Adopted from Visual Impact Assessment Report Report

SiVEST SA (PTY) LTD

Klipkraal Wind Energy Facility (WEF) 1

SOCIAL IMPACT ASSESSMENT

DEFF Reference:	TBA
Report Prepared by:	**Nondumiso Bulunga**
Issue Date:	07 November 2022
Version No.:	00

AURA DEVELOPMENT COMPANY (PTY) LTD

KLIPKRAAL WIND ENERGY FACILITY (WEF) 1

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) – SOCIAL IMPACT ASSESSMENT

EXECUTIVE SUMMARY

Synergy Global Consulting (Pty) Ltd appointed by SiVEST (Pty) Ltd for the Klipkraal Wind Energy Facility (WEF) 1. Aura Development Company (Pty) Ltd (hereafter referred to as 'Aura') are proposing to develop up to seven (7) wind farms and associated infrastructure [including substations and Battery Energy Storage Systems (BESS) on a number of properties, majority being adjacent, near the towns of Beaufort West and Fraserburg in the Northern Cape Province of South Africa. The proposed wind farm projects will have maximum export capacities of up to approximately 200 megawatt (MW) respectively. The proposed wind farms make up a larger wind energy facility (WEF) (with associated BESS) which will be referred to as the Klipkraal WEF, consisting of up to seven (7) phases, with a combined generation capacity of up to approximately 1 400 MW.

The assessment section is divided into assessment of compatibility with relevant policy and planning, assessment of social issues associated with construction phase, assessment of social issues associated with operational phase, assessment of social issues associated with the decommissioning and assessment of 'no development alternative and assessment of cumulative impacts. The findings of review of key policy and planning documents indicates that renewable energy is supported at a national, provincial and local level. The proposed projects also support several objectives contained in the Northern Cape Province.

The key social issues include:

- Air quality
- Noise
- Road and traffic hazards
- Increase in crime
- Increased risk of HIV infections and unplanned and unwanted pregnancies

- In-migration of construction workers and other job seekers
- Hazard exposure
- Disruption of daily living patterns and of social networks
- Changing demands on social and community infrastructure
- Job creation and skills development
- Socio-economic stimulation
- Community expectations of project-related benefits
- Company risks of pressure to engage in fraudulent and / or corrupt practices
- Human rights infringements related to labour practices

The findings at Environmental Impact Assessment (EIA) level for this Social Impact Assessment (SIA) indicate that the development of Klipkraal Wind Energy Facility (WEF) 1 will create employment and business opportunities for locals during both the construction and operational phase of the project.

NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND ENVIRONMENTAL IMPACT REGULATIONS, 2014 (AS AMENDED) – REQUIREMENTS FOR SPECIALIST REPORTS (APPENDIX 6)

Regulation GNR 326 of 4 December 2014, as amended 7 April 2017, Appendix 6	**Section of Report**
2. (1) A specialist report prepared in terms of these Regulations must contain- a) details of- i. the specialist who prepared the report; and ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;	Section 1.2
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Section 1.2
c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.3
(cA) an indication of the quality and age of base data used for the specialist report;	Section 1.3
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 6
d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	N/A
e) a description of the methodology adopted in preparing the report or carrying out the gazetted process inclusive of equipment and modelling used;	Section 1
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 5
g) an identification of any areas to be avoided, including buffers;	None

Regulation GNR 326 of 4 December 2014, as amended 7 April 2017, Appendix 6	Section of Report
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;	Section 1
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, (including identified alternatives on the environment) or activities;	None
k) any mitigation measures for inclusion in the EMPr;	None
l) any conditions for inclusion in the environmental authorisation;	None
m) any monitoring requirements for inclusion in the EMPr or environmental gazetted on;	None
n) a reasoned opinion- i. (as to) whether the proposed activity, activities or portions thereof should be gazetted; (iA) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities or portions thereof should be gazetted, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 8
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	None
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	None
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

AURA DEVELOPMENT COMPANY (PTY) LTD

KLIPKRAAL WIND ENERGY FACILITY (WEF) 1

ENVIRONMENTAL IMPACT ASSESSMENT – SOCIAL IMPACT ASSESSMENT

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Acronyms

B-BBEE	Broad-Based Black Economic Empowerment
CLO	Community Liaison Officer
DFFE	Department of Forestry Fisheries and the Environment
DM	District Municipality
EA	Environmental Authorisation
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GNR	Government Notice
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IFC	International Finance Corporation
IRP	Integrated Resource Plan
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

AURA DEVELOPMENT COMPANY (PTY) LTD

KLIPKRAAL WIND ENERGY FACILITY (WEF) 1

ENVIRONMENTAL IMPACT ASSESSMENT – SOCIAL IMPACT ASSESSMENT

1. INTRODUCTION

Aura is proposing to develop up to five (5) wind farms and associated infrastructure [including substations and Battery Energy Storage Systems (BESS)] on a number of properties, majority being adjacent, near the towns of Beaufort West and Fraserburg in the Northern Cape Province of South Africa. The proposed wind farm projects will have maximum export capacities of up to 300 megawatt (MW) respectively. The proposed wind farms make up a larger wind energy facility (WEF) (with associated BESS) which will be referred to as the Klipkraal WEF, consisting of up to five (5) phases, with a combined generation capacity of up to approximately 1 500 MW, as follows:

- Klipkraal Phase 1 Wind Farm: up to 300MW + BESS (this application)
- Klipkraal Phase 2 Wind Farm: up to 300MW + BESS (part of a separate EIA process which forms part of separate application)
- Klipkraal Phase 3 Wind Farm: up to 300MW + BESS (part of a separate EIA process which forms part of separate application)
- Klipkraal Phase 4 Wind Farm: up to 300MW + BESS (part of a separate EIA process which forms part of separate application)
- Klipkraal Phase 5 Wind Farm: up to 300MW + BESS (part of a separate EIA process which forms part of separate application)
- Klipkraal On-site Switching / Collector Substation and associated 132kV/400kV Power Line (part of a separate BA application).

The overall objective of the development is to generate electricity by means of renewable energy technology capturing wind energy to feed into the National Grid.

It is anticipated that the proposed Klipkraal WEF 1 will comprise up to 60 wind turbines with a maximum total energy generation capacity of up to 300MW. The electricity generated by the proposed WEF development

will be fed into the national grid via a 132kV/400kV overhead power line. A BESS will be located next to the onsite 11-66/132-400kV substation. The storage capacity and type of technology would be determined at a later stage during the development phase, but most likely will comprise an array of containers, outdoor cabinets and/or storage tanks.

In terms of the EIA Regulations, which were published on 04 December 2014 [GNR 982, 983, 984 and 985) and amended on 07 April 2017 [promulgated in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R324 on 7 April 2017], various aspects of the proposed development are considered listed activities under GNR 327 and GNR 324 which may have an impact on the environment and therefore require authorisation from the National Competent Authority (CA), namely the Department of Environment, Forestry and Fisheries (DFFE), prior to the commencement of such activities. Specialist studies have been commissioned to assess and verify the project under the new Gazetted specialist protocols.

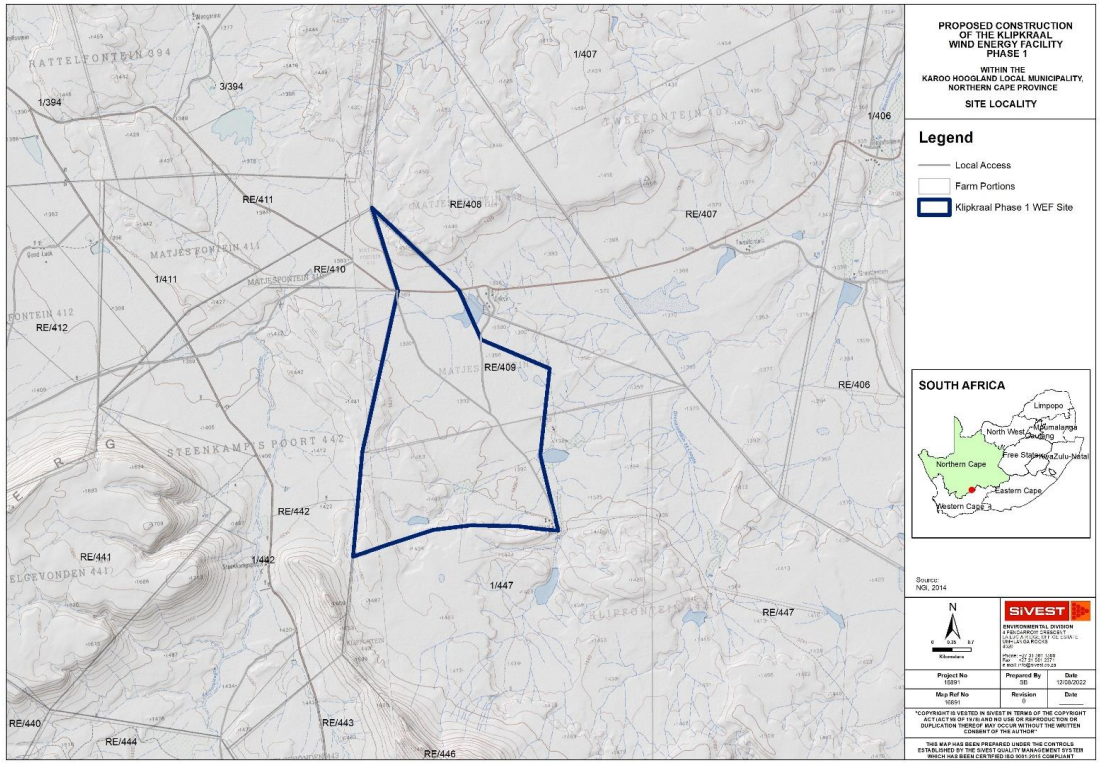

Figure 1:Locality map illustrating the locations of the Klipkraal Wind Energy Facility (WEF) 1.

1.1 Terms of Reference

The proposed wind farm projects are situated near the town of Fraserburg, are subject to full EIA processes respectively, in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended) and the EIA Regulations, 2014 (as amended). Accordingly, separate respective EIA processes, as contemplated in terms of the EIA Regulations (2014, as amended), are being undertaken for each proposed wind farm project (including associated infrastructure).

It should be noted that five (5) separate EIA processes will ultimately be undertaken for the proposed wind farm projects, one (1) for each wind farm phase which makes up the larger Klipkraal Wind Energy Facility (WEF). The competent authority for these separate EIA processes is the national Department of Forestry, Fisheries and the Environment (DFFE).

Grid connection infrastructure for the respective wind farm projects will be subject to a separate Basic Assessment (BA) Process, as contemplated in terms of regulation 19 and 20 of the 2014 EIA Regulations (as amended), which is being undertaken in parallel to the separate EIA processes for each respective wind farm project. It should be noted that one (1) BA process will ultimately be undertaken for the proposed Grid Connection Infrastructure project encompassing all five (5) WEF's

1.2 Specialist Credentials

This full SIA Report has been undertaken by Nondumiso Bulunga of Synergy Global Consulting.

- 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.

- Dan Sonnenberg has over 20 years of experience supporting companies with internal policy and community relations. As an associate at Synergy, Dan has provided advisory services to companies and organisations focusing on social performance - conflict resolution, resettlement, socio-economic development. Dan has BSc in Natural Sciences with other skills such as social impact assessments, stakeholder engagement planning and execution and socio-economic development planning for rural people

1.3 Assessment Methodology

1.3.1 Purpose of the study

The current report is the result of the EIA phase of a social impact assessment for the Klipkraal WEF.

The International Principles for Social Impact Assessment (Vanclay, 2003) 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 full 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 and describe 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).

1.3.2 Approach to study

This Social EIA Report provides a detail of the current socio-economic setting within which the Klipkraal Wind Facility (WEF) 1 is proposed. It is intended to identify potential generic areas of impact (positive and negative)

that may arise from the various phases of development of the WEF (construction through to decommissioning).

This Social EIA Report provides a snapshot of the current social setting within which the Klipkraal Wind Energy Facility (WEF) 1 is proposed. It provides a high-level overview of the manner in which the status quo is likely to change or be impacted by the construction, operation and decommissioning of the project, as well as the way the social environment is likely to impact on the development itself.

The EIA 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

1.3.3 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). They 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 groupings and sub-groupings (IFC, 2007). Identifying stakeholders that are affected by a project is important to determine who might be impacted by the development and in what way. The key stakeholders in the area proposed for the development have been identified, grouped / sub-grouped and described (as per Ilse Aucamp SIA methodology and Aucamp et al, 2011). They are located in the 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 (refer to Figure 2).

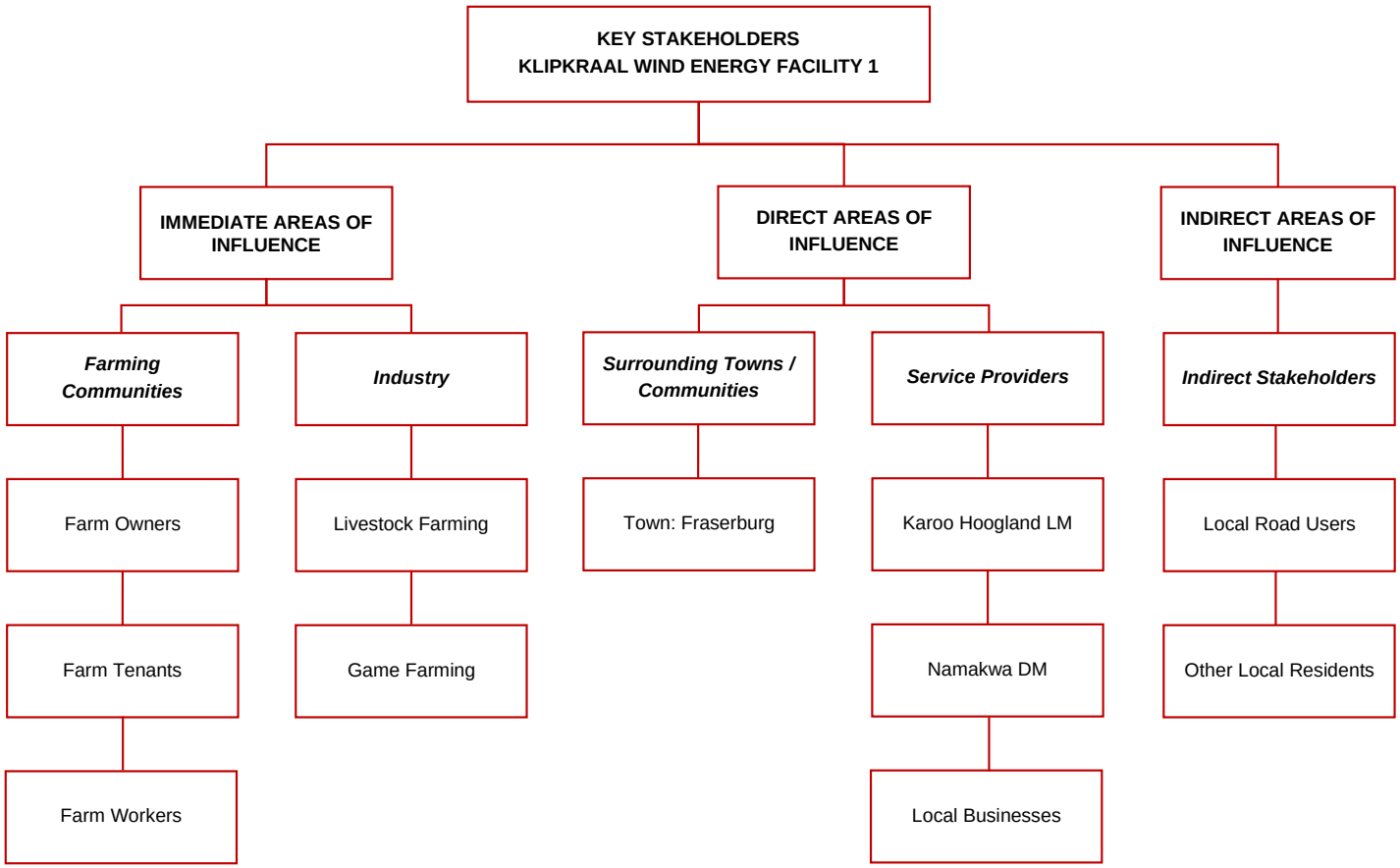

Figure 2 Stakeholder identification and mapping

A description of each of the stakeholder groups in relation to the proposed wind energy facility and associated infrastructure is provided below:

Farming community: The farming community can be divided into three categories: farm owners, farm tenants, and farm workers. Farm owners comprise individuals who own and make a living off of their properties. Farm tenants are people who rent land and work on the land to earn an income. Farm workers are people who work, and also often reside, on the farm with their families, and are seen as a vulnerable community.

Farming industry: There are potentially impacted farming activities in the broader study area of the project. Agriculture is one of the main economic activities within the area, and the primary agricultural activity is livestock farming.

Surrounding towns / affected communities: The closest town to the proposed facility is Fraserburg. The town of Fraserburg it is one the main towns in the Karoo Hoogland LM.

Service providers: The major service providers which will be affected by the project include the DM, LM, and local businesses in the area. The Karoo Hoogland LM and to a lesser degree the Namakwa DM are likely to be impacted by the proposed development both negatively and positively.

Stakeholders outside the direct area of influence: There are a number of stakeholders that reside outside the direct area of influence but who may be affected by the project.

1.3.4 Collation and review of existing information

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

- Project maps.
- Google Earth imagery.
- A description of the project (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 wind energy facility and associated infrastructure.

1.3.5 Key considerations and impacts of wind energy facilities

This section of the social impact report provides a brief overview of the different components associated with a wind turbine generator. The main components included in a wind turbine according to Manwell *et al*, (2002:283) are the rotor, the drive train, the main frame, the yaw system and the tower.

Wind turbines use the energy from the wind to generate electricity. A wind turbine consists of four large main components (Figure 2-1):

- The rotor
- The nacelle
- The tower
- The foundation unit.

The mechanical power generated by the rotation of the blades is transmitted to the generator within the nacelle via a gearbox and drive train. The wind turns the blades, which in turn spin a shaft which connects to a generator and generates electricity. The use of wind for electricity generation is essentially a non-consumptive use of a natural resource and produces zero greenhouse gas emissions.

Turbines can operate at varying speeds. The amount of energy a turbine can harness depends on both the wind velocity and the length of the rotor blades. The turbines being considered for use at the wind farm of up to 200MW in capacity.

Various wind turbine designs and layouts are being considered by the project developer in order to maximise the generating capacity of the sites while minimising environmental impacts. The final facility layouts, turbine capacities and models will depend on what is deemed suitable for the project sites in relation to, among other things, further studies of the wind regime, terrain, environmental constraints and social sensitivities.

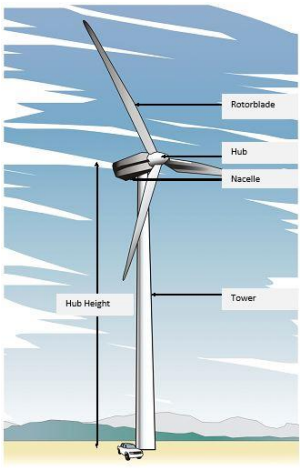

Figure 1-3 Main components of a wind turbine

The length of the construction period for each of the wind farms is estimated to be approximately 30 months. A turbine is designed to operate continuously, with low maintenance, for 20 to 25 years.

1.3.5.1 Approach to identification of potential impacts

According to Vanclay's list of social impact variables, there are various social impact variables that need to be considered across the project and need to be clustered under the flowing main categories:

1. Health and social well-being
2. Quality of the living environment (liveability)
3. Economic
4. Cultural.

1.3.5.2 Health and social wellbeing

The health and social wellbeing impacts related to the project include air quality, noise, shadow flicker, blade glint, electromagnetic field and RF interference, increase in crime, increased risk of HIV infections, influx of construction workers and hazard exposure during transportation and construction (as a result of using heavy vehicles). Each of these impacts are addressed below.

Regarding **air quality**, construction activities are likely to result in the generation of dust and exhaust emissions. Although air quality is subject to a separate specialist study, it should be noted as a factor that may have health consequences.

Concerning **noise,** the operation of the wind turbines has the potential to result in the generation of noise levels that could have nuisance and health impacts for surrounding communities (Michaud, et al., 2016).

Potential impacts from **shadow flicker** which could be experienced during the operation phase could result in the blades momentarily casting shadows that create a strobe-like effect which may be annoying and regarded a health hazard by some people. While **blade glint,** meaning the light reflected off the turbine blades that may result in a flickering sensation, may affect residents in their homes and distract motorists travelling along nearby roads such as the N14.

Electromagnetic fields (EMFs) and radio frequency interference (RFI) have been associated with grid connection power lines and wind turbine generators, although the exact extent of this risk remains unclear according to Krogh & Harrington, 2019.

Crime is most likely during the construction phase if at all. It is often opportunistic crime such as stock theft, abuse of alcohol and relationship related crime that is associated with construction activities. Considering the relative remoteness of the area, it is unlikely that the project will lead to any significant increase in crime levels, however, it is appropriate for the developers to ensure that processes are put in place through which any suspected criminal activities associated with the project can be easily communicated and swiftly addressed.

The increased risk of **HIV infections** is likely to be at its highest during the construction phase of the project as the workforce increases. It is likely to subside during the operational phase. It is important that this issue be given serious attention and that the mitigation measures are implemented, and that the situation is closely monitored throughout the construction and operational phases of the project.

The **influx of workers** may lead to the disruption of social networks with the formation of temporary relationships and an increase in pregnancy which may place pressures on local family units. The arrival of construction workers may result in a formation of a subculture that could manifest in antisocial behaviour, which conflicts with norms and standards of local communities.

Aylin, Colak & Dagdeviren, 2018, reported that the highest risks associated with wind energy facilities occur during transportation and construction. During the construction period, the use of heavy equipment and vehicles and an increase in vehicle traffic along the N14 will result in increased risk to the personal safety of people and animals. Excavation work and trenches also pose a hazard to the safety of people, particularly children and animals.

1.3.5.3 Quality of living environment

There are three aspects that need to be observed as part of the investigation for the quality of life:

1. Disruption of daily living patterns
2. Disruptions to social and community infrastructure
3. Transformation of the sense of place.

If there are any **disruptions to daily living patterns**, these are minimal and are likely to take place during the construction phase. This impact will be associated with the site and the main access roads. **Disruptions to social and community infrastructure** are most likely to occur during the construction phase. In addition, considering the cumulative basis, the activities taking place in, and being planned for the area, it is unlikely there would be a significant impact in this regard. The wind energy facility will be highly visible and will result in the **landscape being transformed** from that of a rural setting to what would be considered by some to be more industrial. The visual environment and noise are both important elements through which a sense of place is developed.

1.3.5.4 Economic

Economic impacts are related to the following:

1. Job creation and skills development
2. Socio-economic stimulation.

The project will **create both direct and indirect jobs** which will have a positive economic benefit within the region. Job opportunities will be available and many of the low and semi-skilled employment opportunities will probably be available to locals. Many of the beneficiaries are likely to be historically disadvantaged members of the community and the project will provide opportunities to develop skills for local people. The project will stimulate the local economy. This will contribute in the form of disposable salaries and the purchase of services and supplies from local communities in and around Fraserburg. The developer would need to ensure that there is a corporate social responsibility plan in place, the intention of which is ensure that it falls in line with the Renewable Energy Independent Power Producer Procurement (REIPPP) BID guidelines or to put an equivalent plan in place.

The **socio-economic values** associated with the proposed Fraserburg WEF 1 are based on review of previously similar projects in the proposed area as well as similar projects in different parts of the country that have been conducted. The construction phase for similar WEF's like the Fraserburg WEF 1 will extend over a period of 24 to 36 months (2-3 years). The total estimated wage bill for the construction phase is ±R 54 million, where total capital expenditure estimate for construction phase is ±R 2.4 billion. The

construction phase will employ 300-400 employees. The number of employment opportunities in terms of low skilled, semi-skilled and skilled is: ± 165 - 220 (± 55%); ± 90 - 120 (± 30%) and ± 45 - 60 (± 15%) respectively.

The typical lifespan of WEFs is 20 to 25 years. During the operational phase there will be a significant decrease in employment opportunities, hence the potential socio-economic benefits will be limited. The total number of people employed in the operational phase is ± 40 – 50. Typical employees that might be required include technicians, electricians, engineers, IT specialists, environmental specialists, health and safety managers, and administrators (skilled); drivers and equipment operators (semi-skilled); construction workers and security staff (low-skilled). It should be noted that the majority of the semi- and low-skilled employment opportunities are likely to be available to the communities of Fraserburg.

1.3.5.5 Cultural

At a social level, it is likely that any cultural impact will be associated with sensitive archaeological and/or heritage sites that may be found. In this regards, the following recommendation is appropriate:

> "*The main heritage concerns for this project are archaeological sites and the cultural landscape. Some archaeological sites are within the current layout but none of these are highly significant sites and none require in situ conservation. It is, of course, always best to avoid any sites that have some research value and hence cultural significance, but excavation within a commercial mitigation context would be completely acceptable for all of the sites concerned here*."

1.3.6 Collection of primary data

Primary data was collected in the form of sending emails and short message service (SMS) in November 2022 to all identified stakeholders and interested and affected parties. The following is a summary of responses received by the project.

Person	Representative details	Date of contact / attempted contact	Notes and feedback (not verbatim, only summarised)
Mpho Mangwegape	Environmental Officer From department of Water and sanitation	09 November 2022	**Are you aware that there is a wind farm planned in this municipal area?** Yes **What potential impacts do you think this wind farm will have in this area?** Job creation **Does the municipality experience any water shortages?** Yes

Person	Representative details	Date of contact / attempted contact	Notes and feedback (not verbatim, only summarised)
			Can you think of any environmental impacts that that might occur because of this wind energy facility? Loss of habitat Impact on water resources Erosion Impact on heritage sites (archaeological and paleo-anthropological)
Adjacent landowner		During the public participation during scoping phase	The reason for considering an energy facility at the subject site is unclear. In terms of the overarching land use policy for the area, namely the Northern Cape Provincial Spatial Development Framework (PSDF), and key legislation (with specific reference to the National Environmental Management Act {NEMA}), the objectives of sustainability should be the determining criteria when considering development. Due to Klipkraal's remoteness and distance from essential services and infrastructure, it is highly questionable

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. Interviewees were asked about their perceptions, interest and concerns regarding 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-making.

1.3.7 Impact assessment evaluation method

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the possible mitigation of the impact. Impacts have been consolidated into a single rating. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

Table 1-1 Rating of impacts criteria

ENVIRONMENTAL PARAMETER
A brief description of the environmental aspect likely to be affected by the proposed activity (e.g. surface water).
ISSUE / IMPACT / ENVIRONMENTAL EFFECT / NATURE
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particularaction or activity (e.g. oil spill in surface

water).		
EXTENT (E)		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during thedetailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site
2	Local/district	Will affect the local area or district
3	Province/region	Will affect the entire province or region
4	International and National	Will affect the entire country
PROBABILITY (P)		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (greater than a 75% chance of occurrence).
REVERSIBILITY (R)		
This describes the degree to which an impact on an environmental parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES (L)		
This describes the degree to which resources will be irreplaceably lost because of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
DURATION (D)		
This describes the duration of the impacts on the environmental parameter. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effectswill last for the period of a relatively short construction period anda limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).

2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct humanaction or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entireoperational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (indefinite).
INTENSITY / MAGNITUDE (I / M)		
Describes the severity of an impact (i.e. whether the impact has the ability to alter the functionality or quality of a system permanently or temporarily).		
1	Low	Impact affects the quality, use and integrity of the system / component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE (S)		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the environmental parameter. The calculation of the significance of an impact uses the following formula: **Significance = (extent + probability + reversibility + irreplaceability + duration) x magnitude/intensity.**		

The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Points	Impact Significance Rating	Description
5 to 23	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
5 to 23	Positive low impact	The anticipated impact will have minor positive effects.
24 to 42	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
24 to 42	Positive medium impact	The anticipated impact will have moderate positive effects.
43 to 61	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level ofimpact.
43 to 61	Positive high impact	The anticipated impact will have significant positive effects.
62 to 80	Negative very high impact	The anticipated impact will have highly significant effects and is unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
62 to 80	Positive very high impact	The anticipated impact will have highly significant positive effects.

2. ASSUMPTIONS AND LIMITATIONS

- Data derived from the 2011 Census; Northern Cape Provincial Growth and Development Strategy 2004-2014); Northern Cape Climate Change Response Strategy; Karoo Hoogland Local Municipality Integrated Development Plan; Namakwa District Municipality Integrated Development Plan (2017 – 2022) was used to generate most of the information provided in the baseline profile of the study area. There may have been significant demographic, socio-economic, and socio-political changes, amongst others, since the initial 2011 Census and data used may, therefore, 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.
- This 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.
- It is assumed that the motivation for, and planning and feasibility study of the project, was undertaken with integrity; and that information provided by the project proponent is accurate and true at the time of preparing this Report.

3. TECHNICAL DESCRIPTION

3.1 Project Location

The proposed WEF and associated grid connection infrastructure is located approximately 30 km south east of Fraserburg in the Karoo Hoogland Local Municipality, in the Namakwa District Municipality.

3.1.1. Wind Energy Facility

Phases 1 to 3 of the WEF application site incorporates the following farm portions:

- Remainder of the Farm Matjesfontein No. 409 (RE/409) - C02600000000040900000;
- Remainder of the Farm Klipfontein No. 447 (RE/44) - C02600000000044700000; and
- Portion 1 of the Farm Klipfontein No. 447 (1/447) - C02600000000044700001.

Phases 4 to 5 of the WEF application site incorporates the following farm portions:

- Portion 3 of the Farm Ratelfontein No. 394 (3/394) - C02600000000039400003; and

- Remainder of the Farm Matjiesfontein No. 411 (RE/411) - C02600000000041100000.

3.2 Project Description

The details of the proposed wind farm projects which form part of the larger Klipkraal WEF are as follows:

Phase	Applicant	Capacity	No. of turbines
Phase 1	Klipkraal Wind Facility 1 (Pty) Ltd	300MW	60
Phase 2	Klipkraal Wind Facility 2 (Pty) Ltd	300MW	60
Phase 3	Klipkraal Wind Facility 3 (Pty) Ltd	300MW	60
Phase 4	Klipkraal Wind Facility 4 (Pty) Ltd	300MW	60
Phase 5	Klipkraal Wind Facility 5 (Pty) Ltd	300MW	60

The Klipkraal WEF will each include the following components:

Wind Turbines:

- Between approximately 60 turbines, between 5MW and 8MW, with a maximum export capacity of up to approximately 300MW . This will be subject to allowable limits in terms of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) or any other program.
- The final number of turbines and layout of the wind farm will, however, be dependent on the outcome of the Specialist Studies in the EIA phase of the project;
- Each wind turbine will have a maximum hub height of up to approximately 200m;
- Each wind turbine will have a maximum rotor diameter of up to approximately 200m;
- Permanent compacted hardstanding areas / platforms (also known as crane pads) of approximately 100m x 100m (total footprint of approx. 10 000m2) per wind turbine during construction and for on-going maintenance purposes for the lifetime of the proposed wind farm projects. This will however depend on the physical size of the wind turbine;
- Each wind turbine will consist of a foundation (i.e. foundation rings) which may vary in depth, from approximately 3m and up to 5m or greater, depending on the physical size of each wind turbine. It should be noted that the foundation can be up to 700m³

Electrical Transformers:

- Electrical transformers will be constructed near the foot of each respective wind turbine in order to step up the voltage to 66kV.
- The typical footprint of the electrical transformers is approximately 10m x 10m, but can be up to 20m x 20m at certain locations

Step-up / Collector Substations:

- One 11-66/132-400kV step-up / collector substation, each occupying an area of up to approximately 2ha,
- The proposed substations will include an Eskom portion and an Independent Power Producer (IPP) portion; hence the substations have been included in each respective wind farm EIA and in the grid connection infrastructure BA (substations, switching stations and power lines) to allow for handover to Eskom.
- Following construction, the substations will be owned and managed by Eskom. The current applicant will retain control of the medium voltage components (i.e. 33kV components) of the substations, while the high voltage components (i.e. 33kV components) of the substation, while the high voltage components (i.e. 400kV components) of the substation will likely be ceded to Eskom shortly after the completion of construction

Main Transmission Substations (MTS):

- One (1) new 132/400kV Main Transmission Substation (MTS) is being proposed, occupying an area of up to approximately 120ha.
- The proposed MTS will include an Eskom portion and an IPP portion.
- Following construction, the substations will be owned and managed by Eskom. The current applicant will retain control of the 132-400kV and lower voltage components of each MTS, while the 132/400kV voltage components of each MTS will likely be ceded to Eskom shortly after the completion of construction

Electrical Infrastructure:

- The wind turbines will be connected to the proposed substations via medium voltage (i.e. 33kV) cables.
- These cables will be buried along access roads wherever technically feasible, however, the cables can also be overhead (if required)
- Each WEF will then connect to the MTS via an up to 400kV powerline.

Battery Energy Storage Systems (BESS):

- One (1) Battery Energy Storage System (BESS) will be constructed for the wind farm and will be located next to the 33-66/132-400kV step-up / collector substations which form part of the respective wind farms, or in between the wind turbines.
- It is anticipated that the type of technology will be either Lithium Ion or Sodium-Sulphur (or as determine prior to construction).

- These batteries are not considered hazardous goods as they will be storing 'energy'.
- The size, storage capacity and type of technology will be determined / confirmed prior to construction. This information will be provided to I&APs prior to the commencement of construction.

Roads:

- Internal roads with a temporary width of up to approximately 15m will provide access to the location each wind turbine. These roads will be rehabilitated back to 8m once construction has been completed.
- Existing site roads will be used wherever possible, although new site roads will be constructed where necessary.
- Existing site roads may also be upgraded using temporary concrete stones in order to accommodate for the heavy loads.
- Turns will have a radius of up to 50m for abnormal loads (especially turbine blades) to access the various wind turbine positions.

Site Access:

- The proposed wind farm application sites will be accessed via existing gravel roads from the R353 Regional Route

Temporary Staging Areas:

- A temporary staging area will be required for the wind farm and will be located both at the foot of each wind turbine and at the storage facility (i.e. turbine development area) to allow for working requirements
- One (1) temporary staging area per wind turbine / range of wind turbines will be required.
- Temporary staging areas will cover an area of up to approximately 100m x 100m (10 000m2 / 1ha) each.

Temporary Construction Camps:

- One (1) temporary construction camp will be required during the construction phase for the wind farm.
- This area will be used as a permanent maintenance area during the operational phase.
- The combined Temporary Construction Camp / Permanent Maintenance Area will cover an area of up to approximately 2.25ha.

- A cement batching plant as well as a chemical storage area will fall within each Temporary Construction Camp and Permanent Maintenance Area.
- The Temporary Construction Camp and Permanent Maintenance Area will be strategically placed around the proposed wind farm sites and will avoid all high sensitivity and/or 'no-go' areas;

Offices, Accommodation, a Visitors' Centre and Operation & Maintenance (O&M) Buildings:

- An office (including ablution facilities), accommodation, a Visitors' Centre and Operation & Maintenance (O&M) building will be required and will occupy areas of up to approximately 100m x 100m (i.e. 1ha).
- Each wind farm (i.e. each phase) will have its own O&M building and Office, however, the Accommodation and Visitors' Centre will be centralised locations which will be shared between certain wind farm projects (i.e. shared between certain phases which will be confirmed at a later stage).

Septic Tank and Soak-Away Systems:

- The proposed wind farm will consist of septic tank and soak-away systems.
- This will be required for construction as well as long term use.
- Septic tanks and soak-away systems will be placed 100m or more from water resource (which includes boreholes),

Fencing:

- Fencing will be required and will surround the wind farm.
- The maximum height of the fencing as well as the area which the fencing will cover will be confirmed during the detailed design phase, prior to construction commencing.
- Fences will however be constructed according to specifications recommended by the Ecologist and Avifauna specialist (as per the EMPr).

Temporary Infrastructure to Obtain Water from Available Local Sources:

- Temporary infrastructure to obtain water from available local sources will be required. Water may also be obtained from onsite boreholes and from the town of Fraserburg.
- New or existing boreholes, including a potential temporary above ground pipeline (approximately 50cm in diameter) for each wind farm, to feed water to the sites are being proposed.
- Water will potentially be stored in temporary water storage tanks.

- The necessary approvals from the Department of Water and Sanitation (DWS) will be applied for separately (should this be required); and

Temporary Containers:

- Temporary containers of up to approximately 80m³ will be required for the storage of fuel on-site during the construction phase of each wind farm.
- The chemical storage area will fall within the Temporary Construction Camp and permanent Maintenance Area.

4. LEGAL REQUIREMENTS AND GUIDELINES

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:

4.1. 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)

4.2. Provincial Policy and Planning Context:
- Northern Cape Provincial Growth and Development Strategy (2004-2014)
- Northern Cape Province Twenty Year Review (2014)
- Northern Cape Spatial Development Framework (2012)
- Northern Cape Department of Environment & Nature Conservation Annual Report (2016/17)
- Northern Cape Department of Economic Development & Tourism Annual Report (2017)
- Northern Cape State of Province Address (2018)
- Northern Cape Climate Change Response Strategy

4.3. Local Policy and Planning Context:
- Namakwa District Municipality Integrated Development Plan (IDP) (2017 – 2022)
- Karoo Hoogland Local Municipality Integrated Development Plan (IDP) (2017 -2022)

- Karoo Hoogland Spatial Development Framework (SDF) (2019)

4.4. 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 increased utilisation of Renewable Energy (RE) sources is considered integral to reducing South Africa's carbon footprint, diversifying the national economy, and contributing towards social upliftment and economic development. As the project comprises a RE project and would contribute RE supply to provincial and national targets set out and supported within these national policies, it is considered that the project fits within the national policy framework.

A brief review of the most relevant national legislation and policies is provided in table format Table 2 below.

Table 2 Relevant national legislation and policies for the Klipkraal Wind Energy Facility (WEF) 1

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 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. 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.
National Environmental Management Act (No. 107 of 1998) (NEMA)	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. 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. The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.
White Paper on the Energy Policy of the Republic of South Africa (1998)	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

Relevant legislation or policy	Relevance to the proposed project
	environmental costs. Government policy RE is thus concerned with meeting the following challenges: • Ensuring that economically feasible technologies and applications are implemented. • Ensuring that an equitable level of national resources 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. 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.
National Energy Act (No.34 of 2008)	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: • Ensure uninterrupted supply of energy to the Republic. • 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. 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.
Integrated Energy Plan (IEP) (2016)	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. The IEP is a multi-faceted, long-term energy framework which has multiple aims, some of which include:

Relevant legislation or policy	Relevance to the proposed project
	• 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.
National Development Plan 2030 (2012)	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. 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: • 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. The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The development of the grid connection infrastructure is considered to be relevant to the plan due to the need of the infrastructure for economic growth within the Kai !Garib Local Municipality municipal area.
Integrated Resource Plan for Electricity (IRP) 2010- 2030 (2011) and subsequent updates	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. 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. 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;

Relevant legislation or policy	Relevance to the proposed project
	6.25GW of coal; 17.8GW of renewables; and approximately 8.9GW of other generation sources such as hydro, and gas.
Strategic Infrastructure Projects (SIPs)	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: • To unlock opportunity. • Transform the economic landscape. • Create new jobs. • Strengthen the delivery of basic services. • Support the integration of African economies. A balanced approach is being fostered through greening of the economy, boosting energy security, promoting integrated municipal infrastructure investment, facilitating integrated urban development, accelerating skills development, investing in rural development, and enabling regional integration. SIP 8 of the energy SIPs supports the development of RE projects as follow: • SIP 8: Green energy in support of the South African economy: Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP 2010) and supports bio-fuel production facilities. 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.

4.5. Provincial Policies

This section provides a brief review of the most relevant provincial policies. The Klipkraal Wind Energy Facility (WEF) 1 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) below.

Table 3 Relevant provincial and policies for the Klipkraal Wind Energy Facility (WEF) 1

Relevant policy	Relevance to the proposed project
Northern Cape Provincial Growth and Development Strategy (2004 - 2014)	The Northern Cape Provincial Growth and Development Strategy (NCPGDS) identifies poverty reduction as the most significant challenges facing the government and its partners. All other societal challenges that the province faces emanate predominately from the effects of poverty. The NCPGDS notes that the only effective way to reduce poverty is through long-term sustainable economic growth and development, The sectors where economic growth and development can be promoted include: • Agriculture and Agro-processing;

Relevant policy	Relevance to the proposed project
	• Fishing and Mariculture • Mining and mineral processing • Transport • Manufacturing • Tourism However, the NCPGDS also notes that economic development in these sectors also requires: • Creating opportunities for lifelong learning • Improving the skills of the labour force to increase productivity • Increasing accessibility to knowledge and information The achievement of these primary development objectives depends on the achievement of a number of related objectives that, at a macro-level, describe necessary conditions for growth and development. These are: • Developing requisite levels of human and social capital • Improving the efficiency and effectiveness of governance and other development institutions • Enhancing infrastructure for economic growth and social development Of specific relevance to the SIA the NCPGDS refers to the need to ensure the availability of inexpensive energy. The section notes that to promote economic growth in the Northern Cape the availability of electricity to key industrial users at critical localities at rates that enhance the competitiveness of their industries must be ensured, At the same time, the development of new sources of energy through the promotion of the adoption of energy applications that display a synergy with the province's natural resource endowments must be encouraged. In this regard the NCPGDS notes "the development of energy sources such as solar energy, the natural gas fields, bio-fuels etc., could be some of the means by which new economic opportunity and activity is generated in the Northern Cape". The NCPGDS also highlights the importance of close co-operation between the public and private sectors for the economic development potential of the Northern Cape to be realised. The NCPGDS also highlights the importance of enterprise development, and notes that the current levels of private sector development and investment in the Northern Cape are low. In addition, the province also lags in the key policy priority areas of SMME Development and Black Economic Empowerment. The proposed solar energy facility therefore has the potential to create opportunities to promote private sector investment and the development of SMMEs in the Northern Cape Province. In this regard care will need to be taken to ensure that the proposed STPs and other renewable energy facilities do not negatively impact on the regions natural environment, in this regard the NCPGDS notes that the sustainable utilisation of the natural base on which agriculture depends is critical in the Northern Cape with its fragile eco-systems and vulnerability to climatic variation. The document also indicates that due to the provinces exceptional natural and cultural attributes, it has the potential to become the preferred adventure and ecotourism destination in South Africa. Care therefore needs to be undertaken to ensure that the development of large renewable energy project, such as the proposed solar energy facility, do not affect the tourism potential of the province.
Northern Cape Provincial Spatial Development Framework	Northern Cape Provincial Spatial Development Framework (NCSDF) (2012) lists a number of sectoral strategies and plans are to be read and treated as key components of the PSDF. Of these there are a number that are relevant to the proposed STPs. These includes: Sectoral Strategy 1: Provincial Growth and Development Strategy of the Provincial Government;

Relevant policy	Relevance to the proposed project
	Sectoral Strategy 2: Comprehensive Growth and Development Programme of the Department of Agriculture, Land Reform and Rural Development Sectoral Strategy 5: Local Economic Development (LED) Strategy of the Department of Economic Development and Tourism Sectoral Strategy 11: Small Micro Medium Enterprises (SMME) Development Strategy of the Department of Economic Development and Tourism; Sectoral Strategy 12: Tourism Strategy of the Department of Economic Development and Tourism Sectoral Strategy 19: Provincial renewable energy strategy (to be facilitated by the Department of Economic Development and Tourism) Under Section B14.4, Energy Sector the NCSDF (2012), notes the total area of high radiation in South Africa amounts to approximately 194 000 km² of which the majority falls within the Northern Cape. It is estimated that, if the electricity production per km² of mirror surface in a solar thermal power station were 30.2 MW and only 1% of the area of high radiation were available for solar power generation, the generation potential would equate to approximately 64 GW. A mere 1.25% of the area of high radiation could thus meet projected South African electricity demand in 2025 (80 MW) (NCPSDF, 2012). However, the SDF does indicate that this would require large investments in transmission lines from the areas of high radiation to the main electricity consumer centres. The SDF also notes that the implementation of large concentrating solar power (CSP) plants has been proposed as one of the main contributors to greenhouse gas emission reductions in South Africa. In this regard various solar parks and CSP plants have been proposed in the province with Upington being the hub of such developments (NCPSDF,2012). Section C8.23, Energy Objectives, set out the energy objectives for the Northern Cape Province. The section makes specific reference to renewable energy, The objectives are listed below. • Promote the development of renewable energy supply schemes. Large-scale renewable energy supply schemes are strategically important for increasing the diversity of domestic energy supplies and avoiding energy imports while minimizing detrimental environmental impacts • Enhance the efficiency of Eskom's power station at the Vanderkloof power station • To reinforce the existing transmission network and to ensure a reliable electricity supply in the Northern Cape, construct a 400 lV transmission power line from Ferrum Substation (near Kathu/Sishen) to Garona Substation (near Groblershoop). There is a national electricity supply shortage and the country is now in a position where it needs to commission additional plants urgently. Consequently, renewable energy project is a high priority • Develop and institute innovative new energy technologies to improve access to reliable, sustainable and affordable energy services with the objectives to realize sustainable economic growth and development. The goals of service in supplying and providing energy services, tackling climate change, avoiding air pollution and reaching sustainable development in the province offer both opportunities and synergies which require joint planning between local and provincial government as well as the private sector • Develop and institute energy supply schemes with the aim to contribute to the achievement of the targets set by the White Paper on Renewable Energy (2003). This target relates to the delivery of 10 000 GWh of energy from renewable energy sources (mainly biomass, wind, solar, and small-scale hydro) by 2013.

Relevant policy	Relevance to the proposed project
	Section C8.3.3, Energy Policy, sets out the policy guidelines for the development of energy sector, with specific refence to the renewable energy sector. • The construction of telecommunication infrastructure must be strictly regulated in terms of the spatial plans and guidelines put forward in the PSDF. They must be carefully places to avoid visual impacts on landscapes of significant symbolic, aesthetic, cultural or historic value and should blend in with the surrounding environment to the extent possible • EIAs undertaken for such construction must assess the impacts of such activities against the directives above • Renewable energy sources such as wind, solar thermal, biomass and domestic hydroelectricity are to constitute 25% of the province's energy generation capacity by 2020. The following key policy principles for renewable energy apply: • Full cost accounting: Pricing policies will be based on an assessment of the full economic, social and environmental costs and benefits of energy production and utilisation • Equity: There should be equitable access to basic services to meet human needs and ensure human well-being. Each generation has a duty to avoid impairing the ability of future generation to ensure their own well-being • Global and international cooperation and responsibilities: Government recognises its share responsibility for global and regional issues and act with due regard to the principles contained in relevant policies and applicable regional and international agreements • Allocation of functions: Government will allocate functions within the framework of the Constitution to competent institutions and spheres of government that can mostly effectively achieve the objectives of the energy policy • The implementation of sustainable renewable energy is to be promoted through appropriate financial and fiscal instruments • An effective legislative system to promote the implementation of reenable energy is to be developed, implemented, and continuously improved • Public awareness of the benefits and opportunities of renewable energy must be promoted • The development of renewable energy systems is to be harnessed as a mechanism for economic development throughout the province in accordance with the Sustainable Development Initiative (SDI)an approach • Renewable energy must, first and foremost, be used to address the needs of the province before being exported
Northern Cape Climate Change Response Strategy	The key aspects of the PCCRS Report are summarised in the MEC's (NCPG Environment and Nature Conservation) 2011 budget speech "The Provincial Climate Change Response Strategy will be underpinned by specific critical sector climate change adaptation and mitigation strategies that include the Water, Agriculture and Human Health sectors as the 3 key Adaptation Sectors, the Industry and Transport alongside the Energy sector as the 3 key Mitigation Sectors with the Disaster Management, Natural Resources and Human Society, livelihoods and Services sectors as 3 remaining key sectors to ensure proactive long term responses to the frequency and intensity of extreme weather events such as flooding and wild fore, with heightened requirements for effective disaster management Key points from the MEC's address include the NCPG's commitment to develop and implement policy in accord with the National Green Paper for the National Climate Change Response Strategy (2010) and an acknowledgment of the NCP's extreme vulnerability to

Relevant policy	Relevance to the proposed project
	climate-change driven desertification. The development and promotion of a provincial green economy, including green jobs, and environmental leadership is indented as an important provincial intervention in addressing climate change. The renewable energy sector, including solar and wind energy (but also biofuels and energy from waste), is explicitly indicated as important element to the Provincial Climate Change Response Strategy. The MEC also indicated that the NCP was involved in the processing several WEF and Solar Energy Facility EIA applications.
Northern Cape Province Green Document	The NCP Green Document (2017-2018) was prepared by the Northern Cape Department of Economic Development and Tourism and provides an impact assessment of IPPs on the communities in the province located within a 50 km radius from existing facilities. The document notes that the NCP is nationally a leader in commercial-scale renewable energy projects. By 2018 a total of 23 IPP projects in the province had been integrated into the national grid. These projects include Solar PV, Concentrated Solar and WEFs. The document notes that through their economic development obligations these projects have already made a significant positive contribution to affected communities. Much of the effort has been directed at supporting local education. The document also notes that, as these projects are committed to 20-year minimum lifespans, the collectively hold a tremendous potential for socio-economic upliftment. Key issues identified about improving the potential beneficial impact of IPPs in the NCP include: • Local community members abusing project benefits for personal gain. • Difficulty in outreach to local community beneficiaries due to high local illiteracy levels. • A lack of business skills generally hampers the successful establishment of local small enterprises which could benefit from projects. • Community benefit obligations are currently met in a piecemeal and uncoordinated fashion. • Anticipated community benefits are often frustrated by inadequate engagement and insufficient ongoing consultation. • The scarcity of people skilled in maths and sciences in local communities hampers meaningful higher-level local skills development and employment. • Insufficient support from local municipalities for IPP development.

4.6. 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 Klipkraal Wind Energy Facility (WEF) 1 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 4 below.

Table 4 Relevant district and local municipal policies for the Klipkraal Wind Energy Facility (WEF) 1

Relevant policy	Relevance to the proposed project
Namakwa District Municipality Integrated Development Plan (IDP) (2017 – 2022)	The Namakwa District Municipality IDP (2017-2022) contains thirteen strategic objectives namely: • Monitor and support local municipalities to deliver basic services which include water, sanitation, housing, electricity and waste management • Support vulnerable groups • Improve administrative and financial viability and capability • Promote and facilitate Local Economic development • Enhance good governance • Promote and facilitate spatial transformation and sustainable urban development • Improve communication and communication systems • Establish a customer care system • Invest in the improvement of ICT systems • To render a municipal health service • To coordinate the disaster management and fire management services in the district • Implement the climate change response plan • Caring for the environment The IDP includes sectoral plans which are intended to ensure alignment between the different organs of state while providing input in the overall strategic objectives of the municipality. Sectoral plans include the Rural Development Plan, Climate Change Response Plan, Tourism Sector Plan, Air Quality Plan and the Housing Sector Plan. The Rural Development Plan notes that the NDM has a competitive advantage in the energy sector with solar, wind, nuclear, wave and natural gas energy plants identified for the area. Of note is the potential for an Eskom nuclear power plant to be constructed at Klienzee. RE has recently become one of the cornerstones of NDM's economy of the District and there needs to be engagement on a National level to ensure that the district profits from this resource. The plan notes unemployment as one of the main reasons for poverty and highlights the importance of productive employment opportunities for reducing poverty and poverty and achieving sustainable economic and social development. Economic diversification is important in rural areas is crucial for bringing about rural development. The Tourism Sector Plan is of relevance to the proposed development as it identifies existing and priority tourism clusters based on destinations and distribution points. Five such clusters have been identified. The clusters include the diamond and history cluster, the river and grapes cluster, outdoor action cluster, the Kalahari adventure cluster and the Ocean, desert and flower cluster, which the proposed power line would pass by
Karoo Hoogland Local Municipality Integrated Development Plan (IDP) (2017 -2022)	The KH IDP (2017-2022) identifies four Key Performance Areas (KPAs). The following categories of importance for the Municipality is as follows for the KPA's: KPA 1, Basic Service Delivery and KPA 2, Local Economic Development, are the most relevant to the proposed project. In terms of KPA 2, Local Economic Development (LED), the IDP highlights the importance of private public partnerships for achieving economic development in the KH. The LED policy framework identifies a number of LED Policy Pillars/Thrusts. Of relevance to the Needs Assessment these include building a diverse economic base, developing learning and skilful economies, and enterprise development and support. The IDP identifies a number of projects associated with the LED Pillar/Thrusts. Of relevance these include: **Building a diverse economic base** • Investigate possible opportunities for development of renewable energy. **Developing learning and skilful local economies**

Relevant policy	Relevance to the proposed project
	• Identify skill gaps and implements skills development and training programmes **Developing inclusive economies** • Support the informal and rural economy. • Support development of women and the youth. • Establish community gardens. The IDP also highlights the need to support for the rural economy, with specific reference to the One House Hold One Hectare (1HH1HA) Programme. The Objectives of the 1HH1HA Programme include reducing poverty in rural areas, creating opportunities for Black Commercial Smallholding Farmers, improving security of tenure for HD rural communities and develop farming skills. The benefits for the 1HH1HA Programme include job creating, poverty alleviation, food security, skills development, security of tenure and restoration of dignity to marginalised HD rural communities. KPA 2, Local Economic Development (LED) identifies the need to address the challenges facing vulnerable groups in the KH, including the youth and physically and mentally challenged members of the community. The high unemployment levels and the lack of meaningful employment opportunities represents a key challenge faced by the youth in the KH. There are also inadequate educational facilities/institutions such as Technikons, FET colleges and Universities in the KH and ND. The IDP also refers to the need to interact with National and Provincial and District agencies aimed at youth development. The provision of quality education at Early Child Development (ECD) is also a key need. The challenges facing ECDs include lack of proper facilities and support material at learning centres, lack of funding, and food security. The IDP also highlights the threat posed by climate change, noting it threatens food security, poverty alleviation and sustainable socio-economic growth. Vulnerable households are at most risk. A combination of increasing temperatures and reduced and/or more variable rainfall could have severe negative impacts for the Namakwa District, including the KHM. In this regard the KHM is characterised by high levels of poverty and inequality, isolated communities, and a large geographical area, which results in a vulnerable population. Large numbers of people, both private and communal, are also directly dependent on agriculture, and therefore on functioning ecosystems and water regimes, for their livelihoods. These communities and households are therefore directly affected by the risks posed by climate change. . The IDP notes that the KHM is likely to be one of the most affected municipalities in terms of the impact of climate change on water quality and availability. Addressing these threats and the needs associated with the threat posed by climate change is therefore a key challenge.
Karoo Hoogland Spatial Development Framework (SDF) (2019)	The KH Spatial Development Framework (SDF) (2019) identifies list four strategies, namely: **Strategy 1: Enhance local connectivity** The objectives of Strategy 1 include improving the connection between the towns of Sutherland, Williston and Fraserburg and the surrounding rural areas, and support for the diversification of economies, tourism, the knowledge economy, the green economy and alternative energy-related enterprise development. **Strategy 2: Protecting local resources** The objectives of Strategy 2 include integrated management and prioritisation of Karoo Hoogland's natural and man-made cultural landscape resources and protection of high value

Relevant policy	Relevance to the proposed project
	agricultural land. The actions identified include alien vegetation clearing and riverine and wetland management and environmental awareness and education programmes. **Strategy 3: Urban and rural development** The objectives of Strategy 3 include more sustainable land reform process and in areas closer to urban centres, creating opportunities for increased food security and economic development for rural dwellers, creation of sustainable and accessible employment opportunities, and improved opportunities in the Tourism Sector. The actions identified include establishing opportunities for urban agriculture (home, school and community gardens) to promote household food security and improved nutrition, create opportunities for local food producers to market their products (farmers markets, etc.), and establishment of artisan workshops to provide local population with the chance to develop skills to participate within the economic sectors. Tourism and the renewable energy sector are identified as key drivers in terms of development in the KH. **Strategy 4: Enhance infrastructure development** The objectives of Strategy 3 include, maintain basic services and addressing backlogs, improving public facilities and access to these facilities, improving public transport and access to public transport and recycling programmes.

The implementation of Klipkraal Wind Energy Facility (WEF) 1 would contribute towards addressing the Karoo Hoogland local municipality 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.

4.7. **Conclusion**

The main findings of the review of the policy documents on all spheres of Government indicated that strong support was given towards renewable energy, specifically wind energy. The White Paper on the Energy Policy of the Republic of South Africa of 1998 stated that due to the fact that renewable energy resources operate from an unlimited resource base, for example the wind, renewable energy can increasingly contribute towards a long-term sustainable energy for future generations. This policy further highlighted that due to the unlimited resources base of renewable energy in South Africa, renewable energy applications like wind energy is considered as having lowest water consumption, lowest relative greenhouse gas emission, and most favourable social impacts. It is considered as one of the most sustainable renewable energy sources. The Integrated Resource Planning for Electricity for South Africa of 2010 – 2030, the National Infrastructure Plan of South Africa and the New Growth Path Framework all support the development of the renewable energy sector.

In particular, the IRP also indicated that 43% of the energy generations in South Africa is allocated to renewable energy applications. On District and Local level not much attention is given to renewable sources like wind energy, however the documents reviewed do make provision for energy efficiency in improving the quality of lives in terms of efficient physical infrastructure. At Provincial, District and Local level the policy

documents support the applications of renewables. The Northern Cape Provincial Development and Resource Management Plan/ Provincial Spatial Development Framework (PSDF) of 2012 indicated that the development of renewable energy applications such as WEFs, could be some of the means by which the Northern Cape can benefit economically. The review of the relevant policies and documents related to the energy section, indicate that renewables like wind energy and the establishment of WEFs are supported by all spheres of Government.

The legislative context plays an important role in identifying and assessing the potential social impacts associated with a proposed development. The policies also highlight awareness of the need for socio-economic development; skills and training; improved education towards future employability. The developments that are undertaken in the area from such proposed projects has a potential to provide support to socio-economic development and enterprise development will further benefit the surrounding communities and local municipality.

5. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The proposed WEF and associated grid connection infrastructure is located approximately 30 km southeast of Fraserburg in the Karoo Hoogland Local Municipality, in the Namakwa District Municipality.

Phases 1 to 3 of the WEF application site incorporates the following farm portions:

- Remainder of the Farm Matjesfontein No. 409 (RE/409)
- Remainder of the Farm Klipfontein No. 447 (RE/44) and Portion 1 of the Farm Klipfontein No. 447 (1/447).

Phases 4 to 5 of the WEF application site incorporates the following farm portions:

- Portion 3 of the Farm Ratelfontein No. 394 (3/394) and
- Remainder of the Farm Matjiesfontein No. 411 (RE/411).

Table 5 Spatial Context of the study area for the development of the Klipkraal Wind Energy Facility (WEF)

Province	Northern Cape Province
District Municipality	Namakwa District Municipality
Local Municipality	Karoo Hoogland Local Municipality
Ward number(s)	3
Nearest town(s)	30km southeast of Fraserburg
Preferred access	The proposed wind farm application sites will be accessed via existing gravel roads from the R353 Regional Route

This Chapter provides an overview of the social environment of the province, DM, and LM within which the Klipkraal Wind Energy Facility (WEF) 1 is proposed and provides the social basis against which potential issues can be identified.

5.1 Northern Cape Province

The Northern Cape Province is the largest province in South Africa and covers an area of 361 830 km2 and, constitutes approximately 30% of South Africa. The province is divided into five district municipalities (DM), namely, Frances Baard, Karoo, Namakwa, Pixley Ka Seme and ZF Mgcawu District Municipality (known before 1 July 2013 as Siyanda DM). Despite having the largest surface area, the Northern Cape has the smallest population of 1 193 780 (Community Household Survey, 2016) or 2.2% of the population of South Africa. Of the five districts, Frances Baard has the largest population (32.5%), followed by ZF Mgcawu District Municipality (21.2%), John Taola Gaetsewe (20.3%), Pixley ka Seme (16.4%) and Namakwa (9.7%). The

majority of the population in the Northern Cape Province are Black African (48.1%), followed by Coloureds (43.7%) and Whites (7.7%).

In terms of age, 36.5% of the Northern Cape population is between 15 and 34 years old, which is the highest age distribution, followed by 29.2% of those aged 35–64 years, while only 6.6% comprised those aged 65 years and older. Similarly, this pattern is also seen across all districts in the province. The district profile shows that the highest proportions of persons aged 15–34 years were recorded in Pixley Ka Seme, ZF Mgcawu and John Taolo Gaetsewe districts. The figures for these three districts were also above the provincial average of 36.5%. The proportion of persons aged 65 years and older was higher in Namakwa (9.5%) and Frances Baard (8.2%).

The Northern Cape offers unique tourism opportunities including wildlife conservation destinations, natural features, historic sites, festivals, cultural sites, star gazing, adventure tourism, agricultural tourism, ecotourism, game farms, and hunting areas, etc. The province is home to the Richtersveld Botanical and Landscape World Heritage Site, which comprises a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site under the World Heritage Convention. The Northern Cape is also home to two (2) Transfrontier National Parks, namely the Kgalagadi Transfrontier Park, and the Richtersveld /Ai-Ais Transfrontier Park, as well as five (5) national parks, and six (6) provincial reserves.
The Northern Cape plays a significant role in South Africa's science and technology sector, and is home to the Square Kilometre Array (SKA), the Southern African Large Telescope (SALT), and the Karoo Array Telescope (MeerKAT).

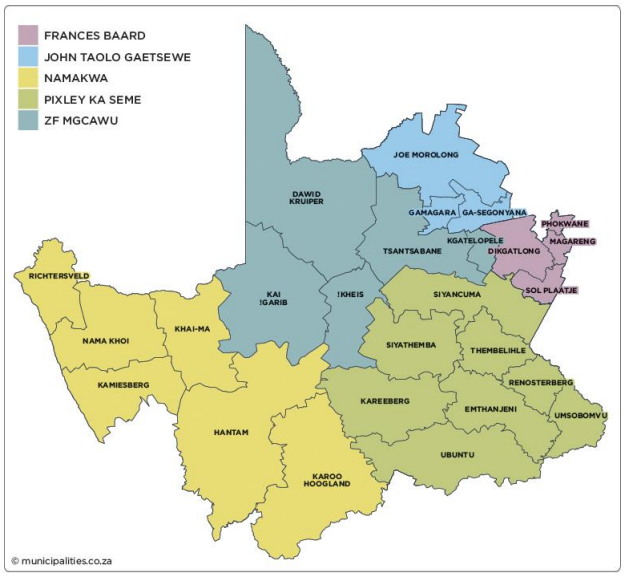

Figure 4: Map showing the district municipalities of the Northern Cape (Source www.municiaplities.co.za)

5.2 Namakwa District Municipality

The Namakwa District Municipality (NDM) is situated in the north-western corner of South Africa and is bordered by the Atlantic Ocean to the west, Namibia to the north, ZF Mgcawu and Pixley ka Seme District Municipalities to the north-east and east, respectively and the Western Cape Province to the south. The NDM is made up of six local municipalities, namely Richtersveld, Nama Khoi, Khai Ma, Kamiesberg, Hantam and Karoo Hoogland. The district has an area of 126 836km², making it the largest district municipality in South Africa, with the town of Springbok functions as the administrative centre. The National Route 7 (N7), an important transport route, passes through the district.

The main economic sectors contributing to the district are agriculture, mining, mari-culture, tourism, industry, and electricity. Between 2003 and 2013, the tertiary (tourism) sector had the highest contribution to the economy with an average annual contribution of 63.1%. This was followed by the primary sector contributing an annual average of 33.8%.

The agricultural sector is the second largest employer in the district and includes stock-farming and the cultivation of various fruits along the Orange River. Abalone and oyster production along the western coast offer further opportunities which could be developed.

Mining is a major economic contributor to the NDM and occurs in four of the six local municipalities. Minerals mined include diamonds, copper, zinc, lead and granite. Several of the mines have come to the end of their economic life, which has led to a number of mines that have either closed or are about to close. One of the largest mines, O'kiep Copper Company, is one such mine that has closed. The closure of mines has had a large negative impact on the district's economy.

The NDM had the highest solar radiation intensity in Southern Africa, making it an ideal location for solar projects. Wind, wave and nuclear energy have also been identified as renewable energy sources which could potentially support the energy sector in the region (Namakwa District Municipality: IDP, 2017).

Figure 5: Map showing the local municipalities of the Namakwa DM (Source: www,municiaplities.co.za)

5.3 Karoo Hoogland LM

The Karoo Hoogland (KH) is one of six local municipalities that make up the Namakwa District (ND) Municipality. The three main towns in Karoo Hoogland are Williston, Fraserburg and Sutherland. The town of Sutherland was founded in 1855 as a church and market town to serve the sheep farming community in the area. The town is located approximately 100 km north of the small village of Matjiesfontiein and is accessed

via the R 354. The main economic activities include tourism and sheep farming. South African Astronomical Observatory (SAAO) was established outside the town in 1972 and plays a key role in the town's tourism related economy.

It is the second-largest of the six municipalities in the district, making up a quarter of its geographical area. Although the municipality's towns are separated by more than 100km by road, they share many administrative tasks. The Main Administration Office is situated in Williston.

Main Economic Sectors: Community, social and personal services (42.5%), transport, storage and communication (15%), wholesale and retail trade, catering and accommodation (13.7%), agriculture, forestry and fishing (13%), finance, insurance, real estate and business services (8.8%), manufacturing (5.9%).

Figure 6: Map showing the local municipalities of the Karoo Hoogland LM (Source: www,municiaplities.co.za)

5.4 Demographic and Economic Context

In this section the demographic and economic context of the respective Province, District and Local municipalities will be discussed. The information below was obtained from the Northern Cape Provincial Development and Resource Management Plan/Provincial Spatial Framework (PSDF) of 2021, the Namakwa District Municipality Draft Integrated Development Plan 201/2019 for 2017-2022, and the Karoo Hoogland Local Municipality Draft Integrated Development Plan of 2017/2022.

5.5 Project Site

The site is situated on top of a plateau landform. The edge of the landform forms an escarpment that descends generally to the south. The landscape is flat and stony dotted with hills and mountains. The current land-use is primarily small stock grazing. The peripheral visual boundaries to the north and east are truncated by low ridges. The peripheral visual boundary to the south and west is relatively undistinguished. The area appears to be sparsely populated.

According to the visual impact assessment report (Klapwijk (2022), there have a homesteads and structures that have been identified in the area identified as part. The farms are privately owned by landowners that are within the project site. The study area is not regarded as having a high visual quality when compared to other areas in the region such as the Swartberg Mountains, Meiringspoort and the mountains around Beaufort West and the Karoo National Park but it does display the typical and iconic Karoo landscape (Klapwijk (2022)).

The Area of Influence of the project is based on 50km radius and is currently anticipated to include all renewable energy facilities that are within close proximity of the project site, homesteads, other visual receptors like Fraserburg, the Karoo National Park, travellers on main roads such as the R353, R356 and the R61, activities and institutions that rely on the aesthetic environment such as small-scale farmers, game farms, national parks, lodges, guesthouses, as well as hunting and photographic safari operations.

5.6 Baseline Description of the Social Environment

Table 6 provides a baseline summary of the social profile of the Karoo Hoogland Local Municipality within which Klipkraal Wind Energy Facility (WEF) 1 is proposed. To provide context against which the Local Municipality's social profile can be compared, the social profiles of the Namakwa District, Northern Cape 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 Northern Cape Provincial Spatial Development Framework (PSDF), and the Namakwa DM and Karoo Hoogland LM IDPs.

Table 6 Baseline description of the social characteristics of the area within which the Klipkraal Wind Energy Facility (WEF) 1

Population characteristics
• Namakwa DM has a population of 115 489 people as of the 2016 community survey which is about 10 percent of the figure in Northern Cape (1,193,789). • Namakwa is 127 663.3 square kilometres with 0.9 people per square kilometre whilst Karoo Hoogland LM 30 253.6 square kilometres with 0.4 people per square kilometre. • Based on the 2016 Community Household Survey the population of the Karoo Hoogland LM was 13 010.
Economic, education and household characteristics

- The Karoo Hoogland LM main economic activities include tourism and sheep farming.
- South African Astronomical Observatory (SAAO) was established outside the town in 1972 and plays a key role in the town's tourism and related economy.
- The dependency ratio for the Karoo Hoogland in 2011 was 50.9%.
- Most people between the age of 15 and 17 are not economically active (i.e. they are still likely to be at school or dependent upon their parents or other family members).
- The dependency ratio in 2016 was 72%, this figure is significantly higher than the national, provincial and municipal levels in 2011.
- A higher dependency ratio reflects the limited employment opportunities in the area and represents a significant risk to the district and local municipality.
- Based on 2011 Census the official unemployment figure for Karoo Hoogland was 8%. The figures also indicate that the majority of the population were not economically active, namely 40.4%.
- The 2011 unemployment figure is lower than the official unemployment rate for the Namakwa District (11.1%) and Northern Cape (14.5%)
- While the level of unemployed was low, this needs to be considered within the context of the low-income levels and the dependence on the agricultural sector.
- Based on the 2016 household community survey, 13.2% of population over the age of 20 had no formal education. This is significantly higher than the figures of Namakwa District (4.4%) and Northern Cape (7.9%) and reflects the rural nature of large parts of the Karoo Hoogland.
- Namakwa IDP (2017-2022) notes that the Karoo Hoogland has the lowest functional literacy rate in the Namakwa District.
- Based on the data from 2011 census, 6.6% of the population of the Karoo Hoogland had no formal income, 2.4% earned less than R4 800, 5% earned between R5 000 and R10 000 per annum.
- Based on the World Bank Development Research group in the region 64.8% of the households in the Karoo Hoogland live close to or below poverty line.
- The low household income levels are reflected in the number of indigent households in the Karoo Hoogland, which had 944 registered indigent households in 2016.
- 32.4% households are headed by women which is about 90% of the rate in Namakwa (37.55%) (Wazimap, 2016).
- 67.6% households are headed by male which is about 10% higher than rate in Namakwa (62%) Wazimap, 2016).

Services

- Based on the information from the 2016 community survey 96.6% of households in the Karoo Hoogland had access to electricity.
- Of this total 66.7% had in-house prepaid meters, while 6.6% have conventional in-houses meters, and 20.3% had solar power.
- Only 3.4% of households did not have access to electricity, this is marginally higher than the figures for the Namakwa District (2.2%), but lower than the figure for Northern Cape (6.7%).
- Most of the households in the Karoo Hoogland (74.3) are supplied with electricity by the Karoo Hoogland.
- 69% of households were supplied by a regional or local service provider, while 30.4% rely on their own source of water.
- 69.7% of households have access to flush toilets, this is significantly lower than Namakwa District (82.3) and marginally lower than Northern Cape (71.6).
- 67.9% of households have their refuse collected by a local authority of private company on a regular basis, while 30% rely on their own waste disposal dump.
- The higher number of households that dispose of their waste at their own dump reflects the rural nature of the Karoo Hoogland.
- The IDP notes that services provided in Karoo Hoogland are not satisfactory due to shortage of doctors, ambulances as well as inferior conditions of the road infrastructure between the towns.
- The most prevalent disease resulting in deaths in the Namakwa district in 2010 was TB with 72 deaths recorded. In 2011, the Chronic lower respiratory disease was the leading cause of death with 46 deaths.

- The Ischaemic heart disease was the leading cause of death in 2012 with 108 deaths, and in 2013 it was the Chronic lower respiratory disease with 75 deaths.
- The Ischaemic heart disease and chronic lower respiratory disease were the leading causes of death over the years 2014 and 2015 respectively.

6. ASSESSMENT OF POTENTIAL SOCIAL IMPACTS

This section provides an overview of the potential social impacts associated with the Klipkraal Wind Energy Facility (WEF) 1. Potential impacts have been identified based on the current understanding of the project and the social environment within which it will be located.

Social impacts are expected to occur during the construction and operational phases including those associated with ancillary infrastructure. Impacts are either positive or negative and either mitigation or enhancement measures are recommended for their management.

6.1 Construction phase impacts

Most social impacts associated with the project are anticipated to occur during the construction phase and are typical social impacts generally associated with construction. 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 create lasting social impacts associated with the placement of project components or associated infrastructure or that result in the mismanagement of construction phase activities.

The following paragraph provide are short descriptions of the positive and negative social impacts identified for the construction and operational phases.

Air quality: WEFs do have air quality impacts which is the subject of a separate specialist study. They may have impacts on health which will be elucidated in this study. For example, the siting of wind turbines may have implications for the operations of the communications, navigation and surveillance systems used for air traffic control and aircraft safety.

Noise: The operation of wind turbines has the potential to result in the generation of noise levels that could have nuisance and health impacts on surrounding communities (Michaud, et al., 2016). Although the closest community is rather the town and not households part of any farms and there no communities in that definition. Further to this research undertaken in Denmark (Poulsen, et al., 2019) it was found that there was a positive association in the redemption of sleep medication and antidepressants after exposure to high levels of out-door night-time noise particularly amongst the elderly, >65 years of age. However, no consistent association with low-frequency indoor night-time wind turbine noise was found. Suggestive evidence, to be interpreted with caution, was found linking atrial fibrillation to long-term exposure to wind turbine noise amongst female nurses above 44 years (Bräuner,et al., 2019).

Social Disruptions

Crime: The influx of job seekers can impact community structures and social networks, competition for housing and jobs, which may lead to crime.

HIV infections: The risk of HIV infections is likely to be at its highest during the construction phase as the workforce increases and material and equipment is delivered to the site.

Construction workers: In a typical Wind Energy Facility the peak of construction workforce will stretch over 12 to 24 month period in terms of commercial operation. As workers seek job and the number of workers in the area influx's this could lead to the disruption of social networks with the formation of temporary relationships and an increase in pregnancy which may place pressures on local family units.

Social and community infrastructure: The change to daily living will affect the social and community infrastructure however from a cumulative perspective. With the increase in renewable energy facilities in the area, it is quite likely that the local authorities will find difficult to deliver services. As there is an increase in migration into the area there will be pressure on accommodation and the need for more services.

impacts on sense of place: This is a concern raised by interest groups that as renewable energy facilities increase the people's sense of place associated with the area may be negatively affected.

Health Disruptions

Hazard exposure: The highest risks associated with wind energy facilities occur during transportation and construction. The use of heavy equipment and vehicles within the vicinity may result in an increased risk to the safety of people and animals.

Shadow flicker: Shadow flicker caused by the turbine blades may cause health-related issues that would need to be considered. The careful siting of wind turbined is necessary to avoid this effect.

Blade glint: The turbine blades reflect light which may affect people at different times of the day. This can be mitigated through non reflective coatings and by appropriately angling the blades to limit the amount of reflection

Economic Disruptions

Disruptions to daily living: The way in which normal day to day activities will change due to the development is mainly through the site access that is required at the facility and the main access for roads. This normal daily living will be through delivering of materials and machinery to the site and transportation of workers to and from site.

Job creation and skills development: The project will lead to the creation of both direct and indirect jobs which will have a positive economic benefit.

Socio-economic stimulation: Apart from jobs, the project is likely to stimulate the local economy through spending locally by persons associated with the project and through purchases of services and supplied from the local area.

The positive and negative social impacts for identified at this stage and that will be assessed for the construction phases include:

- Air quality
- Noise
- Road and traffic hazards
- Increase in crime
- Increased risk of HIV infections and unplanned and unwanted pregnancies
- In-migration of construction workers and other job seekers
- Hazard exposure
- Disruption of daily living patterns and of social networks
- Changing demands on social and community infrastructure
- Job creation and skills development
- Socio-economic stimulation
- Community expectations of project-related benefits
- Company risks of pressure to engage in fraudulent and / or corrupt practices
- Human rights related to labour practices.

6.2 Operational phase Impacts

The project will also need to consider the following impacts expected during operational phase of the project:

- Noise (associated with the energy facility and not the grid infrastructure)
- Shadow flicker (associated with the energy facility and not the grid infrastructure)
- Blade glint (associated with the energy facility and not the grid infrastructure)
- Electromagnetic field and radio frequency interference
- Hazard exposure
- Transformation of the sense of place
- Job creation and skills development
- Socio-economic stimulation
- Community expectations of project-related benefits and potential conflicts arising therefrom (including the structure and functioning of a Community Trust, which is part of the REIPPP conditions.
- Impacts associated with loss of agricultural land

6.3 Decommissioning

It is estimated that the project will have a lifespan of approximately 25 years and that there is a possibility that after this period the facility could be replace with more up-to-date technology, extending the project lifespan even further. Considering this period, and that between commissioning and decommissioning a great deal of social change is certain to occur, it will be meaningless to assess the social impact of decommissioning as the social variables that are likely to be in play at the point of decommissioning are rather uncertain. Loss of jobs would be likely to result in permanent consequences. It is important that mitigation measures are taken into consideration with ensuring that retracement package is in place. Ensure that staff are trained to provide

them with saleable skills within the job market and lastly ensuring that the site is cleared responsibly and left in safe condition.

6.4 No-go Option

The option of not having this project go ahead means that the social environment will not be affected. It also means that all positive aspects associated with the project would not materialise. This would mean that there would be no job creation, no revenue streams into the local economy and no opportunity to enhance the National Grid with renewable source of energy.

- The only mitigation measure would be to proceed with the project which would revise the negative impact to positive

6.5 Cumulative Impacts

Cumulative impacts associated with the project are as follows:

- Economic benefits because of the construction of other WEFs in the area
- Increased changes to inhabitants' sense of place
- Increased damage to local roads
- Exacerbated negative social impacts should other projects begin construction at the same time as the facility under review.

Table 6-1: Construction: Rating of Impacts & Mitigation / Optimisation Measures

ENVIRONMENTAL PARAMETER	ISSUE / IMPACT / ENVIRONMENTAL EFFECT/ NATURE	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION									RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S
Construction Phase																				
	Noise	1	1	1	1	3	1	6	-	Low	Refer to mitigation measures suggested by noise specialist	1	1	1	1	1	1	**6**	-	Low
	Increase in crime	2	2	3	2	2	2	18	-	Low	Ensure that construction workers are clearly identifiable. All workers should carry identification cards and wear identifiable clothing. Fence off the construction sites and control access to these sites. Appoint an independent security company to monitor the site. Encourage local people to report any suspicious activity associated with the construction site through the establishment of a community liaison forum. Prevent loitering within the vicinity of the construction camp as well as construction sites.	2	2	3	2	2	2	**18**	-	Low
	Increased risk of HIV infections	3	4	3	3	3	3	48	-	High	Ensure that an onsite HIV Policy is in place and that construction workers have access to condoms. Expose workers to health and HIV/AIDS awareness programmes. Extend the HIV/AIDS programme into the community with a specific focus on schools and youth clubs.	3	3	2	2	3	2	**16**	-	Medium
	Influx of construction workers	1	4	1	1	1	2	16	-	Low	Communicate the limitation of opportunities created by the project through community leaders and ward councillors. Draw up a recruitment policy in consultation with local leadership and ensure compliance with this policy.	1	4	1	1	1	2	**16**	-	Low
	Hazard exposure	2	4	2	2	1	2	22	-	Low	Ensure that all construction equipment and vehicles are maintained. Ensure that operators and drivers are properly trained and make them aware, through regular toolbox talks, of any risk they may pose to the community. Place specific emphasis on the vulnerable sector of the population such as children and the elderly. Ensure that fires are lit only in designated areas and that the appropriate safety precautions, such as not lighting fires in strong winds and completely extinguishing fires before leaving them unattended, are strictly adhered to. Make staff aware of the dangers of fire during regular toolbox talks.	2	2	2	2	1	2	**18**	-	Low
Quality of living	Disruption of daily living patterns	2	4	2	2	1	2	22	-	Low	Ensure that people have access to their properties as well as to social facilities	2	3	2	2	1	2	**20**	-	Low
	Disruptions to social and community infrastructure	2	4	2	2	1	2	22	-	Low	Regularly monitor the effect that construction is having on infrastructure and immediately report any damage to infrastructure to the appropriate authority. Ensure that where communities' access is obstructed that this access is restored to an acceptable state	2	3	2	2	1	2	**20**	-	Low
Economic	Job creation and skills development	2	4	2	3	1	2	24	+	Medium	Wherever feasible, local residents should be recruited to fill semi- and unskilled jobs. Women should be given opportunities and encouraged to apply for positions. A skills transfer plan should be put in place at an early stage and workers should be given the opportunity to develop skills which they can use to secure jobs elsewhere post construction.	2	4	2	3	1	2	**24**	+	Medium
	Socio-economic stimulation	3	4	2	3	1	2	26	+	Medium	A procurement policy promoting the use of local businesses should be put in place and adhered to throughout the construction phase.	3	4	2	3	1	2	**26**	+	Medium

Table 6-2: Operational: Rating of Impacts & Mitigation / Optimisation Measures

ENVIRONMENTAL PARAMETER	ISSUE / IMPACT / ENVIRONMENTAL EFFECT/ NATURE	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION									RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S
Operation Phase																				
	Shadow flicker WEF only	1	2	1	2	3	2	18	-	Low	Refer to mitigation measures suggested by visual specialist.	1	2	1	2	3	2	**18**	-	Low
	Electromagnetic field and RF interference	2	2	1	2	2	2	18	-	Low	Wind turbine mechanisms will be elevated and the risk of EMFs will be minimal. Notwithstanding this, it would be pertinent to regularly monitor the levels of EMFs emitted by the turbines and, if necessary, make the appropriate adjustments to ensure that these levels remain within acceptable parameters. Ensure that power lines are not routed in close to (with 300 meters) residential areas to limit the effect off EMFs. Consult with the appropriate telecommunication authorities to ensure that the telecommunication installations identified within the vicinity of the project are not comprised through RFI	2	2	1	2	2	2	**18**	-	Low
	Hazard exposure	1	2	2	2	3	2	22	-	Low	Install early detection techniques to avoid or reduce structural damage Install lighting protection systems Install fire prevention and control measures	1	2	2	2	3	2	**22**	-	Low
Quality of living	Transformation of sense of place	2	3	2	1	4	3	36	-	Medium	Apply the mitigation measures suggested in the Visual Impact Assessment Report. Communicate the benefits associated with renewable energy to the broader community. Ensure that all affected landowners and tourist associations are regularly consulted. A grievance mechanism should be put in place and all grievances should be dealt with transparently. The mitigation measures recommended in the Heritage and Palaeontology Impact Assessment should be followed.	2	2	2	1	4	2	**22**	-	Low
Economic	Job creation and skills development	2	4	2	2	3	2	26	+	Medium	Implement a training and skills development programme for locals. Work closely with the appropriate municipal structures regarding establishing a social responsibility programme.	2	4	2	2	3	2	**26**	+	Medium
	Socio-economic stimulation	4	4	2	3	3	2	32	+	Medium	Ensure that the procurement policy supports local enterprises. Establish a social responsibility programme either in line with the REIPPP requirements or equivalent. Ensure that any trusts or funds are strictly managed in respect of outcomes and funds.	4	4	2	3	3	2	**32**	+	Medium

Table 6-3: No Go: Rating of Impacts & Mitigation / Optimisation Measures

ENVIRONMENTAL PARAMETER	ISSUE / IMPACT / ENVIRONMENTAL EFFECT/ NATURE	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION									RECOMMENDED MITIGATION MEASURES
		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S	
The project does not proceed	The status quo remains in place No positive or negative impacts occur	4	4	2	4	3	3	**51**	-	High	The only mitigation measure would be to proceed with the project

Table 6-4: Decommissioning

ENVIRONMENTAL PARAMETER	ISSUE / IMPACT / ENVIRONMENTAL EFFECT/ NATURE	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION									RECOMMENDED MITIGATION MEASURES	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S
Decommissioning Phase																				
Economic	Job loss	2	4	2	3	1	2	24	+	Medium	Major social impacts associated with decommissioning phase are linked to the loss of jobs and associated income. As part of the decommissioning phase, it would likely involve the disassembly and replacement of existing components with more modern technology therefore creation of additional construction type jobs although limited. It is recommended that the implementation of a reskilling, job placement, retrenchment and downscaling programme be implemented.	2	4	2	3	1	2	24	+	Medium

Table 6-5: Cumulative: Rating of Impacts & Mitigation / Optimisation Measures

ENVIRONMENTAL PARAMETER	ISSUE / IMPACT / ENVIRONMENTAL EFFECT/ NATURE	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION									RECOMMENDED MITIGATION MEASURES
		E	P	R	L	D	I/M	TOTAL	STATUS (+ OR -)	S	
Cumulative Phase											

Health and social wellbeing	Noise	1	3	2	2	3	2	**22**	-	Low
	Shadow Flicker	1	3	2	2	3	2	**22**	-	Low
	Blade glint	2	3	2	2	3	2	**24**	-	Low
	Risk of HIV and AIDS	4	3	4	3	4	3	**54**	-	High
Quality of living	Sense of place	2	4	4	3	4	3	**51**	-	Medium
	Services, supplies and infrastructure	2	3	2	2	2	2	**22**	-	Low
Economic	Job creation and skills development	4	4	3	3	3	4	**68**	+	Very high
	Socio-economic stimulation	2	4	2	2	3	2	**26**	+	Medium

With regard to the cumulative impacts, mitigation can only be considered implemented through a readiness action plan at a regional level and will driven on a provincial and municipal basis; underpinned by national government, private sector with public support. In this regard the Draft Consolidated Intergovernmental Readiness Report for large development scenarios Karoo (Western Cape Government Environmental Affairs and Development Planning, 2019) acknowledges the need for intergovernmental readiness for the large development scenarios

Decommissioning Phase		
Considering a period of 20 years prior to decommissioning and the dynamics of social variables, it would be futile to attach assessment criteria to decommissioning at this point.		
No Project Alternative		
No project "No- go"		-51
Cumulative Impacts		
Health & social well-being	Noise	-22
	Shadow flicker	-22
	Blade glint	-24
	Risk of HIV	-54
Quality of living	Sense of place	-51
	Services, supplies & infrastructure	-22
Economic	Job creation and skills development	+26
	Socio-economic stimulation	+68

6.6 Overall Impact Rating

All impacts across all project phase are summarised and a pre and post-mitigation comparison presented in the table below.

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Table 6-6: Summary of Impacts

Construction Phase			
Environmental parameter	**Issues**	**Rating prior to mitigation**	**Rating post-mitigation**
Health & wellbeing	Air quality	Negative low impact	Negative low impact
	Noise	Negative low impact	Negative low impact
	Increase in crime	Negative low impact	Negative low impact
	Increase risk of HV infections	Negative low impact	Negative low impact
	An influx of construction workers	Negative low impact	Negative low impact
	Hazard exposure	Negative low impact	Negative low impact
Quality of living	Disruption of daily living patterns	Negative low impact	Negative low impact
	Disruption to social and community infrastructure	Negative low impact	Negative low impact
Economic	Job creation and skills development	Positive medium impact	Positive medium impact
	Socio-economic stimulation	Positive medium impact	Positive medium impact
Operational Phase			
Healthy & wellbeing	Noise	Negative low impact	Negative low impact
	Shadow flicker	Negative low impact	Negative low impact
	Blade glint	Negative low impact	Negative low impact
	Electromagnetic fields and RF interference	Negative low impact	Negative low impact
	Hazard exposure	Negative low impact	Negative low impact
Quality of living	Transformation of the sense of place	Negative high impact	Negative medium impact
	Job creation and skills development	Positive medium impact	Positive medium impact
Economic	Socio-economic stimulation	Positive medium impact	Positive medium impact
Cumulative			
Health and wellbeing	Noise	Negative low impact	Negative low impact
	Shadow Flicker	Negative low impact	Negative low impact
	Blade glint	Negative low impact	Negative low impact
	Risk of HIV and AIDS	Negative high impact	Negative high impact
Quality of living	Sense of place	Negative high impact	Negative medium impact
	Service supplies and infrastructure	Negative low impact	Negative low impact
Economic	Job creation and skills development	Positive very high Impact	Positive very high Impact
	Socio-economic stimulation	Positive medium impact	Positive medium impact

7. CONCLUSION AND SUMMARY

7.1 Key findings and recommendations

Considering the impacts discussed above, it is evident that the cumulative impacts associated with changes to the social environment of the region are more significant than those attached to any one project.
The initiative to address these cumulative impacts lies at a far higher level than at an individual project level. In this regard conclusions are drawn to the findings of this assessment conducted for the proposed Klipkraal Wind Energy Facility 1 which indicates that during the construction and the operational phase of the proposed development, various employment opportunities, with different levels of skills will be created. In addition this will create local business opportunities benefitting the socio-economic development of the local community of Fraserburg.

7.2 Impact statement

Considering all social impacts associated with the project, it is evident that, at the social level, the positive elements outweigh the negative and that the project carried with it a significant social benefit at a national level and is therefore supported, In addition, no compelling preference emerges in respect of the revised proposed layout and considerable sensitives have been avoided and it would be socially acceptable for the authorisation of Klipkraal WEF 1. All negative impacts are low and can be effectively addressed through the mitigation measures provided.

7.3 Overall 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, and this is also supported by the findings of the Peer Review.

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