GEELSTERT GRID CONNECTION, NORTHERN CAPE PROVINCE

Social Impact Assessment

June 2020

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REPORT DETAILS

Title	:	Social Impact Assessment (SIA) Report for the Geelstert Grid Connection, Northern Cape Province
Authors	:	Savannah Environmental (Pty) Ltd Lisa Opperman
External Peer Review	:	Dr Neville Bews
Client	:	ABO Wind Renewable Energies (Pty) Ltd
Report Revision	:	Revision 0
Date	:	June 2020

When used as a reference this report should be cited as: Savannah Environmental (2020) Social Impact Assessment (SIA) Report for the Geelstert Grid Connection, Northern Cape Province

SPECIALIST DECLARATION OF INTEREST

I, Lisa Opperman, declare that –

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

Lisa Opperman
Name

Signature

June 2020
Date

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APPENDICES:

ACRONYMS

B-BBEE	Broad-Based Black Economic Empowerment
BA	Basic Assessment
CLO	Community Liaison Officer
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries (National)
DENC	Department of Environment and Nature Conservation (Northern Cape Provincial)
DMRE	Department of Mineral Resources and Energy
DM	District Municipality
EA	Environmental Authorisation
EAP	Economically Active Population
ECA	Environment Conservation Act (No. 73 of 1989)
ECO	Environmental Control Officer
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EP	Equator Principles
EPC	Engineering, Procurement and Construction
GDP	Gross Domestic Product
GDP-R	Gross Domestic Product per Region
GGP	Gross Geographic Product
GHG	Greenhous Gas
GNP	Gross National Product
GNR	Government Notice
HDI	Historically Disadvantaged Individuals
I&AP	Interested and Affected Party
IDC	Industrial Development Corporation
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IFC	International Finance Corporation
IPP	Independent Power Producer
IRP	Integrated Resource Plan
km	Kilometre
kV	Kilovolt
LED	Local Economic Development
LM	Local Municipality
MTS	Main Transmission Substation
MW	Megawatt
NEMA	National Environmental Management Act (No. 107 of 1998)
NDP	National Development Plan
O&M	Operation and Maintenance
PGDS	Provincial Growth and Development Strategy
PICC	Presidential Infrastructure Coordinating Committee
PSDF	Provincial Spatial Development Framework

PV	Photovoltaic
RBS	Revised Balanced Scenario
RE	Renewable Energy
REDZ	Renewable Energy Development Zone
REIPPP	Renewable Energy Independent Power Producer Procurement Programme
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIP	Strategic Infrastructure Project
SKA	Square Kilometre Array
SWOT	Strengths, Weaknesses, Opportunities and Threats
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation

1. INTRODUCTION AND PROJECT DESCRIPTION

ABO Wind renewable energies (Pty) Ltd is proposing the development of a grid connection for the proposed Geelstert 1 and Geelstert 2 solar PV facilities on a site approximately 11km south-east of Aggeneys in the Northern Cape Province (refer to **Figure 1.1**). A 1km wide (extending to 2km at the Aggeneis Main Transmission Substation (MTS)) and 17.5km long corridor (known as the project development corridor) is being assessed. The corridor falls within the Khâi-Ma Local Municipality as well as the greater Namakwa District Municipality. The project will be known as the Geelstert Grid Connection.

The development of the Geelstert Grid Connection requires Environmental Authorisation (EA) from the national Department Environment, Forestry and Fisheries (DEFF), in accordance with the National Environmental Management Act (No. 107 of 1998) (NEMA), and the 2014 Environmental Impact Assessment (EIA) Regulations (GNR 326), as amended, subject to the completion of a Basic Assessment (BA) process.

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

1.1 Project Description

The Geelstert Grid Connection will include the development of a collector substation and a double-circuit power line, of up to 220kV, to connect the proposed Geelstert 1 and Geelstert 2 solar PV facilities to the national grid. A 1km wide (extending to 2km at the Aggeneis Main Transmission Substation (MTS)) and 17.5km long corridor (known as the project development corridor) is being assessed to allow for the optimisation of the grid connection infrastructure to accommodate the environmental sensitivities identified within the corridor. The assessed grid connection corridor falls within the Northern Strategic Transmission Corridor and the Springbok Renewable Energy Development Zone (REDZ 8). The grid connection solution comprises of the following project-specific infrastructure, namely:

- A new Collector Substation/Switching Station of up to 1.25ha in extent, including:
  - Construction of a new platform with earth mat and civil works.
  - New feeder bay/s and busbar/s (up to 220kV) complete with protection equipment.
- A double-circuit power line of up to 220kV between the existing Aggeneis MTS and the Geelsert Collector Substation, complete with structures, foundations, conductor, fibre layout, insulation and assemblies.
- A 6m wide access road to access the Geelstert Collector Substation and 4m wide jeep tracks to provide access to and along the power line servitude.
- A single-circuit power line (of up to 220kV) to connect the authorised Aggeneys 1 and Aggeneys 2 Collector Substation to the proposed Geelstert Collector Substation, including a 6m wide access road along this power line.
- Works within the Aggeneis MTS HV yard:
  - Establish new feeder bay/s (up to 220kV), inclusive of line bays, busbars, bussection and protection equipment.
  - If grid connection on 132kV level is required by Eskom, a new transformer (up to 500MVA 400/132kV) would need to be installed.

The corridor traverses six (6) properties, namely:

- Remaining Extent of the Farm Bloemhoek 61
- Remaining Extent of the Farm Aggeneys 56
- Remaining Extent of Portion 1 of the Farm Aggeneys 56
- Portion 2 of the Farm Aggeneys 56
- Portion 12 of the Farm Aggeneys 56
- Portion 13 of the Farm Aggeneys 56

1.2 Details of the Independent Specialist

This SIA has been undertaken by Lisa Opperman of Savannah Environmental, and peer reviewed externally by Dr. Neville Bews of Dr. Neville Bews & Associates.

- **Lisa Opperman** – holds a Bachelor degree with Honours in Environmental Management and has five years of experience in the environmental field. Her key focus is on environmental and social impact assessments, public participation, environmental management plans and programmes, as well as mapping using ArcGIS for a variety of environmental projects.

- **Dr Neville Bews** is a Senior Social Scientist and Human Resource professional at Dr Neville Bews & Associates. Dr Bews has a Doctorate in Literature and Philosophy (D. Litt. et Phil) from the Rand Afrikaans University (RAU) (now the University of Johannesburg (UJ)), and 37 years of experience in the fields of Social Impact Assessment and Research, and Human Resource Management. Dr Bews has worked on a number of large infrastructure, mining and water resource projects.

Dr Bews has undertaken an external review of this SIA and has provided an external reviewer's letter. This letter is attached as **Appendix B**.

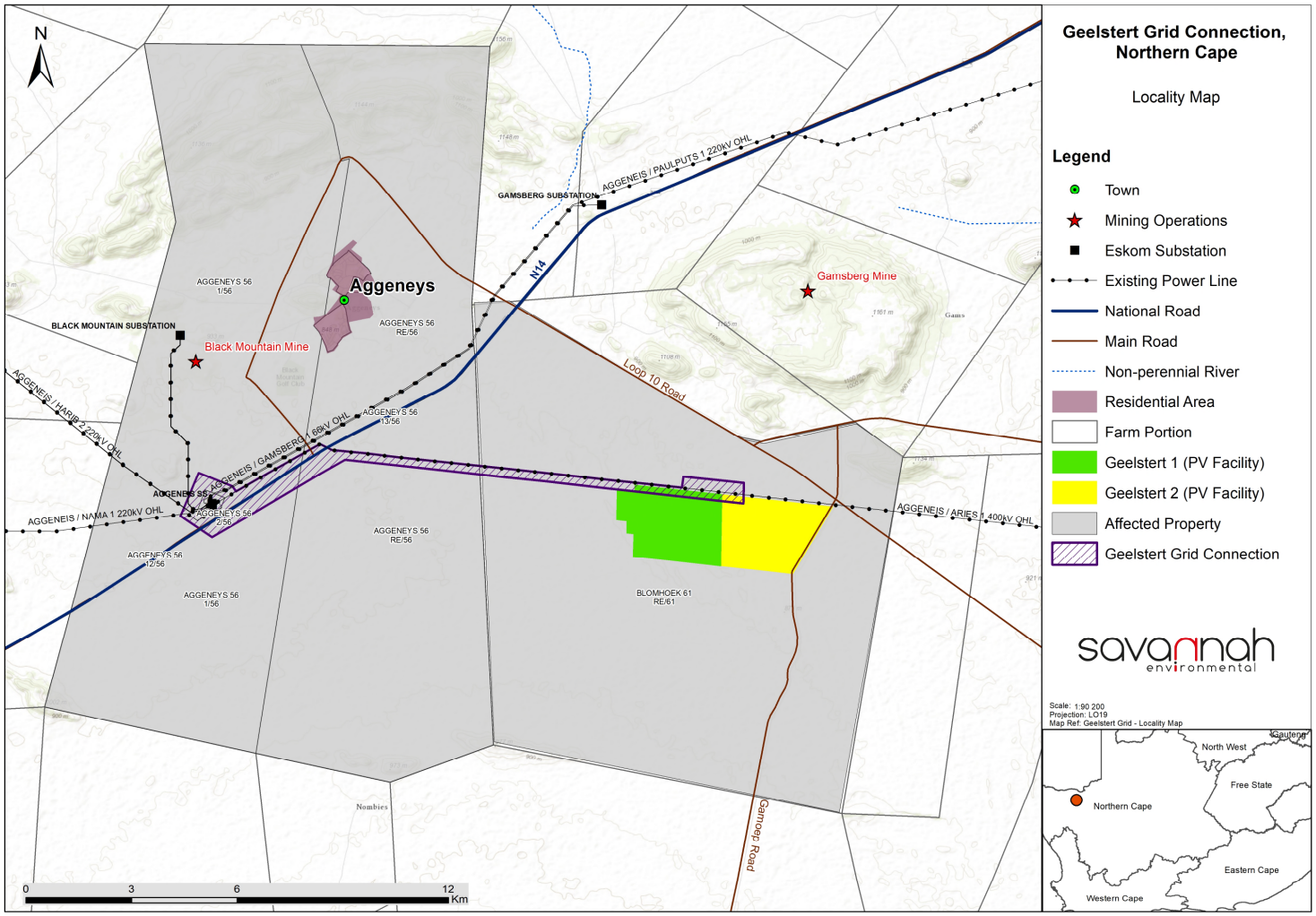

Figure 1.1: Locality map showing the proposed corridor for the Geelstert Grid Connection and the Geelstert 1 and Geelstert 2 PV facilities which are associated with the proposed grid connection, Northern Cape Province.

1.3 Structure of the SIA Report

This SIA Report has been prepared in accordance with the requirements of Appendix 6 of the 2014 EIA Regulations (GNR 326), as amended. An overview of the contents of this SIA Report, as prescribed by Appendix 6 of the 2014 EIA Regulations (GNR 326), and where the corresponding information can be found within the report is provided in **Table 1.1**.

Table 1.1: Summary of where the requirements of Appendix 6 of the 2014 NEMA EIA Regulations (GNR 326), as amended, are provided within this Specialist Report.

	Requirement	Location in Report
(a)	Details of – (i) The specialist who prepared the report. (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae.	Section 1
(b)	A declaration that the specialist is independent in a form as may be specified by the competent authority.	Declaration of Interest
(c)	An indication of the scope of, and the purpose for which, the report was prepared.	Section 2
(cA)	An indication of the quality and age of base data used for the specialist report.	Section 4
(cB)	A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section 5
(d)	The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.	Section 2
(e)	A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.	Section 2
(f)	Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.	Section 4 Section 5
(g)	An identification of any areas to be avoided, including buffers.	N/A
(h)	A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	N/A
(i)	A description of any assumptions made and any uncertainties or gaps in knowledge.	Section 2
(j)	A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.	Section 5
(k)	Any mitigation measures for inclusion in the EMPr.	Appendix A
(l)	Any conditions for inclusion in the environmental authorisation.	Section 6
(m)	Any monitoring requirements for inclusion in the EMPr or environmental authorisation.	Appendix A
(n)	A reasoned opinion – (i) Whether the proposed activity, activities or portions thereof should be authorised. (iA) Regarding the acceptability of the proposed activity or activities. (ii) If the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures.	Section 6
(o)	A description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 2
(p)	A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	N/A
(q)	Any other information requested by the competent authority.	N/A
2.	Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

2. METHODOLOGY AND APPROACH

2.1 Purpose of the Study

The International Principles for Social Impact Assessment define SIA as:

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

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

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

The purpose of this SIA Report is therefore to:

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

2.2 Approach to the Study

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

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

The SIA process comprised the following:

- Collection and review of existing information, including national, provincial, district, and local plans, policies, programmes, Census data, and available literature from previous studies conducted within the area. Project specific information was obtained from the project proponent.
- Previous environmental impact assessment processes have been undertaken for the development of renewable energy projects and the associated grid connection solutions (mainly including the development of PV facilities) within the affected property identified for the development of the Geelstert Grid Connection. These previous processes included the undertaking of social impact assessments for the proposed projects as well as adequate public participation processes which identified and addressed social concerns and impacts. Based on the similarities between the previous projects assessed (in terms of both location and infrastructure) and the Geelstert Grid Connection being proposed (i.e. grid connection solution associated with solar energy developments) the previous social studies and comments and responses reports (compiled through the public participation process) will be utilised to identify and assess the social impacts considered to be associated with the proposed development. These sources of information (which included the undertaking of a site visit and interviews as part of the previous EIA processes and Social Impact Assessments) are considered to be sufficient for the collection of data, and therefore no site visit or stakeholder consultation / interviews were undertaken as part of this SIA[1]. The following list provides the details of the previous projects, as well as the associated DEA reference numbers of the Applications for Environmental Authorisation:
    - Grid Connection Infrastructure for the Aggeneys 1 Solar PV Facility, Northern Cape Province – DEA Ref.: 14/12/16/3/3/1/2023; and
    - Grid Connection Infrastructure for the Aggeneys 2 Solar PV Facility, Northern Cape Province – DEA Ref.: 14/12/16/3/3/1/2024.

  It must be noted that all social issues raised during the public participation process undertaken for the proposed project will be included, considered and addressed as part of the final SIA report for the project to be submitted to the DEA, where relevant.
- Identification of potential direct, indirect and cumulative impacts likely to be associated with the construction, operation, and decommissioning of the proposed project.
- Assessment of identified impacts in terms of their nature, extent, duration, consequence / magnitude, probability, significance, and status.
- Where applicable, mitigation measures with which to minimise impacts and enhance benefits associated with the project were identified.
- Preparation of an SIA Report and inputs into the Environmental Management Programme (EMPr) to be prepared for the project.

2.2.1 Stakeholder Identification and Analysis

Stakeholders are defined as: "A*ny group or organisation which may affect or be affected by the issue under consideration*" (UN, 2001: 26).

[1] It must be noted that the SIA was undertaken during the COVID-19 national state of disaster and therefore no on-site meetings with stakeholders were held.

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

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

A description of each of the stakeholders groups in relation to the Geelstert Grid Connection is discussed in detail below:

- **Farming community:** The farming community can be grouped into three categories, namely farm owners, farm tenants, and farm workers. Farm owners comprise individuals who own and make a living off of their properties. Farm tenants are people who rent land and work on the land to earn an income. Farm workers are people who work, and also often reside on the farm with their families, and are seen as a vulnerable community. The primary farming activities within the surrounding area is used for sheep farming and grazing and the area is considered as non-arable with a low grazing potential.
- **Farming industry:** There are potentially vulnerable farming activities in the broader surrounding area of the corridor. Agriculture is one of the main economic activities within the area. Livestock farming (mainly sheep farming) is undertaken within the area surrounding the project. The grazing potential is relatively low within the municipal area, which necessitates large farming units, mainly used for livestock (including cattle, sheep and antelope) and game farming.
- **Mining industry:** The area is rich in minerals, including sillimanite, zinc, copper, lead, granite, quartz and aventurine. The Black Mountain Mine and the Gamsberg Mine are located within the area and present disturbed landscapes. The Black Mountain Mining company is located to the north west and comprises two shafts, known as the Deep and Swartberg Shafts. The mine produces copper, lead, zinc and silver. The residents of Aggeneys are predominantly employees of the Black Mountain Mine. Mine dumps are also associated with the Black Mountain Mine. The existing and proposed mining activities have and will influence the local landscape character of the area.
- **Surrounding towns / affected communities:** The closest major town is Aggeneys located 7.5km north-west (from the centre of the corridor). Other communities and towns located in the areas surrounding the corridor includes Pella (located ~37km north-east), Pofadder (located ~53km north-east), Concordia (located ~95km south-west), Carolusberg (located ~98km south-west), O'Kiep (located ~104km south-west), Springbok (located ~106km south-west) and Nababeep (located ~113km south-west).
- **Service providers:** The major service providers which will be affected by the project include the DM, LM, and local businesses in the area. The Khâi-Ma LM and to a lesser degree the Namakwa DM are likely to be impacted by the proposed development. The Khâi-Ma LM will absorb a number of positive and negative social impacts. In addition there are a number of local businesses in the surrounding area that could benefit from the opportunities of the proposed project.
- **Stakeholders outside the direct area of influence:** There are a number of stakeholders that reside outside the direct area of influence but who may be affected by the project. These include road users, including those that use the N14 national road, and local gravel roads on a frequent basis as part of their daily or weekly movement patterns.

Figure 2.1 provides an organogram of the key stakeholders that will be impacted by the Geelstert Grid Connection. **Figure 2.2** provides a landowners map of the affected and adjacent properties associated with the Geelstert Grid Connection.

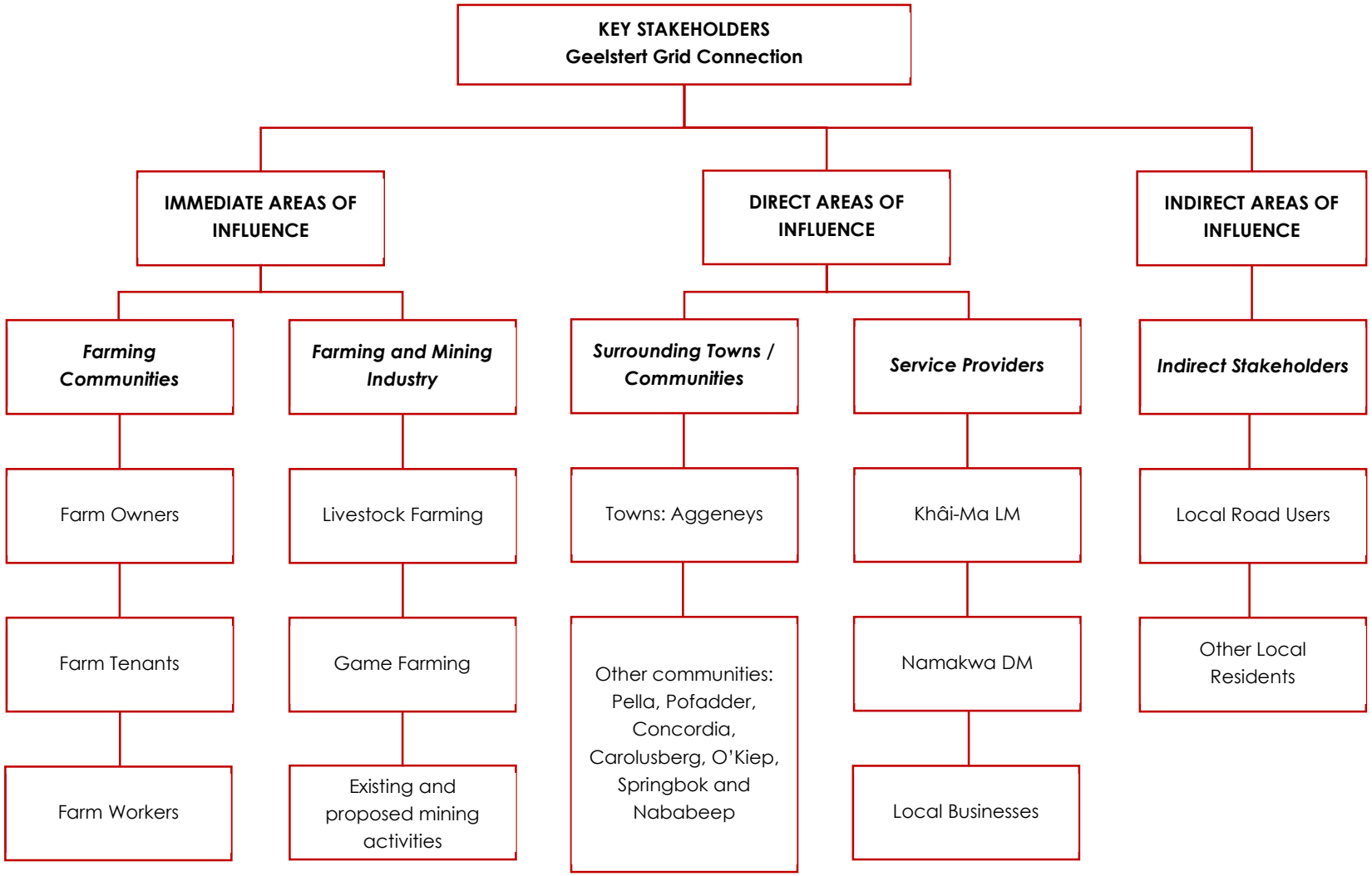

Figure 2.1: Key Stakeholders identified for the Geelstert Grid Connection, near Aggeneys, Northern Cape Province.

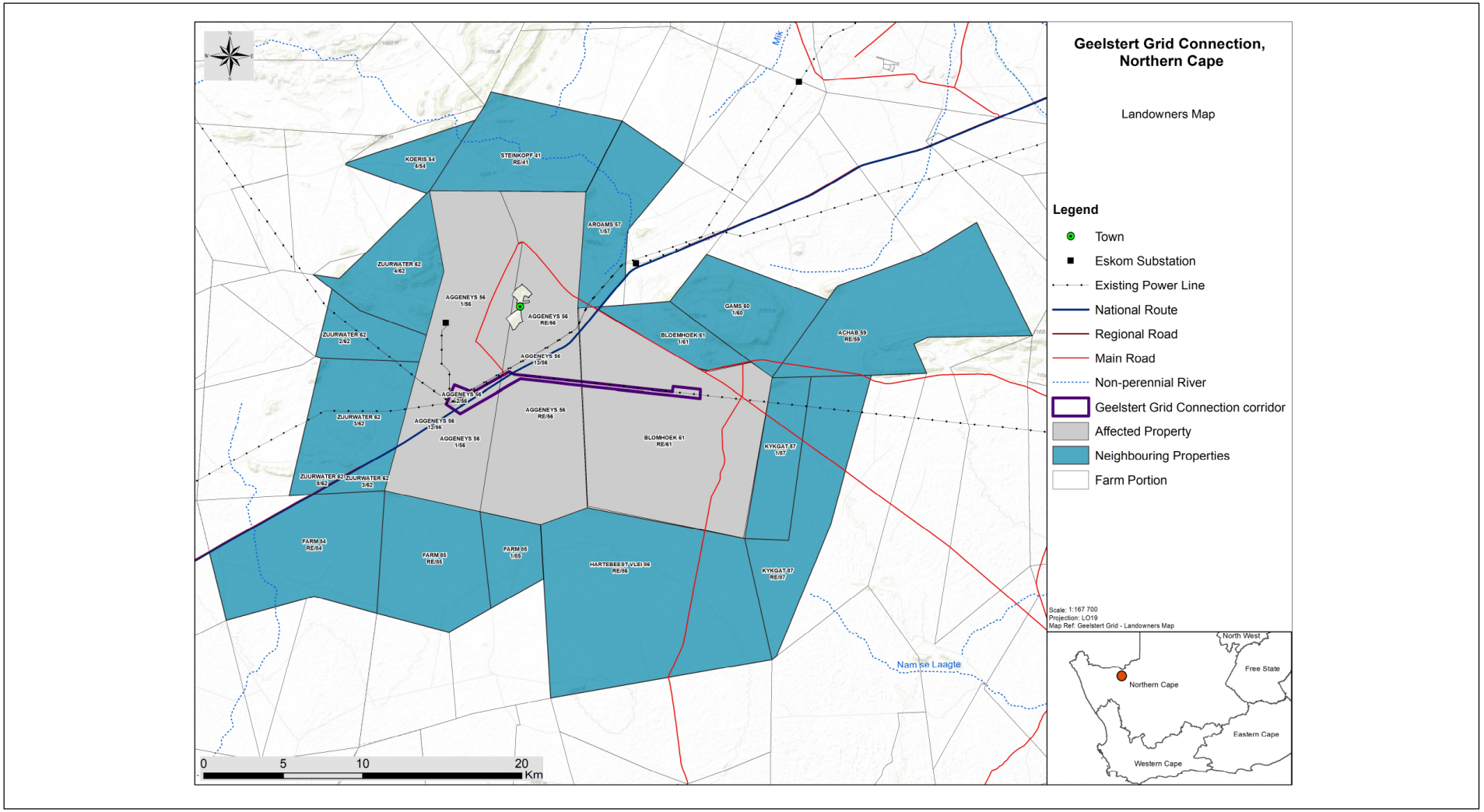

Figure 2.2: Landowners map of the affected and adjacent properties for the Geelstert Grid Connection

2.2.2 Collection and Review of Existing Information and Data

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

- Project maps and layouts.
- Google Earth imagery.
- A description of the project (as provided by the project proponent).
- Responses to questions posed to the project proponent regarding employment and social upliftment and local economic development opportunities (as provided by the project proponent).
- Census data (2011), and the Local Government Handbook (2019).
- Planning documentation such as Provincial Growth and Development Strategies (PGDSs), Local and District Municipality Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs), and development goals and objectives.
- Relevant legislation, guidelines, policies, plans, and frameworks.
- Available literature pertaining to social issues associated with the development and operation of grid connection infrastructure.
- Previous studies undertaken within the affected properties, as well as the consideration of the outcomes and comments raised during the public participation processes undertaken as part of the previous studies.

Should any comments or concerns be raised from a social perspective regarding the project during the public participation process of the Basic Assessment, these will be included and addressed as part of the final SIA to be submitted to DEA for decision-making.

2.3 Impact Assessment Evaluation Method

The main objective of this SIA is to determine the social risks and opportunities, and positive and negative impacts which may be associated with the construction, operation, and decommissioning of the project. The methodology below (as provided by Savannah Environmental) allows for the evaluation of the overall impact of a proposed project on the social environment. This includes an assessment of the significant direct, indirect, and cumulative impacts associated with the project. Social impacts were assessed in terms of their perceived extent (scale), duration, magnitude (severity), probability (certainty), and status (negative, neutral or positive).

- The **nature**, which includes a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it is indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 was assigned as appropriate (with 1 being low and 5 being high).
- The **duration**, wherein it is indicated whether:
  - The lifetime of the impact will be of a very short duration (0 – 1 years) – assigned a score of 1.
  - The lifetime of the impact will be of a short duration (2 – 5 years) – assigned a score of 2.
  - Medium-term (5 – 15 years) – assigned a score of 3.
  - Long term (> 15 years) – assigned a score of 4.
  - Permanent – assigned a score of 5.

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

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

S = (E+D+M)xP

S = Significance weighting
E = Extent
D = Duration
M = Magnitude
P = Probability

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

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

2.4 Limitations and Assumptions

The following assumptions and limitations are applicable to this SIA Report:

- Data derived from the 2011 Census, Northern Cape Provincial Spatial Development Framework (PSDF) 2012, Northern Cape Reviewed Spatial Development Framework (PSDF) Executive Summary 2018 (the complete report was not available at the time of compilation of this report), Namakwa District Municipality Integrated Development Plan (IDP) Draft Revision 2020/2021 and Khâi-Ma Local Municipality Integrated Development Plan (2017/18 – 2021/22) (Revised 2019/20) was used to generate the majority of information provided in the baseline profile of the broader study area and the area within which the corridor is located. The possibility exists that some of the data utilised may be out of date, and may not provide an accurate reflection of the current status quo.

- This SIA Report was prepared based on information that was available to the specialist at the time of preparing the report. The sources consulted are not exhaustive, and the possibility exists that additional information which might strengthen arguments, contradict information in this report, and / or identify additional information might exist. Additional information available from the public participation undertaken during the BA process will be included and considered within the final report, where relevant.
- The use and interpretation of previously collected data from previous environmental impact assessment processes undertaken for the development of grid connection infrastructure associated with renewable energy projects (mainly including the development of PV facilities) within the affected are identified for the development of the Geelstert Grid Connection is considered to be sufficient and therefore no site visit and stakeholder consultation has been undertaken as part of this SIA.
- Some of the project projections reflected in this SIA Report may be subject to change, and therefore may be higher or lower than those estimated by the project proponent.
- It is assumed that the motivation for, as well as the planning and feasibility study of the project were undertaken with integrity, and that information provided by the project proponent was accurate and true at the time of preparing this SIA Report.

3. LEGISLATION AND POLICY REVIEW

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

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

National Policy and Planning Context:
- Constitution of the Republic of South Africa, 1996
- National Environmental Management Act (No. 107 of 1998) (NEMA)
- White Paper on the Energy Policy of the Republic of South Africa (1998)
- White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)
- National Energy Act (No. 34 of 2008)
- Integrated Energy Plan (IEP) (2015)
- Integrated Resource Plan (IRP) for Electricity (2010 – 2030) (2011) (and subsequent updates thereto)
- National Development Plan (NDP) 2030 (2012)
- Strategic Infrastructure Projects (SIPs)

Provincial Policy and Planning Context:
- Northern Cape Provincial Spatial Development Framework (PSDF) 2012
- Northern Cape Reviewed Spatial Development Framework (PSDF) Executive Summary 2018[2]

Local Policy and Planning Context:
- Namakwa District Municipality Integrated Development Plan (IDP) Draft Revision (2020/2021)
- Khâi-Ma Local Municipality Integrated Development Plan (2017/18 – 2021/22) (Revised 2019/20)

3.1 National Policy and Planning Context

Any project which contributes positively towards the objectives mentioned within national policies could be considered strategically important for the country. A review of the national policy environment suggests that the increased utilisation of Renewable Energy (RE) sources is considered integral to reducing South Africa's carbon footprint, diversifying the national economy, and contributing towards social upliftment and economic development. As the project comprises the development of grid connection infrastructure for a RE project that would contribute RE supply to provincial and national targets set out and supported within these national policies, it is considered that the project fits within the national policy framework.

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

[2] It must be noted that the complete PSDF was not available for consideration at the time of compilation of this report.

Table 3.1: Relevant national legislation and policies for the Geelstert Grid Connection

Relevant legislation or policy	Relevance to the proposed project
Constitution of the Republic of South Africa, 1996	Section 24 of the Constitution pertains specifically to the environment. It states that Everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. The Constitution outlines the need to promote social and economic development. Section 24 of the Constitution therefore requires that development be conducted in such a manner that it does not infringe on an individual's environmental rights, health, or well-being. This is especially significant for previously disadvantaged individuals who are most at risk to environmental impacts.
National Environmental Management Act (No. 107 of 1998) (NEMA)	This piece of legislation is South Africa's key piece of environmental legislation, and sets the framework for environmental management in South Africa. NEMA is founded on the principle that everyone has the right to an environment that is not harmful to their health or well-being as contained within the Bill of Rights. The national environmental management principles state that the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.
White Paper on the Energy Policy of the Republic of South Africa (1998)	The White Paper on Energy Policy places emphasis on the expansion of energy supply options to enhance South Africa's energy security. This can be achieved through increased use of RE and encouraging new entries into the generation market. The policy states that the advantages of RE include, minimal environmental impacts during operation in comparison with traditional supply technologies, generally lower running costs, and high labour intensities. Disadvantages include, higher capital costs in some cases, lower energy densities, and lower levels of availability, depending on specific conditions, especially with sun and wind based systems. Nonetheless, renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future. The development of the grid connection infrastructure is required in order to connect RE facilities to the national grid and evacuate the electricity into the grid for use.
White Paper on the Renewable Energy Policy of the Republic of South Africa (2003)	The White Paper on Renewable Energy Policy supplements Government's predominant policy on energy as set out in the White Paper on the Energy Policy of the Republic of South Africa (DME, 1998). The policy recognises the potential of RE, and aims to create the necessary conditions for the development and commercial implementation of RE technologies. The White Paper on RE sets out Government's vision, policy principles, strategic goals and objectives for promoting and implementing RE in South Africa. The country relies heavily on coal to meet its energy needs due to its abundant, and fairly accessible and affordable coal resources. However, massive RE resources that can be sustainable alternatives to fossil fuels, have so far remained largely untapped.

Relevant legislation or policy	Relevance to the proposed project
	The White Paper on Renewable Energy of 2003 set a target of 10 000GWh to be generated from RE by 2013 to be produced mainly from biomass, wind, solar and small-scale hydro. The target was subsequently reviewed in 2009 during the RE summit of 2009. The policy supports investment in RE facilities as they contribute towards ensuring energy security through the diversification of energy supply, reducing GHG emissions and the promotion of RE sources. The development of the associated grid connection infrastructure is required in order to connect RE facilities to the national grid and evacuate the electricity into the grid for use. The development of the grid connection infrastructure is considered to be relevant to the policy due to the need for the associated infrastructure for the operation of RE facilities.
National Energy Act (No. 34 of 2008)	The purpose of the National Energy Act (No. 34 of 2008) is to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, while taking environmental management requirements into account. In addition, the Act also provides for energy planning, and increased generation and consumption of Renewable Energies (REs). The Act provides the legal framework which supports the development of RE facilities for the greater environmental and social good, and provides the backdrop against which South Africa's strategic planning regarding future electricity provision and supply takes place. It also provides the legal framework which supports the development of RE facilities for the greater environmental and social good. The development of the associated grid connection infrastructure is required in order to connect RE facilities to the national grid and evacuate the electricity into the grid for use. The development of the grid connection infrastructure is considered to be relevant to the Act due to the need for the associated infrastructure for the operation of RE facilities.
Integrated Energy Plan (IEP), 2015	The Integrated Energy Plan (IEP) (which was developed under the National Energy Act (No. 34 of 2008)), recognises that energy is essential to many human activities, and is critical to the social and economic development of a country. The purpose of the IEP is essentially to ensure the availability of energy resources, and access to energy services in an affordable and sustainable manner, while minimising associated adverse environmental impacts. Energy planning therefore needs to balance the need for continued economic growth with social needs, and the need to protect the natural environment. The development of the associated grid connection infrastructure is required in order to connect RE facilities to the national grid and evacuate the electricity into the grid for use. The development of the grid connection infrastructure assists with ensuring the availability of energy resources. The development of the grid connection infrastructure is considered to be relevant to the plan due to the need for the associated infrastructure for the operation of RE facilities.
Integrated Resource Plan for Electricity (IRP) 2010-2030 (2011)	The Integrated Resource Plan (IRP) for Electricity 2010 – 2030 is a subset of the IEP and constitutes South Africa's National electricity plan. The primary objective of the IRP is to determine the long term electricity demand and detail how this demand should be met in terms of generating capacity, type, timing and cost. The IRP also serves as input to other planning functions, including amongst others, economic development and funding, and environmental and social policy formulation. On 27 August 2018, the then Minister of Energy published a draft IRP which was issued for public comment. The lengthy public participation and consultation process has culminated in the

Relevant legislation or policy	Relevance to the proposed project
	issue of the overdue IRP 2019 which updates the energy forecast from the current period to the year 2030. Since the promulgated IRP 2010, the following capacity developments have taken place: » A total of 6 422MW has been procured thus far under the REIPPPP, with 3 876MW being currently operational and made available to the grid. In addition, IPPs have commissioned 1005MW from two (2) Open Cycle Gas Turbines (OCGT) peaking plants; and » Under the Eskom Build Programme, 1 332MW has been procured from the Ingula Pumped Storage Project, 1 588MW and 800MW from the Medupi and Kusile power stations and 100MW from the Sere Wind Farm. Provision has been made for the following new capacity by 2030: » 1 500MW of coal; » 2 500MW of hydro; » 6 000MW of solar PV; » 14 400MW of wind; » 1 860MW of nuclear; » 2 088MW of storage; » 3 000MW of gas/diesel; and » 4 000MW from other distributed generation, co-generation, biomass and landfill technologies. Based on the 2019 IRP, South Africa continues to pursue a diversified energy mix that reduces reliance on a single or a few primary energy sources. In the period prior to 2030, the system requirements are largely for incremental capacity addition (modular) and flexible technology, to complement the existing installed inflexible capacity. South Africa is a signatory to the Paris Agreement on Climate Change and has ratified the agreement. In line with INDCs (submitted to the UNFCCC in November 2016), South Africa's emissions are expected to peak, plateau and from year 2025 decline. The development of the associated grid connection infrastructure is required in order to connect RE facilities to the national grid and evacuate the electricity into the grid for use. The development of the grid connection infrastructure assists with adding additional capacity of electricity generated by PV to the national grid. The development of the grid connection infrastructure is considered to be relevant to the plan due to the need for the associated infrastructure for the operation of RE facilities.
National Development Plan 2030 (2012)	The National Development Plan (NDP) 2030 is a plan prepared by the National Planning Commission in consultation with the South African public which is aimed at eliminating poverty and reducing inequality by 2030. In terms of the Energy Sector's role in empowering South Africa, the NDP envisages that, by 2030, South Africa will have an energy sector that promotes: » Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation. » Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households.

Relevant legislation or policy	Relevance to the proposed project
	» Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The development of the associated grid connection infrastructure is required in order to connect RE facilities to the national grid and evacuate the electricity into the grid for use. The development of the grid connection infrastructure is considered to be relevant to the plan due to the need for the associated infrastructure for the operation of RE facilities and due to the associated growth and potential.
Strategic Infrastructure Projects (SIPs)	The Presidential Infrastructure Coordinating Committee (PICC) are integrating and phasing investment plans across 18 Strategic Infrastructure Projects (SIPs) which have 5 core functions, including to unlock opportunity, transform the economic landscape, create new jobs, strengthen the delivery of basic services and support the integration of African economies. SIP 8 of the energy SIPs supports the development of RE projects as follows: » Green energy in support of the South African economy: The SIPs support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP) and supports bio-fuel production facilities. The development of the proposed grid connection infrastructure is aligned with SIP 8 as it enables the operation of a green energy initiative which would contribute clean energy in accordance with the IRP 2010 – 2030. It must be noted that the project would only be registered as a SIP should the project proceed to construction.

3.2 Provincial Policies

This section provides a brief review of the most relevant provincial policies. The Geelstert Grid Connection is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor. A brief review of the most relevant provincial policies is provided in table format (**Table 3.2**) below.

Table 3.2: Relevant provincial policies for the Geelstert Grid Connection

Relevant policy	Relevance to the proposed project
Northern Cape Provincial Spatial Development Framework (PSDF) 2012	The Northern Cape Provincial Spatial Development Framework (PSDF) 2012 states that the overarching goal for the province is to enable sustainability through sustainable development. The province considers social and economic development as imperative in order to address the most significant challenge facing the Northern Cape, which is poverty. The PSDF identifies key sectoral strategies and plans which are considered to be the key components of the PSDF. Sectoral Strategy 19 refers to a provincial renewable energy strategy. Within the PSDF a policy has been included which states that renewable energy sources (including the utilisation of solar energy) are to comprise 25% of the province's energy generation capacity by 2020.

Relevant policy	Relevance to the proposed project
	The overall energy objective for the province also includes promoting the development of renewable energy supply schemes which are considered to be strategically important for increasing the diversity of domestic energy supply and avoiding energy imports, while also minimising the detrimental environmental impacts. The implementation of sustainable renewable energy is also to be promoted within the province through appropriate financial and fiscal instruments. The development of the grid connection infrastructure is considered to be relevant to the framework due to the need for the associated infrastructure for the operation of RE facilities and due to the aim of the Province to have 25% energy generation capacity in terms of renewable energy.
Northern Cape Reviewed Spatial Development Framework (PSDF) Executive Summary 2018	As part of land use management the PSDF identifies spatial planning categories for the province which includes: a) Core Conservation Areas; b) Natural Buffer Areas; c) Agricultural Areas; d) Urban Related Areas; e) Industrial Areas; and f) Surface Infrastructure. These categories provide a framework to guide decision-making regarding land-use at all levels of planning which provides an organised process enabling sustainable development in a coherent manner. Renewable energy has been included under category f – Surface Infrastructure. One of the key strategies and interventions as part of this planning category is the conducting of Strategic Environmental Assessments in areas suited for renewable energy generation to incentivise and streamline the administrative and development processes. High impact projects have been identified for the province which includes a renewable energy and gas energy business incubator, a renewable energy and gas energy skills development centre and supply chain centres in each REDZ, namely the Upington REDZ, Springbok REDZ and Kimberley REDZ. The development of the Geelstert Grid Connection is required in order to connect the Geelstert 1 and Geelstert 2 solar PV facilities to the national grid and evacuate up to 250MW of electricity into the national electricity grid. Should the authorised Aggeneys 1 and Aageneys 2 solar PV facilities also be connected through the Geelstert Grid Connection to the national grid, up to 450MW of electricity will be evacuated.

3.3 District and Local Municipalities Policies

The strategic policies at district and local level have similar objectives for the respective areas, namely to accelerate economic growth, create jobs, and uplift communities. The Geelstert Grid Connection is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

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

Table 3.3: Relevant district and local municipal policies for the Geelstert Grid Connection

Relevant policy	Relevance to the proposed project
Namakwa District Municipality Integrated Development Plan (IDP) Draft Revision (2020/2021)	The vision of the DM is to achieve certain aspects within the municipal area. These include: » The stimulation of radical economic and social transformation; » The fostering of partnership with relevant role-players; » Supporting and capacitating of local municipalities; » Transparent and accountable processes and providing local leadership. In terms of renewable energy development the IDP considers strategic development directives. This includes goals ranging from alleviating poverty and reducing inequality through job creation and economic growth, as well as ensuring access to affordable, reliable, sustainable and modern energy for all. The role of local government in the electricity distribution industry, including consideration of renewable energy, will be critical. The development of the Geelstert Grid Connection is required in order to connect the Geelstert 1 and Geelstert 2 solar PV facilities to the national grid and evacuate up to 250MW of electricity into the national electricity grid. Should the authorised Aggeneys 1 and Aageneys 2 solar PV facilities also be connected through the Geelstert Grid Connection to the national grid, up to 450MW of electricity will be evacuated.
Khâi-Ma Local Municipality Integrated Development Plan (2017/18 – 2021/22) (Revised 2019/20)	The LM IDP places emphasis on education, health, performance management, financial viability and grant expenditure, water and sanitation and electricity as the issues that need to be addressed to lead to the sustainability of the municipality. The LM has set out to create conditions for decent living which includes ensuring access to municipal services such as electricity, water and sanitation. The municipal areas is both subject of and an anchor in major development initiatives including mining, agriculture and renewable energy developments.

3.4 Conclusion

The review of relevant legislation, policies and documentation pertaining to the energy sector indicates that renewable or green energy (i.e. energy generated by naturally occurring renewable resources), and the use thereof through the evacuation of the electricity to the national grid, and therefore the establishment of the proposed grid connection infrastructure, is supported at a national, provincial, and local level, and that the proposed project will contribute positively towards a number of targets and policy aims.

4. SOCIO-ECONOMIC PROFILE

A 1km wide (extending to 2km at the Aggeneis Main Transmission Substation (MTS)) and 17.5km long corridor (known as the project development corridor) is being assessed for the development of the Geelstert Grid Connection. The corridor falls within the Khâi-Ma Local Municipality as well as the greater Namakwa District Municipality (**Table 4.1**).

Table 4.1: Spatial Context of the proposed corridor for the development of the Geelstert Grid Connection.

Province	Northern Cape Province
District Municipality	Namakwa DM
Local Municipality	Khâi-Ma LM
Ward Number(s)	Ward 4
Nearest Town(s) and Settlements	The closest major town is Aggeneys located 7.5km north-west (from the centre of the corridor). Other communities and towns located in the areas surrounding the corridor includes Pella (located ~37km north-east), Pofadder (located ~53km north-east), Concordia (located ~95km south-west), Carolusberg (located ~98km south-west), O'Kiep (located ~104km south-west), Springbok (located ~106km south-west) and Nababeep (located ~113km south-west).
Farm Portion(s), Name(s) and Number(s)	» Remaining Extent of the Farm Bloemhoek 61 » Remaining Extent of the Farm Aggeneys 56 » Remaining Extent of Portion 1 of the Farm Aggeneys 56 » Portion 2 of the Farm Aggeneys 56 » Portion 12 of the Farm Aggeneys 56 » Portion 13 of the Farm Aggeneys 56
SG 21 Digit Code (s)	» C05300000000006100000 » C05300000000005600000 » C05300000000005600001 » C05300000000005600002 » C05300000000005600012 » C05300000000005600013
Current Zoning of the corridor	Agriculture
Current land use of the corridor	Agriculture

This Chapter provides an overview of the socio-economic environment of the province, DM, and LMs within which the Geelstert Grid Connection is proposed for development, and provides the socio-economic basis against which potential issues can be identified.

4.1 Northern Cape Province

The Northern Cape Province is located in the north-western extent of South Africa and constitutes South Africa's largest province, occupying an area 372 889km² in extent, equivalent to nearly a third (30.5%) of the country's total land mass. It is also South Africa's most sparsely populated province with a population of 1 145 861, and a population density of 3.1/km². It is bordered by the provinces of the Western Cape, and Eastern Cape to the south, and south-east, the provinces of Free State, and North West to the east, Botswana and Namibia, to the north, and the Atlantic Ocean to the west. The Northern Cape is South Africa's only province which borders Namibia, and therefore plays an important role in terms of providing linkages

between Namibia and the rest of South Africa. The Orange River is a significant feature within the province, is the main source of water, and also constitutes the international border between South Africa and Namibia.

The Northern Cape offers unique tourism opportunities including wildlife conservation destinations, natural features, historic sites, festivals, cultural sites, star gazing, adventure tourism, agricultural tourism, ecotourism, game farms, and hunting areas, etc. The province is home to the Richtersveld Botanical and Landscape World Heritage Site, which comprises a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site under the World Heritage Convention. The Northern Cape is also home to two (2) Transfrontier National Parks, namely the Kgalagadi Transfrontier Park, and the Richtersveld /Ai-Ais Transfrontier Park, as well as five (5) national parks, and six (6) provincial reserves.

The Northern Cape plays a significant role in South Africa's science and technology sector, and is home to the Square Kilometre Array (SKA), the Southern African Large Telescope (SALT), and the Karoo Array Telescope (MeerKAT).

The Northern Cape makes the smallest contribution to South Africa's economy (contributing only 2% to South Africa's Gross Domestic Product per region (GDP-R) in 2007). The mining sector is the largest contributor to the provincial GDP, contributing 26%. The Northern Cape's mining industry is of national and international importance, as it produces approximately 37% of South Africa's diamond output, 44% of its zinc, 70% of its silver, 84% of its iron-ore, 93% of its lead and 99% of its manganese.

In 2007 the agricultural sector contributed 5.8% to the Northern Cape GDP per region which was equivalent to approximately R1.3 billion. The agricultural sector also employs approximately 19.5% of the total formally employed individuals (LED Strategy). The sector is experiencing significant growth in value-added activities, including game-farming, while food production and processing for the local and export market is also growing significantly (PGDS, July 2011). Approximately 96% of the land is used for stock farming, including beef cattle and sheep or goats, as well as game farming, while approximately 2% of the province is used for crop farming, mainly under irrigation in the Orange River Valley and Vaalharts Irrigation Scheme (LED Strategy).

The Northern Cape comprises five Districts, namely Frances Baard, John Taolo Gaetsewe, Namakwa, Pixley ka Seme, and ZF Mgcawu (refer to **Figure 4.1**).

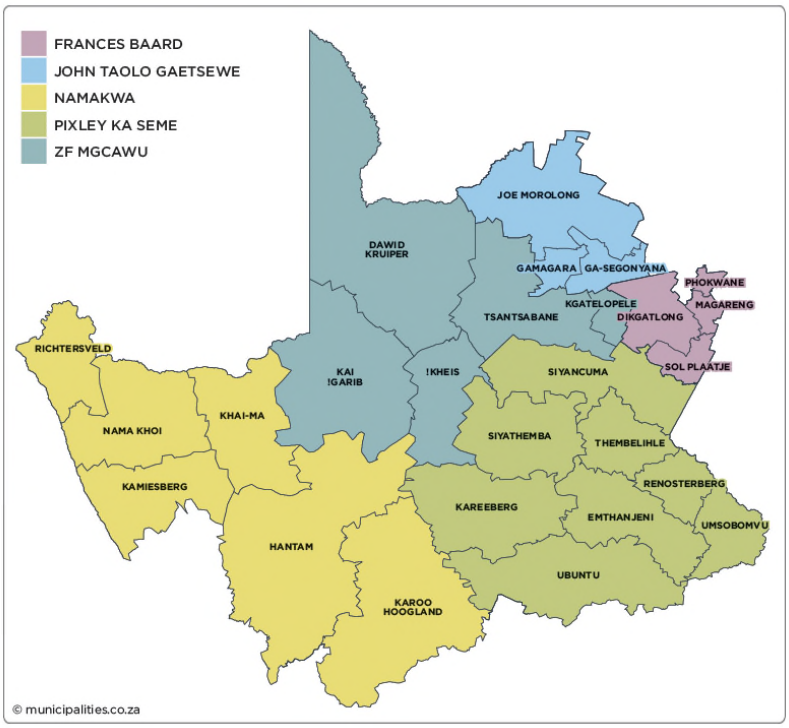

Figure 4.1: Map showing the district municipalities of the Northern Cape (Source: www.municipalities.co.za).

4.2 Namakwa DM

The Namakwa District Municipality is a Category C municipality located in the Northern Cape Province. It is bordered by the republic of Namibia in the north, ZF Mgcawu Local Municipality in the north-east, Cape Winelands District Municipality in the south, West Coast District Municipality in the south-west, Pixley Ka Seme District Municipality in the east, Central Karoo District Municipality in the south-east, and the Atlantic Ocean in the west. The seat of the Namakwa District Municipality is Springbok. The main economic sectors of the municipal area include agriculture and tourism.

It is the largest district in the Province, making up over a third of its geographical area, and is 126 836km² in extent. It is comprised of six local municipalities: Nama Khoi, Hantam, Khâi-Ma, Kamiesberg, Karoo Hoogland and Richtersveld (refer to **Figure 4.2**).

Figure 4.2: Map showing the local municipalities of the Namakwa DM (Source: www.municipalities.co.za).

4.3 Khâi-Ma LM

The Khâi-Ma Local Municipality is a Category B municipality situated within the Namakwa District Municipality in the Northern Cape Province. It is one of the six municipalities that make up the district, accounting for 12% of its geographical area, which is 15 715km² in extent.

The seat, Pofadder, is situated about 220km west of Upington and 165km east of Springbok. Farming settlements are Dwagga Soutpan, Vrugbaar, Raap-en-Skraap and Klein Pella. The main economic sectors include agriculture, tourism, community, social and personal services.

4.4 Grid Connection Corridor

The corridor assessed for the Geelstert Grid Connection is 1km wide (extending to 2km at the Aggeneis Main Transmission Substation (MTS)) and 17.5km long and traverses six (6) properties, namely:

- Remaining Extent of the Farm Bloemhoek 61
- Remaining Extent of the Farm Aggeneys 56
- Remaining Extent of Portion 1 of the Farm Aggeneys 56
- Portion 2 of the Farm Aggeneys 56
- Portion 12 of the Farm Aggeneys 56
- Portion 13 of the Farm Aggeneys 56

Very few communities, other than Aggeneys, are located in close vicinity of corridor. The communities closest to the project includes Pella, Pofadder, Concordia, Carolusberg, O'Kiep, Springbok and Nababeep. These communities are considered to be sparsely populated and related mainly to agricultural activities and mining activities (where relevant for the area).

The corridor is located within the Khâi-Ma Non-Urban (NU) area which has a population of 2 148 people and a population density of 0.14/km².

Land uses within close proximity to the development area include the Black Mountain Mine, the Gamsberg Mine, the Aggeneys Airport, the residential area of Aggeneys, the N14 national road and livestock farming activities associated with the surrounding areas.

According to the National Landcover Map (2014), the affected area consists primarily of low shrubland, grassland, areas with no vegetation and limited pockets of mining areas.

The N14 national road, which links the towns of Upington, Pofadder, Aggeneys and Springbok, is located within the western section of the corridor, with the corridor traversing over the road in a west-east direction. The Loop 10 Main Road is located ~4km to the north and the Gamoep Main Road is located ~2km to the east of the corridor. These local roads provide direct access to the affected properties and the corridor.

The Geelstert Grid Connection caters for the connection of the proposed Geelstert 1 and Geelstert 2 solar PV facilities to the national grid in order to enable the operation of the facilities. Two other solar energy facilities have been authorised directly to the north of the Geelstert Grid Connection and Geelstert 1 and 2, which is known as Aggeneys 1 and Aggeneys 2[3]. Considering the other PV solar energy facilities proposed and authorised, the immediate area will become more industrial with the addition of infrastructure to the area. This change in land use is considered to be acceptable considering the current and previous land use activities undertaken within the area which involves intensive mining operations and the associated infrastructure, as well and the low population density of the area.

There are no major social receptors located within or directly adjacent to the corridor. Social receptors that could be affected are the local travellers making use of the N14 and surrounding gravel roads. Other social receptors include the settlements surrounding the corridor, as well as the agricultural activities including livestock grazing. The distance of the corridor proposed for the Geelstert Grid Connection to these social receptors also provides a buffer in terms of direct impact. Due to the fact that other renewable energy developments and associated grid connection infrastructure have already been authorised within the surrounding area of the social features, the development of the proposed project will not introduce grid connection infrastructure as a land use to the area.

Apart from the Black Mountain Mine Golf Course, very limited tourism/leisure activities are available within the Aggeneys area. Other tourism facilities outside of Aggeneys include the Amam Melkbos Campsite located ~50km north-west and the Klein Pella Campsite located ~34km north-east.

The description of the corridor provided above is considered to be the current *status quo* and social landscape associated with the area within which the Geelstert Grid Connection is proposed to be placed.

[3] The Geelstert Grid Connection also caters for the connection of the authorised Aggeneys 1 and Aggeneys 2 projects to the national grid.

4.5 Baseline Description of the Social Environment

Table 4.2 provides a baseline summary of the socio-economic profile of the Khâi-Ma LM within which the Geelstert Grid Connection is proposed. The data presented in this section have been derived from the 2011 Census, the Local Government Handbook South Africa 2019, the Northern Cape Provincial Spatial Development Framework (PSDF), and the Integrated Development Plans of the Namakwa DM and Khâi-Ma LM[4].

Table 4.2: Baseline description of the socio-economic characteristics of the area proposed for the Geelstert Grid Connection

Location characteristics
» The project is proposed within the Northern Cape Province, which is South Africa's largest, but least populated Province. » The project is proposed within the Khâi-Ma LM and the Namakwa DM. » The Khâi-Ma LM covers an area of land 15 715km² in extent.
Population characteristics
» The Khâi-Ma LM has a total population of 12 465 with a growth rate of 0.83%. » In terms of the age structure 22.2% of the population is under 15 years of age, 71.6% of the population falls between 15 and 64, with 6.2% of the population being over 65. » The Khâi-Ma LM is male dominated, with males comprising approximately 52.6% of the LM population, while the Namakwa DM is female dominated, with females comprising approximately 50.3% of the DM population. » Coloureds comprise the predominant population group within the Khâi-Ma LM and Namakwa DM. » Within the Khâi-Ma LM 88.1% of the population is coloured, 2.7% is black African, 8.1% is white and 0.9% is Indian/Asian. » The dominant language spoken in the Khâi-Ma LM is Afrikaans at 96.6%. The remaining spoken languages in the area include English (0.8%), IsiXhosa (0.9%), IsiZulu (0.2%), Setswana (0.6%) and others (0.8%). » The Khâi-Ma LM, Namakwa DM, Northern Cape provincial, and South African national population age structures are all youth dominated. A considerable proportion of the respective populations therefore comprise individuals within the economically active population between the ages of 15 and 64 years of age
Economic, education and household characteristics
» The Khâi-Ma LM has a dependency ratio of 39.6, which correlates to some extent with the Namakwa DM (47.1), Northern Cape Province (35.8), and South Africa (34.5). » Education levels within the Khâi-Ma LM are low with approximately 22.2% of the population over 20 years of age not having completed Grade 12 / Matric. This means that the majority of the population can be expected to have a relatively low-skill level and would either require employment in low-skill sectors, or skills development opportunities in order to improve the skills level of the area. » The unemployment rate of the Khâi-Ma LM is high which places strain on the municipal services delivery as people cannot afford to pay for municipal services. In 2011 it was found that 77% of residents receive subsidies from government for their basic services. The unemployment rate of the Namakwa DM is 20.1%. » In 2011, the unemployment rate was highest across the Northern Cape at 27.4% and lowest across the Namakwa DM at 20.1%. The Khâi-Ma LM had an unemployment rate of 22.1% over the same period. Regarding youth unemployment, at 34.5%, it is highest across the Province and lowest within the Khâi-Ma LM at a rate of 23.6%. » The Namakwa DM has approximately 40% females as household heads and approximately 62% male household heads while having around 0.25% household heads under the age of 18.

4 While information was derived from the Local Government Handbook South Africa 2019, Northern Cape PSDF, Namakwa DM and Khâi-Ma LM IDP, these sources largely make use of statistical information derived from the Census 2011. The information presented in this Chapter may therefore be somewhat outdated, but is considered sufficient for the purposes of this assessment (i.e. to provide an overview of the socio-economic characteristics against which impacts can be identified and their significance assessed).

- The primary economic activities within the Khâi-Ma LM comprise agriculture, tourism, community, social and personal services.
- The majority of households within the Khâi-Ma LM comprise formal dwellings (92.4%) and the average household size is 3.

Services

- Two hospitals are available within the Namakwa DM which includes the Abraham Esau Hospital in Calvinia and the Dr Van Niekerk Hospital in Springbok. No hospitals are located within the Khâi-Ma LM.
- The majority of households within the Khâi-Ma LM are well serviced with regards to flush toilets connected to sewage, refuse removal, piped water and electricity, with the LM often exhibiting similar levels of service provision than that of the Namakwa DM.

5. SOCIAL IMPACT ASSESSMENT

This Chapter provides a detailed description and assessment of the potential social impacts that have been identified for the detailed design and construction, operation, and decommissioning phases of the Geelstert Grid Connection.

A corridor has been provided by the applicant for consideration as part of the Basic Assessment process and is considered within the SIA (**Figure 5.1**).

Through the undertaking of this Social Impact Assessment for the development of the Geelstert Grid Connection, the current *status quo* of the area from a social and land use perspective, as well as previous studies within the broader area, was considered in order to provide an indication of the pre-construction environment and aid in the identification of positive and negative social impacts expected to occur. This assessment considered the following points:

» The location of the corridor in relation to immediately adjacent and surrounding social features or receptors that may be affected.
» The nature, extent and significance of the features within the social landscape being considered.
» The existing disturbance already present within the social landscape (i.e. current land use activities and industrial developments).

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

As part of this Social Impact Assessment, the comments and responses reports and Social Impact Assessments of the following previous projects (undertaken within the same affected properties and includes the development of the same proposed infrastructure were consulted to obtain a better understanding of the potential social impacts expected with the development of the proposed project:

» Grid Connection Infrastructure for the Aggeneys 1 Solar PV Facility, Northern Cape Province – DEA Ref.: 14/12/16/3/3/1/2023; and
» Grid Connection Infrastructure for the Aggeneys 2 Solar PV Facility, Northern Cape Province – DEA Ref.: 14/12/16/3/3/1/2024.

Refer to Section 2.2 on the approach followed in terms of identification of social impacts and the use of existing information previously collected in the area for this SIA report.

The following main issues/impacts were raised in the comments and responses reports and Social Impact Assessment Reports of the previous projects (as listed above) and have been considered as part of the Social Impact Assessment for the Geelstert Grid Connection:

» Job creation, the establishment of business opportunities and skills development and training.
» Impacts associated with construction activities including transportation or infrastructure, hazard exposure and inconveniences for local residents.

» Disruptions of daily living patterns.
» Presence of construction workers in the area, increase in crime and theft and increased risk of HIV AIDS and threats to family structures and social networks.
» Transformation of the sense of place.
» Cumulative impacts.

The impacts identified above as part of the previous Environmental Impact Assessment processes have been considered as part of the social construction and operation phase impacts for the development of the Geelstert Grid Connection.

5.1 Consideration of project specific alternatives

No alternatives have been identified for the development of the Geelstert Grid Connection.

5.2 Social Impacts during the Construction Phase

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

The positive and negative social impacts identified and assessed for the construction phase include:

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

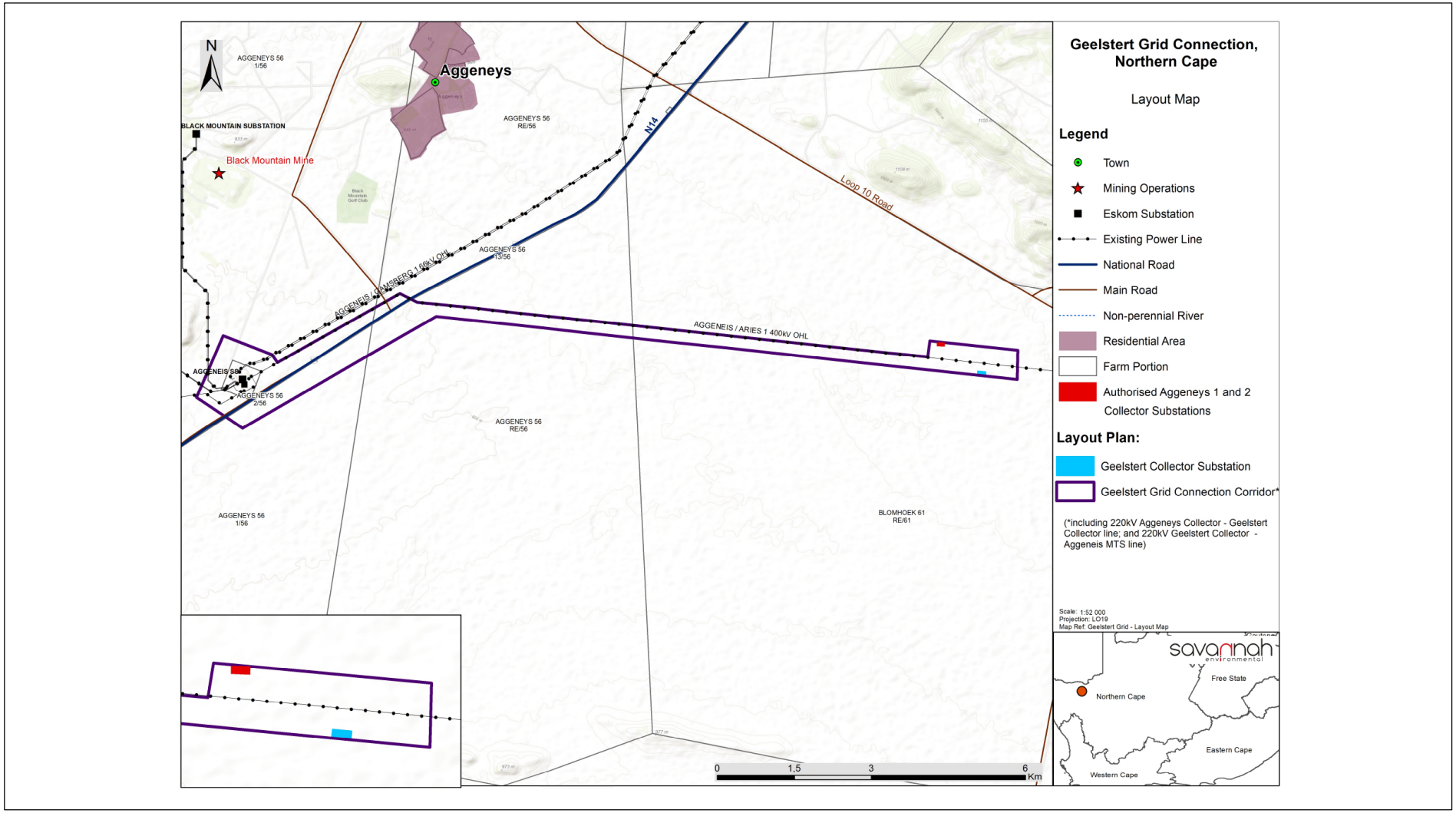

Figure 5.1: Facility layout of the Geelstert Grid Connection .

Table 5.1: Impact assessment on direct and indirect employment opportunities

Nature: The creation of direct and indirect employment opportunities during the construction phase of the project.

It is anticipated that the construction of the Geelstert Grid Connection will result in the creation of approximately 130 employment opportunities at the peak of construction, comprising a mixture of skilled, semi-skilled , and low-skilled opportunities. Employment opportunities generated as a result of the project will be temporary in nature, and will last for the duration of the construction period (i.e. 12 months). The majority of the general labour force will, as far as possible, be sourced from the local labour pool, providing employment opportunities to residents of communities surrounding the project (where the required skill sets are available). Where relevant skills are unavailable from the local labour pool, these would need to be sought elsewhere. The injection of income into the area in the form of wages will represent an opportunity for the local economy and businesses in the area.

A number of indirect employment opportunities will also be created. Indirect employment opportunities will predominantly be created in the service industry, through the opportunity for the provision of secondary services to the construction team. Services may include, but are not limited to, accommodation, transportation, catering, and laundry services.

Skills development will also be undertaken as part of the construction phase. The skills development will broaden the skills of employees associated with the project and enable possible future opportunities where these become available.

	Without enhancement	**With enhancement**
Extent	Local- Regional (3)	Local- Regional (3)
Duration	Short term (1)	Short term (1)
Magnitude	Minor (2)	Low (2)
Probability	Highly probable (4)	Definite (5)
Significance	**Low (24)**	**Medium (30)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes (enhanced)	

Enhancement:

- A local employment policy must be adopted to maximise opportunities made available to the local labour force.
- Labour must be sourced from the local labour pool where possible. If the necessary skills are unavailable, labour should be sourced from (in order of preference) the greater Khâi-Ma LM, Namakwa DM, Northern Cape Province, South Africa, or elsewhere. Where required, training and skills development programmes must be initiated prior to the commencement of the construction phase.
- Labour force suppliers must as far as possible be sourced locally.
- Where feasible local suppliers and contractors, that are compliant with Broad-Based Black Economic Empowerment (B-BBEE) criteria, must be used as far as possible to ensure that the benefits resulting from the project accrue as far as possible to the local communities which are also likely to be most significantly impacted / affected by the project.
- The recruitment selection process must seek to promote gender equality and the employment of women wherever possible.
- Proof of skills development must be provided to the upskilled individual.

Residual impacts:

- Improved pool of skills and experience in the local area.
- Improved overall quality of life.
- Economic growth for small-scale entrepreneurs.

Table 5.2: Economic multiplier effects impact assessment

Nature: Significance of the impact from the economic multiplier effects from the use of local goods and services.

There are likely to be opportunities for local businesses and service providers to provide services and materials, and in doing so benefit from the construction phase of the Geelstert Grid Connection. Off-site accommodation in the nearest town (Aggeneys), and smaller settlements, may be required for contract workers and certain employees. The economic multiplier effects from the use of local goods and services will include, but is not limited to, construction materials and equipment, and workforce essentials such as catering, trade clothing, safety equipment, accommodation, transportation and other goods.

In terms of business opportunities for local companies, expenditure during the construction phase will create business opportunities for the regional and local economy. The increase in demand for new materials and services in the nearby area may stimulate local business and local economic development. There is likely to be a direct increase in industry and indirect increase in secondary businesses where gaps in the market open up.

	Without enhancement	**With enhancement**
Extent	Local- Regional (3)	Local- Regional (3)
Duration	Short term (1)	Short term (1)
Magnitude	Minor (2)	Low (4)
Probability	Probable (3)	Highly Probable (4)
Significance	**Low (18)**	**Medium (32)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes (enhanced)	

Enhancement:

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

Residual impacts:

- Improved local service sector, growth in local business.

Table 5.3: Assessment of impacts from an influx of jobseekers and change in population in the study area

Nature: In-migration of labourers in search of employment opportunities, and a resultant change in population, and increase in pressure on local resources and social networks, or existing services and infrastructure.

An influx of people looking for employment or other economic opportunities could result in increased pressure being placed on economic and social infrastructure, and a change in the local population. Population change refers to the size, structure, density as well as demographic profile of the local community.

An influx of jobseekers into an area, could lead to a temporary increase in the level of crime, cause social disruption (including an increase in HIV and AIDS and unwanted pregnancies) and put pressure on basic services. This includes municipal services such as sanitation, electricity, water, waste management, health facilities, transportation and the availability of housing. It could also potentially create conflict between locals and outsiders due to potential differences in racial, cultural and ethnic composition. A further negative impact that could result due to an influx of jobseekers into an area is an increase in unemployment levels due to an oversupply of available workforce, particularly with respect to semi- and unskilled workers.

	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Short-term (1)	Short-term (1)
Magnitude	Minor (2)	Small (0)
Probability	Probable (3)	Improbable (2)
Significance	**Low (12)**	**Low (4)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated.
- Develop and implement a local procurement policy which prioritises "locals first" to prevent the movement of people into the area in search of work.
- Engage with local community representatives prior to construction to facilitate the adoption of the "local's first" procurement policy.
- Provide transportation for workers (from towns such as Aggeneys and others) to ensure workers can easily access their place of employment and do not need to move closer to the site.
- Compile and implement a grievance mechanism.
- Appoint a Community Liaison Officer (CLO) to assist with the procurement of local labour.
- Prevent the recruitment of workers at the site.
- Implement a method of communication whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.
- Establish clear rules and regulations for access to the proposed site.
- Appoint a security company and implement appropriate security procedures to ensure that workers do not remain onsite after working hours.
- Inform local community organisations and policing forums of construction activities and times and the duration of the construction phase.

Residual impacts:

- Possibility of outside workers remaining in the area after construction is completed and subsequent pressures on local infrastructure, resources and services.

Table 5.4: Assessment of safety and security impacts

Nature: Temporary increase in safety and security concerns associated with the influx of people during the construction phase.

The commencement of construction activities can be associated with an increase in crime within an area. The perceived loss of security during the construction phase of a project due to an influx of workers and / or outsiders to the area (as in-migration of newcomers, construction workers or jobseekers are usually associated with an increase in crime), may have indirect effects such as increased safety and security concerns for neighbouring properties, damage to property, increased risk of veld fire, stock theft, poaching, crime and so forth.

The labour force will not permanently reside within the area, or have any reason to be on-site after hours.

	Without mitigation	With mitigation
Extent	Local (2)	Local (2)
Duration	Short term (2)	Short term (2)
Magnitude	High (8)	Moderate (6)
Probability	Probable (3)	Improbable (2)
Significance	**Medium (36)**	**Low (20)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- Working hours must be kept within daylight hours during the construction phase.
- Employees must be easily identifiable and must adhere to the security rules of the site.
- Provide transportation for workers (from towns such as Aggeneys and others) to ensure workers do not need to move closer to the site.
- The perimeter of the construction site must be appropriately secured to prevent any unauthorised access to the site. The fencing of the site must be maintained throughout the construction and operation phases.
- The appointed EPC contractor must appoint a security company and implement appropriate security procedures and measures.
- Access in and out of the construction site must be strictly controlled by a security company appointed for the project.
- A Community Liaison Officer (CLO) must be appointed to implement a grievance mechanism. A communication protocol must be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.
- A stakeholder management plan must be implemented by the EPC contractor to address neighbouring farmer concerns regarding safety and security.

Residual impacts:

- Residual impacts related to losses through crime and lasting damage to properties.

Table 5.5: Assessment of impacts on daily living and movement patterns.

Nature: Temporary increase in traffic disruptions and movement patterns during the construction phase.

Project components and equipment will be transported to site using road transport. The N14 national road provides the primary access to the corridor, and can also be accessed via the Loop 10 and Gamoep gravel roads. The Loop 10 gravel road is used by the mines in the area which includes heavy vehicles. The mines and local farmers utilise the gravel roads to access their farms/operations and the surrounding areas.

Increased traffic due to construction vehicles could cause disruptions to the local community and increase safety hazards. The use of local roads and transport systems may cause road deterioration and congestion. This impact could be magnified since roads of a gravel nature are not necessarily designed to carry heavy traffic and are prone to erosion, except where these roads are used and maintained by the mining companies in the area. Noise, vibrations, dust and visual pollution from heavy vehicle traffic during the construction phase could also negatively impact local residents and road users.

Where specific land use activities are being undertaken on affected and adjacent properties, these may be impacted. This could impact land use of portions of the affected property for agricultural activities (i.e. grazing), as

well as affected and surrounding landowners which use their properties for livestock grazing, game farming and mining activities.

	Without mitigation	With mitigation
Extent	Local-Regional (3)	Local (2)
Duration	Short term (1)	Short term (2)
Magnitude	Moderate (6)	Low (4)
Probability	Probable (3)	Probable (3)
Significance	**Medium (30)**	**Low (24)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- Working hours must preferably be restricted to daylight hours during the construction phase. Where deviation of the working hours is required it must be approved by the relevant authorities and surrounding landowners must be notified.
- All vehicles must be road worthy and drivers must be licensed, obey traffic rules, follow speed limits and made aware of the potential road safety issues.
- Construction vehicles should be inspected regularly by the EPC contractor to ensure their road worthiness.
- Adequate and strategically placed traffic warning signs and control measures must be implemented along the N14 and gravel access roads (including the Loop 10 and Gamoep gravel roads) to warn road users of the construction activities taking place for the duration of the construction phase. Warning signs must be visible at all times, and especially at night. Signage must be maintained throughout the construction phase.
- Implement penalties for reckless driving as a way to enforce compliance to traffic rules.
- Avoid heavy vehicle activity through residential areas during "peak" hours (when children are taken to school, people driving to work, etc.).
- The developer and EPC contractor must ensure that all fencing along access roads is maintained in the present condition or repaired if disturbed or damaged due to construction activities.
- The developer and EPC Contractor must ensure that the roads utilised for construction activities are either maintained in the present condition or upgraded if damaged (i.e. wear and tear) due to construction activities.
- A protocol communication must be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.
- Communication channels between the affected and surrounding landowners and the EPC contractor must be established.
- Undertake information sessions with the surrounding communities prior to construction in order to ensure that communities are fully informed of the project to be developed in its final form. This must be undertaken through the appointment of a Community Liaison Officer (CLO).

Residual impacts:

- None anticipated.

Table 5.6: Assessment of nuisance impacts (noise and dust)

Nature: Nuisance impacts in terms of temporary increase in noise and dust.

Nuisance impacts associated with construction related activities include noise, dust, and possible disruption to adjacent properties and the land use activities being undertaken on the adjacent properties at the time of construction.

Site clearing activities increase the risk of dust and noise being generated, which can in turn negatively impact on adjacent properties, especially where noise sensitive land use activities are being undertaken. The movement of

heavy construction vehicles, construction activities and operation of equipment also have the potential to create noise in the area, as well as along the N14 national road, and the Loop 10 and Gamoep gravel roads. The primary sources of noise during construction would be from construction equipment, vehicle and truck traffic. Noise levels can be audible over a large distance although are generally short in duration.

Dust would be generated from construction activities as well as trucks / vehicles driving on gravel access roads. This impact will negatively impact sensitive receptors within the vicinity of the construction activities. The impact of noise and dust on sensitive receptors can be reduced through the application of appropriate mitigation measures.

	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	High (8)	Low (4)
Probability	Highly probable (4)	Probable (3)
Significance	**Medium (44)**	**Low (21)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- The movement of heavy vehicles associated with the construction phase through populated areas must be timed to avoid weekends, public holidays and holiday periods, where feasible.
- Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- A speed limit of 45km/hr must be implemented on gravel roads. Should the speed limit be exceeded appropriate action must be taken against the offender of the rules.
- Ensure all vehicles are road worthy, drivers are licensed and are made aware of the potential noise and dust issues.
- A CLO must be appointed. A method of communication must be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.

Residual impacts:

- Residual damage from construction activities.

Table 5.7: Assessment of visual impacts and impacts on the sense of place and landscape character

Nature: Intrusion impacts from construction activities will have an impact on the areas "sense of place".

Intrusion impacts such as aesthetic pollution (i.e. building materials, construction vehicles, etc.), noise and light pollution will impact the "sense of place" for the local community and the surrounding landowners, specifically where land use activities sensitive to visual impacts and impacts on the "sense of place" are undertaken.

Construction related activities have the potential to negatively impact a local area's "sense of place", as well as the landscape character. Such an impact is likely to be present during the construction phase. It is however expected that the project will mostly affect areas and receptors that have already been exposed to other industrial infrastructure associated with the existing mining activities (i.e. for which the sense of place has already been altered).

Given the location of the Geelstert Grid Connection within an area characterised as having a low population density, and given the project's location within close proximity to existing mining activities and the associated infrastructure, the visual impact is anticipated to be of a low significance. This also includes consideration of the area's sense of place and landscape character from a social perspective.

The identification of the significance of the impact on sense of place for the construction phase was undertaken through the consideration of the Visual Impact Assessment (Environmental Planning and Design, 2020) undertaken for the project. The visual impact is expected to be of a low significance from a visual perspective due to the nature of the infrastructure and the fact that the majority of the affected area is also currently impacted by existing development and future planned electrical infrastructure. The Visual Impact Assessment has informed the visual impact from a social perspective.

	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Short-term (2)	Short-term (2)
Magnitude	Minor (2)	Small (0)
Probability	Improbable (2)	Improbable (2)
Significance	**Low (10)**	**Low (6)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

- Limit noise generating activities to daylight working hours and avoid weekends and public holidays.
- The movement of heavy vehicles associated with the construction phase must be timed to avoid weekends, public holidays and holiday periods where feasible.
- Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers.
- All vehicles must be road-worthy and drivers must be licensed and made aware of the potential road safety issues and need for strict speed limits.
- Communication, complaints and grievance channels must be implemented and contact details of the CLO must be provided to the local community in the study area.
- Ensure proper management and tidiness of the construction site.
- Implement the relevant mitigation measures as recommended in the Visual Impact Assessment.

Residual impacts:

- None anticipated.

5.3 Social impacts during the Operation Phase

As the Geelstert Grid Connection is associated infrastructure for the proposed Geelstert 1 and Geelstert 2 solar PV facilities, it is anticipated to operate for a minimum of 20 years during daylight, 7 days a week. While the grid connection infrastructure will be largely self-sufficient, monitoring periodic maintenance activities will be required during the operation phase.

It must be noted that the ownership of the grid connection infrastructure will be transferred to Eskom following completion of construction, who will be responsible for the operation and maintenance of the infrastructure.

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

- Direct and indirect employment opportunities
- Visual impact and sense of place impacts

» Impacts associated with the loss of agricultural land

Table 5.8: Employment opportunities and skills development

Nature: The creation of employment opportunities and skills development opportunities during the operation phase for the country and local economy. During the operation phase, it is expected that very limited employment opportunities will be available to Eskom Employees, as the maintenance will be undertaken by Eskom, and according to scheduled and preventative maintenance regimes. These opportunities will be available for limited periods of time during this phase of the project and would therefore have a negligible positive impact to the area.		
	Without enhancement	**With enhancement**
Extent	Local (1)	Local (1)
Duration	Short term (2)	Short term (2)
Magnitude	Small (0)	Small (0)
Probability	Probable(3)	Probable (3)
Significance	**Low (9)**	**Low (9)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	No, enhancement is relevant as Eskom employees will be utilized for the maintenance of the grid connection infrastructure.	
Enhancement: None		
Residual impacts: None		

Table 5.9: Assessment of the visual impact and impacts on sense of place

Nature: Visual impacts and sense of place impacts associated with the operation phase of the Geelstert Grid Connection. Given the location of the Geelstert Grid Connection within an area characterised as having a low population density, and given the project's location within close proximity to existing mining activities and the associated infrastructure, the visual impact is anticipated to be of a low significance. This also includes consideration of the area's sense of place and landscape character from a social perspective. The identification of the significance of the impact on sense of place for the construction phase was undertaken through the consideration of the Visual Impact Assessment (Environmental Planning and Design, 2020) undertaken for the project. The visual impact is expected to be of a low significance from a visual perspective due to the nature of the infrastructure and the fact that the majority of the affected area is also currently impacted by existing development and future planned electrical infrastructure. The Visual Impact Assessment has informed the visual impact from a social perspective.		
	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Long-term (4)	Long-term (4)
Magnitude	Low (4)	Minor (2)
Probability	Improbable (2)	Improbable (2)

Significance	**Low (18)**	**Low (14)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

» Maintain and manage the power line servitude to be in a good and neat condition to ensure that no degradation of the area takes place and impacts the visual quality of the area.
» Implement the relevant mitigation measures as recommended in the Visual Impact Assessment for the change in character and sense of place and landscape character.

Residual impacts:

» The visual impact of the Geelstert Grid Connection will remain until the infrastructure is completely decommissioned and removed. Thereafter the impact will be removed.

Table 5.90: Assessment on the loss of agricultural land and overall productivity

Nature: Loss of agricultural land and overall productivity as a result of the operation of the proposed project on an agricultural property.

The corridor of the Geelstert Grid Connection is located on sandy soils which are red and structureless with occasional dunes. In addition, there are no high agricultural potential soils present due to a combination of the sandy textures leading to rapid water infiltration.

The low rainfall in the area means that there is little potential for rain-fed arable agriculture in the area. Arable production would therefore be possible only by irrigation, and no indications of any irrigated areas is available within and surrounding the corridor.

Considering the agricultural potential of the site, the significance of the impact on the loss of agricultural land will be low from a social perspective.

The Soils Impact Assessment (ARC, 2020) was considered for the identification of the significance relating to the impact on loss of agricultural land.

	Without mitigation	**With mitigation**
Extent	Local (1)	Local (1)
Duration	Long term (4)	Long term (4)
Magnitude	Low (4)	Minor (2)
Probability	Improbable (2)	Improbable (2)
Significance	**Low (18)**	**Low (14)**
Status (positive or negative)	Negative	Negative
Reversibility	Reversible	Reversible
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	

Mitigation:

» Keep the project footprint as small as possible.
» Implement mitigation measures recommended by the soils specialist.

Residual impacts:

» None expected to occur.

5.4 Cumulative Impacts

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

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

The Geelstert Grid Connection is proposed within the Springbok Renewable Energy Development Zone (REDZ 8) and within the Northern Strategic Transmission Corridor. The location of corridor is in close proximity to a number of other proposed, approved, and operational grid connection infrastructure, which in some cases is associated infrastructure for other renewable energy developments within the area (refer to **Table 5.11**).

Table 5.11: Other solar energy projects / developments proposed, approved and operational within proximity of the Geelstert Grid Connection.

Project Name	Location	Project Status
Biotherm Aggeneys PV Solar Energy Facility (1 x 40MW PV)	Within Portion 1 of the Farm Aroams 57	Preferred Bidder Round 4 (Operational)
Biotherm Enamandla (4 x 75MW PV)	Within the Remaining Extent of the Farms Hartebeest Vlei 86	Approved
PVAfrica Zuurwater (5 x 75MW PV and 1 x 60MW PV)	Within Portion 3 of the Farm Zuurwater 62	Approved
Boesmanland Solar (1 x 75MW PV)	Within Portion 6 of the Farm Zuurwater 62	Approved
Black Mountain Mine Solar (1 x 19MW PV)	Within Portion 1 of the Farm Aggeneys 65	Approved
ABO Wind Geelstert 1 (1 x 125MW PV)	Within the Remaining Extent of the Farm Bloemhoek 61	In process
ABO Wind Geelstert 2 (1 x 125MW PV)	Within the Remaining Extent of the Farm Bloemhoek 61	In process
ABO Wind Aggeneys 1 (1 x 100MW PV)	Within the Remaining Extent of the Farm Bloemhoek 61	Approved
ABO Wind Aggeneys 2 (1 x 100MW PV)	Within the Remaining Extent of the Farm Bloemhoek 61	Approved

Existing grid connection infrastructure surrounding the Geelstert Grid Connection Corridor includes the Aggeneys PV Solar Energy Facility Substation, the Aggeneys PV Solar energy Facility 66kV Power Line, the Aggeneis-Aries 1 400kV Power Line, the Aggeneis-Paulputs 1 220KV Power Line, the Gamsberg-Midway 1 66kV Power Line, the Aggeneis-Harib 1 220kV Power Line, Aggeneis-Nama 1 220kV Power Line, the Midway Substation, the Gamsberg Substation, the Black Mountain Substation and the Aggeneis Main Transmission Substation (which is the connection point for the Geelstert Grid Connection). Proposed grid connection infrastructure includes the Namies Wind Energy Facility Power Line and the Aggeneys 1 and Aggeneys 2 Power Line (proposed to be located within the assessed corridor for the Geelstert Grid Connection).

Considering the concentration of existing and proposed grid connection infrastructure and solar power energy developments within the surrounding area, it is likely that potential cumulative impacts will occur.

Potential cumulative social impacts identified for the project include positive impacts on the economy, business development, and employment, as well as negative impacts such as an influx of jobseekers and change in the areas sense of place.

A cumulative map is included in **Figure 5.2.**

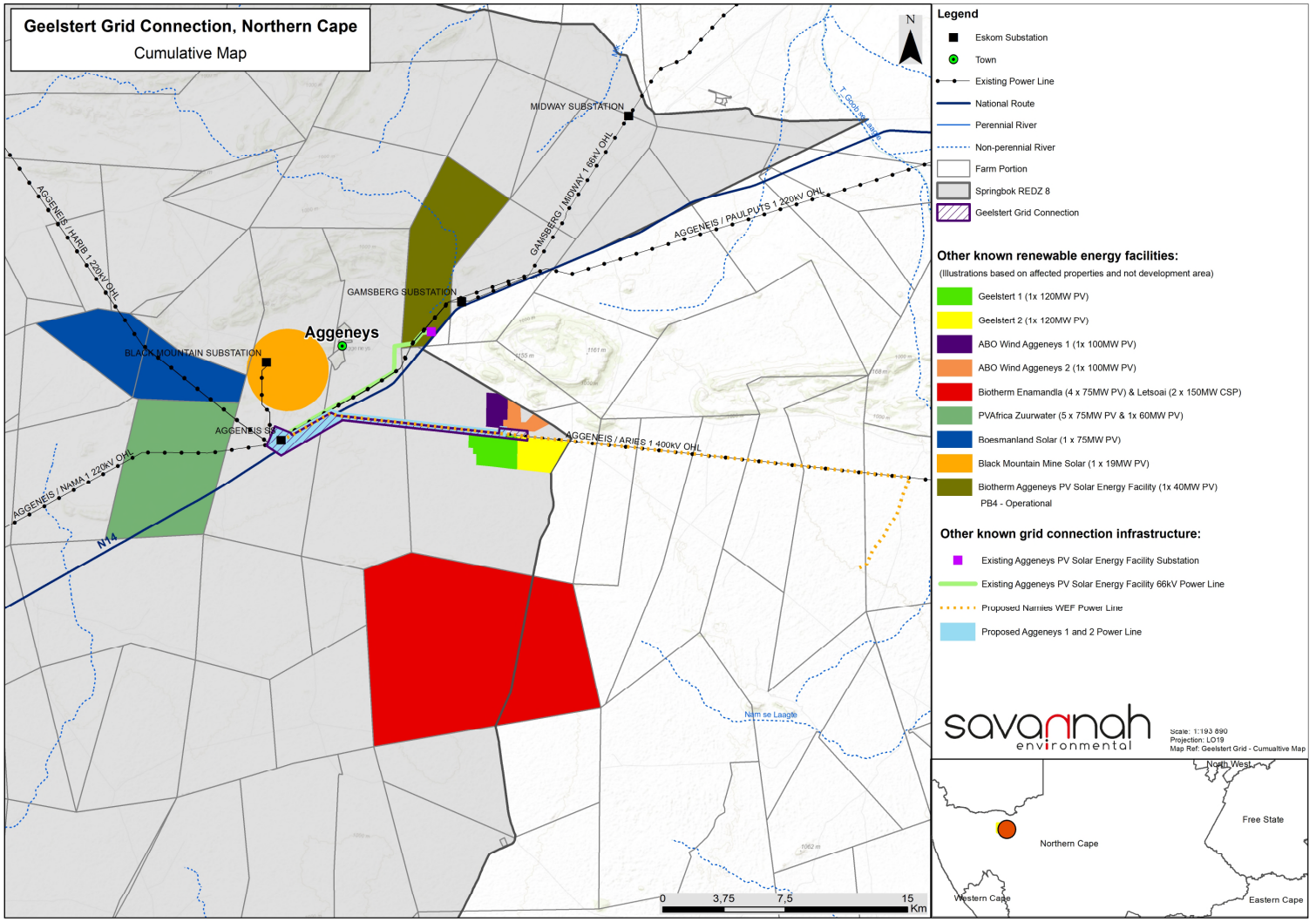

Figure 5.2: Cumulative map of the Geelstert Grid Connection

5.4.1 Cumulative Impacts associated with the Geelstert Grid Connection

Table 5.12: Cumulative impacts of employment opportunities, business opportunities and skills development

Nature: An increase in employment opportunities, skills development and business opportunities with the establishment of more than one solar power facility.

The Geelstert Grid Connection, the establishment of associated grid connection infrastructure for other solar power projects and grid connection infrastructure associated with the national grid within the area has the potential to result in significant positive cumulative impacts, specifically with regards to the creation of a number of socio-economic opportunities for the region, which in turn, can result in positive social benefits. The positive cumulative impacts include creation of employment, skills development and training opportunities, and downstream/spin-off business opportunities. The cumulative benefits to the local, regional, and national economy through employment and procurement of services are more considerable than that of the Geelstert Grid Connection alone.

The positive impacts are mainly associated with the construction phase and not operation phase.

	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Local- Regional-National (4)	Local- Regional-National (4)
Duration	Long term (4)	Long term (4)
Magnitude	Small (0)	Low (4)
Probability	Probable (3)	Highly Probable (4)
Significance	**Low (24)**	**Medium (48)**
Status (positive or negative)	Positive	Positive
Reversibility	N/A	
Irreplaceable loss of resources?	N/A	
Can impacts be mitigated?	Yes (enhanced)	
Confidence in findings	High	

Enhancement:
The establishment of grid connection infrastructure projects within the area has the potential to have a positive cumulative impact on the area in the form of employment opportunities, skills development and business opportunities. The positive benefits will be enhanced if local employment policies are adopted and local services providers are utilised by the developers to maximise the project opportunities available to the local community.

Residual impacts:
- Improved pool of skills and experience in the local area.
- Improved standard of living through the creation of employment opportunities.
- Economic growth for small-scale entrepreneurs.

Table 5.13: Cumulative impact associated with large-scale in-migration of people

Nature: Negative impacts and change to the local economy with an in-migration of labourers, businesses and jobseekers to the area.

While the development of the Geelstert Grid Connection may not result in a major influx of people into the area, the development of several projects at the same time may have a cumulative impact on the in-migration and movement of people. In addition, the fact that the project is proposed within REDZ 8 and within the Northern Strategic Transmission Corridor, which has specifically been earmarked for the development of large scale solar PV energy facilities and grid connection infrastructure, implies that the surrounding area is likely to be subject to considerable amount of future applications and expansion of such infrastructure. Levels of unemployment, and the low level of

earning potential may attract individuals to the area in search of better employment opportunities and standards of living.

It is very difficult to control an influx of people into an area, especially in a country where unemployment rates are high. It is therefore important that the project proponent implement and maintain strict adherence with a local employment policy in order to reduce the potential of such an impact occurring.

	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Local (2)	Local-Regional (3)
Duration	Long term (4)	Long term (4)
Magnitude	Minor (2)	Low (4)
Probability	Very Improbable (1)	Improbable (2)
Significance	**Low (8)**	**Low (22)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Confidence in findings	High	

Mitigation:

» Develop a recruitment policy / process (to be implemented by contractors), which will source labour locally.
» Work together with government agencies to ensure that service provision is in line with the development needs of the local area.
» Form joint ventures with community organisations, through Trusts, which can provide local communities with benefits, such as employment opportunities and services.
» Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated.

Residual impacts

» Possibility of outside workers remaining in the area after the construction is completed and the subsequent potential pressures on local infrastructure, services and poverty problems.

Table 5.14: Cumulative impact on the sense of place and landscape character

Nature: Visual impact and impact on the sense of place and landscape character

The location of the Geelstert Grid Connection, within the Springbok REDZ and the Northern Strategic Transmission Corridor will contribute to the consolidation of infrastructure to this locality and avoid a potentially scattered proliferation of solar energy generation structures and the associated grid connection infrastructure throughout the region. However, the location of the development next to existing grid infrastructure and in an area already subjected to industrial development reduces the impact on the sense of place from a social perspective as the area has been identified and established for the development of large scale solar energy facilities.

The identification of the significance of the cumulative impact on sense of place was undertaken through the consideration of the Visual Impact Assessment (Environmental Planning and Design, 2020) undertaken for the project.

	Overall impact of the proposed project considered in isolation	**Cumulative impact of the project and other projects in the area**
Extent	Local (2)	Local-Regional (3)
Duration	Long term (4)	Long term (4)

Magnitude	Low (4)	Low (4)
Probability	Improbable (2)	Probable (3)
Significance	**Low (20)**	**Medium (33)**
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	No, only best practice measures can be implemented	
Confidence in findings	High	
Mitigation: » Maintain and manage the facilities to be in a good and neat condition to ensure that no degradation of the area and sites takes place and impacts the visual quality of the area. » Implement the relevant mitigation measures as recommended in the Visual Impact Assessment.		
Residual impacts » The visual impact will remain until the infrastructure is completely decommissioned and removed. Thereafter the impact will be removed.		

Cumulative benefits associated with the development of multiple renewable energy facilities and the associated grid connection infrastructure within the area will be experienced, including employment opportunities, skills development, community upliftment, business opportunities and the generation of clean energy.

5.5 Decommissioning Phase

Typically, major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income and will be similar to the impacts during the construction phase associated with construction activities. This has implications for the households who are directly affected, the communities within which they live, and the relevant local authorities. However, due to operation phase employment opportunities being available only to Eskom employees, the impact of the decommissioning phase is expected to be negligible.

5.6 Assessment of Impacts for the No-Go Option:

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

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

» Potential influx of job seekers and an associated change in population and social structures and increase in pressure on basic services.
» Potential safety and security impacts.
» Potential impacts on daily living and movement patterns.
» Potential nuisance impacts (noise and dust).

» Potential visual impact and impact on the sense of place and landscape character.
» Potential loss of agricultural land and overall productivity.

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

» Potential direct and indirect employment opportunities.
» Potential economic multiplier effects.

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

» The benefits would be that there is no disruption from nuisance impacts (noise and dust during construction), visual impacts and safety and security impacts. The impact is therefore neutral.
» There would also be an opportunity loss in terms of job creation, skills development, community upliftment and associated economic business opportunities for the local economy. This impact is considered to be negative.

The option of not developing the Geelstert Grid Connection would compromise the development of the proposed Geelstert 1 and Geelstert 2 solar PV facilities and the socio-economic benefits for local communities associated with the Geelstert Grid Connection (and indirectly the Geelstert 1 and Geelstert 2 solar PV facilities) would be forfeited. With this option the current status of the social aspects associated with the area will remain as it is currently described in this report.

6. CONCLUSION AND RECOMMENDATIONS

This SIA focused on the collection of data to provide an understanding of the current social environment associated with the corridor within which the Geelstert Grid Connection is proposed and identify and assess social issues and potential social impacts associated with the development of such a nature. Secondary data was collected and presented in a literature review and previous data from previous EIA processes undertaken within the corridor and surrounding areas (including Social Impact Assessments) were considered to inform the social impacts associated with the development of the Geelstert Grid Connection. The environmental assessment framework for assessment of impacts and the relevant criteria were applied to evaluate the significance of the potential impacts and to recommend appropriate mitigation and enhancement measures for the identified impacts.

A summary of the potential positive and negative impacts identified for the detailed design and construction, and operation phases are presented in Error! Reference source not found. and Error! Reference source not found.. A summary of the potential positive and negative cumulative social impacts identified for the project is provided in Error! Reference source not found..

Table 6.1: Summary of potential social impacts identified for the detailed design and construction phase of the Geelstert Grid Connection.

Impact	Significance Without Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Positive Impacts		
Creation of direct and indirect employment and skills development opportunities.	Low (24)	Medium (30)
Economic multiplier effects	Low (18)	Medium (32)
Negative Impacts		
In-migration of people (non-local workforce and jobseekers).	Low (12)	Low (4)
Safety and security impacts	Medium (36)	Low (20)
Impacts on daily living and movement patterns	Medium (30)	Low (24)
Nuisance impact (noise and dust)	Medium (44)	Low (21)
Visual, sense of place and general landscape impacts	Low (10)	Low (6)

Table 6.2: Summary of potential social impacts identified for the operation phase of the Geelstert Grid Connection.

Impact	Significance Without Mitigation/ Enhancement	Significance With Mitigation/ Enhancement
Positive Impacts		
Direct and indirect employment and skills development opportunities	Low (9)	Low (9)
Negative Impacts		
Visual, sense of place and general landscape impacts	Low (18)	Low (14)
Impacts associated with the loss of agricultural land.	Low (18)	Low (14)

Table 6.3: Summary of potential cumulative social impacts identified for the Geelstert Grid Connection.

Cumulative Impact	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Positive Cumulative Impacts		
Cumulative impact from employment, skills and business opportunities and skills development	Low (24)	Medium (48)
Negative Cumulative Impacts		
Cumulative impact with large-scale in-migration of people	Low (8)	Low (22)
Cumulative impact on the sense of place and landscape change	Low (20)	Medium (33)

6.1 Key findings and Recommendations

The social impacts identified will be either of a low or high significance. No negative or positive impacts with a high significance rating has been identified to be associated with the development of the Geelstert Grid Connection. All negative social impacts are within acceptable limits with no impacts considered as unacceptable from a social perspective. The recommendations proposed for the project are considered to be appropriate and suitable for the mitigation of the negative impacts and the enhancement of the positive impacts.

Based on the findings of the social impact assessment, the following recommendations are made:

- A Community Liaison Officer (CLO) must be appointed to assist with the management of social impacts and to deal with community issues, if feasible.
- Develop and implement a recruitment protocol in consultation with the municipality and local community leader. Ensure that the procedures for applications for employment are clearly communicated.
- It is recommended that local labour be sourced, wherever possible, to ensure that benefits accrue to the local communities. Efforts should be made to involve local businesses during the construction phase where possible.
- Local procurement of services and equipment is required, where possible, in order to enhance the multiplier effect.
- Involve the community in the project process as far as possible (encourage co-operative decision making and partnerships with local entrepreneurs).
- Employ mitigation measures to minimise the dust and noise pollution and damage to existing roads.
- Safety and security risks should be taken into account during the planning / construction phase of the proposed project. Access control, security and management should be implemented to limit the risk of crime increasing in the area.

All other recommended mitigation measures provided in this SIA Report must also be adhered to.

6.2 Overall Conclusion

The proposed project will create a number of potential socio-economic opportunities and benefits and is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the project is acceptable subject to the implementation of the recommended mitigation and enhancement measures and management actions identified for the project. The project is also considered to be acceptable from a social perspective considering the location of the corridor within the Springbok REDZ and the Northern Strategic Transmission Corridor. Considering the findings of the report and potential for mitigation it is the reasoned opinion of the specialist that the project can be authorised from a social perspective.

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APPENDIX A:
ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

1. Construction Phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Opportunities and benefits associated with the creation of local employment and skills development to be maximised.
Activity/risk source	» Construction procurement practice employed by the Engineering, Procurement and Construction (EPC) Contractor » Developers investment plan
Mitigation: Target/Objective	The developer should aim to employ as many low-skilled and semi-skilled workers from the local area as possible. This should also be made a requirement for all contractors.

Mitigation: Action/control	Responsibility	Timeframe
Where feasible local suppliers and contractors, that are compliant with Broad-Based Black Economic Empowerment (B-BBEE) criteria, should be used as far as possible to ensure that the benefits resulting from the project accrue as far as possible to the local communities which are also likely to be most significantly impacted / affected by the project.	The Proponent & EPC Contractor	Pre-construction & construction phase
Adopt a local employment policy to maximise the opportunities made available to the local labour force.	The Proponent & EPC Contractor	Pre-construction & construction phase
Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated.	The Proponent & EPC Contractor	Pre-construction & construction phase
In the recruitment selection process, a minimum percentage of women must be employed.	EPC Contractor	Pre-construction & construction phase
Set realistic local recruitment targets for the construction phase.	The Proponent & EPC Contractor	Pre-construction & construction phase
Training and skills development programmes to be initiated prior to the commencement of the construction phase.	The Proponent	Pre-construction & construction phase

Performance Indicator	» Implement a business policy document that sets out local employment and targets completed before the construction phase commences. » Employ as many local semi-skilled and unskilled labour as possible. » Training and skills development programme is undertaken prior to the commencement of construction phase.
Monitoring	» The developer and EPC Contractor must keep a record of local recruitments and information on local labour must be shared with the Environmental Control Officer (ECO) for reporting purposes.

OBJECTIVE: Maximise the local economic multiplier effect during the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Potential local economic benefits
Activity/risk source	Developers procurement plan
Mitigation: Target/Objective	Increase the procurement of goods and services especially within the local economy

Mitigation: Action/control	Responsibility	Timeframe
A local procurement policy must be adopted to maximise the benefit to the local economy.	The Proponent & EPC Contractor	Pre-construction & construction phase
Develop a database of local companies, specifically Historically Disadvantaged Individuals (HDIs) which qualify as potential service providers (e.g. construction companies, security companies, catering companies, waste collection companies, transportation companies etc.) prior to the tender process and invite them to bid for project-related work where applicable.	The Proponent & EPC Contractor	Pre-construction & construction phase
Source as much goods and services as possible from the local area. Engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible.	The Proponent	Pre-construction & construction phase

Performance Indicator	» Local procurement policy is adopted. » Local goods and services are purchased from local suppliers, where feasible.
Monitoring	» The developer must monitor the indicators listed above to ensure that they have been met during the construction phase

OBJECTIVE: Reduce the pressure on resources, service delivery, infrastructure and social dynamics from a population change as a result of an increase of construction workers to the area during the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Population changes resulting in additional pressure on resources, service delivery, infrastructure maintenance and social dynamics during the construction phase as a result of an influx of construction workers and job seekers into the area.
Activity/risk source	Influx of construction workers and job seekers.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local infrastructure, services and communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
Implement a grievance and communication system for community issues.	The Proponent & EPC Contractor	Pre-construction & construction phase
Appoint a Community Liaison Officer (CLO).	The Proponent & EPC Contractor	Pre-construction & construction phase

Performance Indicator	» CLO is appointed.
Monitoring	» The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase.

OBJECTIVE: Reduce the pressure on economic and social infrastructure and social conflicts from an influx of jobseekers during the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Decline on local economic and social infrastructure and services as well as a rise in social conflicts from an influx of jobseekers.
Activity/risk source	Influx of jobseekers.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local infrastructure, services and communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
A 'locals first' policy must be implemented for employment opportunities, especially for semi-skilled and low-skilled job categories.	The Proponent & EPC Contractor	Pre-construction & construction phase
The tender documentation must stipulate the use of local labour as far as possible.	EPC Contractor	Pre-construction & construction phase
Inform local community members of the construction schedule and exact size of workforce (e.g. Ward Councillor, surrounding landowners).	EPC Contractor	Pre-construction & construction phase
Recruitment of temporary workers on-site must not be permitted. A recruitment office with a CLO should be established to deal with jobseekers.	EPC Contractor	Pre-construction & construction phase
Set up a labour desk in a secure and suitable area to discourage the gathering of people at the construction site.	EPC Contractor	Pre-construction & construction phase
Have clear rules and regulations for access to the proposed site.	EPC Contractor	Pre-construction & construction phase
All construction workers must be easily identifiable.	EPC Contractor	Pre-construction & construction phase
Local community organisations and policing forums must be informed of construction times and the duration of the construction phase. Also procedures for the control and removal of loiterers at the construction site must be established.	EPC Contractor	Pre-construction & Construction phase
A security company must be appointed and appropriate security procedures must be implemented.	EPC Contractor	Pre-construction & Construction phase

Performance Indicator	» Ensure that a 'locals first' policy is adopted. » Ensure no recruitment takes place on-site. » Control/removal of loiters.
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes

OBJECTIVE: To avoid or reduce traffic disruptions and movement patterns of the local community during the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Increase in traffic disruptions, safety hazards, and impacts on movement patterns of the local community as well as an impact on private property due to the use of the existing roads and heavy vehicle traffic in the local area.
Activity/risk source	Construction activities affecting daily living and movement patterns.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
Working hours must be kept during daylight hours as per the Environment Conservation Act (No. 73 of 1989) (ECA) during the construction phase, and / or as any deviation that is approved by the relevant authorities.	EPC Contractor	Construction phase
All vehicles must be road worthy and drivers must be licensed, obey traffic rules, follow speed limits and be made aware of potential road safety issues.	EPC Contractor	Pre-construction & Construction phase
Heavy vehicles must be inspected regularly to ensure their road safety worthiness. Records pertaining to this must be maintained and made available for inspection as necessary.	EPC Contractor	Construction phase
Adequate traffic warning signs and control measures (including speed limits) must be implemented along access roads to warn road users of the construction activities taking place for the duration of the construction phase. Ensure that all signage is visible at all times (especially at night) and must be maintained throughout the construction phase.	EPC Contractor	Construction phase
Implement penalties for drivers of heavy vehicles for reckless driving or speeding as a way to enforce compliance to traffic rules.	EPC Contractor	Construction phase
Infrastructure such as fencing and gates along access routes must be maintained in the present condition or repaired if disturbed or damaged due to construction activities.	EPC contractor	Construction phase
Ensure that roads utilised are either maintained in the present condition or restored if damaged due to construction activities.	EPC Contractor	Construction phase
A CLO should be appointed and a grievance mechanism implemented. A communication protocol should be implemented whereby procedures to lodge complaints are set out in order for the local community to express any complaints or grievances with the construction process.	EPC Contractor	Pre-construction & Construction phase

Performance Indicator	» Vehicles are roadworthy, inspected regularly and speed limits are adhered to. » Ensure that there are traffic warning signs along access roads, and ensure that these are well illuminated (especially at night). » Roads and electric fencing are maintained or improved upon if disturbed from project activities. » A CLO is appointed for the project.

Monitoring	» The developer and EPC Contractor must monitor the indicators listed above to ensure that they have been met for the construction phase.

OBJECTIVE: To avoid or minimise the potential intrusion impacts such as noise, dust, aesthetic pollution and light pollution during the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Intrusion impacts could impact the area's "sense of place" and heavy vehicles and construction activities can generate noise and dust.
Activity/risk source	Construction activities
Mitigation: Target/Objective	To avoid or minimise the potential intrusion impacts such as aesthetic pollution, noise, dust and light pollution during the construction phase

Mitigation: Action/control	Responsibility	Timeframe
Limit noise generating activities to daylight working hours and avoid undertaking construction activities on weekends and public holidays.	EPC Contractor	Construction phase
The movement of heavy vehicles associated with the construction phase through populated areas should be timed to avoid weekends, public holidays and holiday periods where feasible.	EPC Contractor	Construction phase
Dust suppression measures must be implemented for heavy vehicles such as the wetting of gravel roads on a regular basis and ensuring that vehicles used to transport building materials are fitted with tarpaulins or covers.	EPC Contractor	Construction phase
All vehicles must be road-worthy and drivers must be licensed and made aware of the potential road safety issues and the need for strict speed limits.	EPC Contractor	Construction phase
Communication, complaints and grievance channels must be implemented and contact details of the CLO are to be provided to the local community and affected and adjacent landowners.	EPC Contractor	Construction phase
Ensure that noise generated by machinery is within acceptable limits and implement silencers where required.	EPC Contractor	Construction phase
Ensure that the construction site is kept clean and is maintained within a good condition which includes the removal of waste as and when required.	EPC Contractor	Construction phase
Ensure that the lighting used does not spill into the adjacent surrounding areas.	EPC Contractor	Construction phase
Ensure that damage caused by construction related traffic / project activities to the existing roads is repaired before the completion of the construction phase.	EPC Contractor	Construction phase
A speed limit of 45km/hr should be implemented on gravel roads.	EPC Contractor	Construction phase

Performance Indicator	» Limit noise generating activities. » Dust suppression measures implemented for all heavy vehicles that require such measures during the construction phase. » Enforcement of strict speeding limits.

	» CLO available for community grievances and communication channel. » Road worthy certificates are in place for all vehicles.
Monitoring	» The EPC contractor must monitor the indicators to ensure that they have been met for the construction phase

OBJECTIVE: To avoid or reduce the possibility of the increase in crime and safety and security issues during the construction phase

Project component/s	Construction of the proposed project
Potential Impact	Increase in crime due to influx of non-local workforce and job seekers into the area.
Activity/risk source	Safety and security risks associated with construction activities.
Mitigation: Target/Objective	To avoid or minimise the potential impact on local communities and their livelihoods.

Mitigation: Action/control	Responsibility	Timeframe
Working hours to be restricted to daylight hours as per the ECA during the construction phase, and / or as any deviation that is approved by the relevant authorities.	EPC Contractor	Construction phase
Employees should be easily identifiable and must adhere to the security rules of the project site.	EPC Contractor	Pre-construction & Construction phase
The perimeter of the construction site is to be appropriately secured to prevent any unauthorised access to the site. The fencing of the site is to be maintained throughout the construction period.	The Proponent & EPC Contractor	Pre-construction & Construction phase
Local community organisations and policing forums must be informed of construction times and the duration of the construction phase.	The Proponent & EPC Contractor	Pre-construction & Construction phase
Access in and out of the construction site should be strictly controlled by a security company.	EPC Contractor	Construction Phase
A security company is to be appointed and appropriate security procedures are to be implemented.	EPC Contractor	Construction Phase
No unauthorised entry to the construction site is to be allowed. Access control is to be implemented.	EPC Contractor	Construction Phase
Open fires on the construction site for heating, smoking or cooking are not allowed, except in designated areas.	EPC Contractor	Construction phase
The contractor must provide adequate firefighting equipment on site and provide firefighting training to selected construction staff.	EPC Contractor	Pre-construction & Construction phase
A comprehensive employee induction programme must be developed and utilised to cover land access protocols, fire management and road safety.	EPC Contractor	Pre-construction & Construction phase
Have designated personnel trained in first aid on site to deal with smaller incidents that require medical attention	EPC Contractor	Pre-construction & construction phase

Performance Indicator	» Employee induction programme, covering land access protocols, fire management and road safety » The construction site is appropriately secured with a controlled access system

	» Ensure a security company is appointed and appropriate security procedures and measures are implemented
Monitoring	» The developer and EPC contractor must monitor the indicators listed above to ensure that they have been met for the construction phase

2. Operation Phase

OBJECTIVE: Maximise local employment and skills opportunities associated with the operation phase of the project

Project component/s	Operation and maintenance of the proposed project.
Potential Impact	Loss of opportunities to stimulate production and employment of the local economy.
Activity/risk source	Labour practices employed during operations.
Mitigation: Target/Objective	Maximise local community employment benefits in the local economy where this will not solely be relevant to Eskom.

Mitigation: Action/control	Responsibility	Timeframe
Adopt a local employment policy to maximise the opportunities made available to the local labour force.	The Proponent & Operation and Maintenance (O&M) Contractor	Operation phase
Establish vocational training programs for the local labour force to promote the development of skills.	The Proponent	Operation phase

Performance Indicator	» Percentage of workers that were employed from local communities. » Number of people attending vocational training on an annual basis.
Monitoring	» The developer must keep a record of local recruitments and information on local labour to be shared with the ECO for reporting purposes.

OBJECTIVE: Minimise visual impact and the impact on sense of place during the operation phase

Project component/s	Operation and maintenance of the proposed project.
Potential Impact	Visual impacts and sense of place impacts associated with the operation phase of the project
Activity/risk source	Negative impact on receptors within the surrounding area
Mitigation: Target/Objective	Minimise visual impact and the impact on the sense of place

Mitigation: Action/control	Responsibility	Timeframe
Maintain and manage the facility to be in a good and neat condition to ensure that no degradation of the area and associated infrastructure servitudes takes place and impact the visual quality of the area.	The Proponent & Operation and Maintenance (O&M) Contractor	Operation phase

Implement the relevant mitigation measures as recommended in the Visual Impact Assessment for the change in character and sense of place of the landscape setting.	The Proponent	Operation phase

Performance Indicator	» No complaints are submitted regarding the management of the project.
Monitoring	» The proponent and O&M Contractor must monitor the indicators listed above to ensure that they have been met for the operation phase

APPENDIX B:
EXTERNAL REVIEWER LETTER