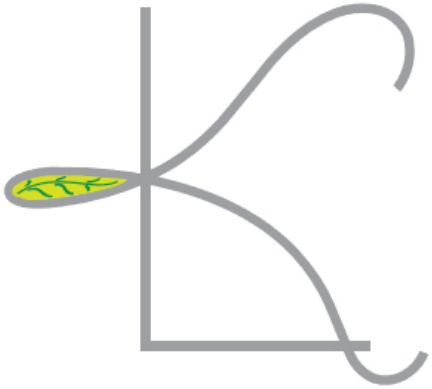

Leandri Kruger

Researcher & Social Impact Assessment Consultant

SOCIAL IMPACT ASSESSMENT

FOR

PAULPUTS WIND ENERGY FACILITY (WEF)

JUNE 2019

Prepared for

PAULPUTS WEF

By

Leandri Kruger

EXECUTIVE SUMMARY

This Social Impact Assessment contains the findings of the Social Impact Assessment (SIA) as part of the Environmental Impact Assessment (EIA). Below follows an executive summary of the main findings of this SIA report.

INTRODUCTION AND LOCATION

Arcus Consultancy Services South Africa (Pty) Ltd was appointed by WKN Windcurrent SA (Pty) Ltd to undertake and manage the Environmental Impact Assessment (EIA) process as the lead consultant for the proposed establishment of the 300MW Paulputs Wind Energy Facility (further referred to as Paulputs WEF), and its associated infrastructure. Leandri Kruger was appointed by Arcus as the Social Impact Assessment (SIA) consultant to conduct and produce the SIA Report for the proposed Paulputs WEF as part of the Environmental Impact Assessment (EIA) process.

The proposed Paulputs WEF is located near the town of Pofadder, which is the closest town to the proposed site. This WEF is located approximately 34km NE outside the town of Pofadder and covers a proposed area of approximately 10 000ha (75 WTG (219ha))—covering 6 farms with four (4) proposed 132/133kV grid connections with a distance of approximately 23km from the switching stations to the existing Eskom Paulputs Substation, located NW of the proposed site. The Paulputs WEF is located in the Northern Cape Province of South Africa, and falls within two (2) district municipalities, i.e. the Namakwa District Municipality and the ZF Mgcawu District Municipality. For this reason, the proposed Paulputs WEF also falls within two (2) local municipal areas, i.e. the Khâi-Ma Local Municipality in the Namakwa District Municipality, which administrative seat is located in the town of Pofadder; and the Kai !Garib Local Municipality in the ZF Mgcawu District Municipality, which administrative seat is located in the town of Kakamas.

PROJECT DESCRIPTION

The proposed Paulputs WEF can be considered as an onshore wind energy facility with structure heights between 125m and 230m. According to the information provided by Arcus Consultancy Services South Africa (Pty) Ltd, "it is assumed that for each turbine, the turbine base and crane pad will cover a maximum of 0,8 hectares each", which will estimate to a total of 60 hectares for a maximum of 75 wind turbines. The road infrastructure to be covered will estimate to approximately 64 hectares, whereas the substation, offices and laydown areas will cover approximately 12 hectares per substation compound. Therefore, the total surface area to be covered by the Paulputs WEF estimates to approximately 219 hectares. The number of turbines for the proposed Paulputs WEF is dependent on the generation capacity of the turbines (3MW – 6MW). Other technical details include: the height of the hub is a maximum of 140m; the maximum tip height of 230m; the estimated blade length is a maximum length of 90m; the rotor diameter is a maximum of 180m; the generation capacity of the on-site substation is 132/133kV; the generation capacity as a whole is 300MW; and the grid connection proximity to the Paulputs Substation is 23km from the on-site switching stations. Other associated infrastructure include: operations and maintenance buildings and roads; and the grid connections to the Paulputs Substation. The operations and maintenance buildings will cover an area of approximately 200 x 200m with internal roads of approximately 12m wide. The buildings and substation will be fenced with 2,6m wired mesh/chain linked fence, and security lights on the top of the turbines will also be placed if SACAA requires it to be. Furthermore, the details regarding the grid connection according to Arcus Consultancy includes the following: 15km – 25km transmission lines; pylons with a maximum height of 30m; a transmission capacity of 132/33kV, and service roads with a width of 5m from the Paulputs WEF to the identified grid connections (±15km).

The socio-economic values associated with the proposed Paulputs WEF which are based on the basic information received from WKN Windcurrent and Arcus Consultancy, and a review of previously similar projects in the proposed area as well as similar projects in different areas of the country have been conducted, the construction phase for the Paulputs WEF will extend over a period of approximately 24 to 36 months (2–3 years). However, if the proposed Paulputs WEF is constructed in two phases, then each phase of the construction period will extend over a period of 24 months per phase (2–4 years in total). The anticipated total capital expenditure for the construction phase will be approximately R3–4 Billion for a 300MW project and will employ approximately 300–400 employees of which approximately 15% (±45–60) will be skilled, 30%

(±90–120) semi-skilled, and 55% (±165–220) low-skilled. 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 operational phase of the proposed project will provide approximately 30–50 employment opportunities of which 20% (±6–10) will be skilled, 40% (±12–20) semi-skilled and 40% (±12–20) low-skilled. The majority of the semi- and low-skilled employment opportunities are likely to be available to the local communities of Pofadder and Kakamas, which will present a positive social benefit to these communities due to the low availability of employment opportunities in these areas. Additionally it also presents a positive opportunity for the local economy of the towns of Pofadder and Kakamas.

RESEARCH APPROACH AND METHODOLOGY

The research approach or methodology followed for the development of the SIA Report was based on the Guidelines for Involving Social Impact Assessment Specialists in the EIA process that was prepared for the Department of Environmental Affairs and Development Planning for the Western Cape Province of South Africa in February 2007 (Barbour, 2007), including the Guidelines and Principles for Social Impact Assessment (Inter-organizational Committee on Guidelines and Principles for Social Impact Assessment, 1994) and IAIA Guidance for Assessing and Managing Social Impacts (IAIA, 2015). These guidelines for the development and planning of Social Impact Assessments (SIAs) are based on accepted international best practice guidelines. The key components of the SIA process which are embodied in these guidelines include:

- Describe and obtain a basic understanding of the proposed development (type, scale and location). Also obtain an understanding of the individuals and/or communities which are likely to be affected by the intervention, and determine the need and the scope of conducting and SIA;
- Collecting the baseline data for the proposed intervention based on the current social environment and historical social trends;
- Assess and document the significance of the social impacts which are associated with the proposed intervention; and

- Based on the baseline data and the identification and assessment of the social impacts likely to be associated with the proposed intervention, identify alternatives and mitigation measures for the social impacts of the proposed intervention (Barbour, 2007).

The research approach to this study is similar to scientific social research methods. A literature review was conducted to define and gain a basic understanding of the key concepts. This research study made use of a mixed method research approach. The steps involved in the SIA research approach involved:

- Project initiation and review of project information including a review of demographic data from the Census Survey and relevant baseline data;
- The collection and review of reports and baseline socio-economic data on the area. This will include the socio-economic characteristics of the affected areas, current and future land uses, and land uses planning and policy frameworks relating to the study area and surrounding areas;
- The identification of the components associated with the construction, operational and decommissioning phase of the proposed project, including estimate of total capital expenditure, number of employment opportunities created, breakdown of the employment opportunities in terms of skill levels (low, medium and high skilled), breakdown of wages per skill level, assessment procurement policies etc;
- Site visit of the proposed development and interviews with key stakeholders;
- The identification and assessment of key social issues and assessment of potential impacts (negative and positive) associated with the construction, operational and decommissioning phase of the proposed project. A key focus of the assessment will be an assessment of the potential socio-economic benefits for the local community associated with the proposed development;
- The identification of appropriate measures to avoid, mitigate, enhance and compensate for potential social impacts;
- The identification and assessment of key cumulative impacts associated with the construction and operational phase of the proposed project;
- The preparation of the Draft SIA Report for comment;
- Incorporate comments and prepare Final SIA Report; and
- Provide Final SIA Report to appointed EAP.

The identification of the potential social issues associated with the proposed intervention was based on the review of relevant documentation, experience from previous similar projects and the observations during the project site visits. The standard methodology used to assess the potential impacts were provided by Arcus Consultancy and is included in Section 1 of this report.

SUMMARY OF KEY FINDINGS

A short summary of the key findings of the SIA for the proposed Paulputs WEF is included here. The legislative and policy context plays an important role in identifying and assessing the potential social impacts associated with the proposed Paulputs WEF. For this reason the proposed development project was assessed in terms of its fit with the key legislative, policy and planning documents. A review of the following policy and planning documents on National, Provincial, District and Local level were conducted for the purpose of this SIA Report:

- The National Energy Act no 34 of 2008;
- White Paper on the Energy Policy of the Republic of South Africa of 1998;
- White Paper on Renewable Energy of 2003;
- Integrated Resource Planning for Electricity for South Africa of 2010–2030;
- National Development Plan of 2030;
- National Infrastructure Plan of South Africa;
- New Growth Path Framework;
- Northern Cape Provincial Development and Resource Management Plan/ Provincial Spatial Development Framework (PSDF) of 2012;
- Namakwa District Municipality Integrated Development Plan (IDP) for 2018–2019;
- ZF Mgcawu District Municipality Draft Integrated Development Plan 2018/2019 for 2017–2022;
- Khâi-Ma Local Municipality Integrated Development Plan for 2012–2017; and
- Kai !Garib Municipality Draft Integrated Development Plan of 2018/2019.

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 operates 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 more sustainable in terms of social and environmental costs. 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 particularly 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 in which the Northern Cape can benefit from economically. The review of the relevant policies and documents related to the energy sector included in Section 3 of this report, thus indicate that renewables like wind energy and the establishment of WEFs are supported on all spheres of Government. The author of this SIA Report is thus of opinion that the establishment of the proposed Paulputs WEF is supported by the related policy and planning documents on all spheres of Government.

The significance rating, used in the methodology of conducting an SIA (see Section 1), of the key social impacts refers to whether the impact had any influence in the decision making of an intervention. A low significance rating refers to where the identified social impact did not have a direct influence on the decision making of the intervention. A medium significance rating refers to where the social impact might influence the decision making of the intervention, unless it is effectively mitigated. Lastly, a high significance rating refers to where the social impact had an influence on the decision making of the proposed intervention. The summary of the key social impacts identified during each phase of the proposed Paulputs WEF with their significance ratings, and positive or negative status, without and with mitigation are tabled below. For more information regarding each impact, see Section 4 in this SIA report.

Table 1.1. Summary of key social impacts related to the construction phase.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Positive Impact: The creation of local employment, business opportunities, and opportunities for skills development and on-site training.	Medium (+)	High (+)
Potential Positive Impact: The potential maximising of opportunities to local and regional SMMEs and other business for service delivery.	Medium (+)	High (+)
Potential Negative Impact: The potential loss of farmlands for grazing of sheep and on associated farming activities.	Low (-)	Low (-)
Potential Negative Impact: In-migration or potential influx of job seekers.	Low (-)	Low (-)
Potential Negative Impact: The presence of construction workers on-site and in the area on the local communities.	Medium (-)	Low (-)
Potential Negative Impact: Potential safety risk for farmers, risk of livestock theft and theft of farming infrastructure.	Medium (-)	Low (-)
Potential Negative Impact: The potential impacts of heavy vehicles and construction related activities, damage to roads, and dust pollution.	Medium (-)	Low (-)
Potential Negative Impact: The increased risk of potential veld fires associated with the construction phase.	Medium (-)	Low (-)

Table 1.2. Summary of key social impacts related to the operational phase.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Positive Impact: The creation of local employment and business opportunities, skills development and training.	Medium (+)	Medium (+)
Potential Positive Impact: Potential up – and downstream economic opportunities.	Medium (+)	Medium (+)
Potential Positive Impact: The establishment of renewable energy infrastructure and the generation of clean, renewable energy.	Medium (+)	High (+)
Potential Positive Impact: The generation of additional income for landowners.	Low (+)	Medium (+)
Potential Positive Impact: The benefits associated with the establishment of a Community Trust.	Medium (+)	High (+)
Potential Negative Impact: Visual impact and associated impact on the sense of place.	Low (-)	Low (-)
Potential Negative Impact: The potential impact on tourism.	Low (-)	Low (-)

Table 1.3. Summary of key social impact related to the decommissioning phase.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Negative Impact: The potential loss of employment opportunities and associated income.	Medium (-)	Low (-)

Table 1.4. Summary of key social impact related to the no-development alternative.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Impact: The potential lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy and a lost opportunity for the Khâi-Ma Local Municipality and the Kai !Garib Local Municipality.	Medium (-)	Medium (+)

Table 1.5. Summary of key social impact related to the grid-connections.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Negative Impact: The potential visual impact and impact on sense of place.	Medium (-)	Low (-)

Table 1.6. Summary of key cumulative social impacts.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Positive Impact: The creation of local employment and business opportunities, skills development and training.	Medium (+)	High (+)
Potential Negative Impact: Visual impact associated with the establishment of WEFs and impact on sense of place and character of area.	Medium (-)	Medium (-)
Potential Negative Impact: The establishment of a number of renewable energy facilities (WEFs and SEFs), may potentially place pressure on local services, e.g. education, medical, accommodation etc.	Low (-)	Low (-)

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the findings of this Social Impact Assessment (SIA) conducted for the proposed Paulputs WEF indicates that during the construction and the operational phase of the proposed development project, various employment opportunities, with different levels of skills will be created. In addition this will also create local business opportunities benefitting the socio-economic development of the local communities of Pofadder and Kakamas. The local communities will however benefit from the establishment of a Community Trust if it is managed effectively. The challenges posed by climate change and global warming will be addressed by the investment in renewable energy facilities like the proposed Paulputs WEF.

The establishment of the proposed Paulputs WEF is therefore supported by the findings of this SIA report and therefore, also creating a positive social benefit for society. It is also recommended that the mitigation and enhancement measures given in Section 4 of this report be implemented by project proponents and appointed contractors.

IMPACT STATEMENT

Due to the above summary and conclusion, it is therefore recommended by the author of this SIA report, that the proposed Paulputs WEF be supported as it was proposed. However, this recommendation is made subject to the implementation of the suggested enhancement and mitigation measures contained in Section 4 of this SIA report, as well as inputs from other specialist studies for the proposed Paulputs WEF.

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ACRONYMS

CSP	Concentrated Solar Power
DoE	Department of Energy
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EEDSM	Energy efficiency demand-side management
EIA	Environmental Impact Assessment
GDP	Gross Domestic Product
GVA	Geographic Value Added
GW	Gigawatt
IAIA	International Association for Impact Assessment
IDP	Integrated Development Plan
I&AP	Interested and Affected Party
IPP	Independent Power Producer
IRP	Integrated Resource Plan
IUCN	International Union for Conservation of Nature
KGLM	Kai !Garib Local Municipality
KLM	Khâi-Ma Local Municipality
MW	Megawatt
NDM	Namakwa District Municipality
PSDF	Provincial Spatial Development Framework
PV	Photovoltaic
RBS	Revised Balanced Scenarios
SIA	Social Impact Assessment
SIP	Strategic Integrated Projects
SMME	Small, Medium and Micro Enterprise
TOR	Terms of Reference
WEF	Wind Energy Facility
WTG	Wind Turbine Generator
ZDM	ZF Mgcawu District Municipality

DECLARATION OF INDEPENDENCE

The social specialist, Leandri Kruger, hereby declares that:

- All the work undertaking relating to the proposed Paulputs WEF project was done as an independent consultant;
- The specialist have the necessary required expertise to conduct Social Impact Assessments (SIAs) and that all work was done in an objective manner; and
- The specialist has no vested- or financial interest in the proposed Paulputs WEF project or the outcome thereof.

SPECIALIST DETAILS

Leandri Kruger has worked in the research field and practice of Social Impact Assessments (SIAs) since 2011, where she mainly conducted research in SIAs and conducted SIAs for various renewable energy projects in South Africa. She has worked at the African Centre for Disaster Studies (ACDS) since 2012 as a researcher and lecturer. She was involved on various research projects, national and international, where she contributed as a researcher. In the year 2012 she obtained her Masters degree in Geography and Environmental Management (Cum Laude) from the North-West University (NWU). She is also the Programme Manager of the Postgraduate diploma in Disaster Risk Management and has published in numerous journal articles and books. She is currently pursuing her doctoral studies in Geography and Environmental Management focusing mainly on the contribution of Disaster Risk Assessment (DRA) to improved Social Impact Assessment (SIA) in South Africa. She is a member of the International Association for Impact Assessment (IAIA), where she also forms part of the North-West Branches' committee. Her research interests are in Social Impact Assessments (SIAs), environmental management, disaster risk reduction, climate change, resilience and sustainable development.

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Proposed Paulputs Wind Energy Facility and associated infrastructure

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.environment.gov.za/documents/forms.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	Leandri Kruger—Researcher and Social Impact Assessment Consultant			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	N/A	Percentage Procurement recognition	N/A
Specialist name:	Leandri Kruger			
Specialist Qualifications:	Msc. Geography and Environmental Management (Cum-Laude)			
Professional affiliation/registration:	IAIAsa (Membership no: 5364)			
Physical address:	Tuscan Views no 27, Ditedu Avenue 51, Bailliepark, Potchefstroom, 2531			
Postal address:	Tuscan Views no 27, Ditedu Avenue 51, Bailliepark, Potchefstroom			
Postal code:	2531	Cell:	0824471455	
Telephone:	N/A	Fax:	N/A	
E-mail:	leandrihildebrandt@gmail.com			

2. DECLARATION BY THE SPECIALIST

I, ___Leandri Kruger___, declare that –

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

Signature of the Specialist

Leandri Kruger—Researcher and Social Impact Assessment Consultant

Name of Company:

2019-07-11

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, ____Leandri Kruger_____, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist

Leandri Kruger—Researcher and Social Impact Assessment Consultant

Name of Company

2019-07-11

Date

Signature of the Commissioner of Oaths

2019-07-11

Date

LOUISE VOS
Ex officio Commissioner of Oaths, MANAGER
North-West University - Potchefstroom Campus
Private Bag X6001, Potchefstroom, 2520
2019 -07- 11

NWU

SECTION 1 – INTRODUCTION

1.1. INTRODUCTION

Arcus Consultancy Services South Africa (Pty) Ltd was appointed by WKN Windcurrent SA (Pty) Ltd to undertake and manage the Environmental Impact Assessment (EIA) process as the lead consultant for the proposed establishment of the 300MW Paulputs Wind Energy Facility (further referred to as Paulputs WEF), and its associated infrastructure. Leandri Kruger was appointed by Arcus as the Social Impact Assessment (SIA) consultant to conduct and produce the Social Impact Assessment (SIA) Report for the proposed Paulputs WEF as part of the Environmental Impact Asessment (EIA) process.

The proposed Paulputs WEF is located near the town of Pofadder, which is the closest town to the proposed site. This WEF is located approximately 34km NE outside the town of Pofadder and covers a proposed area of approximately 10 000ha (75 Wind Turbine Generators (WTGs)) (219ha)—covering six (6) farms with four (4) proposed 132/33kV grid connections with a distance of approximately 23km from the switching stations to the existing Eskom Paulputs Substation, located NW of the proposed site. The Paulputs WEF is located in the Northern Cape Province of South Africa, and falls within two (2) district municipalities, i.e. the Namakwa District Municipality and the ZF Mgcawu District Municipality. For this reason, the proposed Paulputs WEF also falls within two (2) local municipal areas, i.e. the Khâi-Ma Local Municipality in the Namakwa District Municipality, which administrative seat is located in the town of Pofadder; and the Kai !Garib Local Municipality in the ZF Mgcawu District Municipality, which administrative seat is located in the town of Kakamas.

Figure 1 below illustrates the proposed Paulputs WEF and its associated infrastructure. As seen in Figure 1 below the proposed site falls over two district and local municipal areas. Additionally, the site is situated on, and divided by the N14 national road, with 40 WTGs situated on the West side of the N14 and 35 WTGs situated on the East side. It further illustrates the proposed Paulputs WEF and the location of the existing Paulputs Substation situated NW of the proposed site. An established concentrated solar thermal energy facility, the KaXu Solar One, can also be viewed near the Paulputs substation. The yellow pins in Figure 1 represent the placement of the

proposed 75 WTG. The proposed overhead powerline options to the Eskom 132kV can also be viewed.

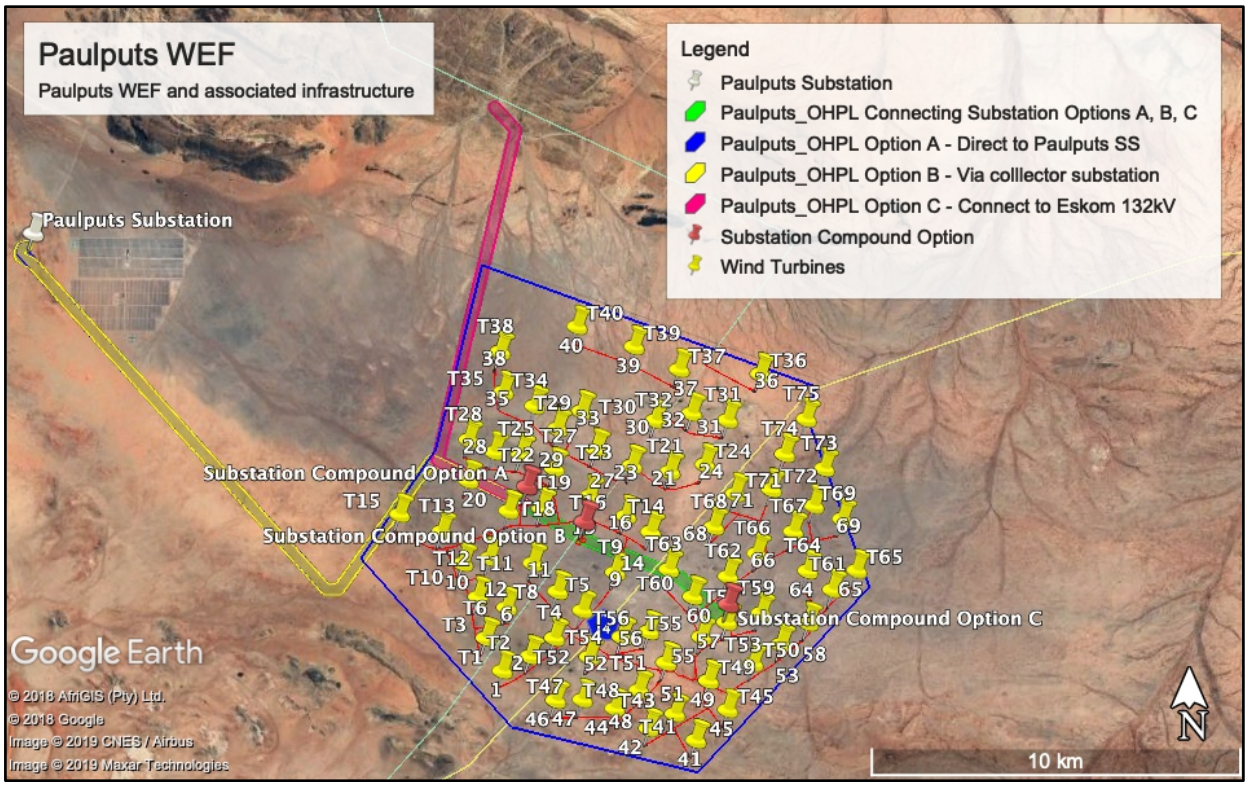

Figure 1. Map of Paulputs Wind Energy Facility (WEF) and its associated infrastructure.

1.2. TERMS OF REFERENCE

The terms of reference (ToR) in an SIA according to Barbour (2007:28) should indicate how and to what extent the SIA specialist should be involved for the purpose and scale of the proposed intervention. The ToR as provided and agreed upon with Arcus are included below:

- A detailed description and overview of the proposed development;
- A detailed description of the environment and communities likely to be affected by the proposed development;
- Consultation with Interested and Affected Parties (I&APs) to identify and assess potential social impacts;

- A detailed assessment and description of the significance of potential social impacts which are associated with the proposed development, and the manner in which the environment might be affected by this intervention; and
- The identification of enhancement measures and mitigation measures aimed at reducing and avoiding the negative impacts of the intervention and maximizing the positive impacts of the proposed intervention.

Specialists in their field of expertise will consider baseline data and identify and assess impacts according to predefined rating scales. Specialists will also suggest optional or essential ways in which to mitigate negative impacts and enhance positive impacts. Furthermore, specialists will, where possible, take into consideration the cumulative effects associated with this and other projects, which are either developed or in the process of being developed in the local area. The results of these specialist studies will be integrated into the Social Scoping Report and the Final SIA. The ToR or general requirements proposed for the inputs were provided by the appointed EAP and are presented below where specialists are encouraged to comment and provide input on.

<u>General Requirements:</u>

Specialists' reports must comply with Appendix 6 of GNR326 of the National Environmental Management Act No. 107 of 1998 (NEMA), as amended on 7 April 2017 and whereby the following are to be included:

a. The details of the specialist who prepared the report and the expertise of that specialist to compile a specialist report including a *curriculum vitae*;
b. A declaration that the specialist is independent in a form as may be specified by the competent authority;
c. An indication of the scope of, and the purpose for which, the report was prepared;
cA. An indication of the quality and age of base data used for the specialist report;
cB. A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;
d. The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;

e. A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;
f. Details of an assessment of the specific identified sensitivity of the site related to the proposed activity/ies and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;
g. An identification of any areas to be avoided, including buffers;
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;
i. A description of any assumptions made and any uncertainties or gaps in knowledge;
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;
k. Any mitigation measures for inclusion in the EMPr;
l. Any conditions for inclusion in the environmental authorisation;
m. Any monitoring requirements for inclusion in the EMPr or environmental authorisation;
n. A reasoned opinion – as to whether the proposed activity/ies or portions thereof should be authorised; regarding the acceptability of the proposed activity/ies; and if the opinion is that the proposed activity/ies, or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr or Environmental Authorization, and where applicable, the closure plan;
o. A summary and copies of any comments received during any consultation process and where applicable all responses thereto; and
p. Any other information requested by the competent authority.

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.

In addition to the above, specialists are expected to:

- Review the EIA Scoping Report, with specific reference to the Comments and Response Report to familiarize with all relevant issues or concerns relevant to their field of expertise;

- In addition to the impacts listed in the Scoping Report, identify any issue or aspect that needs to be assessed and provide expert opinion on any issue in their field of expertise that they deem necessary in order to avoid potential detrimental impacts;
- Assess the degree and extent of all identified impacts—including cumulative impacts, that the preferred project activity and its proposed alternatives, including that of the no-go alternative, may have;
- Identify and list all legislation and permit requirements that are relevant to the development proposal in context of the study;
- Reference all sources of information and literature consulted; and
- Include an Executive Summary to the report.

The key activities or plan of study in the SIA process as embodied in the Western Cape Department of Environmental Affairs and Development Planning Guidelines for Social Impact Assessment (February 2007) will include:

- Describing and obtaining an understanding of the proposed intervention (type, scale, location), the communities likely to be affected and determining the need and scope of the SIA;
- Collecting baseline data on the current social environment and historical social trends;
- Identifying and collecting data on the SIA variables and social change processes related to the proposed intervention. This requires consultation with affected individuals and communities;
- Assessing and documenting the significance of social impacts associated with the proposed intervention; and
- Identifying alternatives and mitigation measures.

In this regard the SIA report for the proposed Paulputs WEF should involve:

- A review of demographic data from the Census Survey;
- A review of relevant planning and policy frameworks for the proposed or affected area;
- Site specific information collected during the site visits to the area and interviews with key stakeholders;
- Review of information from similar projects; and
- Identification of social issues associated with the proposed Paulputs WEF.

1.3. BACKGROUND AND PROJECT OVERVIEW

This section of the SIA Report provides a brief overview of the different components associated with a wind turbine generator. Figure 2 below provides an overview of all the components associated with a WTG, however for the purpose of this report only the main components will be discussed here. 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.

The rotor includes the blades, hub and aerodynamic control surfaces. Wind turbines have rotors that are specifically designed for the purpose of extracting significant power from the wind and then converts it into rotary motion. Manwell *et al*. (2002:284) explains that the rotor can be considered as the generator of cyclic loadings for the rest of the turbine, particularly for the drive train. Magheb (2014) adds that it is the shape of the rotor blades, and their angle of attack relative to the direction of the wind, that affects the performance of the turbine. Most turbines usually consist of three blades.

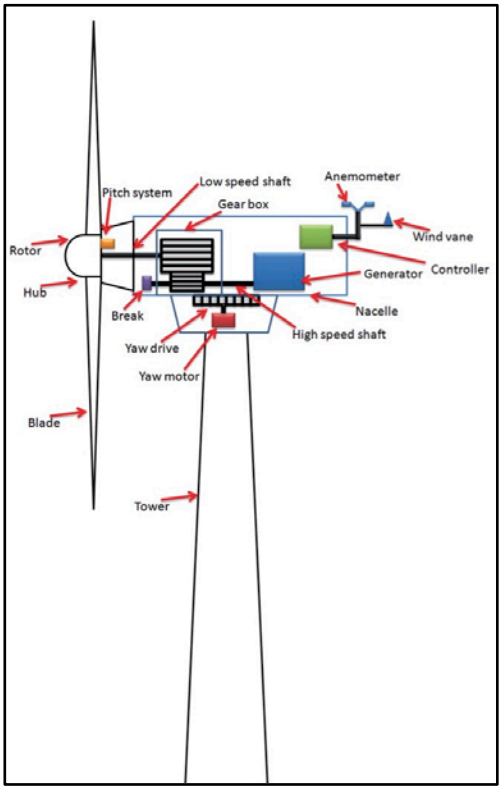

Figure 2. Components associated with a Wind Turbine Generator (WTG) (Source: Karimirad, 2014).

The drive train of a wind turbine consists of the rotor, main shaft, couplings, gearbox, breaks and generator (Manwell *et al*., 2014:297–305). In Figure 2 above it can be seen that the housing component of the wind turbine that houses and protects the drive train are referred to as the nacelle (Magheb, 2014). Manwell *et al*. (2002:307) also refers to the nacelle as the main frame. The purpose of the yaw system is for wind turbines to orient themselves in line with the wind direction (Manwell *et al*., 2002:305). They go further by explaining that the tower is a support "*to raise the main part of the turbine up in the air*". The height of a tower is usually at least as high as the diameter of the rotor (Manwell *et al*., 2002:308). The tower is usually made of steel and are mostly tubular, conical and hollow (Magheb, 2014). The tower further houses the transformer which is responsible for the conversion of electricity for transmission into the grid. Depending on the project, the transformer can also be housed outside the tower in a separate housing facility. Lastly, the wind turbine is anchored to the ground, which is also referred to as the foundational unit. The size and the depth of the foundational unit is determined according to the size of the wind turbine and may also vary depending on the project.

The proposed Paulputs WEF can be considered as an onshore wind energy facility with structure heights between 125m and 230m. According to the information provided by Arcus Consultancy Services South Africa (Pty) Ltd, "it is assumed that for each turbine, the turbine base and crane pad will cover a maximum of 0,8 hectares each", which will estimate to a total of 60 hectares for a maximum of 75 wind turbines. The road infrastructure to be covered will estimate to approximately 64 hectares, whereas the substation, offices and laydown areas will cover approximately 12 hectares per substation compound. Therefore, the total surface area to be covered by the Paulputs WEF estimates to approximately 219 hectares. The number of turbines for the proposed Paulputs WEF is dependent on the generation capacity of the turbines (3MW–6MW). Other technical details include: the height of the hub is a maximum of 140m; the estimated blade length is a maximum length of 90m; the rotor diameter is a maximum of 180m; the maximum tip height is 230m; the generation capacity of the on-site substation is 132/33kV; the generation capacity as a whole is 300MW; and the grid connection proximity to the Paulputs Substation is 23km from the on-site switching stations. Figure 3 below provides a map for the proposed Paulputs WEF and its associated gridline connections to the Paulputs substation. Other associated infrastructure include: operations and maintenance buildings and roads; and the grid connection to the Paulputs Substation (see also Figure 1). The operations and maintenance buildings will cover an area of approximately 200 x 200m with internal roads of approximately 12m wide. The buildings and substation will be fenced with 2,6m wired

mesh/chain linked fence, and security lights on the top of the turbines will also be placed if SACAA requires it to be. Furthermore, the details regarding the grid connections according to Arcus Consultancy includes the following: 15km–25km transmission lines; pylons with a maximum height of 30m; a transmission capacity of 132/33kV, and service roads with a width of 5m from the Paulputs WEF to the identified grid connection (±15km).

1.3.1. Socio-economic values associated with the proposed project

The socio-economic values associated with the proposed Paulputs WEF are based on the basic information received from WKN Windcurrent and Arcus Consultancy. A review of previously similar projects in the proposed area as well as similar projects in different areas of the country have been conducted. The construction phase for similar WEFs like the Paulputs WEF will extend over a period of approximately 24 to 36 months (2–3 years). If the proposed Paulputs WEF is constructed in two phases, then each phase of the construction period will extend over a period of 24 months per phase, thus 2 to 4 years in total. The anticipated total capital expenditure for the construction phase will be approximately R3–4 Billion for a 300MW project. The construction phase will employ approximately 300–400 employees. The number of employment opportunities is also dependent on whether the proposed Paulputs WEF will be constructed over two phases or in one phase. From the estimated employment opportunities approximately 15% (±45–60) will be skilled, 30% (±90–120) semi-skilled, and 55% (±165–220) low-skilled.

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 operational phase of the proposed project will provide approximately 30 to 50 employment opportunities of which 20% (±6–10) will be skilled, 40% (±12–20) semi-skilled and 40% (±12–20) low-skilled. 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 local communities of Pofadder and Kakamas, which will present a positive social benefit to these communities due to the low availability of employment opportunities in these areas. The recruitment process and the requirements for each skill level and each employment opportunity need to be clearly

communicated to local communities to ensure that no unrealistic expectations are created. The total wage bill for the construction phase of approximately 400 employees over a period of 36 months is approximately R80 Million, where 30% of the wage is for skilled, 40% semi-skilled and 30% to low-skilled employees. This represents a positive opportunity for the local economy of the towns of Pofadder and Kakamas as well as the project proponents' commitment to enhance opportunities and benefits for these local communities.

The project proponent indicated in their basic information that they are committed to implement training and skills development programmes during the construction and operational phase of the proposed Paulputs WEF, hence promoting skills development and creating local employment opportunities in the area. Additionally, the project proponent showed their commitment to the establishment of a Community Trust. Community Trusts creates opportunities to support local socio-economic development initiatives for the duration of the project (20–25 years), for example: school feeding schemes, training and skills development programmes as mentioned above, and supporting basic services to mention just a few. An estimated 5% target of the shares of the proposed project are to be reserved for the local community, however this value is dependent on the requirements provided by the DoE and is therefore subject to change.

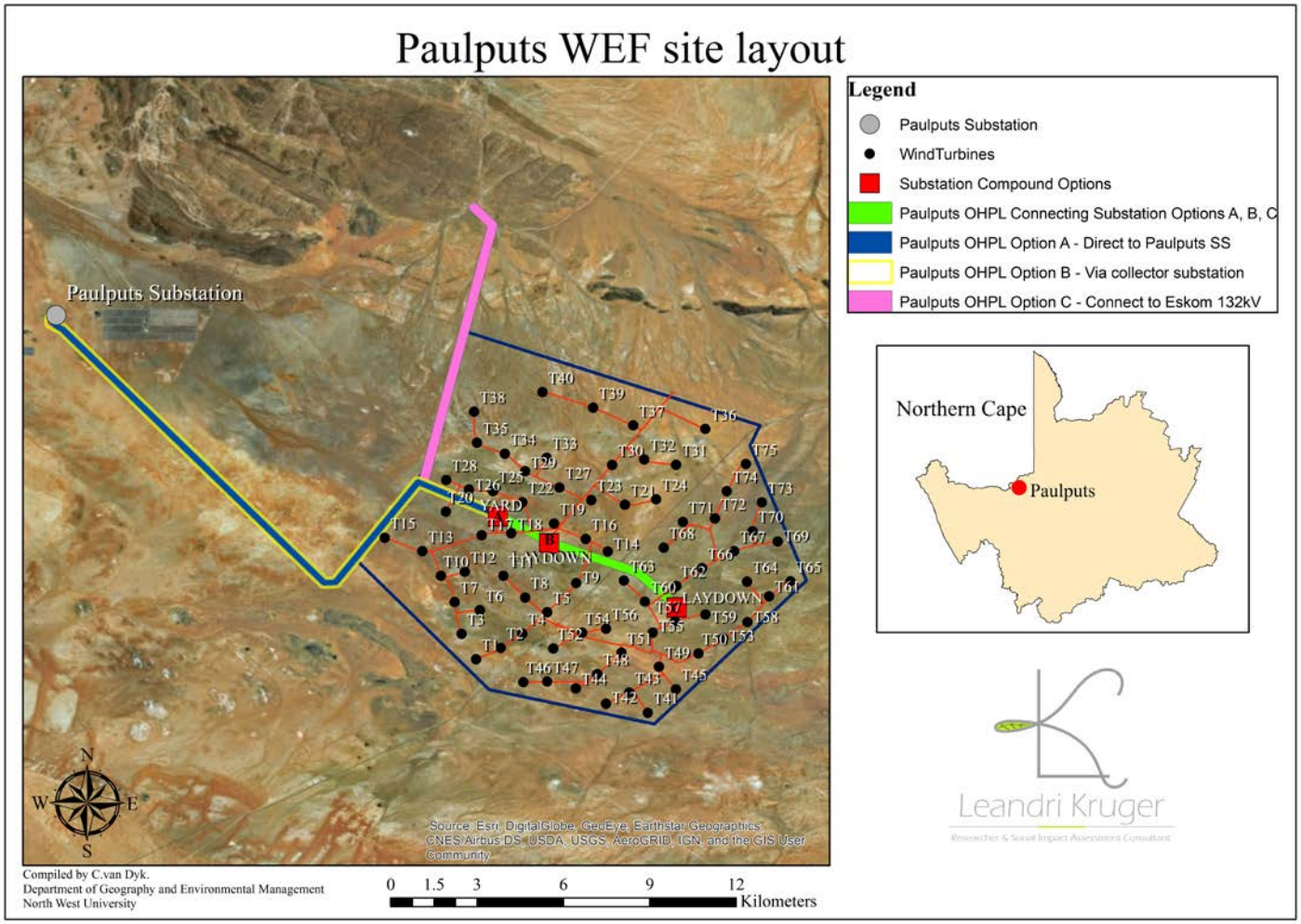

Figure 3. Illustrated map of the proposed Paulputs WEF and its associated infrastructure.

1.4. PROJECT SITE DESCRIPTION AND SURROUNDING LAND ORIENTATION

On the 3rd to the 5th of January 2019 a site visit to the proposed Paulputs WEF, and the surrounding towns was conducted. This section of the SIA report includes more detail pertaining to the proposed Paulputs WEF project site and the surrounding land orientation. The proposed Paulputs WEF is located on 6 farms: Portions 2, 3 and 5 of Farm 92, and Portions 1, 2 and 4 of Farm 93. The total area of the proposed WEF covers an area of approximately 10 000ha. The Paulputs WEF is located approximately 34km NE outside the town of Pofadder. The town of Pofadder, although one of the main towns in the Khâi-Ma Local Municipality, is a very small town situated on the N14 national road from Upington to Springbok. It also lies within 50km from the Namibian border. This town is therefore more considered as a stop-over town for travelling tourists.

Photograph 1.4.1. Overview of the N14 national road entering the town of Pofadder from an Eastern direction.

Photograph 1.4.2. Overview of housing next to the N14 national road entering the town of Pofadder from a Western direction.

Photograph 1.4.3. Overview of the N14 national road and KLK in Pofadder.

Photograph 1.4.4. Overview of the main road in Pofadder.

Photograph 1.4.5. Overview of the proposed Paulputs WEF site in a Northern direction.

Photograph 1.4.6. Overview of the proposed Paulputs WEF site in an Eastern direction.

Photograph 1.4.7. Overview of the proposed Paulputs WEF site in a Northern direction.

Photograph 1.4.8. Panoramic overview of the proposed Paulputs WEF site in a North Western direction.

Photograph 1.4.9. Overview of the Onseepkans road North East of the proposed Paulputs WEF site, on-route to the Namibian border and the KaXu Solar One plant.

Photograph 1.4.10. Overview of the proposed Paulputs WEF site in a South Western direction.

Photograph 1.4.11. Overview of the proposed Paulputs WEF site in a South Eastern direction.

The proposed Paulputs WEF partially also lies within the Kai !Garib Local Municipality and is situated approximately 75km West outside the town of Kakamas. Kakamas is considered one of the main towns in this municipal area, which is also situated on the N14 on-route to Pofadder. Kakamas is an area rich with citrus and grape farming, and lies on the banks of the Orange River. For this reason this town is also very attractive as a tourist destination.

Photograph 1.4.12. Overview of the main road in the town of Kakamas.

Photograph 1.4.13. Overview of the N14 national road intersecting the main road in the town of Kakamas.

The proposed Paulputs WEF is located in an area prone to strong and continuous winds, which is a good motivation for the placement of the Paulputs WEF.

Photograph 1.4.14. Overview of the strong winds warning signs on the N14 national road near the proposed Paulputs WEF site.

Photograph 1.4.15. Panoramic overview of the strong winds warning signs on the N14 national road near the proposed Paulputs WEF site.

The operational KaXu Solar One is situated approximately 15km NW of the Paulputs WEF. KaXu Solar One is a concentrated solar thermal plant developed by Abengoa Solar, which has been operational since 2015.

Photograph 1.4.16. Overview of the KaXu Solar One CSP situated NW of the proposed Paulputs WEF.

Photograph 1.4.17. Overview of the KaXu Solar One CSP situated NW of the proposed Paulputs WEF.

1.5. RESEARCH APPROACH AND METHODOLOGY

The research approach or methodology followed for the development of the SIA Report is based on the Guidelines for Involving Social Impact Assessment Specialists in the EIA process that was prepared for the Department of Environmental Affairs and Development Planning for the Western Cape Province of South Africa in February 2007 (Barbour, 2007), including the Guidelines and Principles for Social Impact Assessment (Inter-organizational Committee on Guidelines and Principles for Social Impact Assessment, 1994) and the IAIA Guidance for Assessing and Managing Social Impacts (IAIA, 2015). These guidelines for the development and planning of Social Impact Assessments (SIAs) are based on accepted international best practice guidelines. The key components of the SIA process which are embodied in these guidelines include:

- Describe and obtain a basic understanding of the proposed development (type, scale and location). Also obtain an understanding of the individuals and/or communities which are likely to be affected by the intervention, and determine the need and the scope of conducting and SIA;

- Collecting the baseline data for the proposed intervention based on the current social environment and historical social trends;
- Assess and document the significance of the social impacts which are associated with the proposed intervention; and
- Based on the baseline data and the identification and assessment of the social impacts likely to be associated with the proposed intervention, identify alternatives and mitigation measures for the social impacts of the proposed intervention (Barbour, 2007).

The research approach to this study is similar to scientific social research methods. A literature review was conducted to define and gain a basic understanding of the key concepts.

Vanclay (2003) described social change processes as a very discreet, describable and observable process, which changes the characteristics of a society. These processes are set in motion by different project interventions and or development policies. If these changes are managed effectively it may not create impacts, but depending on the context, these social change processes might lead the social impacts on a community. Examples of such social processes include the increase of population, the influx of temporary workers, relocation of communities etc. According to Vanclay (2002) the term 'social impacts' can be defined as "the consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community, organisation or society level. Some social impacts are felt by the body as a physical reality, while other social impacts are perceptual or emotional". It is important to note that social impacts can vary in both space and time. Social impacts can also differ in the way people differ from gender, culture, religion, ethnicity and in general how they view the world. This is better known as the social construct of reality and refers to people's worldview and the manner in which they react to impacts and changes.

The term "Social Impact Assessment" (SIA) refers to the efforts to analyse, monitor and manage, in advance, the unintended and intended social consequences, positive or negative, which are likely to follow from proposed interventions, policies and/or programmes (IAIA, 2003; Vanclay, 2006). The objective of an SIA is to identify the intended as well as the unintended effects of

planned interventions in order to achieve sustainable development (Hildebrandt, 2014). Esteves and Vanclay (2009:140) and Hildebrandt (2014) go further by stating that SIA should be seen as an umbrella assessment which incorporates the evaluation of all impacts on people and on all the ways in which people interact with their socio-cultural, biophysical and economic surroundings.

This research study made use of a mixed method research approach. A mixed method research approach builds on both a quantitative and qualitative research approach. A quantitative research approach refers to answering questions about relationships amongst measured variables. The aim is to explain, predict and or control the phenomena, in order to establish, confirm and validate relationships and develop generalisations. A qualitative research approach answers questions about the complex nature of a phenomena. The aim of this approach is to describe and understand the phenomena from a participants' point of view (De Vos *et al*., 2011). This research approach mainly relies on converting information from observations, reports and recordings into data and then into the written word.

This study followed the research approach similar to the components identified above. The steps involved in the SIA research approach involved:

- Project initiation and review of project information including a review of demographic data from the Census Survey and relevant baseline data;
- The collection and review of reports and baseline socio-economic data on the area. This will include the socio-economic characteristics of the affected areas, current and future land uses, and land uses planning and policy frameworks relating to the study area and surrounding areas;
- The identification of the components associated with the construction, operational and decommissioning phase of the proposed project, including estimate of total capital expenditure, number of employment opportunities created, breakdown of the employment opportunities in terms of skill levels (low, medium and high skilled), breakdown of wages per skill level, assessment procurement policies etc;
- Site visit of the proposed development and interviews with key stakeholders;
- The identification and assessment of key social issues and assessment of potential impacts (negative and positive) associated with the construction, operational and decommissioning phase of the proposed project. A key focus of the assessment will be

an assessment of the potential socio-economic benefits for the local community associated with the proposed development;

- The identification of appropriate measures to avoid, mitigate, enhance and compensate for potential social impacts;
- The identification and assessment of key cumulative impacts associated with the construction and operational phase of the proposed project;
- The preparation of the Draft SIA Report for comment;
- Incorporate comments and prepare Final SIA Report; and
- Provide Final SIA Report to appointed EAP.

The identification of the potential social issues associated with the proposed intervention is based on the review of relevant documentation, experience from previous similar projects, consultations with key stakeholders and the observations during the project site visits. Annexure A include the list of the stakeholders that was consulted for the purpose of this study and that assisted in the identification of potential impacts. The standard methodology used to assess the potential impacts were provided by Arcus Consultancy and were adopted to include in this section of the report.

The social impacts identified during the investigations by the specialist will be assessed according to the following criteria's provided by Arcus Consultancy (Adapted Hacking, T. 1998):

- The ***impact description*** or nature of the proposed intervention includes the description of what will be affected, how it will be affected and what the cause thereof is.

- The ***extent*** refers to the indication whether the impact will be local, regional, national or international, i.e. the spatial scale. The extent of each impact is indicated as Low, Medium, or High:

L (Low)	M (Medium)	H (High)
The impact is localized within the site boundary	Local; Impact is widespread beyond boundary	Regional/national; Impact is widespread far beyond site boundary

- The *duration* refers to the length or duration in lifetime of the impact. The duration will thus indicate whether the lifetime of the impact be of a very short term, medium term or long term:

L (Low)	M (Medium)	H (High)
Short Term: quickly reversible, less than project life	Medium Term: reversible over time	Long Term: permanent; beyond closure; irreplaceable or irretrievable commitment of resources

- The *intensity* of the impact refers to the degree of severity that the impact might cause, which can be measured against the following criteria:

Type of Criteria	Positive			Negative		
	L+	M+	H+	L-	M-	H-
Qualitative	Minor improvement; restoration; improved management	Moderate improvement; restoration; improved management; substitution	Substantial Improvement; substitution	Minor deterioration; nuisance or irritation; minor change in species/ habitat/ diversity or resource, no or very little quality deterioration	Moderate deterioration; discomfort; partial loss of habitat/ biodiversity/ resource or slight alteration	Substantial deterioration; death; illness or injury; loss of habitat/ diversity/ resource; severe alteration or disturbance of important processes
Quantitative	No measurable change; within or better than recommended level	Measurable improvement	Measurable improvement	No measurable change; recommended level will never be violated	Measurable deterioration; recommended level will occasionally be violated	Measurable deterioration; recommended level will often be violated

- The *status* of the impact refers to the degree to which an impact can be reversed (positive status), may cause irreplaceable loss of resources (negative) and can be mitigated (neutral).

- The *consequence* of each potential impact was assessed using the following formula and qualitative guidelines:

Consequence (C) = Extent (E) x Duration (D) x Intensity (I)

Intensity = L (Low)				
Duration	H			
	M			Medium
	L	Low		
Intensity = M (Medium)				
Duration	H			High
	M		Medium	
	L	Low		

Intensity = H (High)				
Duration	H			
	M			High
	L	Medium		
		L (Low)	M (Medium)	H (High)
Extent				

- The *significance* of each potential impact was assessed through the following formula:

Significance (S) = Consequence (C) x Probability (P)

Probability					
	Definite Continuous	H (High)	Medium		High
	Possible frequent	M (Medium)		Medium	
	Unlikely Seldom	L (Low)	Low		Medium
			L (Low)	M (Medium)	H (High)
			Consequence		

- The *probability* refers to the likelihood of the impact of actually occurring. The probability will be indicated as Low, Medium or High:

L (Low)	M (Medium)	H (High)
Low likelihood; unlikely/ seldom. Holds no risk or vulnerability to natural or induced hazards	Possible; distinct possibility/ frequent. Holds low to medium risk or vulnerability to natural or induced hazards	Definite; highly likely/ continuous (despite prevention measures). Holds high risk or vulnerability to natural or induced hazards

- *Confidence* refers to the degree of the specialist's confidence in his/her predictions. This is based on the specialist's knowledge and also on the available information. The confidence is also indicated as Low, Medium or High.

1.6. ASSUMPTIONS AND LIMITATIONS

This section of the SIA Report refers to the assumptions and limitations experienced during the preparation of the final SIA report for the proposed Paulputs WEF.

Assumptions

The first assumption in preparing the SIA Report for the proposed Paulputs WEF and due to the limitations discussed below, is that the proposed site for the establishment of the Paulputs WEF is technically suitable for the establishment of a wind energy facility. The second assumption identified is the strategic importance of promoting renewable energy like onshore wind energy. This is supported in Section 3 of this SIA report. Additionally, the fit with key policy and planning documents is a key component in the SIA process, to identify and assess potential social impacts for the proposed development. The proposed study however do recognise the strategic importance of promoting renewable energy like wind energy, and can therefore support the development of the proposed Paulputs WEF.

Limitations

In preparation of the final SIA report, one limitation that could be identified is that the demographic data was based on the most recent available Census data from the year 2011. This data can be considered dated and should be treated with caution. It was however useful in compiling a demographic profile of the affected area of the proposed development. Where necessary the data was however updated with the data from the Community Survey in 2016. A second identified limitation is that the site visit was conducting over the festive season therefore not all potential stakeholders were available for consultations. Follow-up consultations were scheduled telephonically, however stakeholders identified their unavailability to interviews and/or were unwilling to provide their input. For this reason the specialist extended the review of reports similar to the Paulputs WEF, and with the specialists experience with similar projects, this limitation does not affect the findings of this SIA report.

1.7. LAYOUT OF REPORT

This SIA report provides an Executive Summary of the SIA that has been conducted in the beginning of the report as required and communicated in the ToR. Thereafter the SIA report is divided into five (5) main sections:

Section 1: Introduction;

Section 2: Overview of study area;

Section 3: Policy and planning documents;

Section 4: Identification and assessment of key social impacts; and

Section 5: Key findings and recommendations.

After the final sections a reference list with all the references used in this SIA report and an Annexure will be given.

SECTION 2 – OVERVIEW OF STUDY AREA

2.1. INTRODUCTION

After a basic introduction to this SIA report included in Section 1, Section 2 of this SIA report provides a baseline description of the proposed area under study. In Section 2 the administrative and regional, demographic and economic context of the area under study will be given.

2.2. ADMINSTRATIVE CONTEXT

The proposed Paulputs WEF is located near the town of Pofadder. This WEF is located approximately 34km NE, outside the town of Pofadder. The proposed Paulputs WEF covers a proposed magnitude of approximately 10 000ha (75 WTG), covering 6 farms with four (4) proposed grid connections with a distance of approximately 23km from the switching stations to the existing Eskom Paulputs Substation (located NW of the proposed site). As mentioned in the beginning of this report, the Paulputs WEF is located in the Northern Cape Province of South Africa. The Northern Cape Province is divided into five (5) district municipalities, i.e. Frances Baard, John Taolo Gaetsewe, Namakwa, Pixley ka Seme and the ZF Mgcawu (former Siyanda) District Municipality. The proposed Paulputs WEF is situated in two (2) district municipalities, i.e. the Namakwa District Municipality and the ZF Mgcawu District Municipality. The Namakwa District Municipality covers an area of approximately 126 836 km², which is further divided into seven (7) local municipalities, i.e. Nama Khoi, Hantam, Khâi-Ma, Kamiesberg, Karoo Hoogland, Richtersveld and Namaqualand. The site of the proposed Paulputs WEF partially falls within the Khâi-Ma Local Municipality. The Khâi-Ma Local Municipality comprises of 16 628 km², and the administrative seat of the Khâi-Ma Local Municipality is located in the town of Pofadder. The Khâi-Ma Local Municipality consists of five (5) main towns namely, Aggeneys, Onseepkans, Pella, Pofadder and Witbank. Figure 4 below indicates the location of the Namakwa District Municipality (on the left) and the Khâi-Ma Local Municipality (on the right). The town Pofadder is a very small town situated on the N14 national road from Upington to Springbok. The town lies 50km from the Namibian border, and is more known as a stop-over town on-route to Springbok. The surrounding area is very arid and locals of Pofadder earn their income more from sheep and goat farming. The town is also considered as the service centre for the surrounding farm areas.

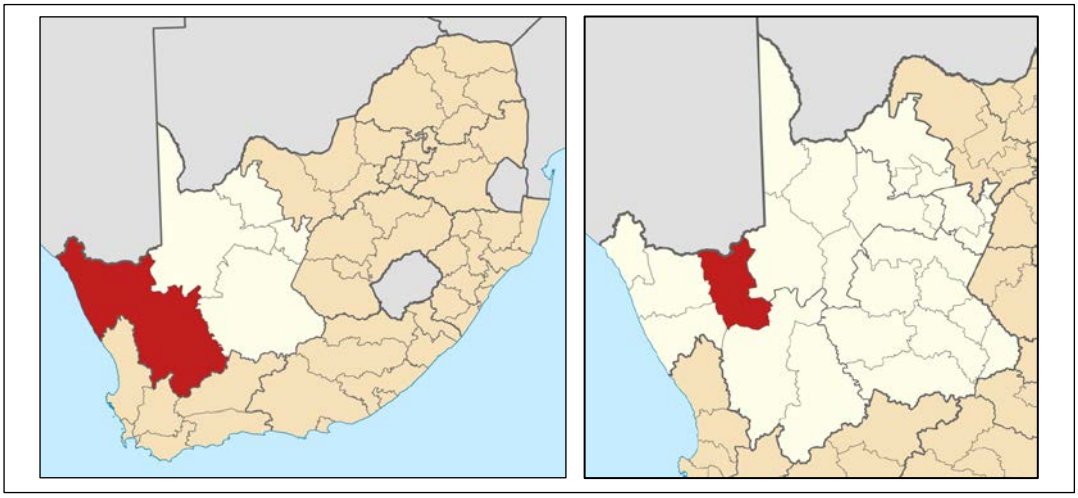

Figure 4. Maps indicating the location of the Namakwa District Municipality and the Khâi-Ma Local Municipality (Source: Wikipedia).

However, the proposed Paulputs WEF partially also falls within the Kai !Garib Local Municipality, which is located in the ZF Mgcawu District Municipality. The Kai !Garib Local Municipality comprises a total area of 26 358 km², and the administrative seat of this local municipality is located in the town of Kakamas. Figure 5 below indicates the location of the ZF Mgcawu District Municipality (on the left) and the Kai !Garib Local Municipality (on the right). Some of the main towns in this municipal area include the town of Kakamas, Keimoes, Kenhardt and Lutzburg to mention a few. Kakamas is also a town situated on the N14 national road on-route to Pofadder and is situated on the banks of the Orange River. For this reason this town earn their main income from farming practices like grapes and citrus farming. Due to this towns' close proximity to the Orange River, this town is also considered attractive for tourism activities in the area.

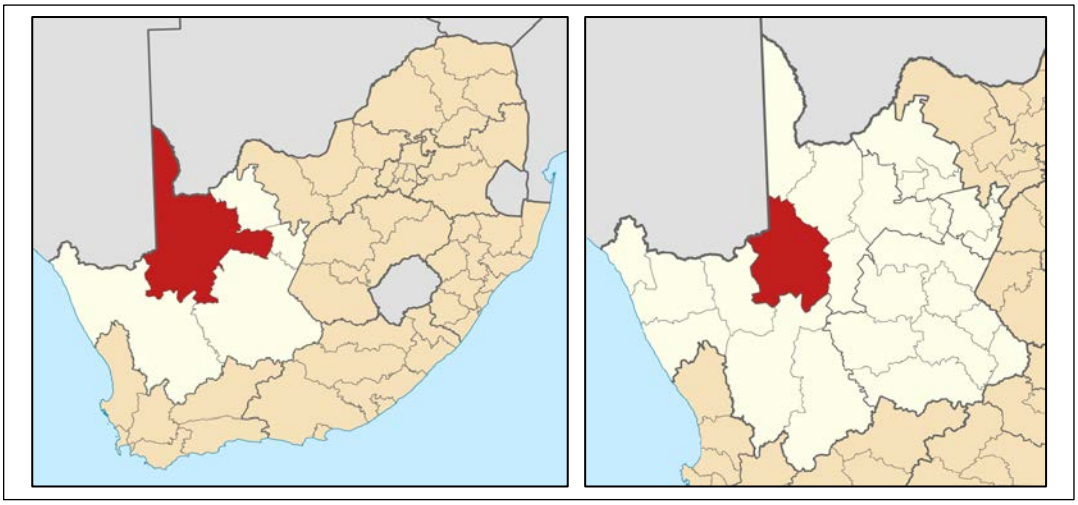

Figure 5. Maps indicating the location of the ZF Mgcawu District Municipality and the Kai !Garib Local Municipality (Source: Wikipedia).

2.3. 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 Development Framework (PSDF) of 2012 (Page 27–72), Namakwa District Municipality Integrated Development Plan 2018/2019 revision report, the Khai-Ma Local Municipality Final Integrated Development Plan for 2012–2017 (Review 2012–2017), the ZF Mgcawu District Municipality Draft Integrated Development Plan 2018/2019 for 2017–2022, and the Kai !Garib Local Municipality Draft Integrated Development Plan of 2018/2019. Where necessary the data was updated from the 2011 Census data and the data from the Community Survey of 2016.

2.3.1. PROVINCE

The Northern Cape Province is located in the North Western corner of South Africa. South Africa has nine (9) provinces of which the Northern Cape is the largest province. This province covers approximately 372 889 km², which is 30.5% of the total land surface of the country. In terms of population, this province has the smallest population in the country, despite the size of the province. According to the Northern Cape PSDF of 2012 the total population of the province in 2005 was estimated at 991 919 people with the major ethnic group being the black population, representing 46% of the entire population. The 2016 Community Survey reported that the main ethnic population still remains the black population (48,1%) followed by the coloured population (43,7%) (Stats SA, 2018). According to the 2011 Census data the total population of the province was estimated at 1, 145, 861 people and it was estimated to grow to 1, 185, 600 people by the year 2015 (Stats SA, 2011). The Community Survey of 2016 however reports a 4,2% growth in the population size of the province with a total population of 1, 193, 780 in 2016. The results further indicated that the Northern Cape Province is the province with the lowest percentage change in population size with a slight growth of 47 919 over a period of six years (Stats SA, 2018).

The 2011 Census data (Stats SA, 2011) revealed that the sex structure of the province was almost equal with approximately 51% (512 126) of the total population being female and approximately 49% (479 793) being male. The same trend can be viewed in the 2016 Community Survey with an equal distribution (50% female and 50% male). The 2016 Community

Survey further reports that the population in the Northern Cape province aged between 0–14 years dropped with 2,3% from the 2011 Census data (30,1% in 2011; 27,8% in 2016). An increase from 34,8% in 2011 to 36,5% in 2016 for the population aged between 15 and 35 years was reported. The adult population aged between 35 and 64 years decreased from 29,4% in the 2011 Census to 29,2% in 2016, whereas the population of elderly persons grew from 5,7% in the 2011 Census to 6,6% in the 2016 Community Survey (Stats SA, 2018). The 2011 Census reported that the province has an average of 301 400 households with an average household size of 3,8 people. The 2016 Community Survey reported an increase in the number of households to 353 709, however the average household size have slightly declined to 3,4 people. In terms of access to services it was reported in the 2016 Community Survey that 88,5% of the provinces' population have access to basic services like water, and 63,2% have access to sanitation services (Stats SA, 2011; 2018).

The economy of the Northern Cape mainly relies heavily on two sectors, namely the mining and agriculture sectors. These two sectors employ approximately 57% of all employees in the province. Over the past eight (8) years there has been little to no increase or decrease in the overall standard of living of the communities in the Northern Cape Province. According to the PSDF of 2012 this trend is unlikely to change in the foreseeable future, mainly due to the marginal economic base of the poorer areas, and the consolidation of the economic base in the relatively better-off areas of the province. The Northern Cape PSDF of 2012 reports that the percentage of the people living in the Northern Cape Province, that lives below the poverty line, has decreased from 40% in 1995 to 27% in 2011, while the poverty gap has decreased from 11% in 1995 to 8% in 2011. It is the province's goal to decrease the percentage of people living below the poverty line by 2015 to 20%.

As reported by the Northern Cape Provincial Government, unemployment still remains a big challenge in the province. Unemployment was reported to be at 24,9% during the fourth quarter of 2013. Unemployment also declined from 119 000 unemployed people in the fourth quarter of 2012 to 109 000 unemployed people in the fourth quarter of 2013. The PSDF further reports that the unemployment level in the province is lower than the national average, but that the "not economically-active" population is higher than the average for South Africa. According to the PSDF of 2012 the community and social services sector is the largest employer in the province at 29%, followed by the agricultural sector (16%), wholesale and retail trade (14%), finance (8%), manufacturing (6%), and mining (6%); where the mining sector is the largest contributor to the

provincial Gross Domestic Product (GDP) at 26%.

In terms of education the average adult education attainment levels in the province are lower than the adult education attainment levels of South Africa as a whole. Approximately 19,7% of the Northern Cape adults have no schooling in comparison to South Africa's 18,1%. The Northern Cape has the second lowest percentage of adult individuals (5,5%) that obtained a tertiary education in South Africa (PSDF, 2012). The overall economic growth of the province has shown significant recovery since 2000/2001 when it had a negative economic growth rate of -1,5%. However, the province is still the smallest contributing province to South Africa's economy (only 2% to South Africa's GDP per region in 2007).

2.3.2. DISTRICT MUNICIPALITIES

This section include the demographic and economic context of the two (2) district municipalities within which the proposed Paulputs WEF is situated, i.e. the Namakwa and the ZF Mgcawu District Municipalities.

2.3.2.1. Namakwa District Municipality

The Namakwa District Municipality (NDM) is one of five (5) district municipalities in the Northern Cape Province. The NDM comprises of seven (7) local municipalities, i.e. the Nama Khoi, Hantam, Khâi-Ma, Kamiesberg, Karoo Hoogland, Richtersveld and the Namaqualand Local Municipality. The NDM according to the 2011 Census is 126, 836 km² in size, which is the largest district municipality in the Northern Cape. The administrative seat of the district municipality is located in the town of Springbok (Stats SA, 2011).

According to the 2011 Census the NDM has a population of 115 842 people. There has been a slight decline in the population of the local municipalities due to out-migration with an average population of 115 488 people according to the Community Survey in 2016. The NDM is the district with the lowest population compared to all the other district municipalities in the Province. The Community Survey of 2016 reveals that the majority of this population is made up of the ages between 35 and 46 years (34,7%), whereas 33,3% are between the ages of 15 to 34 years, 22,5% between the age of 0 to 14 years and 9,5% above the age of 65. The gender distribution

of the population is 50,55% female and 49,45% male according the 2011 Census data. The results from the Community Survey in 2016 further reveals that the majority (88,1%) of the population comprises of a coloured population (Stats SA, 2011; 2018). The NDM IDP of 2018–2019 reported an improvement in the access to basic services like water, electricity and sanitation in the district. The report specifically mentions that "*renewable energy is recently one of the cornerstones of the economy of the District and there needs to be engagement on National level to ensure that the District benefit from this resource*" (NDM, 2018).

The IDP of the district reveals that the community services sector is the main sector that contributes to the districts' economy, followed by the agricultural and mining sector. It further indicates that the district experienced a sharp decrease in GDP growth rated in 2009, which was attributed to the global economic downturn. However, the district forecast a positive GDP growth over the medium term. Between the years 2003 and 2013 the tertiary sector contributed most to the economy with an average annual contribution of 63,1%. This data can however be dated, and new data has not come to the forefront yet. The Northern Cape Province's labour market is faced with a high unemployment rate and the same scenario prevails in the Namakwa District. According to the NDM (2018) in 2014, 34 840 of the districts' population were employed, with 9 515 people unemployed in the district, whereas 44 355 are economically active and 32 557 are not economically active. The IDP recognizes that employment in the district remains a challenge that need to be addressed for economic development. The municipality had a poverty rate of 50,4% in 2004 and 26,2% in 2014 (NDM IDP, 2018). It further stipulates that *"proper planning and implementation processes of programs that intend to create job opportunities need to be intensified*" to improve the labour market of the Namakwa District Municipality (NDM, 2018).

2.3.2.2. ZF Mgcawu District Municipality

The ZF Mgcawu District Municipality (ZDM) forms the mid-northern section of the province on the frontier with Botswana. According to the 2011 Census data this district is 102,524 km^2 in size with a total population of 236 783 people. This district borders with four (4) district municipalities, namely the John Taolo Gaetsewe, Francis Baard, Pixley ka Seme and the Namakwa District Municipality. It also borders with the Republic of Botswana and Namibia. The ZF Mgcawu District comprises of six (6) Local Municipalities, i.e. the Mier, Kai! Garib, Kara Hails, Tsantsabane, Kheis and the Kgatelopele Local Municipality.

Table 1 below according to the ZF Mgcawu IDP of 2018/2019 recorded an increase of 35 903 people that represents a 17,8% increase in the overall population of the district. The aforementioned table also indicates that the majority of the population is located in the //Khara Hais Municipality (42%), followed by the Kai! Garib Municipality (24%) and the Tsantsabane Municipality (12%).

Table 2. Population figures of the ZF Mgcawu District Municipality (ZDM, 2018:7–8).

Municipality	Census 2001	Census 2011	% of the total population	Difference	Area (Km)	Persons / Km
Mier	7207	7003	3%	493	22468	0.3
Kai Garib	58 617	65 869	24%	799	26357	2.1
//Khara Hais	77 919	93 494	42%	25249	21780	4.6
!Kheis	16 538	16 637	8%	2797	11107	1.7
Tsantsabane	27 082	35 093	12%	4018	18330	1.5
Kgatelopele	14 743	18 687	9%	6755	2478	8.7
Total	**202 106**	**236 783**	**100%**	**35903**	**102520**	**2.3**

According to Stats SA (2011) it is reported that 51,21% of the population in the ZDM is female, while 48,79% are male. The highest population of the ZDM is within the ages of 1–19 years. These figures are however dated and should be carefully taking into consideration. It is further reported by Stats SA (2018) that 60,4% of the population are coloured in race, while 29,4% are black african and 8,2% white. The most spoken language in this area is Afrikaans and Tswana.

The ZDM (2018) IDP for 2017–2022, reports that the degree of economic concentration in South African urban areas is significant; the South African Cities Network indicates that 21 functional urban areas (which exclude Upington, but include Kimberley), covering 2% of the national surface area, generate nearly 70% of the Geographic Value Added (GVA). In the 1990s the area between Tshwane and Johannesburg generated 24% of the GDP growth; on 0,2% of the national footprint. There is a very real risk that the economies of agglomeration driving the trend of spatial concentration can result in many cities, towns and rural regions that used to be thriving centers of commerce becoming economically marginalized and dependent on state handouts for survival.

The IDP further identifies that its key economic activities are: agriculture, agricultural enterprises, livestock farming, irrigation farming, tourism and heritage, and minerals and mining. In terms of the minerals and mining in the ZDM, the municipality accounts for approximately 30% of the province's economy. The tourism sector however, is regarded as the most important sector in the ZDM, besides mining. According to the IDP it is regarded as the fastest growing industry

that contributes to the economy of the ZDM. The real area for potential economic growth lies within tourism development. The mining and agricultural sectors thus largely dominates the economy of the ZDM.

2.3.3. LOCAL MUNICIPALITIES

This section include the demographic and economic context of the two (2) local municipalities within which the proposed Paulputs WEF is also situated, i.e. the Khâi-Ma and the Kai !Garib Local Municipalities.

2.3.3.1. Khâi-Ma Local Municipality

The Khâi-Ma Local Municipality (KLM) is located within the Namakwa District Municipality. This municipal area is approximately 16 628 km^2 in geographical size. The KLM municipal area consists of five (5) towns and their surrounding suburbs. These towns include: Aggeneys, Onseepkans, Pella, Pofadder and Witbank. The administrative seat of the KLM is located in the town of Pofadder (Stats SA, 2011).

According to the 2011 Census the population of the KLM consist of 12 465 people. The Community Survey from 2016 reports a population size of 12 333 people in the KLM. Therefore, the population size had a negative growth rate of -0,2% from the year 2011 to 2016. The racial makeup of the KLM reveals that the majority of the population is considered to be coloured (75,1%), while 17,6% are black and 6% of the population white. Afrikaans and Tswana are also the most spoken languages in this municipal area. The Community Survey of 2016 reports that the majority (40,9%) of the KLMs population are aged between 15 and 34 years, followed by 30,7% aged between 35 and 64, 22,2% aged between 0 and 14 years and 6,2% aged above 65 (Stats SA, 2018). The Census data from 2011 indicated that the KLM comprised of 3 783 households with a household size of an average of 3,3 people (Stats SA, 2011). Although the population size have showed a slight decrease in the 2016 Community Survey, the survey in 2016 reflects a growth in the number of households to 4079 with a household size of 3 people per household. The survey further revealed that the KLM is the local municipality within its district which reported to have the most access to basic municipal services (Stats SA, 2018).

The Census data from 2011 reveals that from the 5904 people in the KLM that are economically active, 22,1% are unemployed. The data further reveals that 322 are classified as "discouraged work-seekers" (Stats SA, 2011). According to the KLM IDP of 2012–2017 the poverty levels of the KLM are high (KLM, 2012). The reasons ascribed to this is the high levels of unemployment in the local municipality and an increase in the prevalence of illnesses like HIV/AIDS and TB. The IDP further states that communal farming on peri-urban land causes environmental challenges. HIV/AIDS levels are considered high, especially along the national transport routes. The IDP states that there is an out-migration of skilled people, due to a lack of local economic opportunities in the KLM; the increasing temperatures in the area may lead to an increase in the unemployment rate; and the socio-economic conditions of the KLM are poor which in turn can have a negative effect on the sustainability of infrastructure and service delivery in the KLM. Despite the poor figures reported above, the KLM in its IDP reported that one of their main objectives remain Local Economic Development. For this the KLM set forth a local economic development plan in the IDP to strategize on how to create employment opportunities in the KLM, to alleviate poverty, and to redistribute resources and opportunities for the benefits of the people in the KLM (KLM, 2012).

2.3.3.2. Kai !Garib Local Municipality

The Kai !Garib Local Municipality (KGLM) is situated along the Orange River and covering an area of approximately 26 358 km^2 in size. The KGLM according to the IDP of KGLM (2018) falls within the ZF Mgcawu District Municipality and consists of three large towns: Kakamas, Keimoes and Kenhardt. The Census 2011 data reports that the total population of the KGLM is 65 869 people, of which 62,2% are coloured, 28,3% are black african and 6,3% are white. The Community Survey of 2016 reported a 1% increase in the population size of the KGLM from 2011 to 2016 with a population size of 68 929 in 2016 (Stats SA, 2018). Stats SA (2018:13) indicate that 44,3% of the total population of the KGLM are between the ages of 15 and 34 years, followed by 28,1% being between 35 and 64 years, 22,7% between 0 and 14 years, and only 4,8% above the age of 65. It is further reported by Stats SA (2011) that 34,6% of the households in this local municipality are female headed households.

The number of households in this area are 16 703, whereas 2076 are considered agricultural households. The average household size is 3,9 people per household. The household size from

Census 2011 to the Community Survey in 2016 revealed an increase in the number of households to 23 017 households in the KGLM. The household size however decreased to three (3) people per household (Stats SA, 2018). The Census 2011 data further reports that 30 949 people in the KGLM are economically active, of which 10% are unemployed (Stats SA, 2011). The KGLM (2018) reports that the economy of the KGLM is heavily dependent on the agricultural sector. The main national roads running through this local municipal area assists in the economic growth of the KGLM. The IDP (KGLM, 2018) further reports that 49% of the agricultural sector contributes to the employment sector in the KGLM, making it the biggest contributor to the employment sector. This is followed by the government as an employer (17%), the household sector (14%), finance (8%) and trading (7%) sectors.

SECTION 3 – POLICY AND PLANNING DOCUMENTS

3.1. INTRODUCTION

Section 3 of the SIA Report provides an overview of the related legislation, policy and planning documents affecting the proposed Paulputs WEF project. The overview of the documents included in this section include documents on all spheres of Government, i.e. National, Provincial, District and Local level. The legislative and policy context plays an important role in identifying and assessing the potential social impacts associated with the proposed development project. Hence, the proposed Paulputs WEF will additionally be assessed in terms of its fit with the key legislation and planning documents. A discussion of each of the legislative and policy documents listed below will be given first, followed by an assessment of the policy and planning fit.

National Level – Policy and planning documents:

- The National Energy Act no 34 of 2008;
- White Paper on the Energy Policy of the Republic of South Africa of 1998;
- White Paper on Renewable Energy of 2003;
- Integrated Resource Planning for Electricity for South Africa of 2010–2030;
- National Development Plan of 2030;
- National Infrastructure Plan of South Africa; and
- New Growth Path Framework.

Provincial Level – Policy and planning documents:

- Northern Cape Provincial Development and Resource Management Plan/ Provincial Spatial Development Framework (PSDF) of 2012.

District Level – Policy and planning documents:

- Namakwa District Municipality Integrated Development Plan (IDP) for 2018–2019; and
- ZF Mgcawu District Municipality Draft Integrated Development Plan 2018/2019 for 2017–2022.

Local Level – Policy and planning documents:

- Khâi-Ma Local Municipality Integrated Development Plan for 2012–2017; and
- Kai !Garib Municipality Draft Integrated Development Plan of 2018/2019.

3.2. NATIONAL LEVEL POLICY AND PLANNING DOCUMENTS

The national level policy and planning documents related to the proposed Paulputs WEF are included in this section of the SIA report.

3.2.1. The National Energy Act no 34 of 2008

The National Energy Act no 34 of 2008 was promulgated in the year 2008. Section 1 of this Act refers to the term "*renewable energy*" as energy, which is generated from natural resources that are non-depleting (RSA, 2008). This section specifically refers to wind energy, amongst others, as a form of generating renewable energy. With this definition of renewable energy by the Act, the Act's main focus is to ensure that diverse energy resources are available to the South African economy, to support the economic growth of the country and to assist in alleviating poverty (RSA, 2008). This Act has a few aims described in the Preamble of the Act, but the one aim in particular that relate to this proposed development project is "*to provide for energy planning, increased generation and consumption of renewable energies, contingency energy supply, holding of strategic energy feedstocks and carriers, adequate investment in, appropriate upkeep and access to energy infrastructure*" (RSA, 2008). The Act further calls for the development of an Integrated Resource Plan (IRP) for the electricity of South Africa, which will be discussed later in Section 3.2.4 of the report.

3.2.2. White Paper on the Energy Policy of the Republic of South Africa of 1998

The White Paper on the Energy Policy of the Republic of South Africa of 1998 (further referred to as the White Paper) provides an overview of South Africa's energy sector's contribution to the country's economic sector. The White Paper states that the South African Energy systems can

greatly contribute to a successful development strategy, and a more sustainable national growth. Therefore, this White Paper supports investment initiatives in renewable energy (RSA, 1998).

Globally, there has been rapid development in renewable energy technologies, due to its many advantages, including cost-effectiveness. However, in South Africa the development and the implementation hereof have been neglected. According to the White Paper approximately 10% of South Africa's primary energy resources are provided through renewable energy resources (RSA, 1998). The advantages of renewable energy applications include: the impact on the environment is kept to the minimum, it's more cost-effective than traditional supply technologies and higher labour intensities. The disadvantages of the renewable energies include: higher capital costs, lower densities and level of availability (depending on specific environmental systems like the sun and wind). Despite these disadvantages, renewable energy resources still operate from an unlimited resource base, meaning that another major advantage is that renewable energy is a more sustainable energy resource on the long-term (RSA, 1998).

South Africa consists of very attractive renewable energy resources, including wind. This statement according to the White Paper guides the development of South Africa's renewable energy policy. The Government policy according to the White Paper (RSA, 1998:79) is still concerned with meeting the following challenges:

- To ensure that the technologies and applications, which are being implemented are economically feasible;
- To ensure that an equitable level of national resources is invested in these renewable energy technologies; and
- To address the constraints experienced on the development of the renewable energy industry.

Despite the Government policy's concerns, the policy still recognises renewable energy sources as unlimited resource bases with potential sustainability for the long-term. The Government stated also its support by stating in the White Paper on the Energy Policy of the Republic of South Africa of 1998 (RSA, 1998:80) that the "*Government will provide focused support for the development, demonstration and implementation of renewable energy sources for both small and large-scale applications*". Furthermore, the White Paper supports the investment in renewables, by recognising that renewables are energy resources in their own right which might hold significant medium to long term commercial potential. The White Paper also states that

Government should increase its capacity to deal with the development of renewable energy resources in order to reach a more sustainable energy mix (RSA, 1998:25).

3.2.3. White Paper on Renewable Energy of 2003

The White Paper on Renewable Energy of 2003 (further referred to as the White Paper) sets out the Government's vision, goals, objectives, policies and principles with regards to promoting and implementing renewable energy in South Africa. This White Paper can be considered as a supplement paper to the White Paper on Energy Policy of 1998, which recognised the significant potential of renewable energy over medium- and long-term periods. The White Paper has two overarching goals, namely to inform the public and Government agencies, including the Organs of the State, and the international community, of the Government's goals and the manner in which the Government plan to achieve these goals (RSA, 2003).

The White Paper states that the Government recognised the emission of greenhouse gasses and the effect of climate change globally. For this reason the Government committed in reducing the greenhouse gas footprint of South Africa. According to the White Paper the Government's vision for renewable energy is "*an energy economy in which modern renewable energy increases its share of energy consumed and provides affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation*" (RSA, 2003).

Besides referring to other technologies of renewable energy, this White Paper specifically refers to the potential of wind resources in South Africa, directly relating to the proposed Paulputs WEF. The medium term target (10 years) for the Government as set out in this White Paper is: *"10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro. The renewable energy is to be utilised for power generation and non-electric technologies such as solar water heating and bio-fuels. This is approximately 4% (1667 MW) of the projected electricity demand for 2013 (41539 MW)*" (RSA, 2003:Executive Summary, ix). The long-term goal of the Government is to establish renewable energy industries that will provide fully non-subsides alternatives to fossil fuels that will be more sustainable for future generations.

3.2.4. Integrated Resource Planning for Electricity for South Africa of 2010–2030

The Integrated Resource Plan for Electricity for South Africa of 2010–2030 (further referred to as the IRP) is a "living plan" which is expected to be revised and updated continuously as necessary due to changing circumstances. According to the Summary of the plan the current IRP for South Africa, which was originally initiated by the Department of Energy (DoE) in June 2010, led to the Revised Balanced Scenarios (RBS) for the period 2010–2030.

"*This scenario was derived based on the 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*". In addition to all existing and committed power plants, the RBS included 11,4 GW of renewables, which relates to the proposed Paulputs WEF. In 2010 several changes were made to the IRP model. The main changes in the IRP were the disaggregation of renewable energy technologies to explicitly display solar photovoltaic (PV), concentrated solar power (CSP), and wind options (RSA, 2011a).

The summary of the IRP further explains that traditional cost-optimal scenarios were developed based on the previously mentioned changes in the IRP. This resulted in the Policy-Adjusted IRP, which stated that:

- "*The installation of renewables (solar PV, CSP and wind) have been brought forward in order to accelerate a local industry;*
- *To account for the uncertainties associated with the costs of renewables and fuels, a nuclear fleet of 9,6 GW is included in the IRP;*
- *The emission constraint of the RBS (275 million tons of carbon dioxide per year after 2024) is maintained; and*
- *Energy efficiency demand-side management (EEDSM) measures are maintained at the level of the RBS*" (RSA, 2011a:6).

"*The Policy-Adjusted IRP includes the same amount of coal and nuclear new builds as the RBS, while reflecting recent developments with respect to prices for renewables. In addition to all existing and committed power plants (including 10 GW committed coal), the plan includes 9,6 GW of nuclear; 6,3 GW of coal; 17,8 GW of renewables; and 8,9 GW of other generation sources*" (RSA, 2011a:6).

The IRP highlights the commitments before the next IRP. The commitments pertaining to the purpose of the proposed project in renewable energy is:

- "*Wind 2014/15: As is the case with solar PV, it is necessary to make a firm commitment to the first post-REFIT wind installations in order to connect the wind farms to the grid by 2014. Furthermore, to provide the security of investment to ramp up a sustainable local industry cluster, the first two years from 2014 to 2015 need commitment*" (RSA, 2011a:17).
- "*Wind 2016 to 2019: for the first wind installations until 2015, extensive gird extensions is not necessary. For the additional units to come in 2016 to 2019, these extensions might become necessary. To trigger the associated feasibility studies, planning, and investments in a timely manner, the additional wind units added from 2016-2019 should be decided on in the next round of the IRP at the latest*" (RSA, 2011a:17).

In conclusion the IRP recommends that an accelerated roll-out in renewable energy options should be allowed with regards to the benefits of the localization in renewable energy technologies (RSA, 2011a). It is important to take note that since the release of the IRP in 2011 there has been a number of developments in the energy sector of South Africa. Therefore, the IRP has been updated and were open for comments until March of 2017. The new IRP of 2018 was publicly released in August 2018. The draft IRP of 2018 was open for comments until the end of October 2018. For the revision scenario analysis were conducted and the results thereof are included in the draft IRP of 2018. The results revealed that for the period ending 2030 that: "*The committed Renewable Energy Independent Power Producers Programme, including the 27 signed projects and Eskom capacity rollout ending with the last unit of Kusile in 2022, will provide more than sufficient capacity to cover the projected demand and decommissioning of plants up to approximately 2025*"; "*Imposing annual build limits on renewable energy will not affect the total cumulative capacity and the energy mix for the period up to 2030*"; and "*the scenario without renewable energy annual build limits provides the least-cost option by 2030*" (RSA, 2018). Lastly, the draft IRP of 2018 also included the scenario analysis for the period post 2030. Here it was observed that: "*Imposing annual build limits on renewable energy will restrict the cumulative renewable installed capacity and the energy mix for this period; adopting no annual build limits on renewables or imposing a more stringent strategy to reduce greenhouse gas emissions implies that no new coal power plants will be built in the future unless affordable cleaner forms*

of coal-to-power are available; and the scenario without renewable energy annual build limits provides the least-cost option by 2050" (RSA, 2018).

3.2.5. National Development Plan of 2030

The National Development Plan aims to "*eliminate poverty and reduce inequality by 2030*". In order to eliminate or reduce inequality, the economy of South Africa need to grow faster in order to benefit all South Africans. In May 2010 a draft national development plan was drafted, which highlighted the nine (9) key challenges for South Africa. The highest priority areas according to the plan are considered to be the creation of employment opportunities and to improve the quality of national education.

In this regard, the plan sets out three (3) priority areas, namely to raise employment by a faster growing economy, improve the quality of education, and to build the capability of the state in order to play a more developmental and transformative role. One of the key challenges identified was that the economy is unsustainably resource intensive and the acceleration and expansion of renewable energy was identified as a key intervention strategy to address this challenge.

3.2.6. National Infrastructure Plan of South Africa

In the year 2012 the South African Government adopted a National Infrastructure Plan (further referred to as the Plan). The aim of this Plan is to transform the economic landscape, while strengthening the delivery of basic services and creating new employment opportunities. This Plan also supports the integration of African communities, and also sets out the challenges and enablers that our country needs in order to respond to the planning and development of infrastructure with regards to fostering economic growth (RSA, 2012).

The Plan has developed eighteen (18) strategic integrated projects (further referred to as SIPs). These SIPs stretches over all nine (9) provinces, covering social and economic infrastructure, and projects that enhances development and growth. Of the eighteen (18), five (5) are geographically focused, three (3) spatial, three (3) energy, three (3) social infrastructure, two (2) knowledge, one (1) regional integration, and one (1) water and sanitation focussed. The three

(3) SIPs according to the Plan, which are energy focused and correlate to the proposed project are as follow:

- SIP 8: Green energy in support of the South African economy;
- SIP 9: Electricity generation to support socio-economic development; and
- SIP 10: Electricity transmission and distribution for all.

SIP 8 according to the Plan "*support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the IRP 2010 and support bio-fuel production facilities*". The purpose of SIP 9 according to the Plan is to "*accelerate the construction of new electricity generation capacity in accordance with the IRP 2010 to meet the needs of the economy and address historical imbalances*". SIP 9 should also monitor the implementation of major projects such as new power stations like Medupi, Kusile and Ingula. Lastly, SIP 10's aim is to "*expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development*" (RSA, 2012:20).

3.2.7. New Growth Path Framework

The New Growth Path was developed after 16 years of South Africa's democracy, to respond to emerging opportunities and risks while building on policies. This framework provides a dynamic vision on how to collectively achieve a more developed, equitable and democratic society and economy. This framework mainly reflects the commitment of the South African Government to create employment opportunities for its people in all economic policies (RSA, 2011b).

This framework sets out the markers for job creation and growth and also identify where there is viable changes in the character and structure of production, in order to create a more inclusive, greener economy on the long-term. It is stated in the framework that in order for this framework to reach its objectives, the Government is committed to:

- Identify the possible areas of employment creation; and
- Develop a policy to facilitate employment creation especially with regards to social equity, sustainable employment and growth in the creation of employment activities (RSA, 2011b).

This framework also identifies investments in five key areas, one of which is energy. This framework also states that the green economy is a priority area, which includes the construction and investment of renewable energy technologies like wind and solar (RSA, 2011b). In this regard it will also assist creating employment opportunities over the medium- and long-term.

3.3. PROVINCIAL LEVEL POLICY AND PLANNING DOCUMENTS

The provincial level policy and planning documents related to the proposed Paulputs WEF are included in this section of the SIA report.

3.3.1. Northern Cape Provincial Development and Resource Management Plan/ Provincial Spatial Development Framework (PSDF) of 2012

The Northern Cape Provincial Spatial Development Framework (further referred to as the PSDF) of 2012 in compliance with the Northern Cape Planning and Development Act no 7 of 1998 (Chapter IV, Section 14), aims to "*ensure that the use and allocation of the province's resources, both renewable and non-renewable, are informed by a set of integrated and coordinated policies, objectives, implementation strategies, programmes and, where appropriate, projects aimed at:*
(i) setting and monitoring, where appropriate, measurable standards with regard to, amongst other, public access to health, safety, amenities, education and economic opportunity;

(ii) ensuring that the supply of public infrastructure is directed towards meeting the required standards in a prioritised, coordinated, sustainable and cost-effective way, in terms of capital and maintenance expenditure;

(iii) ensuring the protection and sustainable utilisation of land, water and air where these are important for the maintenance of ecologically-sensitive systems or processes, areas of biological diversity, public health or public amenities;

(iv) providing an investment and expenditure programme coordinated with budgetary cycles and capable of securing financial and other resources from National Government and any other funding agencies as well as public/private sector partnerships; and

(v) informing and guiding the preparation and implementation of district and local municipal

infrastructure management plans and land development plans" (PSDF, 2012:4).

The PSDF mainly aims to build a prosperous, sustainable growing provincial economy to firstly improve social development and to eradicate poverty. The PSDF adopted the International Union for Conservation of Nature (IUCN) mission as their main goal. This goal states that essential ecological processes are being maintained, that natural resources are being preserved and utilised in a sustainable manner, that the use of the biosphere are managed while also maintaining its potential for future generations.

The PSDF of 2012 highlights that renewable energy sources such as solar thermal and wind, comprise 25% of the Northern Cape's energy generation capacity by the year 2020, and should be progressively phased in as appropriate into the province. The PSDF further sets out energy objectives, which include the following:

- To promote the development of renewable energy supply schemes;
- To enhance the efficiency of Eskom's power station at the Vanderkloof power station;
- Reinforce additional electricity supply especially renewable energy projects; and
- Develop and implement innovative energy technologies to improve access to reliable, sustainable and affordable energy services. Also recognize that the objective should be to obtain sustainable economic growth.

Lastly, the PSDF notes that the Northern Cape need to develop large-scale renewable energy supply schemes in order to address the growing demand in energy and to promote a green economy in the province.

3.4. DISTRICT LEVEL POLICY AND PLANNING DOCUMENTS

The district level policy and planning documents related to the proposed Paulputs WEF are included in this section of the SIA report.

3.4.1. Namakwa District Municipality Integrated Development Plan (IDP) for 2018–2019

The Namakwa District Municipality (NDM) strive to be a centre of excellence. In the 2018–2019 revised IDP of the NDM their objectives are set: to stimulate radical economic and social transformation; to foster partnerships with relevant role-players; to support and capacitate local municipalities in the district; to be transparent and accountable; and lastly to provide local leadership. The IDP states that the NDM is aware of the challenges regarding unemployment, inequality and poverty, and to grow economically structural changes are required. The IDP further provides the NDMs' strategic objectives which includes amongst others to promote and facilitate local economic development, and to enhance good governance through the implementation of a climate change response plan. In conclusion the IDP must be seen by local municipalities as a tool for sustainable integrated development planning and development in the NDM (NDM, 2018).

3.4.2. ZF Mgcawu District Municipality Draft Integrated Development Plan of 2018/2019 for 2017–2022

It is the mission of the ZF Mgcawu District Municipality Draft Integrated Development Plan for 2017–2022 (further referred to as the Plan) to be a centre of excellence in providing quality basic services to support local municipalities in the district. The core values according to the plan are outlined below:

- The commitment to the development of people;
- The integrity in the performance of the municipality's duty;
- Respecting their natural resources;
- The transparency in accounting for their actions;
- Consultation on a regular basis to ensure the quality of service delivery;
- Ensuring professionalism in the work environment; and
- The efficient spending and responsible utilisation of the assets of the municipality (ZDM, 2018:9).

According to the plan the strategic objectives of the District are as follows (ZDM, 2018:10–11):

- To monitor and determine the housing backlogs in the district as well as to inform the public on housing information;
- To assess and provide targeted support improving institutional capacity and service

delivery capabilities of category B-municipalities;

- To promote environmental health and safety of communities in the ZF Mgcawu District through the proactive prevention, mitigation, identification and management of environmental health services, fire and disaster risks;
- To promote safety of communities in the ZF Mgcawu District through the proactive prevention, mitigation, identification and management of fire and disaster risks;
- To facilitate the development of sustainable regional land use, economic, spatial and environmental planning frameworks that will support and guide the development of a diversified, resilient and sustainable district economy;
- To market, develop and co-ordinate tourism in the ZF Mgcawu District by promoting a green Kalahari tourism brand;
- To assess and monitor the status of infrastructure needs and requirements of Category B-municipalities; and
- To ensure efficient business operations and to fulfill the assurance statutory requirements of the ZF Mgcawu District Municipality.

The strategic objectives above guided the priority issues identified for each area given in the Plan. It is however noteworthy that the same strategic objectives are reflected in the previous IDP. The issues that were highlighted that relates to the proposed project is firstly the development of infrastructure, and secondly the possibility of renewable energy for the development of new buildings.

3.5. LOCAL LEVEL POLICY AND PLANNING DOCUMENTS

The local level policy and planning documents related to the proposed Paulputs WEF are included in this section of the SIA report.

3.5.1. Khâi-Ma Local Municipality Integrated Development Plan for 2012–2017

The vision of the Khâi-Ma Local Municipality as reflected in the municipalities' IDP of 2012 to 2017 is to ensure a sustainable economic future for all. The mission of the municipality is further to ensure affordable service delivery and a sustainable economic growth. The IDP recognizes

it's development role to facilitate interventions that would create new business enterprises in its mission. The five (5) key performance areas that the Khâi-Ma Local Municipality IDP of 2012–2017 focused on are: Institutional capacity and municipal transformation; basic services and the development of infrastructure; financial viability; economic development; and public participation and good governance. This plan further refers to sector planning in terms of the municipalities' spatial development path, economic growth path, and the provision of basic services (KLM, 2012).

3.5.2. Kai !Garib Municipality Draft Integrated Development Plan of 2018/2019

The Kai !Garib Municipality Draft Integrated Development Plan of 2018/2019 (KGLM, 2018:17) vision is to "*create an economically viable and fully developed municipality, which enhances the standard of living of all the inhabitants/ community of Kai !Garib through good governance, excellent service delivery and sustainable development".* The recent IDP (KGLM, 2018:30) stated that new opportunities opened up for the KGLM since the need to facilitate the generation of sustainable energy was introduced in South Africa. It further elaborates that the KGLM became a "hotspot" for renewable energy facilities like solar energy development and hydro. According to the KGLM (2018:31) the business sector of the KGLM shows great growth potential because the area is becoming known for the availability of land for industrial and business development. Requests to buy land for renewable energy facilities have increased and the KGLM perceives this as an area for potential expansion in the business sector of the KGLM. The IDP provides a swot analysis for the KGLM. Two of the strengths are considered renewable energy facilities, i.e. solar and hydro. There are currently six established Independent Power Producers (IPPs) in the KGLM (KGLM, 2018:56), however there are potential for further IPPs to become operational in the KGLM. It is evident from the KGLM draft IDP of 2018/2019 that the establishment of renewable energy facilities in the KGLM are not only supported, but also encouraged for the sustainable growth of this municipal area.

3.6. ASSESSMENT ON POLICY AND PLANNING FIT

The legislative and policy context plays an important role in identifying and assessing the potential social impacts associated with the proposed Paulputs WEF. For this reason the proposed development project will be assessed in terms of its fit with the key legislative, policy and planning documents discussed above. A review of the above documents on National, Provincial, District and Local level was conducted for the purpose of this SIA Report.

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 operates 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 highlights that due to the unlimited resources base of renewable energy in South Africa, renewable energy applications like wind energy is more sustainable in terms of social and environmental costs. 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 particularly 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 in which the Northern Cape can benefit from economically.

The review of the relevant policies and documents related to the energy sector thus indicate that renewables like wind energy and the establishment of WEFs are supported on all spheres of Government. The author of this SIA Report is thus of opinion that the establishment of the proposed Paulputs WEF is supported by the related policy and planning documents on all spheres of Government.

SECTION 4 – IDENTIFICATION AND ASSESSMENT OF KEY SOCIAL IMPACTS

4.1. INTRODUCTION

Section 4 of this SIA report focuses on the identification and assessment of the key social issues/ impacts, which were identified during the duration of this study. The identification of these key impacts were identified based on the following:

- The review of project baseline information, other specialist studies and the Final Scoping Report of this proposed intervention;
- Consultation with key stakeholders (see Annexure A); and
- Experience with similar projects.

This section will identify and assess the key social impacts related to the proposed Paulputs WEF development project which can be associated with the construction phase, operational phase and the decommissioning phase of the proposed development. The assessment of the no-development alternative, the grid connection alternatives and cumulative impacts will also be discussed and included here.

4.2. SOCIAL IMPACTS RELATED TO THE CONSTRUCTION PHASE

Section 4.2 of this SIA report provides a detailed assessment and discussion of the social impacts that are related to the construction phase of the proposed Paulputs WEF. Table 4.2.1. provides a summary of the key potential social impacts, which are associated with the construction phase of the proposed Paulputs WEF. After the summary a detailed assessment of each impact will be provided. The positive impacts will be given first, followed by the potential negative social impacts.

Table 4.2.1. Summary of the key potential positive and negative impacts which can be associated with the construction phase of the proposed Paulputs WEF.

Potential Positive Impacts	Potential Negative Impacts
The creation of local employment, business opportunities, and opportunities for skills development and on-site training (Table 4.2.2).	Potential loss of farmlands for grazing of sheep and on associated farming activities (Table 4.2.4).
The potential maximising of opportunities to local and regional SMMEs and other business for service delivery (Table 4.2.3).	In-migration or potential influx of job seekers (Table 4.2.5).
	The presence of construction workers on-site an in the area on the local communities (Table 4.2.6).
	Potential safety risk for farmers, risk of livestock theft and farming infrastructure, which are associated with the construction phase and the presence of the workers on the site (Table 4.2.7).
	The potential impacts of heavy vehicles and construction related activities, damage to roads, and dust (Table 4.2.8).
	The increased risk of potential veld fires associated with the construction phase (Table 4.2.9).

4.2.1. Potential Positive Impact: The creation of local employment, business opportunities, and opportunities for skills development and on-site training

According to the basic information provided by Arcus Consultancy and WKN Windcurrent to conduct the SIA report for the proposed Paulputs WEF, and a review and experience of previous similar projects, the construction phase for a WEF similar to the proposed Paulputs WEF will extend over a period of approximately 24–36 months (2–3 years) if the project is constructed in one phase. However if the project is constructed over two phases then each phase will extend over a period of 24 months (2 years) per phase. The anticipated capital expenditure value of the proposed project on completion will be approximately R3 – 4 Billion for a 300MW project like the Paulputs WEF.

The construction phase will employ approximately 300–400 employees depending on whether the proposed project will be constructed over one or two phases. Of these estimated employment opportunities approximately 45–60 (15%) will be skilled, 90–120 (30%) semi-skilled, and 165–220 (55%) low-skilled.

During the construction phase construction companies or contractors with the necessary expertise will undertake the work associated with the construction phase of this project, ie. the establishment of the WEF and associated infrastructure (grid connection, access roads, substations etc). Due to the technical nature of the proposed Paulputs WEF, the opportunities for the local economy of the towns of Pofadder and Kakamas will be limited, however local contractors and engineers will be benefitted specifically in this regard. Based on the high unemployment levels and limited employment opportunities in these municipal areas, as well as that the majority of the potential beneficiaries are likely to be historically disadvantage members of the community, the creation of employment opportunities will provide a positive social benefit to the local communities of Pofadder and Kakamas.

Table 4.2.2. The creation of local employment and business opportunities, and opportunities for skills development and on-site training.

Impact Phase: Construction							
Potential impact description: The creation of local employment, business opportunities, and opportunities for skills development and on-site training.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	L	M	Positive	M	M	H
With Mitigation	H	L	H	Positive	H	H	H
Can the impact be reversed?	Yes. The impact can be reversed by not developing or implementing the proposed Paulputs WEF.						
Will impact cause irreplaceable loss or resources?	No.						
Can impact be avoided, managed or mitigated?	Yes, enhancement measures are included below.						
Mitigation measures to reduce residual risk or enhance opportunities: - The project proponent of Paulputs WEF should liaise with the Khâi-Ma and Kai !Garib Local Municipalities to establish a local skills database for the associated areas. The existence of such a skills database should be made available to the contractors before the commencement of the construction phase to establish the extent of the available service providers in the local municipalities. - The key stakeholders, local authorities and the community need to be informed regarding the outcome of the decision of the Paulputs WEF. The potential employment opportunities and the employment procedure that the project proponent intends to follow should be clearly communicated before the commencement of the construction phase. - Reasonable and practical efforts should be made by the project proponent to appoint local contractors by implementing a "locals first" policy. However, due to the technical nature of this project it is likely that skilled positions will be filled by people from outside the local areas. - Efforts should be made to employ local contractors first, and also contractors that are compliant with the Broad Based Black Economic Empowerment (BBBEE) criteria. - The recruitment selection process should also seek to promote gender equality.							

- If feasible training and skills development programmes for the local workers should be initiated prior to the initiation of the construction phase of the Paulputs WEF.	
Residual Impacts	No Residual Social Impacts.

4.2.2. Potential Positive Impact: The maximising of opportunities to local and regional SMMEs and other businesses for service delivery

Based on the information provided by Arcus Consultancy and WKN Windcurrent the estimated total wage bill for 400 employees over a period of 36 months will be approximately R80 million. From this, 30% will contribute to skilled employment, 40% to semi-skilled and 30% to low-skilled. The local economy will socially benefit hereof for a percentage of the wages will be spent on the local businesses. Specifically, the hospitality industry will benefit from the construction of the Paulputs WEF, for the housing of construction workers and contractors for a period of 24–36 months (2–3 years) or 24 months for each phase should the project be constructed over two phases (4 years in total). The economic benefits will only remain for the period of the construction phase. Due to the medium term duration of the construction phase of the proposed project, it will additionally be possible to implement effective training and skills development programmes as indicated in the previous section. However, the individuals that are employed by the relevant contractors are the ones likely to be benefitted in this regard.

The construction of the proposed Paulputs WEF would enable the support and co-operation between public and private sectors, hence the enhancement measures below are implemented. In this regard, the local economic development of the two local and two district municipalities will also be supported.

Table 4.2.3. Maximising of opportunities to local and regional SMMEs and other businesses for service delivery.

Impact Phase: Construction							
Potential impact description: The potential maximising of opportunities to local and regional SMMEs and other businesses for service delivery.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	L	M	Positive	M	M	H
With Mitigation	H	L	H	Positive	H	H	H
Can the impact be reversed?			Yes. The impact can be reversed by not developing or implementing the proposed Paulputs WEF.				

Will impact cause irreplaceable loss or resources?	No.
Can impact be avoided, managed or mitigated?	Yes, enhancement measures are included below.
Mitigation measures to reduce residual risk or enhance opportunities: - The project proponent of Paulputs WEF should liaise with the Khâi-Ma and Kai !Garib Local Municipalities to establish a database for the local companies/service providers of the associated areas. This database should be made available to the contractors before the initiation of the construction phase to notify and invite such service providers to tender for project-based services. However, it should be noted that a competitive tender process may not guarantee the employment of local service providers/companies and this should also be clearly communicated to potential contractors. - Efforts should be made by the project proponent to assist local Broad Based Black Economic Empowerment (BBBEE) companies regarding the application and submission of tenders. - Strategies need to be identified by the local municipalities and the local business sectors, in order to maximise the potential benefits which can be associated with the establishment of the Paulputs WEF.	
Residual Impacts	No Residual Social Impacts.

4.2.3. Potential Negative Impact: The loss of farmlands for grazing of sheep and on associated farming activities

One of the first negative social impacts identified for the construction phase associated with the proposed Paulputs WEF is the potential loss of productive farmland for the grazing of sheep. The activities associated with the construction phase (movement of heavy vehicles, preparation and construction of foundations and the establishment of construction site/camp) may have a potential negative impact in terms of the loss of available farmland for grazing as well as other agricultural activities. The current land uses of the identified area for the proposed Paulputs WEF is used for the grazing of sheep. However, the landowners (farmers) interviewed for the purpose of this study indicated that the livestock can be relocated to other areas of the farms during the construction phase. The owners of the farms will enter into a lease agreement with the project proponents for the use of the land for the proposed Paupluts WEF, and the income generated from Paulputs WEF will cover the impact on the income of the farming activities due to the loss of grazing for sheep. In the basic information received from Arcus Consultancy and WKN Windcurrent, the project proponent indicated that the landowners will receive rent for the turbines situated on their land.

The impact on the productive farmland during the construction phase can also be mitigated by the careful placement of the wind turbines on the proposed site, ensuring that the footprint size

of the WEF is minimised and ensuring that the disturbed area of the WEF are fully rehabilitated for grazing of sheep after the construction phase. One of the farmers that were interviewed commented with a suggestion that the construction phase should be taking place in phases, initiating construction at one point of the site and gradually work through to the other point of the site, to ensure that the impact in this regard are minimised. The soil and agricultural specialists in their assessment in the scoping report of the Paulputs WEF, also identified this as a potential impact, however the impact is likely to be low. The area is associated with low agricultural potential and is limited to the total construction footprint of 219ha.

Table 4.2.4. The loss of farmlands for grazing of sheep and on associated farming activities.

Impact Phase: Construction							
Potential impact description: The potential loss of farmlands for grazing of sheep and on associated farming activities associated with the activities of the construction phase.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	M	L	Negative	L	L	H
With Mitigation	L	M	L	Negative	L	L	H
Can the impact be reversed?			Yes, through the rehabilitation of affected/ impacted areas associated with the construction phase.				
Will impact cause irreplaceable loss or resources?			No, however affected areas must be rehabilitated.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The soil and agricultural specialist study should be consulted to inform the layout of the wind turbines and its associated infrastructure. Areas of high sensitivity identified in the soil reports should be avoided in the final layout of the turbines. - In addition, the project proponent should consult with the affected land owners for their inputs and comments on the finalization of the layout of the wind turbines and associated infrastructure, in order for landowners to factor in the construction activities and the impact thereof on their farmlands and farming activities. - The proposed site for the Paulputs WEF should be clearly demarcated and fenced-off prior to the construction phase. All construction related activities must be confined to this area. - The footprint of the impact associated with the construction phase need to be kept to the minimum, and sheep need to be relocated to alternative farmlands for the period of the construction phase. - It is advised that the construction phase take place in two phases and also to start with construction from one part of the site and gradually work the construction thereof through to the other part of the site to ensure that the disturbance to the landowners and their farming activities are kept to the minimum. - All impacted areas disturbed during the construction phase must be rehabilitated at the end of the construction phase. Rehabilitation plans need to be informed by the soil and agricultural specialist studies. - An Environmental Control Officer (ECO) must be appointed to continuously monitor the activities associated with the construction phase. The ECO should also apply social monitoring on a quarterly basis and monitor the implementation of the Rehabilitation Programme.							

- A Rehabilitation Programme should be implemented by the project proponents. The specifications hereof should be compiled by the appointed EIA practitioners and must be included in the project proponents terms of reference and also be included in the EMPr. - In the case where a farmer experience permanent loss of farmland due to the construction of the proposed Paulputs WEF, the project proponents should compensate the farmer for the loss of the farmland as in the nature of the agreement made to the affected landowners.	
Residual Impacts	No Residual Social Impacts.

4.2.4. Potential Negative Impact: The influx of job seekers which potentially might have impacts on family structures, communities, social networks and basic community services

From previous experiences with similar renewable energy projects and in the case of large construction projects, job seekers tend to migrate to the area of proposed developments in search of employment. In some cases the job seekers' families accompany them. Whether or not the job seekers find a job, themselves and their families can become economically stranded in the associated area. The influx of the job seekers is not a social impact itself, but their presence and behaviours can hold a negative social impact for community structures and social networks, competition for housing and jobs—which might lead to xenophobia—and crime. The farmers that were interviewed for the purpose of this SIA report indicated that the nearby areas and towns of Pofadder and Kakamas already have high levels of unemployment and poverty. It is therefore suggested that the locals should be accommodated first regarding any employment opportunities for the economic benefit of these areas. It should be noted that the skills required for these employment opportunities and the expectations of these employment opportunities are clearly communicated to the communities. An additional suggestion is for the safety of the farmers and farm workers that the proposed site is fenced-off and that it is clearly communicated that no employment will be available at the gate. However, due to the isolation of the proposed site the impact hereof might be low.

Table 4.2.5. Influx of job seekers which potentially might have impacts on family structures, communities, social networks and basic services.

Impact Phase: Construction							
Potential impact description: In-migration or potential influx of job seekers which potentially might have impacts on family structures, communities, social networks, and basic community services of the Khâi-Ma and Kai !Garib Local Municipalities.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence

Without Mitigation	M	L	L	Negative	L	M	M
With Mitigation	M	L	L	Negative	L	M	M
Can the impact be reversed?			Yes, by not proceeding with the development or the implementation of the project.				
Will impact cause irreplaceable loss or resources?			No, not at a community level.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - As stated earlier in this report, the project proponent should implement a "locals first" policy, where the local community of Pofadder and Kakamas should be employed first, specifically for un-skilled and low-skilled employment opportunities. - The project proponent should implement a policy that no employment opportunities will be available at the gate. - The proposed construction site for the Paulputs WEF should be clearly fenced off for potential security risks in this regard. - It should be noted that although the significance of this impact is low, the influx of job seekers can not be avoided or prevented.							
Residual Impacts			No Residual Social Impacts.				

4.2.5. Potential Negative Impact: Presence of construction workers on-site and in the impacted areas and communities

The potential negative impacts associated with the presence of the construction workers on the local communities include the posed risks associated with family structures and social networks. The manner in which construction workers conduct themselves might have an impact on the local communities of Pofadder and Kakamas. A review of previous WEF projects and experience with similar renewable energy projects states that the potential negative impact is linked to the risky behaviour of the construction workers in terms of, the increase in alcohol and drug use, crime levels increasing, increased unwanted pregnancies and prostitution, and an increase in sexually transmitted diseases.

Table 4.2.6. Presence of construction workers on-site and in the impacted area and communities.

Impact Phase: Construction							
Potential impact description: The presence of construction workers on-site and in the area on the local communities of Pofadder and Kakamas, on their social networks and on family structures.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence

Without Mitigation	M	L	M	Negative	M	M	H
With Mitigation	M	L	L	Negative	L	M	H
Can the impact be reversed?			Yes, by not proceeding with the development or the implementation of the project.				
Will impact cause irreplaceable loss or resources?			No, not at a community level.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The project proponent and appointed contractors need to develop a code of conduct which must be signed by construction workers prior to the construction phase. The code of conduct should clearly outline the acceptable behaviour and activities of construction workers. In doing so construction workers will be legally informed and held liable for any damages or losses. It is however important that dismissals or fines must comply with the South African labour legislation. - The proposed site for the Paulputs WEF should be clearly demarcated and fenced off to effectively monitor the movement of construction workers in the vicinity of the project site. - Transportation for the construction workers need to be arranged by the project proponent on a daily basis, and enable the proponent to effectively monitor the movement of construction workers to and from the project site. Where necessary arrangements need to be made by the project proponents to enable construction workers to return to their hometowns over weekends/on a regular basis to reduce the potential risks posed to local family structures and social networks. - No staff should be accommodated over-night on the construction site, except for the presence of security staff throughout the night on site due to security reasons for the landowners and their workers. - HIV/AIDS awareness programmes should be implement by the project proponent for the construction workers during the construction phase.							
Residual Impacts			No Residual Social Impacts.				

4.2.6. Potential Negative Impact: Safety risk of farmers, risk of livestock theft and theft of farming infrastructure

The presence of construction workers during the construction phase of the proposed Paulputs WEF poses potential risks to the local farmers as well as to their farm workers which include: damage to farming infrastructure (gates and fences); loss of livestock (due to damaged fences and farm gates being left open); and stock theft. During the scoping phase of the Paulputs WEF's public participation process, one of the neighbouring landowners also expressed his concern regarding an increase of stock theft during the construction phase of the proposed project. It is therefore suggested that the construction sites be fenced off and that all construction workers should only be working within the vicinity of the demarcated project site. Additionally, although the site is in isolation of the area, it is advised that due to the potential risks for farmers and

livestock theft that no construction workers should be allowed to stay over at night on the construction site, except for security personnel.

Table 4.2.7. Safety risk for farmers, risk of livestock theft and theft of farming infrastructure.

Impact Phase: Construction							
Potential impact description: The potential safety risk for farmers, risk of livestock theft and farming infrastructure, which are associated with the construction phase and the presence of the workers on the proposed construction site.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	L	M	Negative	M	M	H
With Mitigation	M	L	L	Negative	L	L	H
Can the impact be reversed?	Yes, by compensating potential losses that were stolen, and repairing any damages caused to farming infrastructures.						
Will impact cause irreplaceable loss or resources?	No, not at community level.						
Can impact be avoided, managed or mitigated?	Yes, mitigation measures are included below.						
Mitigation measures to reduce residual risk or enhance opportunities: - The proposed construction site for the Paulputs WEF should be clearly fenced off and the movement of construction workers should be limited to the vicinity of the construction site. - The project proponent/ appointed contractors should provide transportation to the construction workers on a daily basis. This will ensure the potential risk regarding the trespassing of construction workers on farmers' properties, be reduced. - No staff should be accommodated over-night on the construction site, except for the presence of security staff throughout the night on site. - The project proponent and appointed contractors need to develop a code of conduct which must be signed by construction workers prior to the construction phase. The code of conduct should clearly outline the acceptable behaviour and activities of construction workers. In doing so construction workers will be legally informed and held liable for any damages/theft. Construction workers found guilty of such an offence should be charged and dismissed. It is however important that dismissals or fines must comply with the South African labour legislation. - The project proponent should enter into an agreement with the farmers prior to the construction phase, whereby the damages/losses to farming property/infrastructure be compensated for, if it can be proven to be associated with the construction activities of the proposed WEF. - The project proponent should hold the appointed contractors liable for the compensation to farmers for any damages or losses that can be associated with the construction phase of the proposed project. This should also be included in the Code of Conduct signed by all key stakeholders. - Procedures regarding waste management on the construction site should be clearly outlined in the Environmental Management Programme (EMPr), to reduce the risk it poses to livestock.							
Residual Impacts	No Residual Social Impacts.						

4.2.7. Potential Negative Impact: Potential impact of heavy vehicles and construction related activities, damage to roads and dust pollution

Earlier in this report it was indicated that the proposed Paulputs WEF is located near the town of Pofadder, which is the closest town to the proposed site. The Paulputs WEF is located approximately 34km NE outside the town of Pofadder situated in the Northern Cape Province of South Africa. The proposed Paulputs WEF is situated on both sides of the N14 national road. The photographs provided earlier of the project site is evidence that this area is a very arid and sandy area. For this reason the movement of the heavy construction vehicles during the construction phase might potentially damage the current farm roads and in the process also create dust and safety impacts in the associated area. The contractor should thus repair all damages to the gravel roads before the end of the construction phase. There is also already heavy vehicle traffic on the N14 due to it being a national road linking main towns and neighbouring country borders, however the construction phase of this project is unlikely to significantly add to the traffic load on the N14. The volume of the traffic is also low on this road. The impact of the noise levels and the load of the traffic on the road are also likely to be low.

Table 4.2.8. Potential impact of heavy vehicles and construction related activities, damage to roads and dust pollution.

Impact Phase: Construction							
Potential impact description: The potential impacts of heavy vehicles and construction related activities, damage to roads, and dust pollution.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	L	M	Negative	M	M	H
With Mitigation	M	L	L	Negative	L	M	H
Can the impact be reversed?			Yes, through the rehabilitation of affected areas.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - Transportation of construction material on the N14 national road to the site should be planned to avoid weekends as well as holiday periods. - The representatives of the Khâi-Ma and Kai !Garib local municipalities as well as the land owners should be notified in advance the dates and times for when the roads will used for the transportation of abnormal loads. - Measures for dust suppressions should be implemented on a regular basis to minimize potential dust pollution. Examples of measures include wetting of gravel roads.							

- All vehicles related to the construction related activities should adhere to the speed limits. - Vehicles that are used for the transportation of loose building materials, for example sand, should be fitted with covers to avoid any spillage. - The appointed contractors should ensure that all vehicles are road-worthy and that the drivers of all vehicles have the relevant licensing documents. Drivers must be made aware of the speed limits and potential road safety issues. - Appropriate waste management strategies need to be implemented on a regular basis by the contractor for any waste generated during the construction phase and should also be included in the Environmental Management Programme (EMPr). - The Environmental Management Programme (EMPr) should include measures to be implemented, to ensure that speed limits are adhered to at all times and that gates are closed at all times. - The contractor must repair any damages to the roads caused by construction related traffic. The costs with regards to the repair of roads must be borne by die contractor.	
Residual Impacts	No Residual Social Impacts.

4.2.8. Potential Negative Impact: Risk of potential veld fires

The presence of construction workers on site and construction related activities, pose a risk of potential veld fires. This risk further poses threats to the loss of livestock, crops and farmsteads in the area, which could result in the loss or damage of farm infrastructure and also threaten human lives. This area is associated with a low risk of fires, but are associated with strong winds. Therefore, it is suggested that the necessary mitigation measures should be taken, the site need to be equipped with the correct fire-fighting equipment and workers should be trained in fire-fighting and how to work with the equipment. The area of the site also needs to be fenced off to keep construction related activities within the vicinity of the construction site.

Table 4.2.9. Risk of potential veld fires.

Impact Phase: Construction							
Potential impact description: The increased risk of potential veld fires associated with the construction phase.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	L	M	Negative	M	M	H
With Mitigation	M	L	L	Negative	L	L	H
Can the impact be reversed?			Yes, by compensating potential losses that were caused during the fires, and repairing any damages caused.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				

Mitigation measures to reduce residual risk or enhance opportunities: - Firebreaks must be implemented by the contractor around the perimeters of the construction site. - No construction staff should be accommodated on the site over-night except for the presence of security personnel. - No smoking should be permitted on the site. - The appointed contractor should ensure that no open fires for the use of cooking or heating should be allowed, except for designated areas. - Adequate fire-fighting equipment should be provided by the contractors and should be readily available and serviced on a regular basis. Additionally, all staff should be training in fire-fighting and how to use the related fire-fighting equipment. - The appointed contractors should ensure that any construction related activities that might pose potential fire risks, for example welding and grinding, are confined to the designated areas and that it is properly managed. - The necessary precautionary measures need to be taken during high wind conditions and dry months. - In the event of a fire due to construction related activities, the contractor must repair any damages caused to the farmers. The farmers need to be compensated for any damages caused due to fires borne during construction related activities. The costs with regards to firefighting should also be borne by die contractor. - The project proponent should enter into an agreement with the farmers prior to the construction phase, whereby the damages/losses to farming property/infrastructure due to fire risks be compensated for, if it can be proven to be associated with the construction activities of the proposed WEF.	
Residual Impacts	No Residual Social Impacts.

4.3. SOCIAL IMPACTS RELATED TO THE OPERATIONAL PHASE

This section of the SIA report (section 4.3) provides a detailed assessment and discussion of the social impacts that are related to the operational phase of the proposed Paulputs WEF. Table 4.3.1. provides a summary of the key potential social impacts, which are associated with the operational phase of the proposed Paulputs WEF. After the summary a detailed assessment of each impact will be provided. The positive impacts will be given first, followed by the potential negative social impacts.

Table 4.3.1. Summary of the key potential positive and negative impacts which can be associated with the operational phase of the proposed Paulputs WEF.

Potential Positive Impacts	Potential Negative Impacts
The creation of local employment and business opportunities, skills development and training (Table 4.3.2).	Visual impact and associated impact on the sense of place (Table 4.3.7).

Potential up – and downstream economic opportunities (Table 4.3.3).	Potential impact on tourism (Table 4.3.8).
Establishment of renewable energy infrastructure and the generation of clean, renewable energy (Table 4.3.4).	
Generation of income for landowners (Table 4.3.5).	
Benefits associated with the establishment of a Community Trust (Table 4.3.6).	

4.3.1. Potential Positive Impact: The creation of local employment and business opportunities, opportunities for skills development and on-site training

The potential positive impacts associated with the creation of employment opportunities and skills development have been discussed earlier in this report in sub-section 4.2.1 and 4.2.2. The socio-economic benefits have also been stated earlier (see Section 1) and will therefore not be repeated here. For more information, kindly refer to the previous sections of this report.

Table 4.3.2. The creation of local employment and business opportunities, and opportunities for skills development and on-site training.

Impact Phase: Operational							
Potential impact description: The creation of local employment and business opportunities, skills development and training which can be associated with the operational phase.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	L	Positive	M	M	H
With Mitigation	M	M	M	Positive	M	H	H
Can the impact be reversed?			Yes, by not proceeding with the implementation of the project and removing it.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, enhancement measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The enhancement measures suggested in the construction phase (see Table 4.2.2) should have already been implemented prior to the implementation phase. - Skills development programmes and training should be provided and implemented to maximise the number of employment opportunities for the local communities of Pofadder and Kakamas. - The project proponent together with the Khâi-Ma and Kai !Garib Local Municipalities should explore the option for establishing a Community Development Trust.							

- The project proponent and the local municipalities, together with the Tourism Centre, need to explore the possibility of establishing a visitor centre for the proposed project. - The potential opportunities for local content, procurement as well as community shareholding should be explored and maximised.	
Residual Impacts	No Residual Social Impacts.

4.3.2. Potential Positive Impact: The potential up- and downstream economic opportunities for the impacted community

Like sub-section 4.3.1. above, the potential positive impacts associated with the potential up-and downstream economic opportunities for the impacted area have been discussed earlier in this report in sub-section 4.2.1 and 4.2.2. The socio-economic benefits have also been stated earlier in Section 1 of the report and will therefore not be repeated here. For more information, kindly refer to the previous sections of this report.

Table 4.3.3. The potential up- and downstream economic opportunities for the impacted community.

Impact Phase: Operational							
Potential impact description: Potential up- and downstream economic opportunities for the community associated with the operational phase.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	L	Positive	M	M	H
With Mitigation	M	M	M	Positive	M	M	H
Can the impact be reversed?			Yes, by not proceeding with the project and removing it.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, enhancement measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The enhancement measures suggested in the construction phase (see Table 4.2.3) should have already been implemented prior to the implementation phase. - The project proponent together with the Khâi-Ma and Kai !Garib Local Municipalities should explore the option for establishing a Community Development Trust. - The project proponent and the local municipalities, together with the Tourism Centre, need to explore the possibility of establishing a visitor centre for the proposed project. - The potential opportunities for local content, procurement as well as community shareholding should be explored and maximised.							
Residual Impacts			No Residual Social Impacts.				

4.3.3. Potential Positive Impact: The establishment of renewable energy infrastructure and the generation of clean, renewable energy

In a review of the previous sections of this report and during the scoping phase of this proposed project it can be seen that South Africa currently relies on coal-powered energy to meet more than 90% of its energy needs. The overall contributions of the proposed Paulputs WEF to South Africa's total energy grid is relatively small, but it will assist in the offset of the total carbon emissions in terms of the energy generation sector in South Africa. For this reason, but not limited to, the proposed Paulputs WEF as an Independent Power Provider (IPP) in renewable energy will make a positive contribution to the energy sector of the country and to the region.

Table 4.3.4. The establishment of renewable energy infrastructure and the generation of clean, renewable energy.

Impact Phase: Operational							
Potential impact description: The establishment of renewable energy infrastructure and the generation of clean, renewable energy for South Africa.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	H	M	Positive	M	M	H
With Mitigation	M	H	H	Positive	H	H	H
Can the impact be reversed?			Yes, by not proceeding with the implementation of the project and removing the renewable energy infrastructure.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, enhancement measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The establishment of a renewable energy facility like the proposed Paulputs WEF can be regarded as a mitigation measure itself in terms of the country's high energy demand. - Training and skills development programmes need to be implemented by the project proponents for the local communities in order to maximise the amount of local people employed during the operational phase. - Maximise the exposure of the proposed Paulputs WEF to the public through extensive communication, advertisement and the establishment of a visitor centre. - Utilise the proposed Paulputs WEF to promote and possibly increase South Africa's contributions towards renewable energy to supply the national energy grid.							
Residual Impacts			No Residual Social Impacts.				

4.3.4. Potential Positive Impact: The generation of additional income for landowners

The potential generation of an additional income for landowners, is a significant benefit for the farmers of this area. The farmers of this area mainly farm with sheep. Additionally, this area is prone to arid conditions and droughts throughout the year. The generation of an additional income for the farmers therefore reduces the farmers' risks to their livelihoods and also towards fluctuating market prices for sheep and feed. In the basic information provided by Arcus Consultancy and WKN Windcurrent the project proponent demonstrated they will be entering into lease agreements with the landowners and that the landowners will receive rent for the wind turbines situated on their land. This will make a positive contribution towards an additional sustainable income for landowners.

Table 4.3.5. The generation of additional income for landowners.

Impact Phase: Operational							
Potential impact description: Generation of additional income for landowners representing a significant benefit for local affected farmers in the area.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	L	Positive	L	M	H
With Mitigation	M	M	M	Positive	M	H	H
Can the impact be reversed?	Yes, by not proceeding with the project and not implementing agreements with the local farmers.						
Will impact cause irreplaceable loss or resources?	No.						
Can impact be avoided, managed or mitigated?	Yes, enhancement measures are included below.						
Mitigation measures to reduce residual risk or enhance opportunities: - Lease agreements between the project proponent and the affected landowners should be implemented.							
Residual Impacts	No Residual Social Impacts.						

4.3.5. Potential Positive Impact: The potential positive impacts associated with the establishment of a Community Trust

In a review of previous similar renewable energy projects identified that the Department of Energy (DoE) indicated in their request for proposals, that all bidders for operating licences for renewable energy projects, must in their proposal indicate what the benefit of the proposed renewable

energy development would be to the local community. The establishment of a Community Trust that are funded by the revenues generated from the sale of energy generated by the proposed Paulputs WEF will assist in this regard.

Due to the fact that the operational phase is estimated to extend over a period of 20–25 years, the Community Trust can benefit from this in assisting long-term project initiatives for the benefit of the local communities of Pofadder and Kakamas. Long-term project initiatives funded by a Community Trust can include for example feeding schemes for schools, provision of affordable health services, and training and skills development. In the basic information provided by Arcus Consultancy and WKN Windcurrent a threshold of 2,5% and a target of 5% of the shares of the Paulputs WEF are to be reserved for the local communities. However, it should be noted that this estimate is subject to change because it is aligned with the requirements of the DoE as a requirement of the REIPPP. In a review of previous projects and experience with similar project, it should be noted that Community Trusts could also be mismanaged. Therefore, in order to optimally benefit from a Community Trust, the issue of mismanagement need to be addressed prior to the establishment thereof.

Table 4.3.6. The potential positive impacts associated with the establishment of a Community Trust.

Impact Phase: Operational							
Potential impact description: The benefits associated with the establishment of a Community Trust which is funded from the revenues generated from the sale of energy of the proposed Paulputs WEF.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	H	M	Positive	M	M	H
With Mitigation	M	H	H	Positive	H	M	H
Can the impact be reversed?			Yes, by not proceeding with the project and by not implementing agreements.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, enhancement measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The potential trustees to sit on a Community Trust need to be identified with the assistance of the Khâi-Ma and Kai !Garib local municipalities. The structure of this trust and the trustees also need to be established to ensure that the Trust is also not mismanaged. - There must be strict financial management controls in place to manage the funds generated for a Community Trust for the proposed Paulputs WEF. Financial management controls that could be implemented can include annual audits.							

- There should be a clear criteria for the identification and the funding of community projects, for the local communities to optimally benefit from the trust.	
Residual Impacts	No Residual Social Impacts.

4.3.6. Potential Negative Impact: Visual impact and impact on sense of place

The potential social impact associated with the establishment of the proposed Paulputs WEF will have a visual impact on the environment and its surroundings. In effect this will also impact the sense of place or character of the surrounding areas. The proposed Paulputs WEF will definitely be visible from the N14 national road, and the impact hereof on the sense of place is likely to be high. In addition the grid connection lines to the Paulputs substation is also linked to the visual impact and the areas sense of place. The potential impact of property values associated with the operational phase of the Paulputs WEF are likely to be low due to the isolation of the site in the area. The visual impact of the proposed WEF might have an impact in this regard, however the Visual Impact Assessment (VIA) report should be consulted in this regard. It is recommended that the mitigation measures as suggested by the Visual Impact Assessment report also be consulted and implemented.

Table 4.3.7. Visual impact and impact on sense of place.

Impact Phase: Operational							
Potential impact description: The visual impact and associated impact on the sense of place associated with the proposed Paulputs WEF.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	M	L	Negative	L	L	M-H
With Mitigation	L	M	L	Negative	L	L	M-H
Can the impact be reversed?			Yes, by not proceeding with the project and removing the WEF.				
Will impact cause irreplaceable loss or resources?			Yes, there will be marginal loss of resources.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The recommendations contained in the Visual Impact Assessment (VIA) report should be consulted and implemented during the operational phase. The measures aimed at addressing the impact of aviation lights at night should specifically also be addressed.							
Residual Impacts			No Residual Social Impacts.				

4.3.7. Potential Negative Impact: Impact on the tourism industry

The proposed Paulputs WEF as stated earlier in this report is situated in the Northern Cape Province. Due to its location, this WEF falls within two local municipalities. The two towns in close proximity to the site is the town of Pofadder and Kakamas. The main tourism in this area is linked to the areas' natural resources, and undisturbed scenery and landscape. The town of Pofadder is considered as a stop over town for tourist to the West Coast of South Africa and Namibia, whereas the town of Kakamas is very famous for it is situated on the banks of the Orange River and the Augrabies Water Falls. Both towns are therefore considered as popular destinations for tourism purposes. The impact however of the proposed Paulputs WEF and its proximity to these towns on the tourism sector is likely to be low, but in some cases the WEF may attract tourists to the proposed area and its surroundings.

Table 4.3.8. Impact on the tourism industry.

Impact Phase: Operational							
Potential impact description: The potential impact on tourism due to the establishment of the proposed Paulputs WEF.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	L	Negative	L	M	H
With Mitigation	M	M	L	Negative	L	M	H
Can the impact be reversed?			Yes, by not proceeding with the project and removing the WEF.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The recommendations contained in the Visual Impact Assessment (VIA) report should be consulted and implemented during the operational phase. - The project proponents should also consider the establishment of a visitor centre for the proposed Paulputs WEF.							
Residual Impacts			No Residual Social Impacts.				

4.4. SOCIAL IMPACTS RELATED TO THE DECOMMISSIONING PHASE

In section 4.4 of the SIA report a detailed assessment and discussion of the social impacts that are related to the decommissioning phase of the proposed Paulputs WEF is provided. Table 4.4.1. below provides a summary of the key potential negative social impact, which are associated with the decommissioning phase of the proposed Paulputs WEF. A detailed assessment of the impact will be provided after the summary below.

Table 4.4.1. Summary of the key potential negative impact which can be associated with the decommissioning phase of the proposed Paulputs WEF.

Potential Negative Impacts
Potential loss of employment opportunities and associated income (Table 4.4.2).

4.4.1. Potential Negative Impact: The loss of employment opportunities and associated income

In section 1 of this SIA report it was indicated that a large number of people might be employed during the construction and operational phase of the proposed Paulputs WEF. The decommissioning of the proposed project therefore might hold a negative social impact for the local communities of Pofadder and Kakamas.

Table 4.4.2. The loss of employment opportunities and associated income.

Impact Phase: Decommissioning							
Potential impact description: The potential loss of employment opportunities and associated income due to the decommissioning of the proposed Paulputs WEF.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	M	H
With Mitigation	M	L	L	Negative	L	M	H
Can the impact be reversed?			Yes, by not proceeding with the implementation of the project and removing it.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, enhancement measures are included below.				

Mitigation measures to reduce residual risk or enhance opportunities: - Retrenchment packages should be provided to all staff when the Paulputs WEF is decommissioned and must be included in their contracts and communicated in advance. - An Environmental Rehabilitation Trust Fund should be established to cover all the costs associated with the decommissioning phase and the rehabilitation of the affected/ impacted areas. Funds should be funded by a percentage of the revenue generated from the sale of the energy to the national grid over the lifespan (20–25 years) of the WEF. - All related infrastructures associated with the proposed Paulputs WEF should be dismantled and transported off-site.	
Residual Impacts	No Residual Social Impacts

4.5. ASSESSMENT OF THE "NO-DEVELOPMENT" ALTERNATIVE

Section 4.5 provides a detailed assessment and discussion of the social impacts that are related to the no-development alternative of the proposed Paulputs WEF. In table 4.5.1. below a summary of the key potential negative social impact, which are associated with the no-development alternative of the proposed Paulputs WEF is provided. A detailed assessment of the impact will be provided after the summary below.

Table 4.5.1. Summary of the key potential negative impact which can be associated with the No-Development alternative of the proposed Paulputs WEF.

Potential Negative Impacts
Potential lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy and a lost opportunity for the Khâi-Ma Local Municipality and the Kai !Garib Local Municipality (Table 4.5.2).

4.5.1. Potential Negative Impact: Lost opportunity for South Africa to supplement current energy needs with clean, renewable energy

The no-development alternative poses a lost opportunity for South Africa to supply renewable energy to its consumers, which represents a negative social cost. It should however be noted that a number of other renewable energy facilities (Solar and Wind) are also proposed in the Northern Cape Province and already established renewable energy facilities are already

operational in certain parts of South Africa. By following the no-development alternative would not only compromise the renewable energy development across the Northern Cape Province and in South Africa, but the socio-economic benefits to the Kai !Garib and Khâi-Ma Local Municipalities and the community of Pofadder and Kakamas will be lost.

Table 4.5.2. Lost opportunity for South Africa to supplement current energy needs with clean, renewable energy.

Impact Phase: No-Development alternative							
Potential impact description: The potential lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy and a lost opportunity for the Khâi-Ma Local Municipality and the Kai !Garib Local Municipality.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	H	L	Negative	M	M	H
With Enhancement	M	H	L	Positive	M	M	H
Can the impact be reversed?			Yes, by proceeding with the implementation of the project.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, enhancement measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The enhancement and mitigation measures proposed in Section 4 of this SIA report for the proposed Paulputs WEF should be implemented. Other specialist studies should also be consulted for the final location, design and layout of the proposed Paulputs WEF. Evidence from this study supports that the proposed Paulputs WEF should be developed.							
Residual Impacts			No Residual Social Impacts				

4.6. SOCIAL IMPACTS RELATED TO THE GRID CONNECTIONS

This section of the SIA report provides a detailed assessment and discussion of the social impacts that are related to the grid connections of the proposed Paulputs WEF. Table 4.6.1. provides a summary of the key potential negative social impact, which are associated with the proposed grid connections of the proposed Paulputs WEF. A detailed assessment of each impact will be provided after the summary below.

Table 4.6.1. Summary of the key potential negative impact which can be associated with the Grid Connections of the proposed Paulputs WEF.

Potential Negative Impacts
Potential visual impact and impact on sense of place (Table 4.6.2).

4.6.1. Potential Negative Impact: Visual impact and impact on sense of place

The development of the proposed Paulputs WEF and its associated grid connection alternatives will have a visual impact and an impact on the regions' sense of place. The proposed Paulputs WEF will be visible from the N14 national road for the proposed layout of the site stretches over the national road. The visual impact therefore for the wind turbines will be high. Additionally, the grid connection lines will also have a visual impact, however it is likely to be low. The landowners interviewed for the purpose of this SIA have no objection regarding the potential visual impact the proposed development and its associated infrastructure might hold, because of the socio-economic benefits that such a development might hold.

Table 4.6.2. Visual impact and impact on sense of place.

Impact Phase: Grid connection alternatives							
Potential impact description: The visual impact and associated impact on the sense of place associated with the proposed WEF and its grid line alternatives.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	L	M	L	Negative	M	M	H
With Mitigation	L	M	L	Negative	L	M	H
Can the impact be reversed?			Yes, by not proceeding with the implementation of the project and removing the transmission lines				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The Visual Impact Assessment (VIA) report need to be consulted and recommendations therein should be implemented.							
Residual Impacts			No Residual Social Impacts				

4.7. CUMULATIVE SOCIAL IMPACTS RELATED TO THE PROPOSED PAULPUTS WEF

The last section of Section 4 (section 4.7) in this SIA report provides a detailed assessment and discussion of the cumulative social impacts that are related to the proposed Paulputs WEF. Table 4.7 below provides a short summary of the potential positive and negative cumulative social impacts which might be associated with the proposed WEF. The following list of developments were considered for the cumulative impacts, and are within a 35km radius from the proposed Paulputs WEF:

- Kaxu Solar One which was developed by Abengoa Solar Power South Africa (Pty) Ltd, which is a 200MW operational concentrated solar plant (Solar CS);
- The three (3) proposed Paulputs Solar PV energy facilities on Portion 5, 6 and the Remainder of Portion 2 of the farm Konkoonsies (Farm no. 91) and Portion 4 of the Farm Scuit-Klip (Farm No. 92) for the client Juwi Renewable Energies (Pty) Ltd, recently received Environmental Authorisation (EA) for all three developments;
- The proposed 133MW Solar PV plant on Portion 6 of the Farm Koonkonsies. The BA application is currently being amended for the client Ramizone (RF) (Pty) Ltd;
- The proposed construction of the 9,7MW Solar PV energy facility on Site 1 of Konkoonsies and Site 2 of Kleinzwart for the client Limarco 77 (Pty) Ltd. The EIA application was accepted by the DEA;
- The proposed establishment of the 520MW Pofadder Solar Thermal Plant and its associated infrastructure for !Kaxu CSP (Pty) Ltd;
- The proposed 75MW Khoi-Sun Solar development on a portion of the farm Skuitdrift no. 426 for the client Khoi-Sun Development (Pty) Ltd. The EIA is currently being amended for approval;
- The proposed establishment of the two 10MW Scuitdrift PV solar energy facilities on the farm Skuitdrift 426 for the client Scuitdrift Solar Project (Pty) Ltd;
- The proposed establishment of the 20MW Southern Cross solar energy facility. The Basic Assessment Report (BAR) is currently still in process; and
- The proposed establishment of the 20MW Tutwa Solar energy facility. The BAR is currently still in process.

A detailed assessment of each impact will be provided after the summary below. The positive cumulative social impacts will be given first, followed by the potential negative cumulative social impacts.

Table 4.7.1. Summary of the key potential cumulative social impacts which can be associated with the proposed Paulputs WEF.

Potential Positive Impacts	Potential Negative Impacts
The creation of local employment and business opportunities, skills development and training (Table 4.7.2).	Visual impact associated with the establishment of WEFs and impact on sense of place and character of area (Table 4.7.3).
	Establishment of a number of renewable energy facilities (WEFs and SEFs), may potentially place pressure on local services, e.g. education, medical, accommodation etc (Table 4.7.4).

4.7.1. Potential Positive Impact: Creation of local employment and business opportunities, skills development and training

The proposed Paulputs WEF has the potential to result in a significant positive cumulative impact. The establishment of the proposed Paulputs WEF as well as the establishment of a number of proposed renewable energy facilities in the region have the potential to make a positive contribution to the local economy of the region. The local communities can also socially benefit from the establishment of a Community Trust, providing that is managed effectively.

Table 4.7.2. Creation of local employment and business opportunities, skills development and training.

Impact Phase: Cumulative impacts							
Potential impact description: The establishment of a number of renewable energy facilities (Solar and Wind) in the proposed region in the Northern Cape Province might lead to the creation of local employment and business opportunities, skills development and training for local communities.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	H	M	Positive	M	M	H
With Mitigation	M	H	M	Positive	H	M	H
Can the impact be reversed?			Yes, by not proceeding with the implementation of the project and removing it.				
Will impact cause irreplaceable loss or resources?			No.				

Can impact be avoided, managed or mitigated?	Yes, mitigation measures are included below.
Mitigation measures to reduce residual risk or enhance opportunities: - The proposed establishment of the Paulputs WEF as a suitably sited renewable energy facility situated within the Kai !Garib and Khâi-Ma Local Municipalities in the Northern Cape Province of South Africa should be supported and developed. The enhancement and mitigation measures proposed in this SIA report and other specialist studies for the Paulputs WEF should be implemented.	
Residual Impacts	No Residual Social Impacts

4.7.2. Potential Negative Impact: Visual impact and impact on sense of place

The relevant issues that need to be taken into consideration when it comes to the impacts on rural sense of place is:

- Combined visibility (if two or more renewable energy facilities are visible from one location);
- Sequential visibility (seeing two or more renewable energy facilities along a road or trail);
- The perceived or actual change in the land use across a region;
- The loss of characteristic of the environment; and
- The visual compatibility of renewable energy facilities in the same vicinity.

It is further noted that cumulative impacts need to be considered in relation with dynamic and static viewpoints. It is also important that aesthetic perception regarding the sense of place, are a key determinant of people's attitudes and is subjective of matter. As indicated earlier in Section 4 of this SIA report the potential social impact associated with the establishment of a WEF will have a visual impact on the environment and its surroundings, however, the impact on the sense of place is likely to be medium. The proposed Paulputs WEF will be visible from the N14 national road, for the proposed site layout stretches over both sides of the N14. In addition the grid connection to the Paulputs substation is also linked to a visual impact and the areas' sense of place. However, the potential social impacts associated with the transmission lines will be low. There is also already an established solar energy facility in the area, the KaXu Solar One which was developed by Abengoa Solar Power South Africa (Pty) Ltd. KaXu Solar One is a 200MW operational concentrated solar plant (Solar CS) that already contributes to the economy of the local community. The potential negative impact of the proposed Paulputs WEF on the areas' sense of place however still need to be considered, because of the increasing number of renewable energy facilities in the region. A number of renewable energy facilities (listed above)

have been proposed in the region, thus environmental authorities need to take this into account for cumulative impacts when evaluating the applications. The Visual Impact Assessments (VIAs) of all applications also needs to be evaluated and considered in this regard.

Table 4.7.3. Visual impact and impact on sense of place.

Impact Phase: Cumulative impacts							
Potential impact description: The cumulative visual impact associated with the establishment of WEF and impact on sense of place and character of the landscape of the impacted area.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	M	M	Negative	M	M	M
With Mitigation	M	M	M	Negative	M	M	M
Can the impact be reversed?			Yes, by not proceeding with the implementation of the project and removing the WEF.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The final placement of the wind turbines of the proposed Paulputs WEF should be communicated to the affected landowners; - Environmental Authorities should consider the overall cumulative impacts on the sense of place and consult the recommendations made in the Visual Impact Assessment specialist report in this regard, and implement those recommendations made.							
Residual Impacts			No Residual Social Impacts				

4.7.3. Potential Negative Impact: Establishment of number of renewable energy facilities may potentially place pressure on local services

It is evident from the list of the projects that were taken into consideration for the assessment of the cumulative social impacts, that there is a considerable number of renewable energy facility applications in this region of the Northern Cape Province. Some facilities are already operational. The establishment of such a number of renewable energy facilities may potentially place pressure on local services delivery of the local municipalities. Although the impact is likely to be low, the mitigation measures given below should be addressed to keep this cumulative impact low.

Table 4.7.4. Establishment of number of renewable energy facilities may potentially place pressure on local services.

Impact Phase: Cumulative impacts							
Potential impact description: The establishment of a number of renewable energy facilities (WEFs and SEFs), may potentially place pressure on local services, like education, medical, accommodation etc.							
	Extent	Duration	Intensity	Status	Significance	Probability	Confidence
Without Mitigation	M	L	L	Negative	L	M	H
With Mitigation	M	L	L	Negative	L	M	H
Can the impact be reversed?			Yes, by implementing effective mitigation measures.				
Will impact cause irreplaceable loss or resources?			No.				
Can impact be avoided, managed or mitigated?			Yes, mitigation measures are included below.				
Mitigation measures to reduce residual risk or enhance opportunities: - The Northern Cape Provincial Government, the Kai !Garib Local Municipality and the Khâi-Ma Local Municipality, as well as project proponents, should co-ordinate and manage the development of renewable energy facilities in the region. This way potential negative impacts could be effectively mitigated for and potential positive impacts be enhanced. This will also assist in the issues raised in the Integrated Development Plans (IDPs) of the Local Municipalities and to address those issues related to local service delivery.							
Residual Impacts			No Residual Social Impacts				

SECTION 5 – KEY FINDINGS AND RECOMMENDATIONS

5.1. INTRODUCTION

The final section of this report (Section 5) provides the key findings and recommendations pertaining to the proposed Paulputs WEF. The key findings and recommendations are based on the review of the basic information identified during the scoping process of the EIA as well as a review of the policy and planning documents which relates to this proposed development project. A review of selected specialist studies, a site visit, experience with similar projects and literature were conducted, and key stakeholders were consulted. Based on the findings of these tasks that were conducted during this study, this section will be formulated.

5.2. SUMMARY OF KEY FINDINGS

The key findings of the SIA study for the proposed Paulputs WEF will be summarized in this section. They key findings of each phase of the proposed project will be summarised as well as the policy and planning summary pertaining to this proposed development.

5.2.1. The fit with policy and planning documents

The legislative and policy context plays an important role in identifying and assessing the potential social impacts associated with the proposed Paulputs WEF. For this reason the proposed development project was assessed in terms of its fit with the key legislative, policy and planning documents. A review of the following policy and planning documents on National, Provincial, District and Local level was conducted for the purpose of this SIA Report and detailed assessments are included in Section 3 of the report:

- The National Energy Act no 34 of 2008;
- White Paper on the Energy Policy of the Republic of South Africa of 1998;
- White Paper on Renewable Energy of 2003;

- Integrated Resource Planning for Electricity for South Africa of 2010–2030;
- National Development Plan of 2030;
- National Infrastructure Plan of South Africa; and
- New Growth Path Framework.
- Northern Cape Provincial Development and Resource Management Plan/ Provincial Spatial Development Framework (PSDF) of 2012.
- Namakwa District Municipality Integrated Development Plan (IDP) for 2018–2019; and
- ZF Mgcawu District Municipality Draft Integrated Development Plan 2018/2019 for 2017–2022.
- Khâi-Ma Local Municipality Integrated Development Plan for 2012–2017; and
- Kai !Garib Municipality Draft Integrated Development Plan of 2018/2019

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 operates 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 more sustainable in terms of social and environmental costs. 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 particularly 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 in which the Northern Cape can benefit from economically.

The review of the relevant policies and documents related to the energy sector included in Section 3 of this report, thus indicate that renewables like wind energy and the establishment of

WEFs are supported on all spheres of Government. The author of this SIA Report is thus of opinion that the establishment of the proposed Paulputs WEF is supported by the related policy and planning documents on all spheres of Government studied for the purpose of this SIA report.

5.2.2. Summary of key social impacts

The significance rating, used in the methodology of conducting an SIA (see Section 1), of the key social impacts refers to whether the impact had any influence in the decision making of an intervention. A low significance rating refers to where the identified social impact did not have a direct influence on the decision making of the intervention. A medium significance rating refers to where the social impact might influence the decision making of the intervention, unless it is effectively mitigated. Lastly, a high significance rating refers to where the social impact had an influence on the decision making of the proposed intervention. The summary of the key social impacts identified during each phase of the proposed Paulputs WEF with their significance ratings, and positive or negative status, without and with mitigation are tabled below. For more information regarding each impact, see Section 4 in this SIA report.

5.2.2.1. Summary of key social impacts related to the construction phase

Table 5.1. Summary of key social impacts related to the construction phase.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Positive Impact: The creation of local employment, business opportunities, and opportunities for skills development and on-site training.	Medium (+)	High (+)
Potential Positive Impact: The potential maximising of opportunities to local and regional SMMEs and other business for service delivery.	Medium (+)	High (+)
Potential Negative Impact: The potential loss of farmlands for grazing of sheep and on associated farming activities.	Low (-)	Low (-)
Potential Negative Impact: In-migration or potential influx of job seekers.	Low (-)	Low (-)
Potential Negative Impact: The presence of construction workers on-site and in the area on the local communities.	Medium (-)	Low (-)
Potential Negative Impact: Potential safety risk for farmers, risk of livestock theft and theft of farming infrastructure.	Medium (-)	Low (-)
Potential Negative Impact: The potential impacts of heavy vehicles and construction related activities, damage to roads, and dust pollution.	Medium (-)	Low (-)

Potential Negative Impact: The increased risk of potential veld fires associated with the construction phase.	Medium (-)	Low (-)

5.2.2.2. Summary of key social impacts related to the operational phase

Table 5.2. Summary of key social impacts related to the operational phase.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Positive Impact: The creation of local employment and business opportunities, skills development and training.	Medium (+)	Medium (+)
Potential Positive Impact: Potential up- and downstream economic opportunities.	Medium (+)	Medium (+)
Potential Positive Impact: The establishment of renewable energy infrastructure and the generation of clean, renewable energy.	Medium (+)	High (+)
Potential Positive Impact: The generation of additional income for landowners.	Low (+)	Medium (+)
Potential Positive Impact: The benefits associated with the establishment of a Community Trust.	Medium (+)	High (+)
Potential Negative Impact: Visual impact and associated impact on the sense of place.	Low (-)	Low (-)
Potential Negative Impact: The potential impact on tourism.	Low (-)	Low (-)

5.2.2.3. Summary of key social impact related to the decommissioning phase

Table 5.3. Summary of key social impact related to the decommissioning phase.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Negative Impact: The potential loss of employment opportunities and associated income.	Medium (-)	Low (-)

5.2.2.4. Summary of key social impact related to the No-Development alternative

Table 5.4. Summary of key social impact related to the no-development alternative.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation

Potential Impact: The potential lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy and a lost opportunity for the Khâi-Ma Local Municipality and the Kai !Garib Local Municipality.	Medium (-)	Medium (+)

5.2.2.5. Summary of key social impact related to the grid connections

Table 5.5. Summary of key social impact related to the grid connections.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Negative Impact: The potential visual impact and impact on sense of place.	Medium (-)	Low (-)

5.2.2.6. Summary of key cumulative social impacts

Table 5.6. Summary of key cumulative social impacts.

Potential +/- Impact	Significance rating without mitigation	Significance rating with mitigation
Potential Positive Impact: The creation of local employment and business opportunities, skills development and training.	Medium (+)	High (+)
Potential Negative Impact: Visual impact associated with the establishment of WEFs and impact on sense of place and character of area.	Medium (-)	Medium (-)
Potential Negative Impact: The establishment of a number of renewable energy facilities (WEFs and SEFs), may potentially place pressure on local services, e.g. education, medical, accommodation etc.	Low (-)	Low (-)

5.3. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the findings of this Social Impact Assessment (SIA) conducted for the proposed Paulputs WEF indicates that during the construction and the operational phase of the proposed development project, various employment opportunities, with different levels of skills will be created. In addition this will also create local business opportunities benefitting the socio-economic development of the local communities of Pofadder and Kakamas. The local

communities will however benefit from the establishment of a Community Trust if it is managed effectively. The challenges posed by climate change and global warming will be addressed by the investment in renewable energy facilities like the proposed Paulputs WEF.

The establishment of the proposed Paulputs WEF is therefore supported by the findings of this SIA report and therefore, also creating a positive social benefit for society. It is however recommended that the mitigation and enhancement measures given in Section 4 of this report be implemented by project proponents and appointed contractors.

5.4. IMPACT STATEMENT

Due to the above summary and conclusion, it is herefore recommended by the author of this SIA report, that the proposed Paulputs WEF be supported as it was proposed. However, this recommendation is made subject to the implementation of the suggested enhancement and mitigation measures contained in Section 4 of this SIA report, as well as inputs from other specialist studies for the proposed Paulputs WEF.

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ANNEXURE

Consultations with the following parties of this proposed development project was held.

Stakeholder	Location	Date of consultation
Mr. Floris van der Colff Landowner: Farm 92–Portion 3 and 5 Farm 93–Portion 1 and 2	Kakamas	4 January 2019
Mr. Ricus Brand Farm Manager: Farm 93–Portion 4	Farm 93, Portion 4	4 January 2019
Mr. Sakkie van der Heever Landowner: Farm 92–Portion 2	Telephonically	4 January 2019