. However, the risk cannot be eliminated	
Mitigation: See below		
Cumulative impacts: None		
Residual impacts: The visible nature of the panels may draw some interest, primarily from curious passers by.		

ASSESSMENT OF NO-GO OPTION

Without the project, the landscape remains as is. The community also loses out on the ability to revive their sense of identity given their unique positioning as one of SA's few energy communities.

[13] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

4.6 ASSESSMENT OF NO-DEVELOPMENT OPTION

The No-Development option would mean that the electricity generated through renewable sources, in this case solar energy, is not generated and fed into the national electricity grid. In the given and described policy context, this would represent a negative social and environmental cost.

In addition, the employment opportunities associated with the construction and operational phase, as well as the benefits associated with the additional funding for socio-economic and enterprise development measures and the established local ownership entity representing beneficiary communities would be forgone.

Nature: The no-development option would result in the lost opportunity for South Africa to supplement is current energy needs with renewable energy.[14]		
	Without Mitigation	With Mitigation
Extent	Local-International (4)	Local-International (4)
Duration	Long term (4)	Long term (4)
Magnitude	Moderate (6)	Moderate (6)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Medium (54)	Medium (54)
Status	Negative	Positive
Reversibility	Yes	
Irreplaceable loss of resources?	Yes, impact of climate change on ecosystems	
Can impact be mitigated?	Yes	
Enhancement: The development of the proposed WEF would represent an enhancement measure. However, the impact of large facilities on the sense of place and landscape are issues need to be addressed in the location, design and layout of the proposed plant.		
Cumulative impacts: Reduce carbon emissions via the use of renewable energy and		

[14] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

associated benefits in terms of global warming and climate change.
Residual impacts: Not applicable

4.7 CUMMULATIVE IMPACT ON SENSE OF PLACE

The establishment of the facility will be a game-changing event for the community and local municipality. It'll result in the following impacts, in varying degrees:

- People
    - Skills development
    - Employment
    - Renewed sense of hope
    - Improved social outcomes owing to SED investments:
        - Health
        - Education
        - Economic participation
    - Social cohesion for the community beneficiaries
    - Increased sense of prestige for the community and town
- Planet
    - Increased power supply for the country, with less damage to the planet as a consequence.
- Profit
    - Increased revenue for local municipality
    - Increased economic activity in local community and broader municipality
    - Investment in social and commercial infrastructure to increase economic activity.

4.8 ASSESSMENT OF DECOMMISSIONING PHASE

The social impact of decommissioning the Grootpoort PV project is likely to be significant. While the relatively small number of people employed during the operational phase (50), the associated funding available for community projects and benefits are significant and expected to end with decommissioning of the plant. With mitigation however, the impacts are assessed to be low.

The proponent should inform and discuss the stakeholder and wider community involved and affected in the governance, management and implementation of community funds about the decommissioning of the energy project. This communication needs to be timed well in advance of the decommissioning, allowing all relevant parties to prepare. Further consideration is required to develop strategies for rehabilitation of the land.

SECTION 5: CONCLUSIONS AND IMPACT STATEMENT

5.1 CONCLUSIONS AND RECOMMENDATIONS

The project represents an important development opportunity for the communities surrounding Grootpoort PV. Should it be approved, it will not only supply the national grid with much needed clean power, but will also achieve the following for social upliftment:

- Increase educational attainment of local youth through a bursary programme funded through SED.
- Increase the number of job-creating enterprises funded through ED.
- Improve key infrastructure identified by the community such as housing and roads.
- Increase the skills levels of local community.
- Lead to lasting economic development gains for the local community and province.

5.2 IMPACT STATEMENT

The following positive impacts are noted as the primary case for approving the Grootpoort PV project:

- Up to 100MW to be supplied to the national grid.

- 350 jobs to be created.

- At least 50% of the jobs created to be for local community members.

- Skills transfer from foreign to local staff.

- At least 40% of the total project value to be procured from South African businesses.

- At least 0.6% of annual revenue to be dedicated to local enterprise development.

-At least 1% of annual revenue to be dedicated to local socio-economic development.

ANNEX A

REFERENCES AND SOURCES

POLICY AND PLANNING DOCUMENTS

- National Energy Act (No. 34 of 2008)
- National White Paper on Renewable Energy (2003)
- National Integrated Resource Plan for Electricity (2010, 2013 draft)
- National Development Plan (2013)
- Republic of South Africa, Department Government Communication and Information System. South Africa Yearbook 2014/15
- Department of Energy, State of Renewable Energy in South Africa, 2015
- Free State Provincial Spatial Development Framework , Phase 3/3rd Draft Report (2013)
- Housing Development Agency, Free State: Informal settlements Status (2013)
- Free State Overview of Provincial Revenue and Expenditure 2012/13 (2013)

Relevant policy and planning documents on district level include:

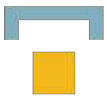
- Xhariep Integrated Development Plan 2012-2017
- Ka Seme District Municipality Integrated Development Plan 2015/16
- Renosterberg Local Municipality Integrated Development Plan 2014/15 (draft)
- Letsemeng Local Municipality Integrated Development Plan 2014/15
- Kopanong Local Municiaplity Integrated Development Plan 2014/15

WEBSITES

- http://northerncapepsdf.co.za/
- http://greencape.co.za/
- http://www.fdc.co.za/about-the-free-state/energy

FURTHER SOURCES

- http://greencape.co.za/assets/Uploads/GreenCape-MIR-Renewable-Energy.pdf
- http://www.infrastructurene.ws/2014/08/07/new-renewable-energy-centre-of-excellence-launched/



- http://northerncapepsdf.co.za/wp-content/uploads/Northern_Cape_PSDF_22_August_2012.pdf

ANNEX B

ASSESSMENT METHODOLOGY FOR THE ASSESSMENT OF POTENTIAL IMPACTS[15]

Direct, indirect and cumulative impacts of the above issues, as well as all other issues identified will be assessed in terms of the following criteria:

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, where it will be indicated whether the impact will be local (limited to the immediate area or site of development), regional, national or international. A score between 1 and 5 will be assigned as appropriate (with a score of 1 being low and a score of 5 being high).
- The **duration**, where it will be indicated whether:
    - the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
    - the lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
    - medium-term (5–15 years) – assigned a score of 3;
    - long term (> 15 years) - assigned a score of 4; or
    - permanent - assigned a score of 5.
- The **magnitude**, quantified on a scale from 0-10, where a score is assigned:
    - 0 is small and will have no effect on the environment;
    - 2 is minor and will not result in an impact on processes;
    - 4 is low and will cause a slight impact on processes;
    - 6 is moderate and will result in processes continuing but in a modified way;
    - 8 is high (processes are altered to the extent that they temporarily cease); and

[15] **Generic Standards Text from:** Barbour, T And Rogatschnig, D (2012): Social Impact Assessment For Proposed Valleydora Photovoltaic Power Plant Free State Province (Draft Report)

- 10 is very high and results in complete destruction of patterns and permanent cessation of processes.

- The **probability** *of occurrence*, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale, and a score assigned:
  - Assigned a score of 1–5, where 1 is very improbable (probably will not happen);
  - Assigned a score of 2 is improbable (some possibility, but low likelihood);
  - Assigned a score of 3 is probable (distinct possibility);
  - Assigned a score of 4 is highly probable (most likely); and
  - Assigned a score of 5 is definite (impact will occur regardless of any prevention measures).
- The **significance**, which shall be determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high.
- The **status**, which will be described as either positive, negative or neutral.
- The *degree* to which the impact can be *reversed*.
- The *degree* to which the impact may cause *irreplaceable loss of resources*.
- The *degree* to which the impact can be *mitigated*.
- The **significance** is determined by combining the criteria in the following formula: S=(E+D+M)P; where S = Significance weighting E = Extent D = Duration M = Magnitude P = Probability

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

· < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),

· 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),

· > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).