

KIARA PV CLUSTER FACILITY AND ASSOCIATED INFRASTRUCTURE

North West Province

Social Assessment - Report

August 2022

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REPORT DETAILS

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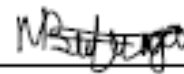
SPECIALIST DECLARATION OF INTEREST

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

04 August 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 solar PV facilities will comprise several arrays of PV panels and associated infrastructure and will range from a contracted capacity of 120MW to 130MW. 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.

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 has been 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).

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

- » 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)
- » 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.

Details of the Independent Specialist

This SIA Report has been undertaken by Nondumiso Bulunga of Savannah Environmental. Tony Barbour 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.
- » **Tony Barbour** is a social specialist who has undertaken in the region of 230 SIA's, including approximately 100 SIA's for a renewable energy projects, including wind and solar energy facilities. All of the SIAs have included as assessment of socio-economic issues. In addition, he is the author of the Guidelines for undertaking SIA's as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa. Tony has also undertaken a number of SIAs for PV facilities within the North West Province and is therefore familiar with the local socio-economic conditions.

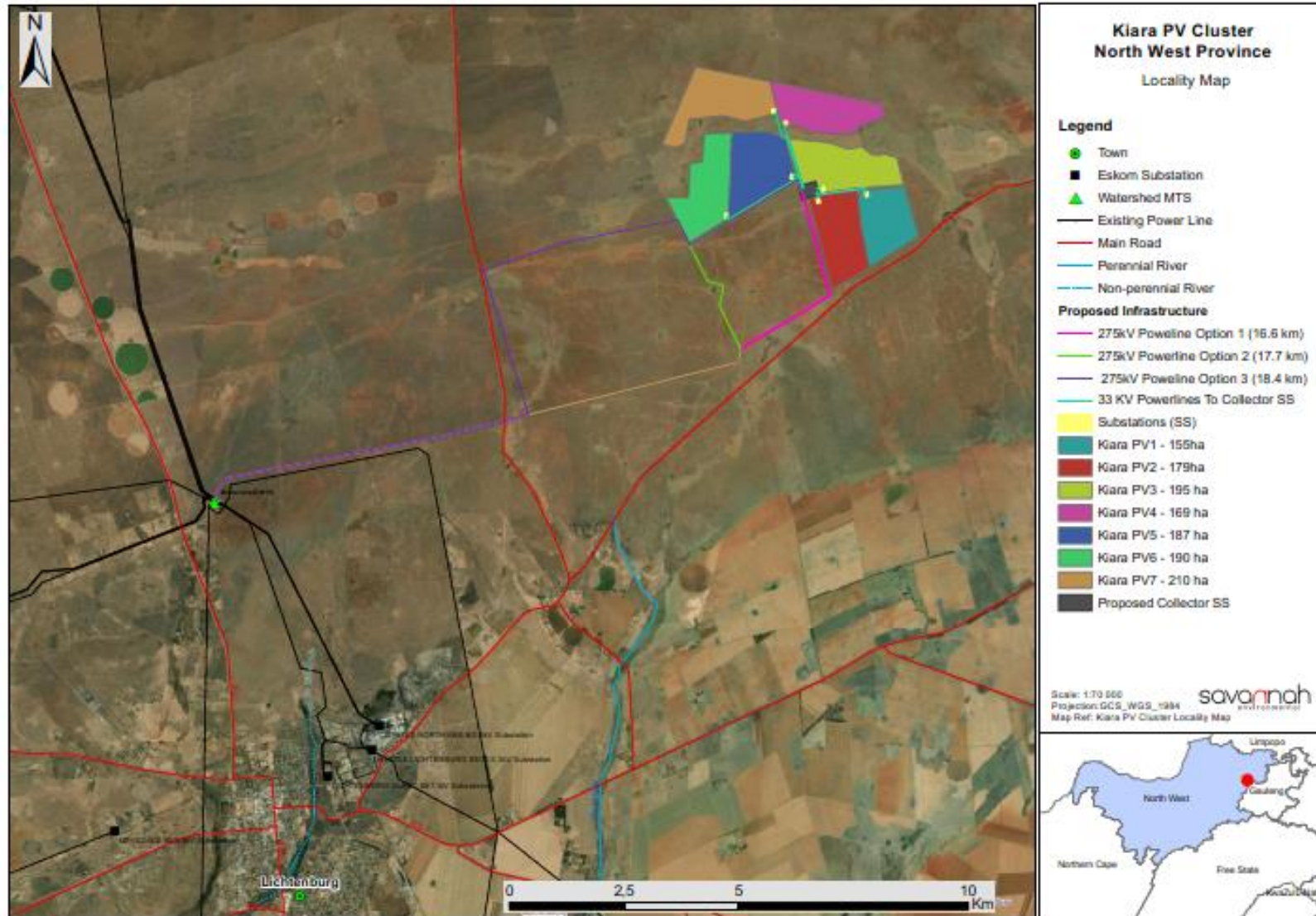


Figure 1-1: Locality map illustrating the locations of the Kiara PV Cluster Facility development areas.

Structure of the SIA Report

This SIA Report has been prepared in accordance with the requirements of Appendix 6 of the 2014 EIA Regulations, as amended. An overview of the contents of this SIA Report, as prescribed by Appendix 6 of the 2014 EIA Regulations (GNR 326), and where the corresponding information can be found within the report is provided in **Table 1-1**.

Table 1-1: Summary of where the requirements of Appendix 6 of the 2014 NEMA EIA Regulations (GNR 326), as amended, are provided within this Specialist Report.

Requirement	Location in Report
(a) Details of – (i) The specialist who prepared the report. (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae.	Section 1
(b) A declaration that the specialist is independent in a form as may be specified by the competent authority.	Specialist Declaration of Interest
(c) An indication of the scope of, and the purpose for which, the report was prepared.	Section 2
(cA) An indication of the quality and age of base data used for the specialist report.	Section 4
(cB) A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section Error! Reference source not found.
(d) The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.	Section 2
(e) A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.	Section 2
(f) Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.	Section 4 Section Error! Reference source not found.
(g) An identification of any areas to be avoided, including buffers.	N/A
(h) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	N/A
(i) A description of any assumptions made and any uncertainties or gaps in knowledge.	Section 2
(j) A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.	Section Error! Reference source not found.
(k) Any mitigation measures for inclusion in the EMPr.	Appendix A
(l) Any conditions for inclusion in the environmental authorisation.	Section Error! Reference source not found.
(m) Any monitoring requirements for inclusion in the EMPr or environmental authorisation.	Appendix A
(n) A reasoned opinion – (i) Whether the proposed activity, activities or portions thereof should be authorised. (iA) Regarding the acceptability of the proposed activity or activities. (ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures.	Section Error! Reference source not found.

Requirement	Location in Report
(o) A description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 2
(p) A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	N/A
(q) Any other information requested by the competent authority.	N/A
2. Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

2. METHODOLOGY AND APPROACH

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.

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:

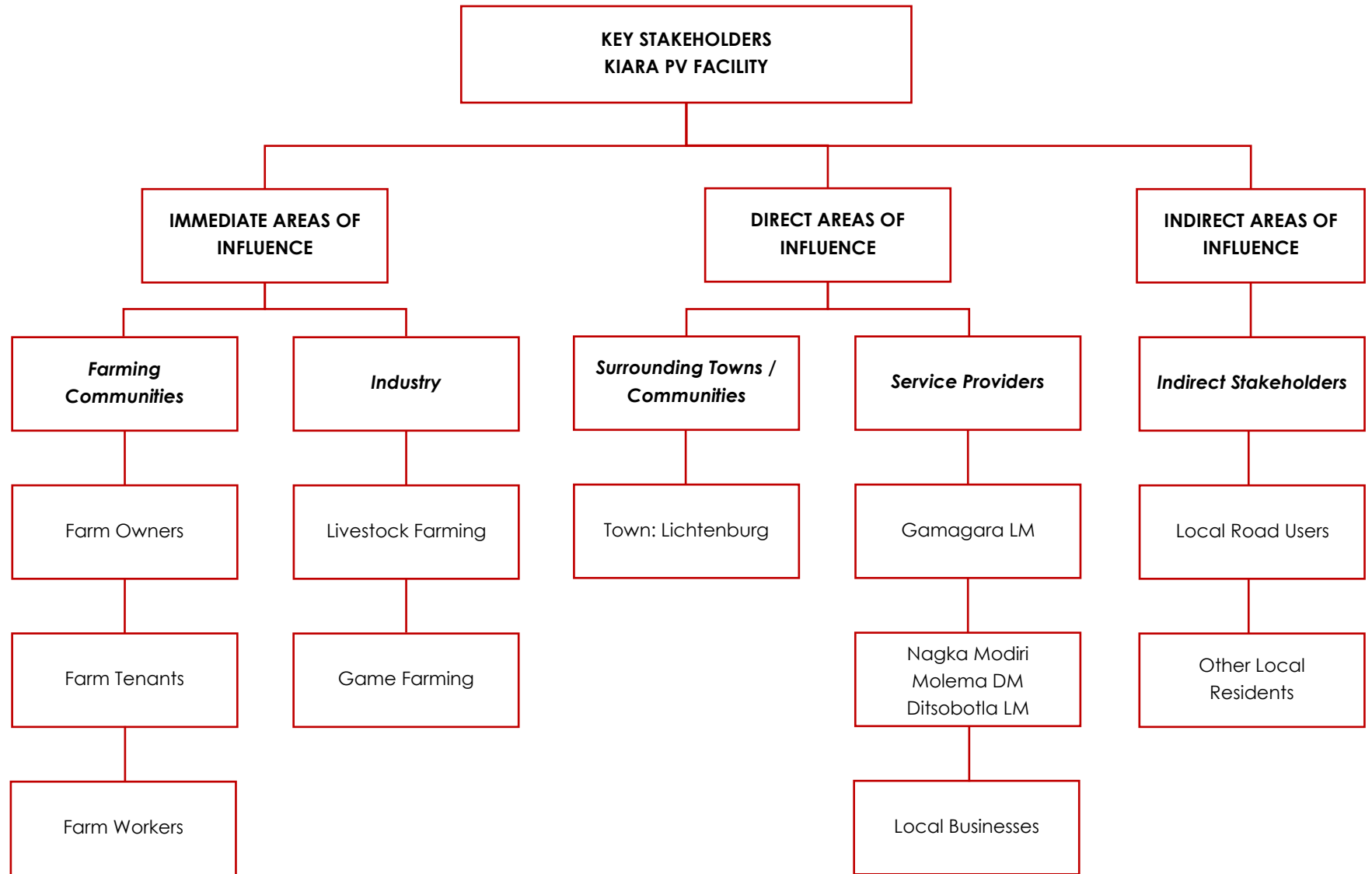
- » Collection and review of existing information, including national, provincial, district, and local plans, policies, programmes, census data, and available literature from previous studies conducted within the area. Project specific information was obtained from the project proponent.
- » Identification 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 EIA Report to be prepared for the project.

2.1.1. Stakeholder Identification and Analysis

Stakeholders are defined as: “Any group or organisation which may affect or be affected by the issue under consideration” (UN, 2001: 26).

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

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



2.1.2. 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.

2.1.3. 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.
- » 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.

2.1.4. Collection of Primary Data

Primary data was collected in the form in the form of meeting notes from Focus Group Meetings (FGMs) conducted with key stakeholders as part of the Public Participation process being conducted for the Scoping process (refer to **Error! Reference source not found.**), and from interviews conducted with identified stakeholders and affected landowners (refer Table 2-2).

Table 2-1 Overview of FGMs conducted as part of the Public Participation process being conducted for the Scoping process.

FGM Date & Time	Stakeholder Group	Summary of Matters Raised
Monday, 20 July 2022 at 09h00	Local and District Officials	No matters pertaining to social issues were raised.
Monday, 20 July 2022 at 11h00	Key Stakeholders	Questions were asked regarding the ownership of the land and the process that needs to be undertaken if the land is owned by municipality.
Monday, 20 July 2022 at 14h00	Representative Officials	No matters pertaining to social issues were raised.

Table 2-2: Overview of Telephonic Interviews with landowners and stakeholders as well as attempts made to contact the relevant parties.

Representative	Representative details	Date of contact / attempted contact	Notes and feedback (not verbatim, only summarised)
Kgalalelo Mothibedi	Ditsobotla Municipality Local	17 August 2022	N/A

During the interviews, interviewees were provided with background on the proposed project, and the EIA and public participation process being undertaken in support of the application for EA. Interviewees were then interviewed utilising a questionnaire to determine their perceptions, interest and concerns regarding the project.

The local municipality Ditsobotla were engaged, and their comments obtained as part of the EIA process being undertaken for the project. Should any comments or concerns be raised from a social perspective regarding the project during the public participation process of the project, these will be included and addressed as part of the final SIA to be submitted to DFFE for decision.

Assessment of Impacts

Direct, indirect, and cumulative impacts associated with the projects must be assessed in terms of the following criteria:

- » The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- » The **duration**, wherein it will be indicated whether:
 - * the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
 - * the lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;

- * medium-term (5–15 years) – assigned a score of 3;
- * long term (> 15 years) - assigned a score of 4; or
- * permanent - assigned a score of 5;
- » The **magnitude**, quantified on a scale from 0-10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- » The **probability** of occurrence, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- » the **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- » the **status**, which will be described as either positive, negative or neutral.
- » the degree to which the impact can be reversed.
- » the degree to which the impact may cause irreplaceable loss of resources.
- » the degree to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

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

S = Significance weighting

E = Extent

D = Duration

M=Magnitude

P=Probability

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

- » < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- » 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

The summarizing of assessment impacts in a prescribed table format including the rating values as per above criteria.

Measures for inclusion in the Environmental Management Programme.

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

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>Integrated Resource Plan for Electricity (IRP) 2010-2030 (2011) and subsequent updates</p>	<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>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>

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 815 000 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>

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.

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.

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).

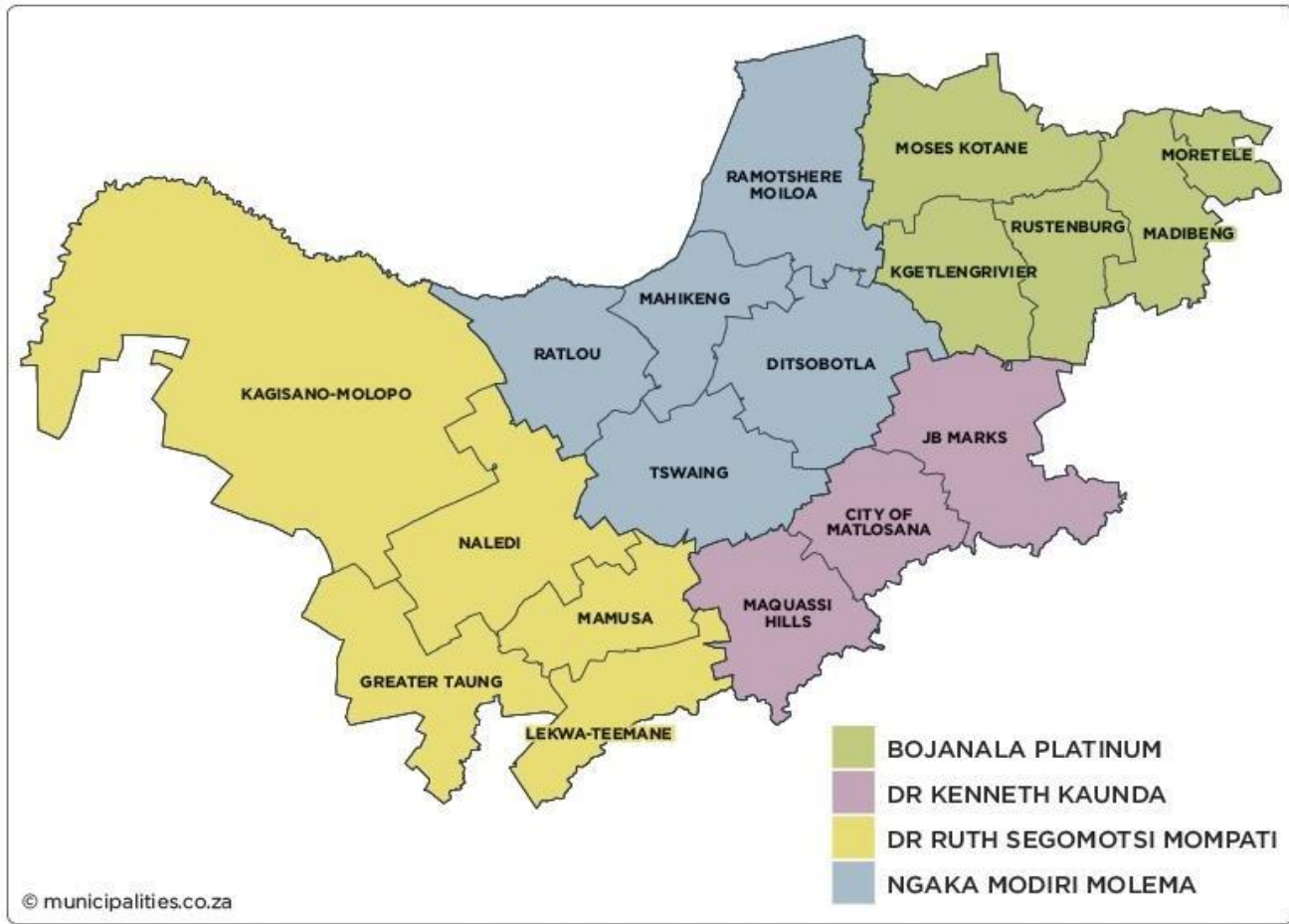


Figure 4-1 Districts under the North West Province

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

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%).

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.

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. SOCIAL IMPACT ASSESSMENT

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.

Potential Social Impacts during the Construction Phase of the 7 PV's

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
- » Safety and security impacts
- » Impacts on daily living and movement patterns
- » Nuisance impacts, including noise and dust

Table 5.1: Impact assessment on direct and indirect employment opportunities

Nature:			
Employment opportunities and skills development			
Impact description: The creation of employment opportunities and skills development opportunities during the construction phase for the country and local economy			
	Rating	Motivation	Significance
Prior to Enhancement			
Duration	Short-term (1)	The construction period will last for less than one year	Medium Positive (30)
Extent	Local – Regional (5)	The impact will occur at a local, regional and national level	
Magnitude	Low (4)	The creation of employment opportunities will assist to an extent in alleviating unemployment levels within the area	
Probability	Probable (3)	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	
Enhancement measures:			
To enhance the local employment, skills development and business opportunities associated with the construction phase, the following measures should be implemented:			
<ul style="list-style-type: none"> » It is recommended that a local employment policy be adopted to maximise the opportunities made available to the local labour force. Voltalia South Africa (Pty) Ltd should make it a requirement for contractors to implement a 'locals first' policy, especially for semi and low skilled job categories. » Enhance employment opportunities for the immediate local area, i.e., Ditsobotla Local Municipality. If this is not possible, then the broader focus areas should be considered for sourcing workers. » Consideration must be given to women during the recruitment process. » It is recommended that realistic local recruitment targets be set for the construction phase. » Training and skills development programmes should be initiated prior to the commencement of the construction phase. 			
Post Enhancement			
Duration	Short-term (1)	The construction period will last for less than one year	Medium Positive (55)
Extent	Regional (4)	The impact will occur at a local, regional and national level	
Magnitude	Moderate(6)	The creation of employment opportunities will assist to an extent in alleviating unemployment levels within the area	
Probability	Definite (5)	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 the skills development of communities in the area	
Residual Risks:			
Improved pool of skills and experience in the local area			

Table 5.2: Economic multiplier effects

Nature:			
Multiplier effects on the local economy			
Impact description: Significance of the impact from the economic multiplier effects from the use of local goods and services			
	Rating	Motivation	Significance
Prior to Enhancement			
Duration	Long-term (4)	Will continue for the duration of the project due to legal obligation to pay taxes.	Medium Positive (36)
Extent	Local – Regional (4)	Will include mostly local and some regional impacts	
Magnitude	Low (4)	Will derive from increased cash flow from wages, local procurement, economic growth, taxes and LED and HRD initiatives.	
Probability	Probable (3)	Will depend on; proportion of local spending by employees, capacity of local enterprises to supply; effectiveness of LED and HRD initiatives, contributions to local government.	
Enhancement measures:			
<ul style="list-style-type: none"> » It is recommended that a local procurement policy be adopted by the developer to maximise the benefit to the local economy, where feasible (Ditsobotla Local Municipality). » Voltalia South Africa (Pty) Ltd should develop a database of local companies, specifically Historically Disadvantaged (HD) companies, which qualify as potential service providers (e.g. construction companies, catering companies, waste collection companies, security companies etc.) prior to the commencement of the tender process for construction contractors. These companies should be notified of the tender process and invited to bid for project-related work where applicable. » It is a requirement to source as much good and services as possible from the local area. » Engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible. 			
Post Enhancement			
Duration	Long-term (4)	As for pre-enhancement	Medium Positive (60)
Extent	Local – Regional (4)	SMME capacity building will limit procurement from outside the local municipality	
Magnitude	Low (4)	Mitigation will likely increase intensity of multiplier effects as it will concentrate impact to local area, sustainability of initiatives will also be increased if aligned with other those of other institutions	
Probability	Definite (5)	Increased local employment and procurement as well as skilled SMME's skill enhance likelihood of benefits to local economy	
Residual Risks:			
Improved local service sector, growth in local business.			

Table 5.3: Assessment of safety and security impacts

Nature: Safety and security			
Impact description: Temporary increase in safety and security concerns associated with the influx of people during the construction phase			
	Rating	Motivation	Significance
Prior to Mitigation			
Duration	Short-term (2)	Will be limited to the construction phase which is less than one year.	Medium Negative (27)
Extent	Local – Regional (3)	Safety concerns will affect nearby communities.	
Magnitude	Low (4)	Could place the lives of neighboring community members at risk.	
Probability	Probable (3)	Traffic would need to be considered in the area	
Mitigation:			
<ul style="list-style-type: none"> » Access in and out of the construction area should be strictly controlled by a security company. » The appointed EPC contractor must appoint a security company and appropriate security procedures are to be implemented to limit access to the site and surrounding areas. » The contractor must ensure that open fires on the site for heating, smoking or cooking are not allowed except in designated areas. » The contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff. » Have clear rules and regulations for access to the proposed site to control loitering. » A comprehensive employee induction programme would cover land access protocols, fire management and road safety must be prepared. A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process 			
Post Mitigation			
Duration	Short-term (2)	As for pre-mitigation	Low Negative (16)
Extent	Local (2)	Safety measures will likely restrict impacts on nearby communities	
Magnitude	Low (4)	Appropriate mitigation will reduce the risk of this project	
Probability	Improbable (2)	As for pre-mitigation	
Residual Risks: None anticipated.			

Table 5.4: Assessment of impacts on daily living and movement patterns.

Nature: Disruption of daily living and movement patterns			
Impact description: Temporary increase in traffic disruptions and movement patterns during the construction phase			
	Rating	Motivation	Significance
Prior to Mitigation			
Duration	Short-term (2)	Will be limited to the construction phase which is less than one year	Medium Negative (40)
Extent	Local (2)	Will affect road users from nearby communities	

Magnitude	Moderate (6)	Will affect the quality of life of neighboring communities	
Probability	Highly probable (4)	Traffic would need to be considered in the area	
Mitigation:			
<ul style="list-style-type: none"> » All vehicles must be road worthy, and drivers must be qualified, obey traffic rules, follow speed limits and be made aware of the potential road safety issues. » Heavy vehicles should be inspected regularly to ensure their road safety worthiness. » Implement penalties for reckless driving for the drivers of heavy vehicles as a way to enforce compliance to traffic rules. » Avoid heavy vehicle activity during 'peak' hours (when people are driving to and from work). » The developer and engineering, procurement and construction (EPC) contractors must ensure that any damage / wear and tear caused by construction related traffic to the roads is repaired. » A comprehensive employee induction programme which covers land access protocols and road safety must be prepared. » A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process. 			
Post Mitigation			
Duration	Short-term (2)	As for pre-mitigation	Low Negative (16)
Extent	Local (2)	Safety measures will likely restrict impacts on road users	
Magnitude	Low (4)	Appropriate mitigation will reduce the risk of this project	
Probability	Improbable (2)	As for pre-mitigation	
Residual Risks: None anticipated.			

Table 5.5: Assessment of nuisance impacts (noise and dust)

Nature:			
Nuisance impacts (noise& dust)			
Impact description: Nuisance impacts in terms of temporary increase in noise and dust, and the wear and tear on private farm roads for access to the site			
	Rating	Motivation	Significance
Prior to Mitigation			
Duration	Short-term (2)	Nuisance impacts will only be limited to the construction phase.	Medium Negative (44)
Extent	Local (1)	This will remain within the project extent from construction activities.	
Magnitude	High (8)	Dust impacts and noise nuisance from construction activities.	
Probability	Highly Probable (4)	Movement of heavy construction vehicles during the construction phase has a potential to create noise, damage to roads and dust.	
Mitigation:			
<ul style="list-style-type: none"> » The movement of construction vehicles on the site should be confined to agreed access road/s. 			

<ul style="list-style-type: none"> » The movement of heavy vehicles associated with the construction phase should be timed (where possible) to avoid times days of the week, such as weekends, when the volume of traffic travelling along the access roads may be higher. » Dust suppression measures should be implemented, such as wetting 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 roadworthy, and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. » A Community Liaison Officer should be appointed. A method of communication should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process 			
Post Mitigation			
Duration	Short-term (2)	As for pre-mitigation	Low Negative (18)
Extent	Local (1)	Mitigation measures will assist with increasing the impact.	
Magnitude	Moderate (6)	Appropriate mitigation will reduce the risk of this project	
Probability	Improbable (2)	As for pre-mitigation	
Residual Risks: None anticipated			

Potential Social impacts during the Operation Phase of 7 PV's

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
- » Development of renewable energy infrastructure
- » Socio-economic benefits associated with community trust and SED investments
- » Visual impact and sense of place impacts
- » Impacts associated with the loss of agricultural land

Table 5.6: Employment opportunities and skills development

Nature: Job creation during operation			
Impact description: The creation of employment opportunities and skills development opportunities during the operation phase for the country and local economy			
	Rating	Motivation	Significance
Prior to Enhancement			
Duration	Long term (4)	Project will be operational up to 30years	Medium Positive (33)
Extent	Regional (3)	Any new positions are likely to be filled by persons living in the local municipal area	
Magnitude	Low (4)	It is anticipated that ~10 jobs will be generated during the operation phase. A number of highly skilled personnel may	

		need to be recruited from outside the local municipal area	
Probability	Probable (3)	Employment opportunities will be created during the operation phase	
Enhancement measures:			
<ul style="list-style-type: none"> » It is recommended that a local employment policy is adopted by the developer to maximise the project opportunities being made available to the local community. Enhance employment opportunities for the immediate local area, Ditsobotla Local Municipality, if this is not possible, then the broader focus areas should be considered for sourcing employees. » The recruitment selection process should seek to promote gender equality and the employment of women wherever possible » The developer should establish vocational training programs for the local employees to promote the development of skills 			
Post Enhancement			
Duration	Long-term (4)	As for pre-enhancement	Medium Positive (44)
Extent	Local - regional (3)	As for pre-enhancement	
Magnitude	Low (4)	Mitigation will maximise local job creation	
Probability	High Probable (4)	Mitigation will maximise probability that any local recruitment targets are achieved and local benefits optimised	
Residual Risks:			
Improved pool of skills and experience in the local area			

Table 5.7: Development of clean, renewable energy infrastructure

Nature:			
Development of clean, renewable energy infrastructure			
Impact description: Development of clean, renewable energy infrastructure			
	Rating	Motivation	Significance
Prior to Enhancement			
Duration	Long term (4)	Adding a renewable energy sector to the Lichtenburg economy may contribute to the diversification of the local economy and provide greater economic stability.	Medium Positive (48)
Extent	Local – Regional - National (4)	The generation of renewable energy will contribute to South Africa's electricity market. Since the off-taker of the power generated by the facility will be Sasol limited (which is currently dependent on Eskom for electricity supply), the proposed development will indirectly relieve the national grid	
Magnitude	Low (4)	The proposed facility will only generate up to 100MW	
Probability	Highly Probable (4)	Facility will help contribute to the total carbon emissions associated with non-renewable energy generation	
Enhancement measures:			
None anticipated			
Post Enhancement			

Duration	Long term (4)	As for pre-enhancement	Medium Positive (48)
Extent	National (4)	As for pre-enhancement	
Magnitude	Low (4)	As for pre-enhancement	
Probability	Highly Probable (4)	As for pre-enhancement	
Residual Risks: Reduce carbon emissions through the use of renewable energy and contribute to reducing global warming			

Table 5.8: Socio-economic benefits associated with community trust and SED investments

Nature: Socio-economic benefits associated with community trust and SED investments			
Impact description: Development of clean, renewable energy infrastructure			
	Rating	Motivation	Significance
Prior to Enhancement			
Duration	Long term (4)	Adding a renewable energy sector to the Ditsobotla economy may contribute to the diversification of the local economy and provide greater economic stability.	Medium Positive (50)
Extent	Local – Regional - National (4)	The generation of renewable energy will contribute to South Africa's electricity market, and the proposed development will indirectly relieve the national grid	
Magnitude	Moderate (6)	The proposed facility will only generate up to 100MW – 120MW	
Probability	Highly Probable (4)	Facility will help contribute to the total carbon emissions associated with non-renewable energy generation	
Enhancement measures: None anticipated			
Post Enhancement			
Duration	Long term (4)	As for pre-enhancement	Medium Positive (64)
Extent	National (4)	As for pre-enhancement	
Magnitude	High (8)	As for pre-enhancement	
Probability	Highly Probable (4)	As for pre-enhancement	
Residual Risks: Social upliftment of the local communities through the development and operation of the project.			

Table 5.9: Visual impacts and impacts on sense of place

Nature: Visual impacts and impacts on sense of place			
Impact description: Visual impacts and sense of place impacts associated with the operation phase of the project			
	Rating	Motivation	Significance
Prior to Mitigation			
Duration	Long term (4)	Impact on sense of place relates to the change in the landscape character and visual impact of the proposed solar energy facility	Medium Negative (48)

Extent	Very short distance (4)	Dependent on the demographics of the population that resides in the area and their perceptions	
Magnitude	High (8)	There are industrial/mining operations and formal residential areas located in proximity to the site	
Probability	Probable (3)	There are no tourist attractions located adjacent to the property and therefore the anticipated impact on the areas visual quality and sense of place is low.	
Mitigation: None anticipated			
Post Mitigation			
Duration	N.A. – Mitigation not possible.		N.A. – Mitigation not possible.
Extent	N.A. – Mitigation not possible.		
Magnitude	N.A. – Mitigation not possible.		
Probability	N.A. – Mitigation not possible.		
Residual Risks: The visual impact will be removed after decommissioning, provided the PV facility infrastructure is removed. Failing this, the visual impact will remain.			

Table 5.10: Impacts associated with the loss of agricultural land

Nature: Impacts associated with the loss of agricultural land			
Impact description: Development on agricultural land and removal of potential agricultural production			
	Rating	Motivation	Significance
Prior to Mitigation			
Duration	Long term (4)	The development footprint on which the solar energy facility will be developed will be removed from agricultural production	Medium Negative (33)
Extent	Local (1)	The impact will occur at local level	
Magnitude	Moderate (6)	Impacts associated with the loss of agricultural land use to occupation of land by the solar energy facility.	
Probability	Probable (3)	Land uses will be affected by development	
Mitigation Measures			
Mitigation: » Keep the project footprint as small as possible.			
Post Mitigation/Enhancement Measures			
Duration	Long term (4)	As for pre-mitigation	Low Negative (27)
Extent	Local (1)	As for pre-mitigation	
Magnitude	Low (4)	As for pre-mitigation	
Probability	Probable (3)	As for pre-mitigation	
Residual Impact: The implications in terms of food production and security could also threaten jobs of workers employed in the agricultural activities.			

Assessment of Cumulative Impacts

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

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

The potential for cumulative impacts to occur as a result of the projects is therefore likely. Potential cumulative impacts identified for the project include positive impacts on the economy, business development, and employment, as well as negative impacts such as on pressure on local services and change in visual impacts

Potential cumulative social impacts identified for the project include positive impacts on the economy, business development, and employment, as well as such as on pressure on local services and change in visual impacts.

Table 5.11: Employment opportunities, skills development and business opportunities

Nature: An increase in employment opportunities, skills development and business opportunities with the establishment of more than one solar energy facility		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local -regional (3)	Local-regional (3)
Duration	Long-term (4)	Long-term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Probable (3)
Significance	Medium (33)	Medium (52)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impacts be mitigated?	Yes	Yes
Confidence in findings: High.		
Mitigation: The establishment of a number of solar energy facilities in the area does have the potential to have a positive cumulative impact on the area in the form of employment opportunities, skills development and business opportunities. The positive benefits will be enhanced if local employment policies are adopted and local services providers are utilised by the developers to maximise the project opportunities available to the local community.		

Table 5.12: Local economy with an in-migration of labourers, business and jobseekers

Nature: Negative impacts and change to the local economy with an in-migration of labourers, businesses and jobseekers to the area		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area

Extent	Local (1)	Local-regional (3)
Duration	Long-term (4)	Long-term (4)
Magnitude	Low (4)	Low (4)
Probability	Very improbable (3)	Improbable (2)
Significance	Medium (27)	Low (22)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Confidence in findings: High.		
Mitigation:		
<ul style="list-style-type: none"> » Develop a recruitment policy / process (to be implemented by contractors), which will ensure the sourcing of labour locally, where available. » Work together with government agencies to ensure that service provision is in line with the development needs of the local area. » Form joint ventures with community organisations, through Trusts, which can provide local communities with benefits, such as employment opportunities and services. » Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated. 		

Table 5.13: Sense of place and landscape character

Nature:		
Visual impact on sense of place and landscape character		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (1)	Local-regional (3)
Duration	Long-term (4)	Long-term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Probable (3)
Significance	Low (27)	Medium (39)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	No, only best practice measures can be implemented	
Confidence in findings: High.		
Mitigation:		
<ul style="list-style-type: none"> » Maintain and manage the facilities to be in a good and neat condition to ensure that no degradation of the area and sites takes place and impacts the visual quality of the area. » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment 		

Assessment of Decommissioning

Typically, major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income and will be similar to the impacts during the construction phase associated with construction activities. This has implications for the households who are directly affected, the communities within which they live, and the relevant local authorities. The impact of the decommissioning phase is expected to be negligible due to the small number of permanent employees affected. The potential

impacts associated with decommissioning phase can also be effectively managed with the implementation of a retrenchment and downscaling programme. With mitigation, the impacts are assessed to be Low (negative).

Table 5.14: Assessment of Decommissioning

Nature: Social impacts associated with decommissioning		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (1)	Local-regional (1)
Duration	Medium-term (2)	Very short-term (1)
Magnitude	Moderate (6)	Low (4)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Medium (40)	Low (24)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Confidence in findings: High.		
Mitigation:		
<ul style="list-style-type: none"> » The project developer/team to ensure there are retrenchment packages provided for all staff retrenched when plant is decommissioned » All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site on decommissioning » Revenue generated from the sale of scrap metal during decommissioning should be allocated to funding closure and rehabilitation of distributed areas 		

Assessment of No-Development Option

The “no-go” alternative is the option of not constructing the Kiara Cluster PV. The implementation of the proposed project is expected to result in a number of positive and negative social impacts. The majority of negative impacts identified for the project are associated with the construction phase of the project, while the positive impacts are associated with both the construction and operation phases of the project.

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

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

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

- » Potential direct and indirect employment opportunities.
- » Potential economic multiplier effect.
- » Socio-economic benefits associated with community trust and SED investments

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

- » The benefits would be that there is no disruption from nuisance impacts (noise and dust during construction), visual impacts and safety and security impacts. The impact is therefore neutral.
- » There would also be an opportunity loss in terms of limited job creation, skills development, community upliftment and associated economic business opportunities for the local economy. This impact is considered to be negative.
- » The opportunity to strengthen the grid connection within the municipal area would be lost which will have a negative impact on economic growth and development and therefore result in negative social impacts.

Table 5.15: Assessment of No-Development Option

Nature: The no-development option would result in the lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local-International (4)	Local-International (4)
Duration	Long term (4)	Long term (4)
Magnitude	Moderate (6)	Moderate (6)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Moderate (56)	Moderate (56)
Status (positive or negative)	Negative	Positive
Reversibility	Yes	
Irreplaceable loss of resources?	N/A	
Can impacts be mitigated?	Yes	
Confidence in findings: High.		
Mitigation:		
» Reduce carbon emissions via the use of renewable energy and associated benefits in terms of global warming and climate change.		

6. CONCLUSION AND RECOMMENDATIONS

This SIA has focused on the collection of data to provide an understanding of the current social environment associated with the development of Kiara PV Cluster Facility and identifying and assessing social issues and potential social impacts associated with the development of such a nature. The environmental assessment framework for evaluation of impacts at the EIA phase and the relevant criteria was applied to evaluate the significance of the potential impacts and to recommend appropriate mitigation and enhancement measures for the identified impacts.

A summary of the potential positive and negative impacts identified for the detailed design, construction and operation phases are presented in Error! Reference source not found. and Error! Reference source not found. for the potential impacts identified at EIA phase.

Table 6.1: Summary of potential social impacts identified for the detailed design and construction phase of the Kiara PV Cluster Facility

Impact	Status	Significance
Positive Impacts		
Creation of direct and indirect employment and skills development opportunities.	Positive	Medium
Economic multiplier effects	Positive	Medium
Negative impacts		
Safety and security impacts	Negative	Medium
Impacts on daily living and movement patterns	Negative	Low
Nuisance impact (noise and dust)	Negative	Low

Table 6.2: Summary of potential social impacts identified for the operation phase of the Kiara PV Cluster Facility

Impact	Status	Significance
Positive Impacts		
Direct and indirect employment and skills development opportunities	Positive	Medium
Development of clean, renewable energy infrastructure	Positive	Medium
Socio-economic benefits associated with community trust and SED investments	Positive	Medium
Negative Impacts		
Visual and sense of place impacts	Negative	Medium

Table 6-3: Summary of potential cumulative social impacts identified for the project

Cumulative Impact	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Positive Cumulative Impacts		
Cumulative impact from employment, skills and business opportunities and skills development	Medium	Medium

Cumulative Impact	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Negative Cumulative Impacts		
Cumulative impact with large scale in-migration of people	Low	Medium
Visual and sense of place impacts	Low	Medium
Cumulative impact on the sense of place and landscape character	Low	Medium

Key findings and Recommendations

Key Findings

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

- » The potential negative social impacts associated with the construction phase are typical of construction related projects and not just focused on the construction of PV facilities and pivot infrastructure (these relate to intrusion and disturbance impacts, safety and security) and could be reduced with the implementation of the mitigation measures proposed.
- » Employment opportunities will be created in the construction and operation phases and the impact is rated as positive even if only a small number of individuals will benefit in this regard.
- » The proposed project could assist the local economy in creating entrepreneurial development, especially if local businesses could be involved in the provision of general material and services during the construction and operational phases.
- » Capacity building and skills training amongst employees are critical and would be highly beneficial to those involved, especially if they receive portable skills to enable them to also find work elsewhere and in other sectors.
- » The proposed development also represents an investment in infrastructure for the generation of clean, renewable energy, which, given the challenges created by climate change, represents a positive social benefit for society.

Recommendations

The following recommendations are made based on the Social Impact Assessment during the stakeholder engagement process. The proposed mitigation measures should be implemented to limit the negative impacts and enhance the positive impacts. Based on the social assessment, the following recommendations are made:

- » In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled are scarce commodities in the study area and could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen local endeavors to obtain jobs and provoke discontent as well as put pressure on the local services available. Local labour should be utilised to enhance the positive impact of employment creation in the area. Local businesses should be involved with the construction activities where possible. It is

imperative that local labour be sourced to ensure that benefits accrue to the local communities. Preference should thus be given to the use of local labour during the construction and operational phases of the project as far as possible.

- » Locals should also be allowed an opportunity to be included in a list of possible local suppliers and service providers, enhancing the multiplier effect. This aspect would serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.
- » Impacts associated with the construction period should be carefully mitigated to minimise any dust and noise pollution.
- » Safety and security concerns should be considered during the planning and construction phases of the proposed project.

Conclusion

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

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EXTERNAL PEER REVIEW

KIARA PV SOLAR ENERGY CLUSTER SOCIAL IMPACT ASSESSMENT

NORTH WEST PROVINCE

AUGUST 2022

By

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1.1 INTRODUCTION

Tony Barbour was appointed by Savannah Environmental to undertake an independent Peer Review of the Social Impact Assessment (SIA) Report for the proposed Kiara PV Solar Energy Cluster¹, located ~ 16 km north-east of Lichtenberg in the North West Province of South Africa. This report contains the findings of the Peer Review of the SIA for the Kiara PV Solar Energy Cluster prepared by Savannah Environmental (Savannah, July 2022).

1.2 EXPERIENCE WITH SOCIAL IMPACT ASSESSMENTS

Tony Barbour has undertaken in the region of 300 SIAs, including approximately 150 SIAs for renewable energy projects, including wind and solar energy facilities. Tony has also undertaken a number of SIAs for solar projects in the study area and is therefore familiar with the local socio-economic conditions and social issues affecting renewable energy projects in the area. In addition, he is the author of the Guidelines for undertaking SIAs as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa. A copy of Tony Barbour's CV is attached in Annexure A.

1.3 TERMS OF REFERENCE AND APPROACH

The terms of reference for the Peer Review were to review the SIA prepared by Savannah Environmental to ensure that the report met the accepted standards. The approach to the review involved:

- A review of the approach adopted in preparing the SIA Report.
- A review of the type and quality of information contained in the SIA Report.
- A review of the key findings contained in the SIA Report.
- Assessment of conformance of the Specialist Report with the requirements for Specialist Reports (Appendix 6, Regulation GNR 326 of 4 December 2014, as amended 7 April 2017).

1.4 FINDINGS OF PEER REVIEW

The findings of the Peer Review indicate that the SIA provides decision makers with the information required to identify the key socio-economic issues and risks associated with the proposed project. The findings of the Peer Review also support the findings of the SIA, namely that there are likely to be no fatal flaws.

Introduction and Approach

The approach adheres to and meets the requirements for SIAs. The SIA provides a detailed description of the proposed project and the location (Section 1). Section 2, Methodology and Approach (p6), provides an overview of the approach to the SIA, including the identification of key stakeholders and the collection and review of baseline information, and the impact assessment method (Table 2.3, p12). Table 2.1 and 2.2 (p10) provide a summary of interviews conducted. The limitations and assumptions are also clearly spelt out.

¹ Kiara PV Solar Energy Cluster consists of seven PV SEFs (Kiara 1-7).

Policy and Baseline Socio-economic Information

Section 3, Legislation and Policy Review (p12), provides an overview of the relevant National, Provincial and Local policies and planning documents, while Section 4, Socio-economic Profile (p21), provides baseline socio-economic information at a Provincial, Municipal, and local site level.

Assessment

Section 5, Assessment of Potential Social Impacts (p276), identifies, describes, and assesses the potential social impacts associated with the construction (Section 5.1, p36) and operation (Section 5.2, p37) phases of the project. Based on the authors' experience with wind projects, the relevant potential social impacts that are likely to have a bearing on the decision-making process have been identified and assessed. Section 5.5, Cumulative Impacts (p38), identifies and addresses the relevant potential cumulative impacts.

Table 5.1, 5.2, 5.3, 5.4 and 5.6 provide a description and assessment of potential social impacts associated with the construction phase. Table 5.6, 5.7, 5.8, 5.9 and 5.10 provide a description and assessment of potential social impacts associated with the operational phase. Table 5.14 and 5.15 assess decommissioning and the no development option. Table 5.11, 5.12 and 5.13 assess the cumulative impacts. The assessment ratings for the construction and operation phase impacts with enhancement and/or mitigation measures are regarded as accurate. The same finding applies to the assessment of cumulative impacts.

Conclusion

The key findings and recommendations (Section 6.1, p38) of the SIA as summarised in Table 6.1, 6.2 and 6.3 (Construction, Operation and Cumulative), are supported by the findings of the Peer Review. The overall conclusion, Section 6.2, that "the proposed project and associated infrastructure will create a number of potential socio-economic opportunities and benefits and is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the project is acceptable subject to the implementation of the recommended mitigation and enhancement measures and management actions identified for the project. Considering the findings of the report and potential for mitigation it is the reasoned opinion of the specialist that the project can be authorised from a social perspective", is also supported by the findings of the Peer Review.

The findings of the Peer Review also confirm that the SIA complies with the requirements for Specialist Reports (Appendix 6, GNR 326 of 4 December 2014, as amended 7 April 2017).

ANNEXURE A: CV

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Tony Barbour's experience as an environmental consultant includes working for ten years as a consultant in the private sector followed by four years at the University of Cape Town's Environmental Evaluation Unit. He has worked as an independent consultant since 2004, with a key focus on Social Impact Assessment. His other areas of interest include Strategic Environmental Assessment and review work.

EDUCATION

- BSc (Geology and Economics) Rhodes (1984);
- B Economics (Honours) Rhodes (1985);
- MSc (Environmental Science), University of Cape Town (1992)

EMPLOYMENT RECORD

- Independent Consultant: November 2004 – current;
- University of Cape Town: August 1996-October 2004: Environmental Evaluation Unit (EEU), University of Cape Town. Senior Environmental Consultant and Researcher;
- Private sector: 1991-August 2000: 1991-1996: Ninham Shand Consulting (Now Aurecon, Cape Town). Senior Environmental Scientist; 1996-August 2000: Steffen, Robertson and Kirsten (SRK Consulting) – Associate Director, Manager Environmental Section, SRK Cape Town.

LECTURING

- University of Cape Town: Resource Economics; SEA and EIA (1991-2004);
- University of Cape Town: Social Impact Assessment (2004-current);
- Cape Technikon: Resource Economics and Waste Management (1994-1998);
- Peninsula Technikon: Resource Economics and Waste Management (1996-1998).

RELEVANT EXPERIENCE AND EXPERTISE

Tony Barbour has undertaken in the region of 240 SIA's, including SIA's for infrastructure projects, dams, pipelines, and roads. All of the SIAs include interacting with and liaising with affected communities. In addition he is the author of the Guidelines for undertaking SIA's as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa.

Tony was also the project manager for a study commissioned in 2005 by the then South African Department of Water Affairs and Forestry for the development of a Social Assessment and Development Framework. The aim of the framework was to enable the Department of Water Affairs and Forestry to identify, assess and manage social impacts associated with large infrastructure projects, such as dams. The study also included the development of guidelines for Social Impact Assessment, Conflict Management, Relocation and Resettlement and Monitoring and Evaluation.

Countries with work experience include South Africa, Namibia, Angola, Botswana, Zambia, Lesotho, Swaziland, Ghana, Nigeria, Senegal, Armenia, Mozambique, Mauritius, Kenya, Ethiopia, Oman, South Sudan, Sudan and Armenia.