

KIARA PV CLUSTER FACILITY AND ASSOCIATED INFRASTRUCTURE

North West Province

Social Assessment - Baseline Scoping Report

June 2022

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REPORT DETAILS

Title	:	Social Impact Assessment (SIA) Scoping Report: Kiara PV Cluster Facility and associated Infrastructure
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Client	:	Voltalia South Africa (Pty) Ltd
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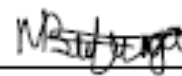
SPECIALIST DECLARATION OF INTEREST

I, Nondumiso Bulunga, declare that –

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

Nondumiso Bulunga

Name



Signature

17 June 2022

Date

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ACRONYMS

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

1. INTRODUCTION AND PROJECT DESCRIPTION

The Applicant, Voltalia South Africa (Pty) Ltd, is proposing the construction of seven (7) PV solar energy facilities & a grid connection to be assessed through separate Environmental Impact Assessment (EIA) processes and to be known as the Kiara PV1, Kiara PV2, Kiara PV3, Kiara PV4, Kiara PV5, Kiara PV6 and Kiara PV7 facilities. The facilities will be connected to the national grid via a new overhead power line connecting to the existing Watershed Substation. The projects are proposed to be located on a site approximately 16km north east of the town of Lichtenburg in the North West Province. The nature and extent of the seven solar PV facilities are explored in more detail in this Background Information Document (BID).

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

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

1.1. Project Description

The Kiara PV Cluster Facility is located on the following properties:

PV Facility, including associated facility and grid connection infrastructure¹	» Portion 2 of the Farm Hollaagte No. 8
	» Remaining Extent of the Farm Hollaagte No. 8

A project site considered to be suitable for the development of seven solar PV facilities, with an extent of approximately 856.5ha hectares in total, was identified by the project developer. The facility development area will be evaluated in the Scoping phase to identify sensitivities. Site-specific studies and assessments will delineate areas of potential sensitivity within the identified study area. Once constraining factors have been confirmed, the layout of the solar PV facilities within the development areas can be planned to minimise social and environmental impacts.

The infrastructure associated with the PV facilities includes:

- » Solar PV array comprising PV modules and mounting structures
- » Inverters and transformers
- » Cabling between the panels
- » 132kV onsite facility substation
- » Cabling from the onsite substation to the collector substation (either underground or overhead).
- » Electrical and auxiliary equipment required at the collector substation that serves the solar energy facility, including switchyard/bay, control building, fences, etc.
- » Battery Energy Storage System (BESS)

¹ Two alternative locations for the grid connection infrastructure have been provided for assessment.

- » Site and internal access roads (up to 8m wide)
- » Site offices and maintenance buildings, including workshop areas for maintenance and storage.
- » Temporary and permanent laydown area

To avoid areas of potential sensitivity and to ensure that potential detrimental environmental impacts are minimised as far as possible, the developer will identify a suitable development footprint within which the infrastructure of Kiara PV Cluster Facility and its associated infrastructure is proposed to be located and fully assessed during the EIA Phase.

1.2. Objective of the Scoping Process

This SIA Report has been prepared as part of the Scoping Process being undertaken for Kiara PV Cluster Facility and associated infrastructure. The purpose of this SIA Report is to provide details on the nature and extent of Kiara PV Cluster Facility and associated infrastructure, and the potential social impacts associated with the construction, operation, and decommissioning of the project. The inputs contained within this SIA Report are intended to provide a high-level overview of the social environment within which the project is proposed and set the scene for issues which will be addressed in detail as part of the EIA Phase specialist investigations.

The objective of this SIA Report is therefore to:

- » Identify and review policies and legislation which may have relevance to the activity from a social perspective.
- » Provide comment on the need and desirability of the proposed activity from a social perspective.
- » Identify potential impacts and risks associated with the preferred activity and technology alternatives.
- » Identify key social issues to be addressed in the EIA phase.
- » Agree on the level of assessment to be undertaken, including the methodology to be applied to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site.

1.3. Details of the Independent Specialist

This SIA Report has been undertaken by Nondumiso Bulunga of Savannah Environmental. Dr Neville Bews has undertaken an external review of this SIA and has provided an external reviewer's letter. This letter is attached as **Appendix C**.

- » **Nondumiso Bulunga** – holds a master's degree in advanced Geographical Information System and has eight years of experience in the environmental field. Her key focus is on environmental and social impact assessments, public participation, stakeholder engagement environmental management screening as well as mapping using ArcGIS for a variety of environmental projects.
- » **Dr Neville Bews** is a Senior Social Scientist and Human Resource professional at Dr. Neville Bews & Associates. Dr. Bews has a Doctorate in Literature and Philosophy (D. Litt. et Phil) from the Rand Afrikaans University (RAU) (now the University of Johannesburg (UJ)), and 37 years of experience in the fields of Social Impact Assessment and Research, and Human Resource Management. Dr. Bews has worked on a number of large infrastructure, mining and water resource projects.

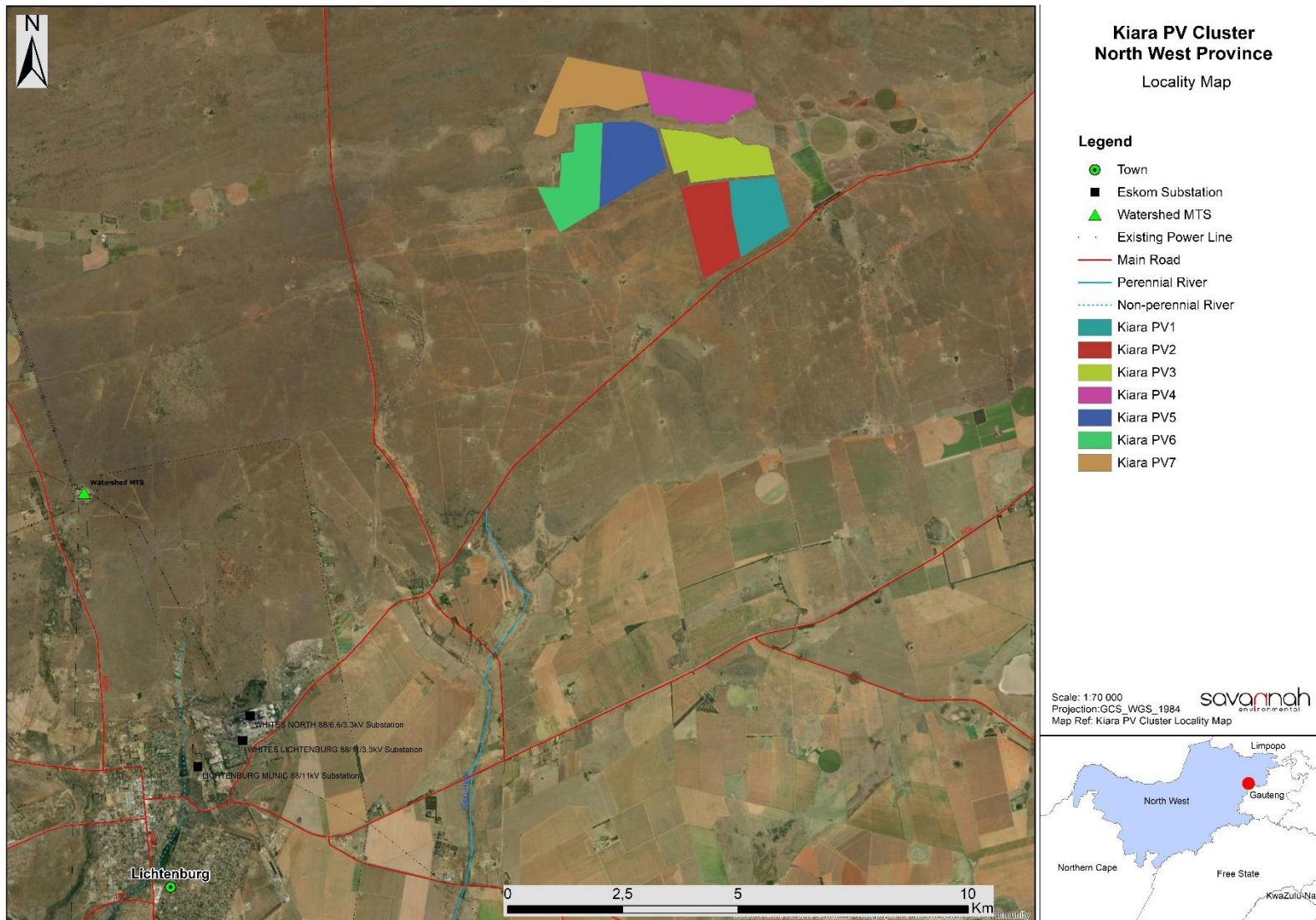


Figure 1-1: Locality map illustrating the locations of the Kiara PV Cluster Facility development areas.

1.4. Structure of the SIA Report

This SIA Report has been structured as follows:

- » **Chapter 1** provides the introduction to the proposed project and the project description.
- » **Chapter 2** provides an overview of the methodology and approach utilised in preparing this SIA Report.
- » **Chapter 3** provides an overview of the legislative and policy environmental within which Kiara PV Cluster Facility is proposed.
- » **Chapter 4** provides the socio-economic profile of the Ditsobotla Local Municipality, Ngaka Modiri Molema District, North West Province, and South Africa as a whole.
- » **Chapter 5** describes the potential social impacts which have been identified for the project and which will be assessed in more detail as part of the EIA.
- » **Chapter 6** provides the conclusion of the scoping study and recommendations for further study to be incorporated into the Plan of Study for EIA to be approved by Department of Forestry, Fisheries and the Environment (DFFE).

2. METHODOLOGY AND APPROACH

2.1. Purpose of the Study

The International Principles for Social Impact Assessment define SIA as:

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

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

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

The purpose of this SIA Process is therefore to:

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

2.2. Approach to the Study

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

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

The SIA process comprised the following:

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

2.2.1. Collection and Review of Existing Information

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

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

2.3. Limitations and Assumptions

- » Data derived from the 2011 Census, North West Provincial Development Plan (PDP), 2030 (2013), North West Provincial Growth and Development Strategy (PGDS) (2004 – 2014), Renewable Energy Strategy for the North West Province (2012), North West Provincial Spatial Development Framework (2017), Ngaka Modiri Molema District Municipality Integrated Development Plan (IDP), 2017 – 2022, and Ditsobotla Local Municipality Integrated Development Plan (IDP), 2017 – 2018 was used to generate the majority of information provided in the baseline profile of the study area. The possibility therefore exists that the data utilised may be out of date, and may not provide an accurate reflection of the current status quo.
- » This SIA Report is intended to provide an overview of the current social environmental and assist in the identification of potential social impacts which require further investigation as part of the EIA phase. As a result no consultation has been conducted with key stakeholders as part of the Scoping process to date.
- » This SIA Report was prepared based on information which was available to the specialist at the time of preparing the report. The sources consulted are not exhaustive, and the possibility exists that additional

information which might strengthen arguments, contradict information in this report, and / or identify additional information might exist.

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

3. LEGISLATION AND POLICY REVIEW

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

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

National Policy and Planning Context:

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

Provincial Policy and Planning Context:

- » North West Provincial Development Plan (PDP) 2030 (2013)
- » North West Provincial Growth and Development Strategy (PGDS) 2004 – 2014
- » Renewable Energy Strategy for the North West Province (2012)
- » North West Provincial Spatial Development Framework (PSDF) (2017)

Local Policy and Planning Context:

- » Ngaka Modiri Molema District Municipality Integrated Development Plan (IDP) 2017 – 2022
- » Ditsobotla Local Municipality Integrated Development Plan (IDP) 2017 – 2018

3.1. National Policy and Planning Context

Any project which contributes positively towards the objectives mentioned within national policies could be considered strategically important for the country. A review of the national policy environment suggests that the connection infrastructure is considered integral to contributing towards social upliftment and economic development, even if only limited in extent.

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

Table 3.1: Relevant national legislation and policies for the Kiara PV Cluster Facility

Relevant legislation or policy	Relevance to the proposed project
Constitution of the Republic of South Africa, 1996	Section 24 of the Constitution pertains specifically to the environment. It states that Everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected, for the benefit of present and future generations, through

Relevant legislation or policy	Relevance to the proposed project
	<p>reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p> <p>The Constitution outlines the need to promote social and economic development. Section 24 of the Constitution therefore requires that development be conducted in such a manner that it does not infringe on an individual's environmental rights, health, or well-being. This is especially significant for previously disadvantaged individuals who are most at risk to environmental impacts.</p>
<p>National Environmental Management Act (No. 107 of 1998) (NEMA)</p>	<p>This piece of legislation is South Africa's key piece of environmental legislation, and sets the framework for environmental management in South Africa. NEMA is founded on the principle that everyone has the right to an environment that is not harmful to their health or well-being as contained within the Bill of Rights.</p> <p>The national environmental management principles state that the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</p> <p>The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.</p>
<p>White Paper on the Energy Policy of the Republic of South Africa (1998)</p>	<p>The White Paper on Energy Policy places emphasis on the expansion of energy supply options to enhance South Africa's energy security. This can be achieved through increased use of RE and encouraging new entries into the generation market. South Africa has an attractive range of cost effective renewable resources, taking into consideration social and environmental costs. Government policy RE is thus concerned with meeting the following challenges:</p> <ul style="list-style-type: none"> » Ensuring that economically feasible technologies and applications are implemented. » Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options. » Addressing constraints on the development of the renewable industry. <p>The policy states that the advantages of RE include; minimal environmental impacts during operation in comparison with traditional supply technologies, generally lower running costs, and high labour intensities. Disadvantages include; higher capital costs in some cases; lower energy densities; and lower levels of availability, depending on specific conditions, especially with sun and wind based systems. Nonetheless, renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The White Paper on Energy Policy therefore supports the advancement of RE sources and ensuring energy security through the diversification of supply.</p>
<p>National Energy Act (No.34 of 2008)</p>	<p>The purpose of the National Energy Act (No. 34 of 2008) is to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation; while taking environmental management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies (REs). The objectives of the Act, are to amongst other things, to:</p> <ul style="list-style-type: none"> » Ensure uninterrupted supply of energy to the Republic.

Relevant legislation or policy	Relevance to the proposed project
	<ul style="list-style-type: none"> » Promote diversity of supply of energy and its sources. » Facilitate energy access for improvement of the quality of life of the people of the Republic. » Contribute to the sustainable development of South Africa's economy. <p>The National Energy Act therefore recognises the significant role which electricity plays growing the economy while improving citizens' quality of life. The Act provides the legal framework which supports the development of RE facilities for the greater environmental and social good, and provides the backdrop against which South Africa's strategic planning regarding future electricity provision and supply takes place. It also provides the legal framework which supports the development of RE facilities for the greater environmental and social good.</p>
<p>Integrated Energy Plan (IEP) (2016)</p>	<p>The Integrated Energy Plan (IEP) (which was developed under the National Energy Act (No. 34 of 2008)), recognises that energy is essential to many human activities, and is critical to the social and economic development of a country. The purpose of the IEP is essentially to ensure the availability of energy resources, and access to energy services in an affordable and sustainable manner, while minimising associated adverse environmental impacts. Energy planning therefore needs to balance the need for continued economic growth with social needs, and the need to protect the natural environment.</p> <p>The IEP is a multi-faceted, long-term energy framework which has multiple aims, some of which include:</p> <ul style="list-style-type: none"> » To guide the development of energy policies and, where relevant, set the framework for regulations in the energy sector. » To guide the selection of appropriate technologies to meet energy demand (i.e. the types and sizes of new power plants and refineries to be built and the prices that should be charged for fuels). » To guide investment in and the development of energy infrastructure in South Africa. » To propose alternative energy strategies which are informed by testing the potential impacts of various factors such as proposed policies, introduction of new technologies, and effects of exogenous macro- economic factors.
<p>National Development Plan 2030 (2012)</p>	<p>The National Development Plan (NDP) 2030 is a plan prepared by the National Planning Commission in consultation with the South African public which is aimed at eliminating poverty and reducing inequality by 2030.</p> <p>In terms of the Energy Sector's role in empowering South Africa, the NDP envisages that, by 2030, South Africa will have an energy sector that promotes:</p> <ul style="list-style-type: none"> » Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation. » Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households. » Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. <p>The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy.</p>

Relevant legislation or policy	Relevance to the proposed project
	<p>The development of the Solar PV Energy Facility and associated infrastructure is considered to be relevant to the NDP due to the need of the infrastructure for economic growth within the Ditsobotla Local Municipality municipal area.</p>
<p>Integrated Resource Plan for Electricity (IRP) 2010-2030 (2011) and subsequent updates</p>	<p>The Integrated Resource Plan for Electricity (IRP) 2010 – 2030 is a subset of the IEP and constitutes South Africa's national electricity plan. The primary objective of the IRP is to determine the long term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing and cost. The IRP also serves as input to other planning functions, including amongst others, economic development and funding, and environmental and social policy formulation.</p> <p>The current iteration of the IRP, led to the Revised Balanced Scenario (RBS) that was published in October 2010. Following a round of public participation which was conducted in November / December 2010, several changes were made to the IRP model assumptions. The document outlines the proposed generation new-build fleet for South Africa for the period 2010 to 2030. This scenario was derived based on a cost- optimal solution for new-build options (considering the direct costs of new build power plants), which was then “balanced” in accordance with qualitative measures such as local job creation.</p> <p>The Policy-Adjusted IRP reflects recent developments with respect to prices for renewables. In addition to all existing and committed power plants, the plan includes 9.6GW of nuclear; 6.25GW of coal; 17.8GW of renewables; and approximately 8.9GW of other generation sources such as hydro, and gas.</p>
<p>Strategic Infrastructure Projects (SIPs)</p>	<p>The Presidential Infrastructure Coordinating Committee (PICC) are integrating and phasing investment plans across 18 Strategic Infrastructure Projects (SIPs) which have the following 5 core functions:</p> <ul style="list-style-type: none"> » To unlock opportunity. » Transform the economic landscape. » Create new jobs. » Strengthen the delivery of basic services. » Support the integration of African economies. <p>A balanced approach is being fostered through greening of the economy, boosting energy security, promoting integrated municipal infrastructure investment, facilitating integrated urban development, accelerating skills development, investing in rural development and enabling regional integration.</p> <p>SIP 8 of the energy SIPs supports the development of RE projects as follow:</p> <ul style="list-style-type: none"> » SIP 8: Green energy in support of the South African economy: <p>Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities.</p> <p>The development of the proposed project is therefore also aligned with SIP 8 as it constitutes a green energy initiative which would contribute clean energy in accordance with the IRP 2010 – 2030.</p>

3.2. Provincial Policies

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

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

Table 3.2: Relevant provincial policies for the Kiara PV Cluster Facility

Relevant policy	Relevance to the proposed project
<p>North West Provincial Development Plan (PDP) 2030 (2013)</p>	<p>The North West Provincial Development Plan (PDP), 2030, is largely based on, and intended to apply the objectives of, the National Development Plan (NDP) 2030. The overall targets of the PDP have been identified as follows:</p> <p>By 2030:</p> <ul style="list-style-type: none"> » Eliminate income poverty: reduce the percentage of the population living in poverty from 46% to 0% in 2030. » Reduce inequality: the Gini coefficient should fall from 0.61 to 0.53. » The targets for poverty reduction and the GINI coefficient compliments the national targets set out for the elimination of poverty and reduction of inequality. » The unemployment rate should fall from 24% in 2010 to 14% by 2020 and to 6% by 2030. This requires an additional 81 5 000 jobs. Total employment should rise from 748 000 to 1 563 000. » The NDP projects that total employment should rise from 13 million to 24 million in South-Africa. 7% of additional jobs that has to be created will be located in the North West Province. By 2030 the North West will be responsible for 6.5% of employment in South-Africa. » The provincial Gross Value Added (GVA) should increase by 2.9 times in real terms. Such growth will require an average annual Gross Value Added (GVA) growth of 5.4%. <p>The development of Kiara PV Cluster Facility has the potential to contribute towards a number of the targets set by the PDP, including:</p> <ul style="list-style-type: none"> » Job creation and increased income, which would have a positive impact on the current unemployment rate, standard of living, levels of inequality, and poverty levels within the Province. » Contribute towards the capita income, and improve on labour force participation rates. » Production of clean energy.
<p>North West Provincial Growth and Development Strategy (PGDS) 2004 - 2014</p>	<p>The North West Provincial Growth and Development Strategy (PGDS) provides a framework for integrated and sustainable growth and economic development for the province and its people. Challenges facing the Province can be summarised as follows: the Province is mostly rural in nature; has a low population density, and relative inadequate infrastructure, especially in the remote rural areas; has inherited an enormous backlog in basic service delivery and maintenance that will take time to eradicate; the population is predominantly poor with high levels of illiteracy and dependency that seriously affect their productivity and ability to compete for jobs; is characterised by great inequalities between the rich and poor as well as disparities between urban and rural; is faced with HIV / AIDS as a social and economic challenge; available resources are unevenly distributed, and there is limited potential for improved delivery of services and growth. From the above, job creation and poverty eradication together with the low level of expertise and skills; stand out as the greatest challenges to be resolved within the Province.</p>

Relevant policy	Relevance to the proposed project
	<p>Goals and objectives of the PGDS are to fight poverty and unemployment, improve the low level of expertise and skills which are classified as both immediate and long term goals and require primary goals for sustained growth and economic development. The proposed solar farm will contribute to employment creation and skills development which is in line with the goals and objectives of the North West PGDS.</p> <p>The North West PGDS aims at building a sustainable economy to eradicate poverty and improve social development. The proposed solar farm will contribute to growth and development of the local area by expanding the economic base and creating employment opportunities.</p>
<p>Renewable Energy Strategy for the North West Province (2012)</p>	<p>In 2012 the North West Province's then Department of Economic Development, Environment, Conservation and Tourism (DEDECT) developed the Renewable Energy Strategy for the North West Province. The strategy was developed in response to the need of the North West Province to participate meaningfully within South Africa's RE sector. The RE strategy aims to improve the North West Province's environment, reduce its contribution to climate change, and alleviate energy poverty, whilst promoting economic development and job creation whilst developing its green economy.</p> <p>According to the strategy the North West Province consumes approximately 12% of South Africa's available electricity, and is rated as the country's fourth largest electricity consuming province. This is mainly due to the high demand of the electrical energy-intensive mining and related industrial sector, with approximately 63% of the electricity supplied to the province being consumed in its mining sector.</p> <p>While the strategy recognises that South Africa has an abundance of RE resources available, it is cognisant of the fact that the applicability of these RE resources depend on a number of factors and as a result are not equally viable for the North West Province. The RE sources that were identified to hold the most potential and a competitive strength for the North West Province are Solar Energy (photovoltaic as well as solar water heaters), Municipal Solid Waste, hydrogen and fuel cell technologies, bio-mass, and energy efficiency.</p> <p>The advantages and benefits for the North West Province associated with the implementation and use of RE technologies include:</p> <ul style="list-style-type: none"> » Provision of energy for rural communities, schools and clinics that are far from the national electricity grid. » Creation of an environment where access to electricity provides rural communities with the opportunity to create an economic base via agricultural and home-based industries and Small, Medium and Micro Enterprises (SMMEs) in order to grow their income-generating potential. » The supply of water within rural communities. » It would result in less time taken for the collection of wood and water, thus improving the quality of life within communities and specifically for women. » Improved health through the reduced use of fuelwood as energy source for cooking and heating that causes respiratory and other hazards. » Solar water heating for households in urban and rural settings, reducing the need for either electricity (in urban settings) and fuelwood (in rural settings) to heat water, thus lowering our National peak demand and conservation of woodlands in a sustainable manner. » Large-scale utilisation of renewable energy will also reduce the emissions of carbon dioxide, thus contributing to an improved environment.

Relevant policy	Relevance to the proposed project
	<ul style="list-style-type: none"> » The fact that RE go hand-in-hand with energy efficiency, it will result in additional financial benefit and the need for smaller RE systems. » The development of a strong localised RE industry within the NWP holds substantial potential for Black Economic Empowerment (BEE) and job creation within the Province. » The establishment of a strong RE base in the North West Province, especially in the manufacturing of fuel cells could stimulate the market for Platinum Group Metals (PGM), which would in turn help the local mining sector. <p>This is due to RE sources having considerable potential for increasing security of supply by diversifying the energy supply portfolio and increasingly contributes towards a long-term sustainable energy future. In terms of environmental impacts, RE results in the emission of less GHGs than fossil fuels, as well as fewer airborne particulates, and other pollutants. Furthermore, RE generation technologies save on water consumption in comparison with coal-fired power plants.</p>
<p>North West Provincial Spatial Development Framework (2017)</p>	<p>As per the North West Provincial Spatial Development Framework (PSDF) (2017) electricity within the province is primarily provided by Eskom to re-distributors – mainly municipalities (10%), commercial (5%), agriculture (5%), mining (30%), industrial (30%) and Residential (20%). Electricity for supply to the North West Province is mostly generated by Eskom’s Matimba coal-fired Power Station in Limpopo which will in future be augmented by Eskom’s Medupi coal-fired Power Station.</p> <p>According to the North West PSDF the proposed project site is located within the Mahikeng Distribution Area, which is characterised by minor developments, including Commercial, Industrial, and Major Electrification; and has a projected growth of 125MW (Eskom, 2015).</p> <p>Eskom’s Transmission Development Plan 2015 – 2024 represents the transmission network infrastructure investment requirements over the 10 year period between 2015 and 2024. Projects proposed for the North West Province for the next 10 years include the introduction of 400kV power lines and transformation to support or relieve the existing networks. Five transmission power corridors have been identified as critical to providing a flexible and robust network that could respond to meet the needs of future IPPs and IRP requirements.</p>

3.3. District and Local Municipalities Policies

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

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

Table 3.3: Relevant district and local municipal policies for the Kiara PV Cluster Facility

Relevant policy	Relevance to the proposed project
<p>Ngaka Modiri Molema District Municipality Integrated</p>	<p>The vision of the Ngaka Modiri Molema District Municipality as contained within its 2017 – 2022 Integrated Development Plan (IDP) is as follows:</p> <p>“Leaders in integrated municipal governance”.</p>

Relevant policy	Relevance to the proposed project								
<p>Development Plan (IDP), 2017 – 2022</p>	<p>The vision of the Ngaka Modiri Molema District Municipality is:</p> <p>“To provide a developmental municipal governance system for a better life for all”.</p> <p>In recognition of its vision and mission, the Ngaka Modiri Molema District Municipality has adopted the following strategic development goals for the District:</p> <ul style="list-style-type: none"> » Institutional Transformation and Organisational Development. » Provision of Infrastructure for Basic Service Delivery. » Economic Development. » Financial Viability. » Good Governance. <p>With regards to “Economic Development”, the following additional strategic objectives have been identified:</p> <ul style="list-style-type: none"> » To facilitate economic development by creating a conducive environment for business development. » Unlock opportunities to increase participation amongst all sectors of society in the mainstream economy to ultimately create decent job opportunities. » To promote Local Economic Development » To enhance rural development and agriculture » To Expand Public Works Programme <p>The implementation of Kiara PV Cluster Facility would contribute positively towards local economic development as well as the creation of new job opportunities within the Ngaka Modiri Molema District Municipality, and would therefore be in line with these objectives.</p>								
<p>Ditsobotla Local Municipality Integrated Development Plan (IDP), 2017 – 2018</p>	<p>The vision statement for the Ditsobotla Local Municipality as contained within the Integrated Development Plan (IDP) 2017 – 2018 is as follows:</p> <p>“A developmental municipality dedicated to the social and economic upliftment of its communities.” The Mission Statement of the Ditsobotla Local Municipality is as follows: “Sustainable service delivery through: transparent administration, dedicated staff, implementation of municipal programmes, and consultation with communities.”</p> <p>The following key issues and objectives have been identified for the Ditsobotla Local Municipality:</p> <table border="1" data-bbox="373 1565 1461 1998"> <thead> <tr> <th data-bbox="373 1565 916 1601">Key Issue</th> <th data-bbox="916 1565 1461 1601">Key Objective</th> </tr> </thead> <tbody> <tr> <td data-bbox="373 1601 916 1711">The municipality’s financial position is poor due to inadequate capacity as well as poor finance management controls/systems</td> <td data-bbox="916 1601 1461 1711">A fully capacitated municipal administration developing and implementing effective controls.</td> </tr> <tr> <td data-bbox="373 1711 916 1854">The organizational design does not respond to service delivery challenges. There is no adequate capacity in technical functions of the municipality</td> <td data-bbox="916 1711 1461 1854">Capacitated institution structured in a way that enables efficient and effective service delivery.</td> </tr> <tr> <td data-bbox="373 1854 916 1998">High levels of poverty and unemployment, skills shortage, and inequalities within the Ditsobotla Local Municipality.</td> <td data-bbox="916 1854 1461 1998">Create an environment conducive for economic growth, sustainable employment opportunities and growth in personal income levels of communities</td> </tr> </tbody> </table>	Key Issue	Key Objective	The municipality’s financial position is poor due to inadequate capacity as well as poor finance management controls/systems	A fully capacitated municipal administration developing and implementing effective controls.	The organizational design does not respond to service delivery challenges. There is no adequate capacity in technical functions of the municipality	Capacitated institution structured in a way that enables efficient and effective service delivery.	High levels of poverty and unemployment, skills shortage, and inequalities within the Ditsobotla Local Municipality.	Create an environment conducive for economic growth, sustainable employment opportunities and growth in personal income levels of communities
Key Issue	Key Objective								
The municipality’s financial position is poor due to inadequate capacity as well as poor finance management controls/systems	A fully capacitated municipal administration developing and implementing effective controls.								
The organizational design does not respond to service delivery challenges. There is no adequate capacity in technical functions of the municipality	Capacitated institution structured in a way that enables efficient and effective service delivery.								
High levels of poverty and unemployment, skills shortage, and inequalities within the Ditsobotla Local Municipality.	Create an environment conducive for economic growth, sustainable employment opportunities and growth in personal income levels of communities								

Relevant policy	Relevance to the proposed project	
	Backlogs in the provision of social services, infrastructure service delivery and economic opportunities	A well-structured Ditsobotla Local Municipality able to support sustainable human settlement and enable residents meet their social and economic needs,

The implementation of Kiara PV Cluster Facility would contribute towards addressing the Ditsobotla LM's key issue regarding high levels of poverty and unemployment, skills shortage, and inequalities through the creation of employment opportunities, the provision of skills training opportunities, and local economic growth, including growth in personal income levels of those community members who would be employed on the project.

3.4. Conclusion

The review of relevant legislation, policies and documentation pertaining to the energy sector indicate that renewable or green energy (i.e. energy generated by naturally occurring renewable resources) and therefore the establishment Kiara PV Cluster Facility is supported at a national, provincial, and local level, and that the proposed project will contribute positively towards a number of targets and policy aims.

4. SOCIAL PROFILE

Kiara PV Cluster Facility including associated facility and grid connection infrastructure is proposed on Portion 2 of the Farm Hollaagte No. 8 and Remaining Extent of the Farm Hollaagte No. 8 within the Ditsobotla Local Municipality within the Ngaka Modiri Molema District Municipality, North West Province (refer to **Table 4.1**).

Table 4.1: Spatial Context of the study area for the development of the Kiara PV Cluster Facility and associated infrastructure

Province	North West Province
District Municipality	Ngaka Modiri Molema District Municipality
Local Municipality	Ditsobotla Local Municipality
Ward number(s)	16
Nearest town(s)	Lichtenburg (approximately 10km south-east) Bakerville (approximately 14 km north)
Preferred access	The site is accessible via an existing gravel road which provides access to the development area off the R505, located east of the development area.

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

4.1. North West Province

The North West Province is situated in the central-northern extent of South Africa. The Province is bordered by Northern Cape Province to the west, and south-west; Free State Province to the south; Gauteng Province to the east; Limpopo Province to the north-east; and Botswana to the north. It occupies an area of land approximately 104 882km² in extent, making it South Africa's 6th largest in terms of area; and has a population of 3 509 953 (2011) and population density of 33/km² (2011), making it South Africa's 7th most densely populated Province.

The North West Province is characterised by altitudes ranging from 920 - 1782m amsl, which makes it one of the provinces with the most uniform terrain. The central and western extents of the province are characterised by gently undulating plains, while the eastern extent is characterised as mountainous, and includes the Magaliesberg mountain range. Ancient igneous rock formations dominate the north-eastern and north-central extent of the province; and the Gatsrand between Potchefstroom and Carletonville is considered to be one of the most ancient preserved landscapes in the world. The geology of the province is significant given its mineral resources which are rich in platinum, gold, uranium, iron, chrome, manganese and diamonds.

In terms of land use patterns, approximately 69% of the North West Province is in a natural, or near-natural state; while 31% of the province is irreversibly modified as a result of croplands (25.6%), urban (3.5%), and mining (0.7%) activities. The province is predominantly rural with the main economic activities comprising mining and agriculture. The North West Province comprises 4 Districts, namely Bojanala Platinum, Ngaka Modiri Molema, Dr Ruth Segomotsi Mompati, and Dr Kenneth Kaunda (refer to Figure 4-1).

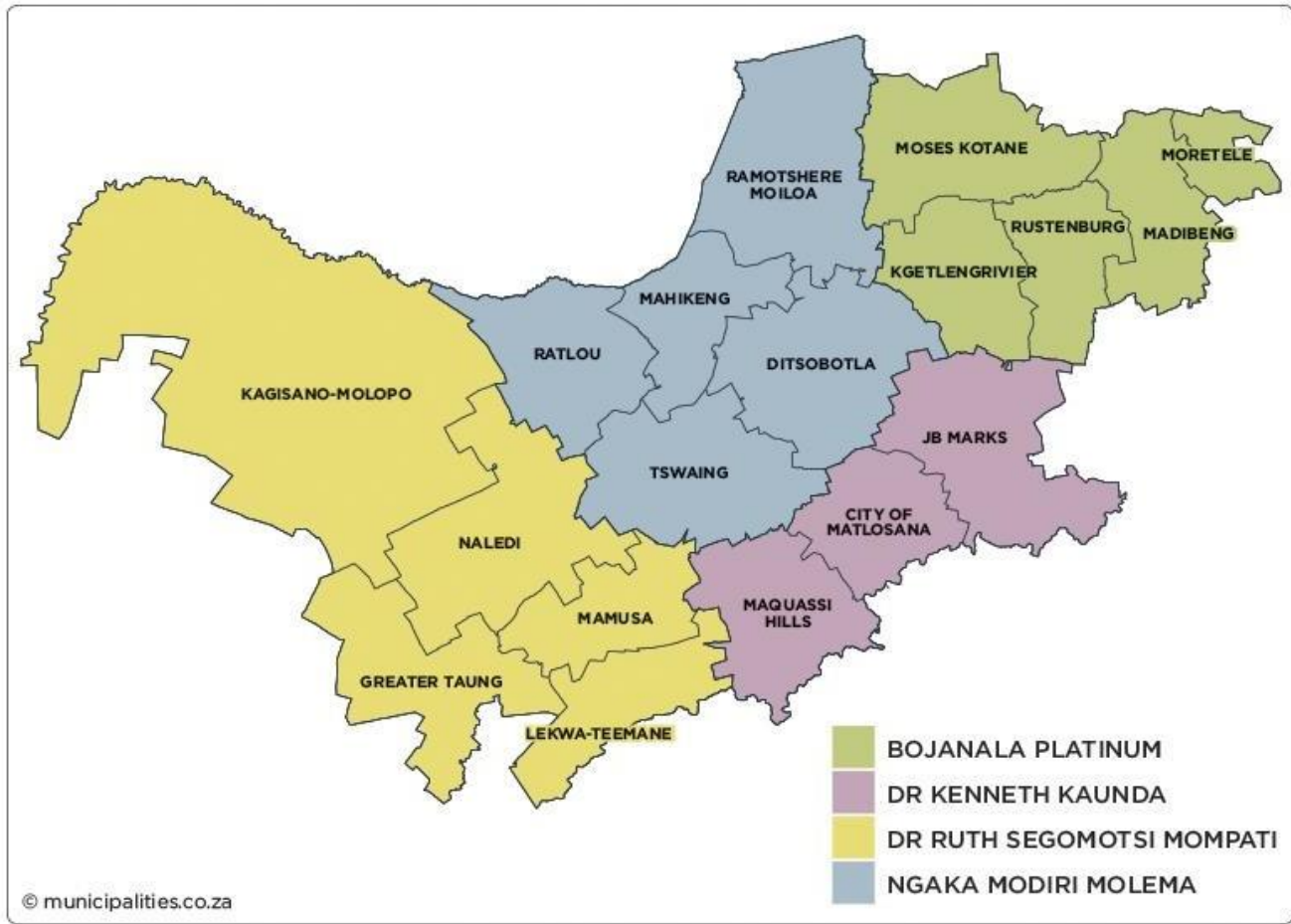


Figure 4-1 Districts under the North West Province

4.2. Ngaka Modiri Molema DM

Ngaka Modiri Molema District is in the north-central extent of the North West Province, and is bordered by Dr Ruth Segomotsi Mompoti District to the west, south-west, and south; Dr Kenneth Kaunda District to the south, and south-east; Bojanala Platinum District to the east; and Botswana to the north. The Ngaka Modiri Molema District occupies an area of land approximately 25 206km² in extent, making it the 2nd largest District in the North West Province; with the second highest population (842 699 in 2011), and 3rd highest population density (30/km² in 2011).

The Ngaka Modiri Molema District is home to Mahikeng (previously Mafikeng), the capital of the North West Province. Other prominent cities and towns found within the District include Biesiesvlei, Coligny, Delareyville, Disaneng, Groot Marico, Kraaipan, Lichtenburg, Madibogo, Mahikeng, Mmabatho, Ottosdal, Ottoshoop, Sannieshof, Setlagole, and Zeerust. The main economic sectors include agriculture, tourism, and mining.

Ngaka Modiri Molema District comprises five Local Municipalities (LMs) namely, Ditsobotla, Mahikeng, Ramotshere Moiloa, Ratlou and Tswaing LMs (refer to Figure 4-2).



Figure 4-2 Local Municipalities under the North West Province

4.3. Ditsobotla LM

Ditsobotla LM is in the south-eastern extent of the Ngaka Modiri Molema District. It is bordered by Ramotshere Moiloa LM to the north; Mahikeng LM to the north-west, and west; Tswaing LM to the south-west; the City of Matlosana LM, and JB Marks LM of Dr Kenneth Kaunda District to the south, and south-east; and Kgetlengrivier LM of Bonjala Platinum District to the north-east. The Ditsobotla LM is approximately 6 387km² in extent, making it the second largest LM in the District; with the 2nd largest population (168 902 in 2011), and 2nd highest population density (26/km² in 2011).

The Ditsobotla LM was established through the amalgamation of the former Lichtenburg, Coligny and Biesiesvlei Transitional Councils. The seat of the Ditsobotla LM is Lichtenburg. Its main attractions include cultural, heritage, and agricultural museums; the burning vlei, which is a unique vlei consisting of the thick layers of subterranean peat that burnt for years, creating a rare natural phenomenon; the Lichtenburg Game Breeding Centre (which has since closed); Eufees and Duch Roode Dams; and Molopo Oog/Wondergat. Major cities and towns found within the Ditsobotla LM include Biesiesvlei, Coligny, and Lichtenburg. The main economic sectors within the municipality include manufacturing (38.5%), agriculture (16.5%), and wholesale and retail (7.4%).

4.4. Project Site

Kiara PV Cluster Facility is proposed on Portion 2 of the Farm Hollaagte No. 8 and Remaining Extent of the Farm Hollaagte No. 8 within Ward 16 of the Ditsobotla Local Municipality, of the Ngaka Modiri Molema District. The closest major town to the project site is Lichtenburg, which is located approximately 10km south-east of the project site. Other towns in proximity of the project site include Bakerville, located approximately 14 km north, and Itsoseng located approximately 24km west of the project site. Mahikeng, the provincial capital, is located approximately 53km north-west of the project site.

Lichtenburg serves as the administrative centre of the Ditsobotla LM. Lichtenburg is located at the centre of the maize triangle, considered to be the primary maize growing area in South Africa, and Lichtenburg's main economic activity is the production of maize (corn). The production of cement is also considered to be a major economic activity with three large cement producers located within 80km of the town. Several factories manufacturing liquid fertilizer, animal feed and agricultural equipment have also been established.

The Lichtenburg area is considered to have a unique historical background and houses a number of places of interest including the Lichtenburg Diggings Museum, Bakerville, the Burning Vlei, Wondergat, and monuments such as the General De la Rey Square.

The surrounding area within which Kiara PV Cluster Facility is proposed is characterised by a number of small holdings which are used for small-scale agriculture (i.e., maize and livestock), residential, and semi-industrial (earth moving and agricultural equipment). Existing built infrastructure is present within and surrounding the study area, some of which are expected to be occupied. It is assumed that these buildings include farm homesteads, workers quarters and warehouses. The vertical and horizontal landscapes are also disturbed due to the presence of linear infrastructure within the surrounding area.

4.5. Baseline Description of the Social Environment

Table 4.2 provides a baseline summary of the socio-economic profile of the Ditsobotla Local Municipality within which Kiara PV Cluster Facility is proposed. In order to provide context against which the Local Municipality's socio-economic profile can be compared, the socio-economic profiles of the Ngaka Modiri Molema District, North West Province, and South Africa as a whole have also been provided where applicable. The data presented in this section have been derived from the 2011 Census, the North West Provincial Spatial Development Framework (PSDF), and the Ngaka Modiri Molema DM and Ditsobotla LM IDPs.¹

Table 4.2: Baseline description of the socio-economic characteristics of the area within which the Kiara PV Cluster Facility

Location characteristics
» The project is proposed within the North West Province, the province located to the west of the major population centre of Gauteng Province.
» The project is proposed within the Ditsobotla LM of the Ngaka Modiri Molema DM.
» The Ditsobotla LM is approximately 6 398.7km ² in extent.
Population characteristics
» Ditsobotla LM has a population of 181 866 which is about one-fifth of the figure in Ngaka Modiri Molema 889,108.
» The LM occupies an area of land approximately 6 465km ² in extent and has a population density of 26/7km ² .
» Between 2001 and 2011 the LM experience a positive population growth of 1.3% per year. This is higher than the DM population growth of 1.0% between 2001 and 2011.

- » According to Census 2011, the significant majority of 89.1% of the Ditsobotla LM population are Black African, followed secondly by 8.2% which are White, 1.9% which are Coloured, and 0.6% which are Indian / Asian. This population structure corresponds to that of the Ngaka Modiri Molema DM, and North West Province.
- » The Ditsobotla LM is slightly male dominated with males making up just over half (50.5%) of the municipal population, and females the remaining 49.5% of the population. This correlates with the Provincial population which is also slightly female dominated (comprising 50.7% males, and 49.3% females), but differs from the District and National populations which are both female dominated.
- » When assessing five-year age groups the largest proportion of the population are between the ages of 0 to 4 years old, with the proportion decreasing uniformly as age increases. There are no significant outliers within any one age group. The age structure of the North West Province and South African national populations are similar to one another, but differ somewhat from that of the Ditsobotla LM and Ngaka Modiri Molema DM.
- » The dependent portion of the population typically comprises youth below 15 years of age which are yet to enter the workforce, and individuals 65 years and older which would typically already have retired from the workforce.
- » The Ditsobotla LM has a dependency ratio of 38.1; implying that for every 100 people within the Ditsobotla LM, over two thirds (i.e. 38.1) of them are considered dependent. This figure is slightly lower than the Ngaka Modiri Molema DM (39.2), but higher than the provincial (35.3) and national (34.5) dependency ratios

Economic, education and household characteristics

- » Approximately 14.7% of the Ditsobotla LM population aged 20 years and older have received no formal form of schooling.
- » The majority of 29.9% of the LM population have received some secondary education (which correlates with the DM, Provincial, and national averages), followed closely by 22.6% which have received some primary schooling. Approximately one fifth (20%) of the LM population have completed Grade 12 / Matric, with 6.8% having received some form of higher / tertiary education.
- » Due to the fact that the majority of almost three quarters (73.2%) of the Ditsobotla LM population have not completed Grade 12 / Matric, it can be expected that a large proportion of the population will either be unskilled or have a low-skill level, and would therefore either require employment in non-skilled or low-skilled sectors; or alternatively would require skills development opportunities in order to improve the skills, and income levels of the area
- » The Ditsobotla LM has an unemployment rate of 28.3%.
- » Of the Ditsobotla LM's labour force (i.e. individuals ages between 15 and 64 years of age) the majority of 43.2% are not economically active.
- » The economically inactive proportion of the Ditsobotla LM's labour force is slightly lower than the DM (47.9%), but higher than the Provincial (40.2%), and national (39.2%) averages.
- » Approximately 14.3% of the Ditsobotla LM's labour force is unemployed.
- » Over two thirds (68.4%) of households within the Ditsobotla LM fall within the low income (poverty level) bracket (i.e. below R38 400 per annum).
- » Approximately one quarter (25.9%) of households within the LM fall within the medium income bracket, while the remaining 5.7% fall within the high income bracket.
- » According to the Ditsobotla LM IDP 2017 – 2018 the LM contributes 22.7% to the DM economy.
- » The finance and business services sector represent the largest contributing sector with a contribution of 24.7%, followed by the trade sector with a contribution of 19.1%, the manufacturing sector which contributes 11.8%, and the general government service which contributes 11.4%.
- » The dominant economic sectors within the LM include finance and business services (25%); wholesale and retail trade, catering and accommodation (19%); manufacturing (12.2%); and general government services (11.5%).
- » The unemployment rate for the LM is fractionally lower than the DM (14.8%), as well as the Provincial (17.1%), and national averages (16.5%).

Services

- » Approximately two thirds (66%) of households within the Ditsobotla LM have access to piped water inside their yard / dwelling which is equivalent to the basic level of service provision.
- » Approximately 23.2% of households receive piped water outside of their yard, while 10.9% have no access to water services

- » The majority of 34.8% of the Ditsobotla LM households make use of the bucket system, followed by 33.7% which have access to and make use of flush or chemical toilets
- » . A quarter (25%) of households within the LM have access to pit latrines, and 6.5% of households have no access to sanitation services
- » Approximately 32 933 (74%) of households within the LM are connected to the electricity grid. The LM has a total backlog of 11 567 (26%) of households without access to electricity.

5. IDENTIFICATION OF POTENTIAL SOCIAL IMPACTS

This Chapter provides an overview of the potential social impacts that have been identified, which may be associated with the development of Kiara PV Cluster Facility. Potential impacts have been identified based on the current understanding of the project and the socio-economic environment within which it is proposed. The potential social impacts identified for the project will be investigated further during the EIA phase.

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

5.1. Potential Social Impacts during the Construction Phase

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

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

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

Table 5.1: Impact assessment on direct and indirect employment opportunities

Impact Creation of direct and indirect employment opportunities and skills development			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Construction of the project will result in the creation of a number of direct and indirect employment opportunities, which will assist in addressing unemployment levels within the area and aid in skills development of communities in the area.	Positive – the creation of employment opportunities will assist to an extent in alleviating unemployment levels within the area.	The impact will occur at a local, regional and national level.	N/A
Description of expected significance of impact At its peak, the construction is likely to result in the creation of approximately 250 – 350 employment opportunities. Of those employment opportunities available, approximately 60% will comprise opportunities for low skilled workers, 25% for semi-skilled workers, and 15% for skilled workers. Skills developed through experience in the construction of the facility will be retained by the community members involved. The impact is likely to be positive, local to national in extent, short-term, and of medium significance			
Gaps in knowledge & recommendations for further study			
Gaps in Knowledge » Collection of information on the exact direct and indirect employment opportunities and skills development opportunities likely to be created during construction			
Recommendation » A local employment policy should be adopted to maximise opportunities made available to the local labour force. » Labour should be sourced from the local labour pool where possible. If the necessary skills are unavailable, labour should be sourced from (in order of preference) the greater Ditsobotla LM, John Ngaka Modiri Molema DM, North- West Province, South Africa, or elsewhere. Where required, training and skills development programmes should be initiated prior to the commencement of the construction phase. » Labour force suppliers should as far as possible be sourced locally. » Where feasible, local suppliers and contractors that are compliant with the Broad-Based Black Economic Empowerment (B-BBEE) criteria, should be used as far as possible to ensure that the benefits resulting from the project accrue, as far as possible, to the local communities which are also likely to be most significantly impacted / affected by the project. » The recruitment selection process should seek to promote gender equality and the employment of women wherever possible. » Proof of skills development must be provided to the upskilled individuals			

Impact Economic multiplier effects			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Economic multiplier effects from the use of local good and services during the construction phase.	Positive – There are likely to be opportunities for local businesses to provide goods and services during the construction phase of development.	The impact will occur at a local and regional .	N/A
Description of expected significance of impact			

Economic multiplier effects from the use of local goods and services opportunities include but are not limited to, the provision of construction materials and equipment, and workforce essentials such as services, safety equipment, ablution, accommodation, transportation and other goods. The increase in demand for goods and services may stimulate local business and local economic development (however locally sourced materials and services may be limited due to availability). There is likely to be a direct increase in industry and indirect increase in secondary businesses. The impact is likely to be positive, local to regional in extent, short-term, and of medium significance.

Gaps in knowledge & recommendations for further study

Gaps in Knowledge

- » Collection of information on capital expenditure to be spent on local good and services

Recommendation

- » A local procurement policy should be adopted to maximise the benefit of the local economy and the existing local SMME's
- » A database of local companies, specifically Historically Disadvantaged Individuals (HDI) which qualify as a potential service providers (e.g. construction companies, security companies, catering companies, waste collection companies, transportation companies etc.) should be created and companies listed thereon should be invited to bid for project-related work where applicable
- » Local procurement must be encouraged along with engagement with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers where feasible.

Impact			
Influx of jobseekers and change in population			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Issue Increased pressure on infrastructure and basic services, and social conflicts during construction as a result of in-migration of people.	Negative – The in-migration of job seekers to the area could result in increased pressure being placed on infrastructure and basic services, and a rise in social conflicts.	The impact will occur at a local level.	N/A
Description of expected significance of impact			
An influx of people looking for employment or other economic opportunities could result in increased pressure being placed on economic and social infrastructure, and a change in the local population. Population change refers to the size, structure, density as well as demographic profile of the local community.			
An influx of jobseekers into an area, could lead to a temporary increase in the level of crime, cause social disruption and put pressure on basic services. It could also potentially create conflict between locals and outsiders due to potential differences in racial, cultural and ethnic composition. A further negative impact that could result due to an influx of jobseekers into an area is an increase in unemployment levels due to an oversupply of available workforce, particularly with respect to semi- and unskilled workers.			
Gaps in knowledge & recommendations for further study			
<u>Gaps in Knowledge</u>			
<ul style="list-style-type: none"> » Collection of information on exact number of employment opportunities likely to occur to the accrue to the local labour versus the number of employment opportunities likely to accrue to non-local workforce and jobseekers. » Mechanisms for employment of local labour and minimisation of in-migration. 			
<u>Recommendation</u>			
<ul style="list-style-type: none"> » Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated. » Develop and implement a local procurement policy which prioritises "locals first" to prevent the movement of people into the area in search of work. 			

- » Engage with local community representatives prior to construction to facilitate the adoption of the local's first procurement policy.
- » Provide transportation for workers (from towns such as Lichtenburg) to ensure workers can easily access their place of employment and do not need to move closer to the project site.
- » Compile and implement a grievance mechanism.
- » Appoint a Community Liaison Officer (CLO) to assist with the procurement of local labour.
- » Prevent the recruitment of workers at the construction site.
- » Implement a method of communication whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.
- » Establish clear rules and regulations for access to the construction site.
- » Appoint a security company and implement appropriate security procedures to ensure that workers do not remain on site after working hours.
- » Inform local community organisations and policing forums of construction activities and times and the duration of the construction phase.

Impact			
Safety and security impacts			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Temporary increase in safety and security concerns associated with the influx of people during the construction phase.	Negative – The in-migration of job seekers to the area could be perceived to result in increased criminal activity.	The impact will occur at a local level.	N/A
<p>Description of expected significance of impact</p> <p>The commencement of construction activities can be associated with an increase in crime within an area. The perceived loss of security during the construction phase of a project due to an influx of workers and / or outsiders to the area (as in-migration of newcomers, construction workers or jobseekers are usually associated with an increase in crime), may have indirect effects such as increased safety and security concerns for neighbouring properties, damage to property, increased risk of veld fire, stock theft, poaching, crime and so forth.</p> <p>The labour force will not permanently reside within the construction site.</p>			
<p>Gaps in knowledge & recommendations for further study</p> <p>Gaps in Knowledge</p> <ul style="list-style-type: none"> » Collection of information on existing crime levels within the area. » Mechanisms for employment of local labour and minimisation of in-migration. <p>Recommendation</p> <ul style="list-style-type: none"> » Working hours should be kept within daylight hours during the construction phase. » Employees should be easily identifiable and must adhere to the security rules of the construction site. » Provide transportation for workers (from towns such as Lichtenburg) to ensure workers do not need to move closer to the construction site. » The perimeter of the main contractor's camp should be appropriately secured to prevent any unauthorised access to the site. The fencing of the site should be maintained throughout the construction period. » The appointed EPC contractor must appoint a security company and ensure appropriate security procedures and measures are implemented. » Access in and out of the construction site should be strictly controlled by a security company. » A Community Liaison Officer (CLO) should be appointed, and a grievance mechanism implemented. A communication protocol should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process. 			

- » The EPC contractor to implement a stakeholder management plan to address neighbouring landowner concerns regarding safety and security. Organisations and policing forums of construction activities and times and the duration of the construction phase.

Impact			
Impacts on daily living and movement patterns			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Temporary increase in traffic disruptions and movement patterns during construction	Negative – An increase in traffic due to construction vehicles and heavy vehicles could create short-term disruptions and safety hazards for current road users.	The impact will occur at a local level.	N/A
Description of expected significance of impact			
Increased traffic due to construction vehicles and heavy vehicles could cause disruptions to road users and increase safety hazards. The use of local roads and transport systems may cause road deterioration and congestion. The impact is likely to be negative, local in extent, short-term, and of low significance given the proximity of the project to existing mining operations within the area.			
Gaps in knowledge & recommendations for further study			
Gaps in Knowledge			
<ul style="list-style-type: none"> » Study and collection on number of vehicle trips anticipated during construction. 			
Recommendation			
<ul style="list-style-type: none"> » Working hours must preferably be restricted to daylight hours during the construction phase. Where deviation of working hours is required it must be approved by the relevant local authorities and surrounding landowners must be notified. » All vehicles must be road worthy and drivers must be licensed, obey traffic rules, follow speed limits and made aware of the potential road safety issues. » Construction vehicles should be inspected regularly by the EPC contractor to ensure their road worthiness. » Adequate and strategically placed traffic warning signs and control measures must be placed along the R505, R503 and gravel farm access roads to warn road users of the construction activities taking place for the duration of the construction phase. Warning signs must be visible at all times, and especially at night and must be maintained throughout the construction phase. » Implement penalties for reckless driving as a way to enforce compliance to traffic rules. » Avoid heavy vehicle activity through residential areas during "peak" hours (when children are taken to school, people driving to work, etc.). » The developer and EPC contractor must ensure that all fencing along access roads is maintained in the present condition or repaired if disturbed or damaged due to construction activities. » The developer and EPC Contractor must ensure that the roads utilised for construction activities are either maintained in the present condition or upgraded if damaged (i.e. wear and tear) due to construction activities. » A protocol for communication must be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process. » Undertake information sessions with the surrounding communities, and affected and adjacent landowners, prior to construction in order to ensure that communities are fully informed of the project to be developed in its final form. This must be undertaken through the appointment of a CLO. 			

Impact			
Nuisance impacts (noise and dust)			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Nuisance impacts in terms of temporary increase in noise and dust, and wear and tear on access roads	Negative – The impact will negatively impact sensitive receptors, and could cause disruptions for neighbouring properties.	The impact will occur at a local level.	N/A

to the site.

Description of expected significance of impact

Nuisance impacts associated with construction related activities include noise, dust, and possible disruption to adjacent properties. Site clearing activities increase the risk of dust and noise being generated, which can in turn negatively impact on adjacent properties. The movement of heavy construction vehicles and construction activities and equipment also have the potential to create noise, as well as impacts on travellers travelling along the R505 national road, and gravel access roads. The primary sources of noise during construction would be from construction equipment, vehicle and truck traffic. Noise levels can be audible over a large distance although are generally short in duration. Dust would be generated from construction activities as well as trucks / vehicles driving on gravel access roads. This impact will negatively impact sensitive receptors. The impact of noise and dust on sensitive receptors can be reduced through the application of appropriate mitigation measures.

Gaps in knowledge & recommendations for further study

Gaps in Knowledge

- » Impact of noise and dust on surrounding landowners.

Recommendation

- » The movement of heavy vehicles associated with the construction phase through populated areas should be timed to avoid weekends, public holidays and holiday periods, where feasible.
- » Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- » A speed limit of 40km/hr should be implemented on gravel roads.
- » Ensure all vehicles are road worthy, drivers are licensed and are made aware of the potential noise and dust issues.
- » A CLO should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.
- » A stakeholder management plan must be implemented by the EPC contractor to address neighbouring farmer concerns regarding safety and security.

Impact

Visual and sense of place impacts

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Intrusion impacts from construction activities will have an impact on the area's "sense of place".	Negative – The project could alter the area's sense of place which could negatively impact on sensitive receptors.	The impact will occur at a local level.	N/A

Description of expected significance of impact

Intrusion impacts such as aesthetic pollution (i.e. building materials, construction vehicles, etc.), noise and light pollution will impact the "sense of place" for the local community. Construction related activities have the potential to negatively impact a local area's "sense of place". Such an impact is likely to be present during the construction phase. It is however expected that the power line will only affect areas and receptors that have already been exposed to other existing grid connection infrastructure (i.e. power lines and substations) and other industrial infrastructure, specifically mining related infrastructure (i.e. for which the sense of place has already been altered).

Gaps in knowledge & recommendations for further study

Gaps in Knowledge

- » Impact of noise and dust on surrounding landowners.

Recommendation

- » Limit noise generating activities to daylight working hours and avoid weekends and public holidays.
- » The movement of heavy vehicles associated with the construction phase should be timed to avoid weekends, public holidays and holiday periods where feasible.

- » Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- » All vehicles must be road-worthy and drivers must be licensed and made aware of the potential road safety issues and need for strict speed limits.
- » Communication, complaints and grievance channels must be implemented and contact details of the CLO must be provided to the relevant local communities.
- » Ensure proper management and tidiness of the construction site.
- » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment.

5.2. Potential Social impacts during the Operation Phase

It is anticipated that the Kiara PV Cluster Facility will operate for approximately 20 years (which is equivalent to the operational lifespan of the project).

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

- » Direct and indirect employment opportunities
- » Visual impact and sense of place impacts
- » Impacts associated with the loss of agricultural land

Impact			
Direct and indirect employment opportunities and skills development			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Creation of direct and indirect employment and skills development opportunities and skills development as a result of the operation of the project.	Positive – The creation of employment opportunities and skills development will assist to an extent in alleviating unemployment levels within the area.	The impact will occur at a local, regional and national level.	N/A
Description of expected significance of impact			
During operation a number of direct full time employment opportunities will be created. Of those employment opportunities created approximately 70% will comprise opportunities for low-skilled workers, 25% will comprise opportunities for semi-skilled workers, and approximately 5% will comprise opportunities for skilled workers. Employment opportunities include safety and security staff, operation and monitoring; and maintenance crew. Maintenance activities will be carried out throughout the lifespan of the project, and will include washing of solar panels, vegetation control, and general maintenance around the solar energy facility. The impact is likely to be positive, local to national in extent, long-term, and of medium significance.			
Gaps in knowledge & recommendations for further study			
Gaps in Knowledge			
» Information on the exact direct and indirect employment opportunities and skills development opportunities likely to be created during construction			
Recommendation			
» Information on exact direct and indirect employment opportunities and skills development programmes likely to be created during operation			
» Labour should be sourced from the local labour pool where possible. If the necessary skills are unavailable, labour should be sourced from (in order of preference) the greater Ditsobotla LM, John Ngaka Modiri Molema DM,			

North- West Province, South Africa, or elsewhere. Where required, training and skills development programmes should be initiated prior to the commencement of the construction phase.

- » Labour force suppliers should as far as possible be sourced locally.
- » Where feasible, local suppliers and contractors that are compliant with the Broad-Based Black Economic Empowerment (B-BBEE) criteria, should be used as far as possible to ensure that the benefits resulting from the project accrue, as far as possible, to the local communities which are also likely to be most significantly impacted / affected by the project.
- » The recruitment selection process should seek to promote gender equality and the employment of women wherever possible.
- » Proof of skills development must be provided to the upskilled individuals

Impact Development of non-polluting, renewable energy infrastructure			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Development of non- polluting, renewable energy infrastructure.	Positive – Increasing the contribution of the RE sector to the local economy would contribute to the diversification of the local economy and provide greater economic stability.	The impact will occur at local, regional, and national levels	N/A
Description of expected significance of impact The generation of renewable energy will contribute to South Africa's electricity market, and may contribute to the diversification of the local economy. The growth in the RE sector as a whole could introduce new skills and development into the area. The impact is likely to be positive, local to national in extent, long-term, and of medium significance.			
Gaps in knowledge & recommendations for further study <u>Gaps in Knowledge</u> » Information on the proposed project's contribution towards diversifying the local economy.			

Impact Contribution to local economic development and social upliftment			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Benefits to the local area from Socio-Economic Development (SED) / Enterprise Development (ED) programmes and community trust from REIPPP Programme social responsibilities.	Positive – The creation of employment opportunities, skills development, and the proposed projects contributions to local economic development will assist to an extent in both alleviating unemployment levels within the area, and improving the quality of life.	The impact will occur at local, regional, and national levels	N/A
Description of expected significance of impact Projects are required to contribute to local economic development in the area. Awarded projects are required to spend a certain amount of their generated revenue (as defined in the agreement with DoE) on Socio-Economic Development (SED) and Enterprise Development (ED) and share ownership in the project company with local communities. The impact is likely to be positive, local to national in extent, long-term, and of high significance.			
Gaps in knowledge & recommendations for further study <u>Gaps in Knowledge</u> » Information on the project's proposed contributions to SED and ED.			

Impact Visual and sense of place impacts			
Issue	Nature of Impact	Extent of Impact	No-Go Areas

Sense of place impacts from a social perspective associated with the operation phase of the solar energy facility and associated infrastructure.	Negative – The project could alter the areas sense of place which could negatively impact on sensitive receptors.	The impact will occur at local level.	N/A
<p>Description of expected significance of impact</p> <p>An area's sense of place is created through the interaction of various characteristics of the environment, including atmosphere, visual resources, aesthetics, climate, lifestyle, culture, and heritage. An area's sense of place is however subjective and largely dependent on the demographics of the population residing within the area and their perceptions regarding trade-offs. For example, while some individuals may prefer not to see any form of infrastructure development, others may be interested in large-scale infrastructure, or engineering projects and consider the impact to be less significant. Such a scenario may be true given that one of the main economic sectors within the area is mining which has altered the landscape from natural to industrial.</p>			
<p>Gaps in knowledge & recommendations for further study</p> <p>Gaps in Knowledge</p> <ul style="list-style-type: none"> » Potential sensitive visual receptors need to be identified. » Visual Impact Assessment to inform impact on sense of place. <p>Recommendation</p> <ul style="list-style-type: none"> » Maintain and manage the infrastructure to be in a good and neat condition to ensure that no degradation of the area and the associated infrastructure servitude takes place and impacts the visual quality of the area. » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment for the change in the general landscape character. 			

<p>Impact</p> <p>Impacts associated with the livestock production</p>			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
The development footprint on which the solar energy facility will be developed will be removed from agricultural production.	Negative – Impacts associated with loss of agricultural land due to occupation of land by the solar energy facility.	The impact will occur at local level.	N/A
<p>Description of expected significance of impact</p> <p>The development of the proposed project on an agricultural property would result in the area of land required to support the development footprint being removed from potential agricultural production. This could have negative implications in terms of food production and security, and could also threaten jobs of workers employed in the agricultural activities.</p>			
<p>Gaps in knowledge & recommendations for further study</p> <p>Gaps in Knowledge</p> <ul style="list-style-type: none"> » The current land use and agricultural potential of the area likely to be removed from agricultural production needs to be determined. <p>Recommendation</p> <ul style="list-style-type: none"> » Keep the project footprint as small as possible. » Avoid interference with current agricultural activities undertaken within the affected properties. 			

6. PLAN OF STUDY FOR EIA PHASE

This SIA focused on the collection of data to provide an understanding of the current social environment associated with the Kiara PV Cluster Facility and grid connection corridor that is proposed and identifying social issues and potential social impacts associated with the development of such a nature.

It is recommended that a detailed SIA be conducted as part of the EIA phase. The following activities should be undertaken as part of this process:

- » Review comments pertaining to social impacts received from members of the public, key stakeholders, and any organ of state during the public review of the Scoping Report. Where applicable, comments received from the DFFE on the Final Scoping Report (FSR), which may pertain to social impacts or have relevance to the SIA, will also be reviewed.
- » Assessing the cumulative impacts of the proposed, approved and authorised renewable projects in the area.
- » Collect primary data during a site visit. Interview directly affected and adjacent landowners, and key stakeholders to obtain primary information related to the project site, social environment, and to gain their inputs on the proposed project and its perceived social impact (positive and /or negative).
- » Update the baseline information with information received during the site visit, as well as any additional information received from the client, or updates to the project description.
- » Assess impacts identified for the project in terms of their nature, extent, duration, magnitude, probability, status, and significance; as well as the degree to which the impact can be reversed, may cause irreplaceable loss of resources, and can be mitigated.
- » Identify mitigation measures with which to reduce negative impacts and enhance positive impacts for inclusion in the Environmental Management Programme (EMPr). As far as possible the mitigation hierarchy of "avoid, minimise, and reduce" will be followed in the mitigation of potential negative impacts.
- » Identify any conditions for inclusion in the Environmental Authorisation (EA).
- » Identify any monitoring requirements for inclusion in the EMPr or EA.
- » Provide a reasoned opinion regarding the acceptability of the project, and whether the proposed project should be authorised.
- » Prepare a SIA Report for inclusion in the EIA Report to be prepared for the project.
- » Subject the SIA Report prepared for the project for inclusion in the EIA Report to external peer review.

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