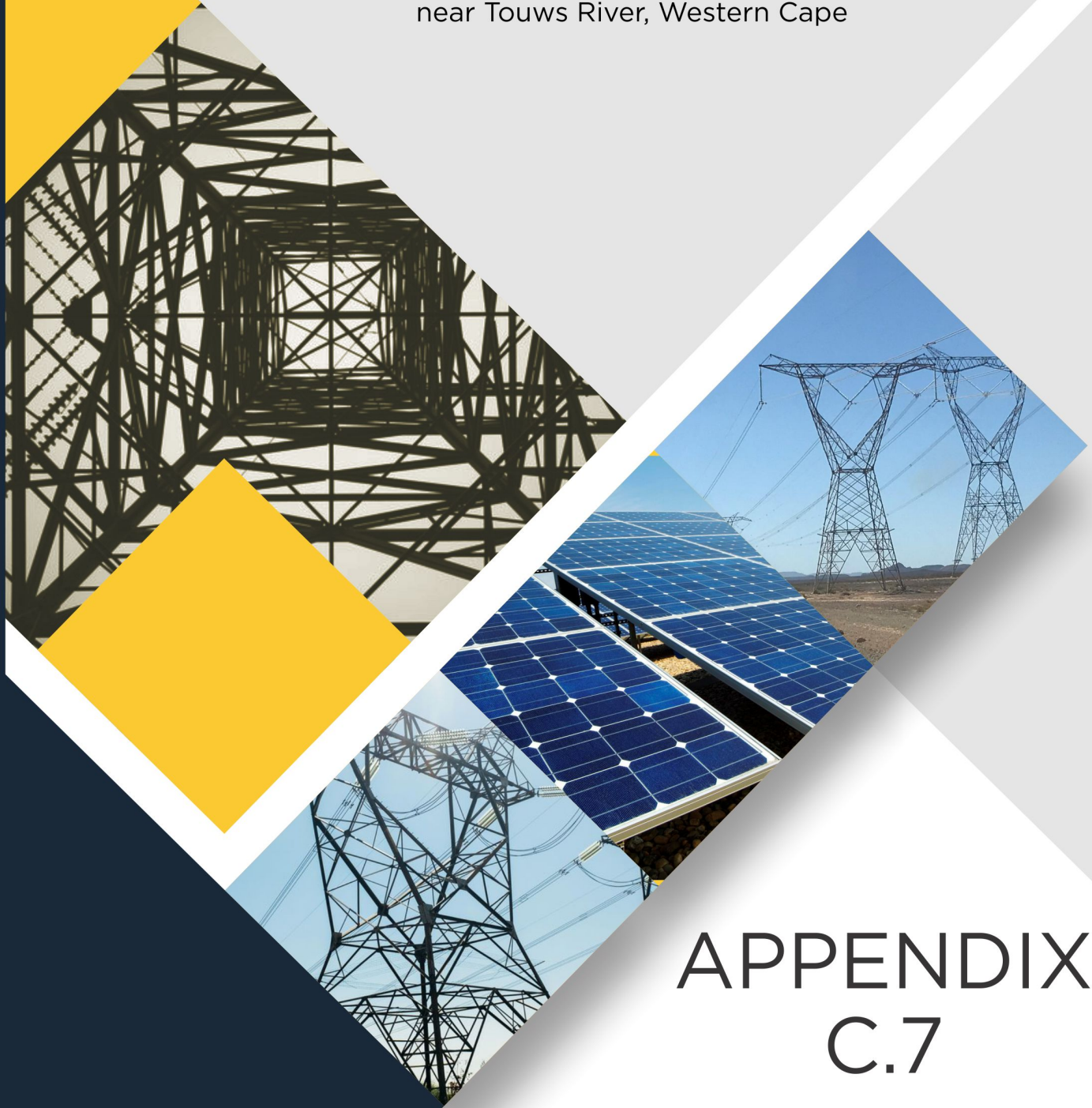
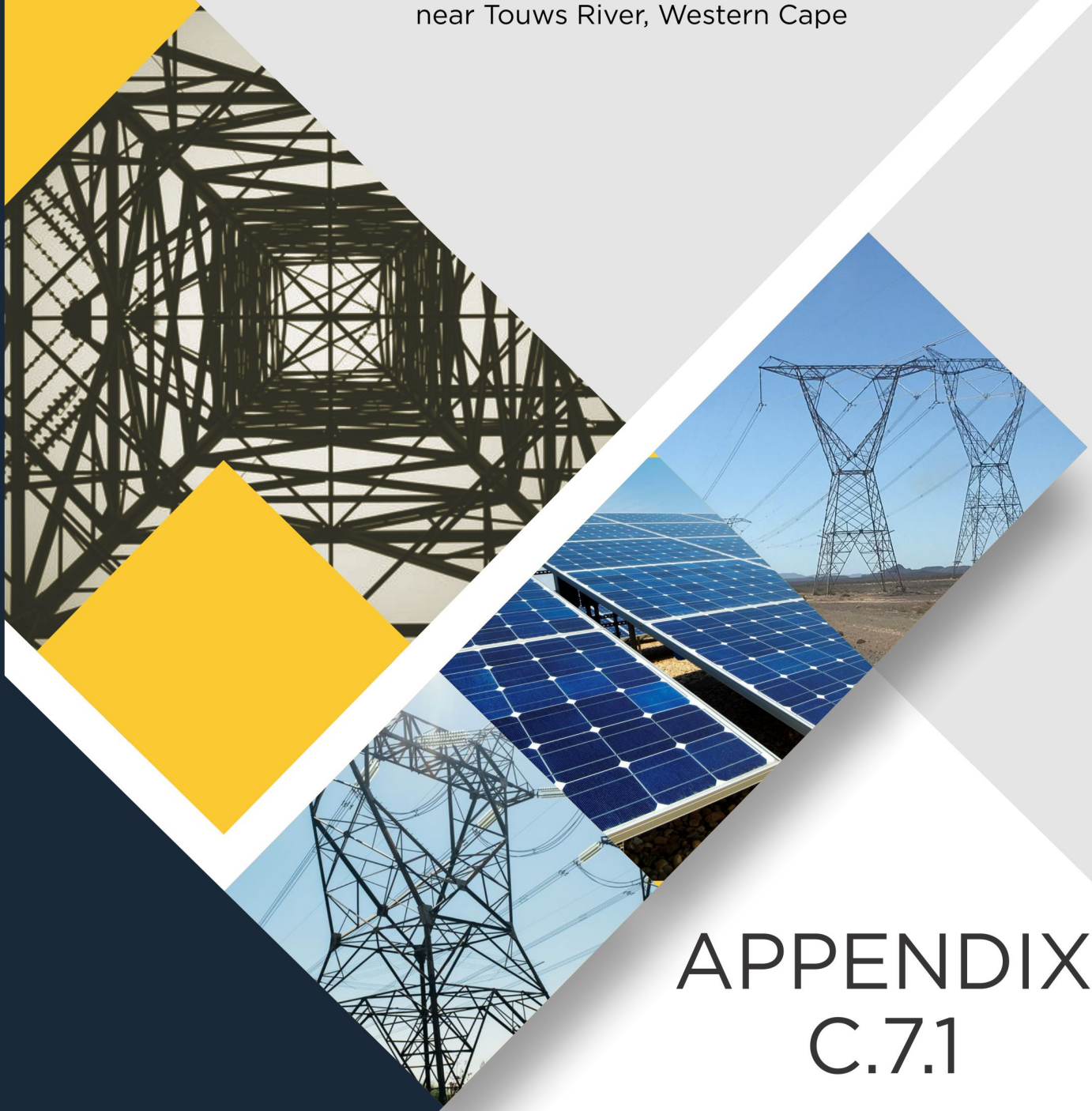
Basic Assessment for the Proposed Development of Electrical Grid Infrastructure to support the proposed nine 175 MW Solar Photovoltaic Facilities and associated Infrastructure (i.e. Witte Wall PV 1, Witte Wall PV 2, Grootfontein PV 1, Grootfontein PV 2, Grootfontein PV 3, Hoek Doornen PV 1, Hoek Doornen PV 2, Hoek Doornen PV 3, and Hoek Doornen PV 4), near Touws River, Western Cape



APPENDIX C.7

Socio-Economic Assessment

Basic Assessment for the Proposed Development of Electrical Grid Infrastructure to support the proposed nine 175 MW Solar Photovoltaic Facilities and associated Infrastructure (i.e. Witte Wall PV 1, Witte Wall PV 2, Grootfontein PV 1, Grootfontein PV 2, Grootfontein PV 3, Hoek Doornen PV 1, Hoek Doornen PV 2, Hoek Doornen PV 3, and Hoek Doornen PV 4), near Touws River, Western Cape



APPENDIX C.7.1

Socio-Economic Assessment for Witte Wall

SOCIO ECONOMIC SPECIALIST ASSESSMENT

BASIC ASSESSMENTS FOR THE PROPOSED DEVELOPMENT OF TWO 175 MW SOLAR PHOTOVOLTAIC FACILITIES, ELECTRICAL GRID INFRASTRUCTURE, AND ASSOCIATED INFRASTRUCTURE FOR THE WITTE WALL PROJECTS PV 1 AND PV 2, NEAR TOUWS RIVER, WESTERN CAPE PROVINCE

Report prepared for:	*Report prepared by:*
CSIR – Environmental Management Services P O Box 320 Stellenbosch 7599 South Africa	Sandra Hill – Independent Consultant Wolfe St Wynberg 7200 South Africa

4 November 2020

Executive Summary

This socio-economic impact study, includes the individual land parcels on which the proposed projects will be developed if approved, the surrounding area, known as the Tankwa Karoo (of which the land parcels are a part), and the nearest towns, Touws River and Ceres, as the anticipated socio-economic impacts will be spread to varying degrees across these localities. While Touws River falls within the Breede Valley Local Municipality, the project sites and Ceres fall within the Witzenberg Local Municipality.

The following socio-economic risks and challenges characterise the study area:

- High levels of unemployment
- Poverty
- Food insecurity
- Slow economic growth
- Marginalisation of rural communities
- Persisting drought
- Poor service delivery
- High levels of drug and/or alcohol abuse
- Deteriorating education outcomes
- Increasing rate of teenage pregnancy
- Social grant dependency
- Increasing gang activity
- COVID-19 hotspots (Touws River and Ceres) and the continuing impact of the pandemic on lives and livelihoods

Positive socio-economic impacts likely to result from the proposed projects include the creation of skilled and unskilled employment opportunities for the duration of the construction and the operational phases. While the developer may not be able to fill skilled positions with locals, unskilled labour positions can be filled locally should the recommended mitigation measures be implemented. Communities will also likely benefit from the concomitant growth opportunities for local businesses and support service industries, and increased local spending. These impacts will benefit local communities through the creation of income generation opportunities and human development through skills development and training. In addition, local communities will benefit from the proposed Economic Development Plan if well designed and well implemented.

On a macro level, positive impacts also include the generation of clean energy for the national grid which is under severe pressure and unable to meet demand, thereby curtailing the economic advancement of the country. Therefore, the proposed development can also be seen as creating a positive social benefit for society.

Negative socio-economic impacts likely to result from the project include an influx of opportunistic job seekers which could strain social structures and support networks, increase risky social behaviour such as prostitution and drug abuse, and burden existing services. Unsuccessful job seekers and other disenchanted community members who, realistically or unrealistically, expect to gain from the proposed development could engender ill feelings towards the proposed projects, and potentially lead to protest, damage to project property, and/or intimidation of staff.

Furthermore, given the time-bound nature of the development, the inevitable job losses at the end of each phase are high. The additional movement of people and vehicles to the site, particularly during the construction phase may increase the chances of crime on surrounding properties and a decline in eco-tourism. This (negative impact) can be managed by implementing recommended mitigation measures.

The overall significance rating of the negative socio-economic impacts associated with the proposed projects during the construction phase is very low to low; whereas the overall significance rating of the positive socio-economic associated with the proposed projects during construction is low to moderate, should mitigation and enhancement measures be implemented respectively.

The overall significance rating of the positive socio-economic impacts associated with the proposed projects during the operation phase is very low to high, should enhancement measures be implemented.
The overall significance rating of the socio-economic impacts associated with the proposed projects during decommissioning phase is low (negative) and low (positive), should mitigation measures and enhancement measures be implemented, respectively.

The cumulative impact during the construction and operational phases is low (negative) to moderate (positive). There is no cumulative impact of the decommissioning phase.

Given the overall very low to low significance of potential negative impacts associated with the projects, as compared to the overall very low to high significance of potential positive impact of the projects; it can be concluded that the prospective socio-economic benefits of the proposed projects outweigh the socio-economic losses/impacts.

From a social impact perspective, in light of the above argument, the specialist conducting this Socio-economic Assessment is of the opinion that the proposed projects should be authorised by the competent authority.

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List of Abbreviations

ART	Anti-retroviral Treatment
BA	Basic Assessment
BVLM	Breede Valley Local Municipality
CSIR	Council for Scientific and Industrial Research
CWDM	Cape Winelands District Municipality
DEFF	Department of Environment, Forestry and Fisheries
EA	Environmental Authorisation
ECD	Early Childhood Development
EDP	Economic Development Plan
EEA	Employment Equity Act
EIA	Environmental Impact Assessment
FET	Further Education and Training
HDI	Human Development Indicator/Index
MLL	Minimum Living Level
MW	Megawatt
NMR	Neonatal Mortality Rate
PV	Photovoltaic
NEMA	National Environmental Management Act
NMD	Notified Maximum Demand
IDP	Integrated Development Plan
REDZs	Renewable Energy Development Zones
REIPPPP	Renewable Energy Independent Power Producer Procurement Program
SDF	Spatial Development Framework
SIA	Socio-economic Impact Assessment
WLM	Witzenberg Local Municipality

Glossary

Definitions	
Dependency ratio	Refers to the number of persons on average dependent on every working person in a region (the number of people supported by each economically active person. The lower the dependency ratio the better.
Poverty	The inability to attain a minimal standard of living.
Minimum Living Level	Reflects the minimum amount a household needs to meet their basic need. The MLL for the Western Cape was R1606 per month in 2017.
Working Age Population	The portion of the population aged between 15 – 64.
Unemployment Rate	Refers to individuals without work, but actively seeking work in a recent past period (usually four weeks), and are currently available for work.
Gross Domestic Product	The sum of value added created by all residents within a certain period which is commonly a year.
Human Development Indicator/Index	The HDI serves as a composite indicator of social and economic development and overall well-being.
Human Capital	Refers to the physical and mental ability and the well-being of the population of an area.
Study Area	Refers to the area surrounding the site of the proposed development within an approximately 80km radius.

SOCIO-ECONOMIC IMPACT ASSESSMENT

This report serves as the Socio-economic Specialist Assessment that was prepared as part of the Basic Assessment (BA) for the proposed development of two 175 MW Solar Photovoltaic (PV) facilities, electrical grid infrastructure (EGI), and associated infrastructure (i.e. Witte Wall PV 1 and Witte Wall PV 2), near Touws River in the Western Cape Province.

The Applicant is proposing to develop nine solar PV facilities, nine power lines and associated infrastructure to link the proposed PV facilities to the Eskom Kappa Substation. There are nine separate Project Applicants. Two PV facilities are being proposed on the farm Witte Wall 171; three PV Facilities are being proposed on the farm Grootfontein 149; and four PV Facilities are being proposed on the Farm Hoek Doornen 172. This Socio-Economic Impact Assessment deals with the Witte Wall projects.

1. Introduction

1.1. Scope, Purpose and Objectives of this Specialist Report

This Socio-economic Impact Assessment (SIA) Report investigates the potential social disruptors and possible associated social impacts that may ensue from the development of the two proposed 175 MW Solar PV facilities and associated infrastructure on the farm Witte Wall 171.

This socio-economic impact study includes the individual land parcels on which the proposed projects will be developed if approved, the surrounding area known as the Tankwa Karoo (of which the land parcels are a part of), and the two nearest towns, Touws River and Ceres, as the anticipated socio-economic impacts will be spread to varying degrees across these localities.

The project is located within the Witzenberg Local Municipality (WLM). However, the closest town, Touws River (76 km by road), is located in the Breede Valley Local Municipality (BVLM), while the next closest town, Ceres (78 km by road) lies in the WLM.

Social disruptors and impacts most likely to significantly influence social and cultural concerns, values, consequences, and benefits to communities are the focus of this SIA.

The objective of this SIA is to assist with informed decision-making by the competent authority, Department of Environment, Forestry and Fisheries (DEFF), as well as the development of appropriate management measures relating to socio-economic impacts linked to the proposed project.

The purpose of the SIA is as follows:

- Undertake a policy review and assess the alignment of the proposed project with the national, provincial, and local socio-economic policies, with a focus on the compatibility of the project with the spatial planning, development objectives and land use management plans of the respective authorities.
- Profile the socio-economic status quo of the study area using secondary data.
- Identify and analyse the potential socio-economic impacts (direct, indirect, and cumulative) of the proposed project.
- Evaluate the potential positive impacts versus any negative socio-economic effects that may ensue as a result of the change in status quo of the affected and benefiting communities and economies.

1.2. Details of Specialist

This specialist assessment has been undertaken by Sandra Hill, an independent social science consultant, in response to a request by the Council for Scientific and Industrial Research (CSIR) on behalf of Veroniva (PTY) Ltd (the project developer), and forms part of a BA for the development of the proposed 175 MW Solar PV facilities, EGI, and associated infrastructure in the Tankwa Karoo, equidistant from the towns of Touws River and Ceres in the Komsberg Renewable Energy Development Zone (REDZ) (REDZ 2), located in the Western Cape Province. A curriculum vitae is included in Appendix A of this specialist assessment.

1.3. Terms of Reference

The following terms of reference were provided for this study:

- Comply with the Assessment Protocols that were published on 20 March 2020, in Government Gazette 43110, GN 320 (i.e. Part A, which provides the Site Sensitivity Verification Requirements where a Specialist Assessment is required but no Specific Assessment Protocol has been prescribed).
- Compile a Socio-economic Assessment in compliance with Appendix 6 of the 2014 National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (as amended). The Specialist Assessment must also be in adherence to any additional relevant legislation and guidelines that may be deemed necessary.
- Provide review input on the preferred infrastructure layout following the sensitivity analysis and layout identification (as applicable).
- Describe the socio-economic context of the study area, focusing on aspects that are potentially affected by a solar PV project and associated infrastructure, and taking into consideration the current situation as well as the trends, the local planning (Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs)), other developments in the area.
- Apply a variety of appropriate options for sourcing information, such as a review of analogous studies, available databases and social indicators, and use of interviews with key affected parties such as local communities, local landowners and government officials (local and regional) etc. and a site visit, if necessary. The REDZ Phase 1 Strategic Environmental Assessment (SEA) (DEA, 2015) should also be considered.
- Consider social issues such as potential in-migration of job seekers, opportunities offered by training and skills development, phasing of employment over the duration of the Renewable Energy Independent Power Producer Procurement Program (REIPPPP), cumulative effects with other REIPPPP projects in the local area, implications for local planning and resource use.
- Evaluate the implications of the social investment programme associated with REIPPPP projects on the local socio-economic context.
- Identify and assess the potential direct, indirect and cumulative impacts of the proposed development on the receiving environment from a socio-economic perspective.
- Identify any protocols, legal and permit requirements that are relevant to this project and the implications thereof.
- Provide recommendations with regards to potential monitoring programmes.
- Determine mitigation and/or management measures which could be implemented to as far as possible reduce the effect of negative impacts and enhance the effect of positive impacts. Also identify best practice management actions, monitoring requirements, and rehabilitation guidelines for all identified impacts for inclusion in the EMPr.
- Incorporate and address all issues and concerns raised by Stakeholders, Competent Authority, I&APs and the public during the Public Participation Process (where relevant and applicable).
- Review the Generic EMPr for 1) Power Lines and 2) Substations (GN 435) and confirm if there are any specific environmental sensitivities or attributes present on the site and any resultant site-specific impact management outcomes and actions that are not included in the pre-approved generic EMPr (Part B – Section 1).

2. Approach and Methodology

The approach to and methodology adopted for the SIA is discussed in this section.

Type of Specialist Investigation	Socio-economic Impact Assessment
Date and Duration of Specialist Site Visit	7 September 2020 (1 day)
Season	Spring – however the season is not relevant to the assessment and has no bearing on its findings.
Relevance of Season	The season in which the site visit was undertaken has no relevance and bearing on the findings of the assessment.

Approach: SIA Guidelines

The Guideline for Social Impact Assessment (Barbour, 2007) is used to provide policy and quality control guidelines for the SIA process used in this report. The guideline's key activities, objectives and areas of particular interest for assessment are elaborated on below.

Social Impact Assessment Guidelines (Barbour, 2007)
1. Key Activities
Describe and obtain an understanding of the proposed intervention (type, scale, location), the communities likely to be affected and determine the need and scope of the SIA
Collect baseline data on the current social environment and historical social trends
Identify and collect data on the SIA variables and social change processes related to the proposed intervention
Assess and document the significance of social impacts associated with the proposed intervention
Identify alternatives and mitigation measures
2. Key Objectives
Assess the proposed development in terms of its fit with the relevant legislative, policy and planning requirements
Identify and assess the factors that contribute to the overall quality of life (social wellbeing) of people not just their standard of living
Identify and assess the needs of vulnerable, at risk, groups and/or ethnic minorities or indigenous peoples
Clearly identify which individuals, groups, organisations and communities stand to benefit from the proposed intervention and those that stand to be negatively affected. In so doing the assessment must identify and emphasize vulnerable and underrepresented groups
Recognise that social, economic and biophysical systems and impacts are inextricably interconnect, and identify and understand the impact pathways created when changes in one domain trigger impacts across other domains
Acknowledge and incorporate local knowledge and experience into the assessment process
Identify and assess development opportunities and not merely the mitigation of negative or unintended outcomes
3. Key Areas of Particular Interest
Where vulnerable communities are present
With high poverty and unemployment levels
Where access to services, mobility and community networks are affected
Where local livelihoods depend on access to and use of environmental resources and services
Of important tourism or recreation value
Where the existing character and "sense of place" will be altered

Data Collection

To create a comprehensive understanding of the socio-economic environment that might be affected by the proposed development, a socio-economic overview was developed incorporating both secondary and primary data collection.

Data sources consulted to compile the socio-economic baseline include internet sources, for example, Statistics South Africa, to provide a broad overview of the socio-economic setting of the area; National, provincial and local policy and plans to determine whether the proposed project is aligned with the planning objectives of the various spheres of government, as well as previously conducted EIAs conducted to determine the potential impact and linkages to this assessment.

Primary data collection was done through face-to-face and/or telephonic interviews with land owners of the affected properties, municipal officials and community role-players to obtain additional context-specific information.

A site visit was undertaken on 7 September 2020 to the affected project farms, Touws River, and Ceres.

Data Analysis
Data analysis was conducted by evaluating relevant data from various sources published over different time periods in order to gain a long-term perspective. Information was analysed to establish status quo socio-economic conditions, prevailing social structures, local demographic trends, and potential change processes present in the study area.

The overview was then used to interpret the impacts and measure the extent of socio-economic impacts that could be derived from the proposed activities.

2.1. Information Sources

The project made use of both primary and secondary data to assess the impacts and desirability of the proposed project.

Secondary data analysed was mainly derived from the following sources:

Data / Information	Source	Date	Type	Description
The South African Guideline for Involving Social Assessment Specialists in EIA (Barbour, 2007)	Western Cape Government	2007	Guidelines	Professional guidelines for conducting social impact assessment studies in South Africa
Statistics South Africa Census, 2011	Stats SA	2011	Census	Latest available census data
Statistics South Africa Community Survey, 2016	Stats SA	2016	Census	Latest available community survey data
Cape Winelands District Municipality Integrated Development Plan (IDP)	Cape Winelands District Municipality	2017/18 – 2021/22	Overview and planning document	Updated contextual overview and IDP
Witzenberg Local Municipality (WLM) Amended IDP	WLM	2017 – 2022	Overview and planning document	Updated contextual overview and IDP
Breede Valley Local (BVLM) Municipality Review of the IDP	BVLM	2020 - 2021	Overview and planning document	Updated contextual overview and IDP
National Development Plan 2030	National Government	2012	National planning document	Outlines long term development plan for South Africa
Municipal Capacity Assessment Witzenberg WC022	Municipal Demarcation Board	2018	Assessment	Overview of the environmental situation of the municipality, and summary of capacity information
Municipal Capacity Assessment Breede Valley WC025	Municipal Demarcation Board	2018	Assessment	Overview of the environmental situation of the municipality, and summary of capacity information
Socio-economic Profile: BVLM	Western Cape Government	2019	Profile	Socio-economic overview
Socio-economic Profile: WLM	Western Cape Government	2018	Profile	Socio-economic overview
Farmworker Household Survey Report	Western Cape Government	2014/15	Census	Comprehensive census of farm workers and dwellers in the CWDM.
Cape Winelands District Municipality Draft Spatial	Western Cape Government	2019	Strategic planning	Strategic planning

Data / Information	Source	Date	Type	Description
Development Framework (SDF)				
WLM SDF	WLM	2019	Spatial development	Spatial development planning

Primary data was generated through face-to-face and/or telephonic interviews with the following:

Name	Designation	Location	Technique	Date 2020
Jan Minnaar	Farm representative	Farm Grootfontein 149	Telephonic	8 September
Philip van Heerden	Farm Manager	Farm Witte Wall 171	Face-to-face	7 September
Erhard Buhr	Land Owner	Farm Hoek Doornen 172	Telephonic	5 October
Andre Vermeulen	Land Owner and interim chairperson of the Tankwa Ceres Karoo Farmers' Union	Farm Die Brak 241	Face-to-face	2 November
Leon Teunissen	Land Owner	Farm Karee Kolk 174	Telephonic	2 November
Brian Stander	National Department of Public Works	Farm Platfontien 240	Telephonic	23 October
Adwin Zinkfontein	Operational Manager	Touws River Clinic BVLM	Face-to-face	7 September
Riaan Fick	Socio-economic Development Manager	WLM	Telephonic	8 September
Nina King	Business Owner	Touws River	Face-to-face	7 September
Ashleigh Sibanda	Programme Manager at Knowledge Pele	Johannesburg	Telephonic	10 September

2.2. Assumptions, Limitations and Disclaimer

This SIA is based on several key assumptions, which are aligned with industry practice, and is consequently, subject to certain limitations. Therefore, relevant assumptions and limitations should be considered when deliberating this report. However, the assumptions and limitations are not expected to invalidate the findings of this report.

Key assumptions:

- The SIA is based on the technical information provided by the Applicant and which is assumed to be accurate (e.g. the proposed location, extent, scale of the project).
- The SIA is primarily based on secondary data. Accordingly, except for a single site visit and interviews as listed above, no primary research or social surveys have been conducted as part of this assessment. However, the level of assessment and its attendant data sources were deemed adequate for this study.
- The accuracy of secondary data sources directly influences the quality of this SIA. However, the data used in this assessment is published by reputable authors and therefore deemed to be of sufficient quality for this study.
- With regard to the primary data sources, it is assumed that the questions asked during the interviews were answered accurately.
- It is assumed that the socio-economic conditions, as found during the assessment, will not undergo significant changes between the date of data collection and the release of this report.

Key limitations:

- While of high quality and reputability, most secondary sources were published before the outbreak of COVID-19 and the concomitant widespread social and economic devastation.

- Socio-economic impacts are inherently interconnected and do not lend themselves to clear disaggregation into distinct impacts.
- Socio-economic impacts are notoriously difficult to quantify and represents different levels of significance to different individuals. Accordingly, the same impact might be experienced in vastly different ways by different individuals within the same community.
- Socio-economic impacts, being the product of human behaviour, are derived from baseline information and anticipated project implications; as opposed to being empirically measured.
- Humans and the communities in which they live are adaptable, dynamic and open systems. Accordingly, the communities under investigation in this SIA might react to various factors not necessarily related to the proposed development; thereby complicating clear inference of observed social change to anticipated project impacts.
- Secondary baseline information is useful in establishing a municipal-wide picture of the most prominent socio-economic trends; it is not particularly informative with regards to the specific conditions present in the Tankwa Karoo and in the towns of Touws River or Ceres.
- As at October 2020, there are no sensitivity layers on the Screening Tool for socio-economic features, and as such the environmental sensitivity as identified by the Screening Tool cannot be confirmed or disputed.

Approved and proposed energy developments within a 30 km radius were taken into consideration as they have the potential to create supplementary positive or negative socio-economic impacts identified in this study or vice versa. A list of these projects is provided in Section 6 of this report.

2.3. Consultation Processes Undertaken

Face-to-face and telephonic interviews were conducted with selected landowners, farm representatives, and Breede Valley, and Witzenberg Municipal officials. Participant observation conducted during a one-day site visit encompassing the affected project farms, Ceres, and Touws River.

3. Description of Project Aspects relevant to Socio-economic Assessment

As noted above, the Project Applicant is proposing to design, construct and operate nine 175 MW Solar PV power generation facilities north-east of Ceres in the Western Cape Province (referred to as Ceres Solar PV Development). The proposed project will make use of PV solar technology to generate electricity from the sun. Each solar PV facility will have a range of associated infrastructure, including an on-site substation, and will connect to the Eskom Kappa Substation via a 132 kV power line. The proposed projects will take place within REDZ 2, known as the Komsberg REDZ.

The proposed facilities will be constructed on portions of the following farms:
- Grootfontein (5/149 and RE 149)
- Hoekdooren (172)
- Witte Wall (171)

The power lines will traverse the aforementioned farms, as well as Die Brak (Farm 241) and Platfontein (Farm 240). Assessment of nine 132kV power lines covers the worst-case scenario. However, this number may be reduced depending on which projects win preferred bidder status in terms of the REIPPPP.

As noted above, this SIA deals with the proposed Witte Wall PV 1 and Witte Wall PV 2 projects.

Each 175 MW plant will cover an approximate footprint of 250 hectares. The footprint includes the PV facility and infrastructure such as internal roads for each PV facility, while some of the main access roads will be outside of the 250 hectares.

From a socio-economic perspective, the most important project as aspects are:
- Employment creation over the lifetime of the project; and
- The Economic Development Plan (EDP) the Applicant is to develop for implementation should the project obtain preferred bidder status in terms of the REIPPPP.

Approximately 90 to 150 skilled and 400 to 460 unskilled employment opportunities will be generated during the construction phase (per project) which is expected to extend for 12 to 14 months.

Approximately 20 skilled and 40 unskilled employment opportunities will be generated during the operational phase of an expected 20 years. Unskilled jobs will be linked to services such as panel cleaning, maintenance, and security. Employment opportunities to be created during this phase equate to approximately 4800 person months (for skilled opportunities) and approximately 9600 person months (for unskilled opportunities) per project over the 20-year plant lifespan.

It should be noted that the employment opportunities provided in this report are estimates and depend on the final engineering design and the REIPPPP Request for Proposal (RFP) provisions at that point in time.

While the Applicant does not yet have a fully articulated EDP as this will be dependent on the RFP IPP requirements, the broad objectives of the EDP are to:

- Create a local community trust which has an equity share in the project life to benefit historically disadvantaged communities.
- Initiate a training strategy to facilitate employment from local communities.
- Give preference to local suppliers of components and/or services for the construction of the facility.

The creation of employment opportunities, as well as the EDP, is likely to serve as an economic pull factor that may result in in-migration to the Tankwa Karoo, Touws River and/or Ceres area, as well as serve to provide potential positive project benefits to these local communities.

Refer to the key mitigation measures proposed by the specialist, and which needs to be included in the Environmental Management Programme (EMPr) listed in Section 9 of this report.

4. Baseline Environmental Description / Description of Receiving Environment

4.1. General Social and Economic Description

This baseline description is the same for Witte Wall PV 1 and Witte Wall PV 2.

Secondary data sources

The study area is located within the Cape Winelands District Municipality (CWDM). The actual project footprint is located in the WLM. However, the closest town, Touws River, is located in the BVLM, while the next closest town, Ceres, lies in the WLM.

The Tankwa Karoo, colloquially described as the empty space on your map between Ceres, Calvinia and Sutherland, is sparsely populated and reflects the overall trend towards depopulation in the Karoo. The decline in the rural population and of many of its small towns is one of the area's most important changes since the mid-1950s. The Karoo is home to fewer than a million people (1.9% of the country's population), of whom three out of every four live in small country towns. The Karoo is politically and economically marginal, and administratively fragmented. Large scale land use shifts are impacting the region's economy and social fabric. These developments include renewable energy production facilities (solar and wind power), additional electricity power transmission corridors and the issuing of prospecting and mining rights over large areas for uranium and the extraction of shale gas. Agricultural production has intensified, with the expansion of irrigated croplands. Game farming and eco-tourism has also intensified, as has the trend towards 'lifestyle farmers', property owners whose income is not from farming. (Henschel, J; Hoffman, M; Walker, C. 2018)

The region has great potential for eco-tourism, not only for the Cape metropolitan market, but also international visitors with a range of tourism offerings such as wilderness experience, hunting, stargazing, mountain biking, bird watching, game viewing, plant-spotting, hiking, and several festivals.

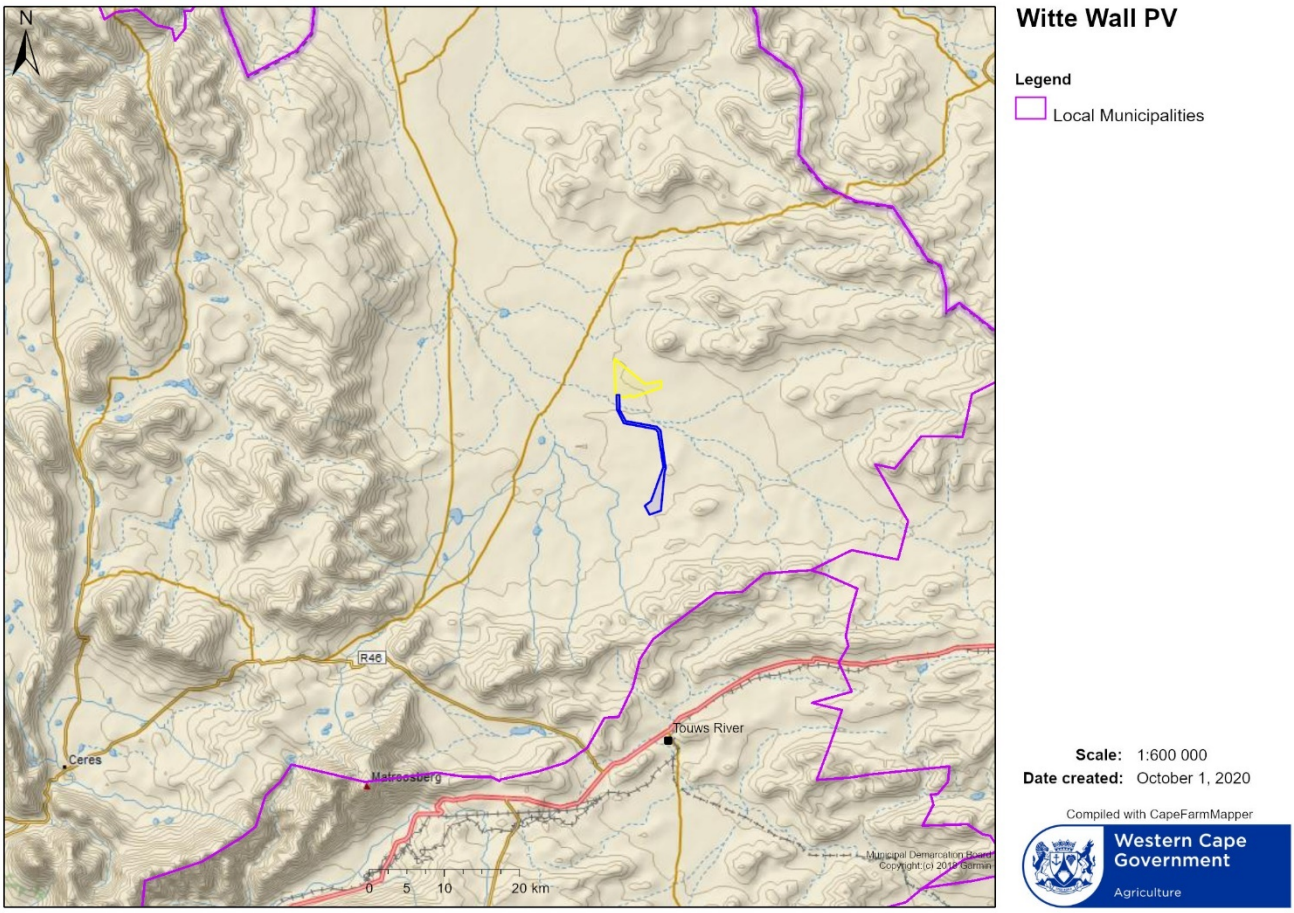

Figure 1: Map of project site, nearest towns and municipal boundaries

The map in Figure 1 shows Witte Wall PV 1 and PV 2 project site (yellow), EGI corridor (blue), location of Touws River and Ceres, the BVLM and WLM boundaries (purple) and the N1 (pink).

The CWDM is a Category C municipality situated in the Western Cape Province adjacent to the City of Cape Town Metropolitan area. The CWDM is a landlocked area between the West Coast and Overberg coastal districts and includes five local municipalities, namely: Drakenstein, Stellenbosch, Witzenberg, Breede Valley and Langeberg. The language most often spoken in the household in Western Cape Province is Afrikaans representing 46,6%, followed by English representing 19,6%.

The BVLM covers an area of 3 834km² and serves the rural towns of De Doorns, Rawsonville, Touws River, and Worcester as well as the rural areas adjacent to and between these towns, and the Matroosberg rural area. Worcester serves as the administrative headquarter of the municipality and is also regarded as the primary economic service node.

The small town of Touws River falls within the BVLM. It is located on the southern edge of the Great Karoo, roughly 180 km by road from Cape Town, and 76km from the proposed development. The town lies adjacent to the national route (N1) between Cape Town and the North. It covers an area of 21,6km² and comprises several distinct areas including the old central part of town known as Paddasvlei, Topkamp (the oldest housing area), Steenvliet, the original township for Coloured people, and Zion Park, an informal settlement.

Originally established as a railway town servicing trains travelling from Cape Town to the interior of the country since 1877, Touws River enjoyed almost a century of prosperity before the decline and subsequent total withdrawal of the railways in the 1980s led to its virtual collapse. The demise of the railways resulted in mass unemployment in Touws River as most people were at that time employed either directly by the railways or by one of the associated industries or businesses. Touws River today

faces multiple socio-economic problems, a high level of human need, and low economic potential and development resources to stimulate and support recovery.

The major socio-economic risks and challenges facing the BVLM include (Breede Valley Review IDP 2020-2021; 2019 Socio-economic Profile BVLM):

- Income inequality;
- Food insecurity;
- Rising unemployment;
- Deteriorating education outcomes;
- Demand for adequate housing;
- The persisting drought in the Western Cape and in-migration of people to the Breede Valley;
- Adequate service delivery;
- The effect of poverty, especially on smaller towns such as Touws River;
- Culture of violence fuelled by gang activity;
- Load shedding adversely affecting the local economy; and
- The impact of COVID-19 on current and future municipal planning and operations, as well as society in general.

The WLM covers an area of 10 753km² and serves the rural towns of Ceres, Op-Die-Berg, Prince Alfred Hamlet, Tulbagh, and Wolseley, as well as the rural areas adjacent to and between these towns.

Ceres is the administrative centre and largest town in the WLM and serves as a regional hub for the surrounding towns. It is situated about 170 km north-east of Cape Town, and 78km from the proposed development. Established in the mid-1800s as more and more farmers moved into the area, Ceres is located along the original route north between Cape Town and Johannesburg. Ceres covers an area of 77,12km² and includes the residential areas of the old town, Bella Vista, historically a township for Coloured people, and Nduli, historically a township for Black people.

Ceres's importance within the broader agricultural economy and its role as a primary regional service centre has been recognized through the identification of a possible Agri-park development. While this bodes well for economic development, future development will be severely constrained by insufficient bulk services: the town has been crippled by water shortages and has already run at its Notified Maximum Demand (NMD) of 42,8 MVA of power that Eskom is required to provide. The implications thereof are four years and R360m of investment, meaning that 2021 is the earliest that NMD can be upgraded. Without significant bulk infrastructure upgrades – specifically related to electricity – the WLM will be unable to support any further growth (WLM SDF 2019).

The major socio-economic challenges facing the Witzenberg Municipal area include (Witzenberg Amended IDP 2017 – 2022; Witzenberg Municipality Spatial Development Framework 2019):

- The marginalization of rural communities, exacerbated by a general lack of skills and access to opportunities/ services in these areas;
- Predominance of seasonal agriculture-based labour shrinks revenue base;
- Rising level of unemployment
- People in poverty;
- Social Grant dependency;
- Increasing TB and HIV/Aids prevalence;
- Social ills – Crime, vandalism and substance abuse;
- Lack of economic growth; and
- Increasing population and demand for services.

Demographics

Table 1: Demographics of municipal areas and towns
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM; Stats SA Community Survey 2016)

Population estimates 2018	**Households** actual 2016
BREEDE VALLEY	
186 796	**47 569**
Touws River: 8 768 actual population 2016	
WITZENBERG	
140 124	**35 976**
Ceres: 36 043 actual population 2016	

The BVLM has a population of 186 796 (estimates in 2018), making it the second most populated municipal area in the CWDM (BVLM IDP Review 2020 – 2021 citing Stats SA Community Survey 2016). The BVLM area comprises 47 569 households[1] of which approximately 14,7% (7 000) are classified as indigent. The BVLM's 2020 average household size is 3,8 persons. (2019 Socio-economic Profile: BVLM). It is worth noting that although the number of households in the area is increasing, the actual size of households is trending downwards. This potentially implies an inflow of young professionals (either single, as couples or with small family groupings) into the area as a result of enhanced urbanisation. Other contributing factors include, but are not limited to, lower fertility rates, occurrences of divorce, ageing population, etc. (2019 Socio-economic Profile: BVLM). In 2016, Touws River actual population stood at 8 768 persons. (Stats SA Community Survey 2016).

The WLM has a population of 140 124, comprising 35 976 households (based on 2018 and 2016 data, respectively). The average household size is 3,6 persons. (2018 Socio-economic Profile: WLM). In 2016, Ceres actual population stood at 36 043 persons. (Stats SA Community Survey 2016).

According to a 2014/15 survey, 34 074 people live and or work on farms in the Cape Winelands area. Witzenberg had the highest number of households (2482) and individuals (8181), followed by Breede Valley, which contained 1005 households and 4222 individuals (Western Cape Government Farmworker Household Survey Report 2014/15).

[1] A household is seen as a group of persons who live together and provide themselves jointly with food or other essentials for living, or a single person who lives alone. (Municipal Capacity Assessment 2018)

Demographics by Age

Table 2: Demographic profile of Breede Valley and Witzenberg by age cohort
(2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM)

Year	Children: 0 – 14 Years	Working Age: 15 – 65 Years	Aged: 65+	Dependency Ratio (%)
Breede Valley: Age Cohorts, 2019 - 2025				
2019	55 143	121 646	10 007	53.6
2022	56 671	125 281	11 199	54.2
2025	58 057	128 072	12 056	54.7
Growth	0.9%	0.9%	3.2%	-
Witzenberg: Age Cohorts, 2011 - 2024				
2011	29 460	81 634	4 849	42.0
2019	34 457	100 049	8 974	43.4
2024	36 098	112 780	11 143	41.9
Growth	Not available			

The above table depicts the BVLM and WLM population composition per age cohorts. These groupings are also expressed as a dependency ratio which indicates the number of people supported by each economically active person. A higher dependency ratio means a more vulnerable community, higher pressure on social systems and the delivery of basic services.

In the BVLM area the largest population growth between 2019 and 2025 was estimated in the aged cohort which grew at an annual average rate of 3.2%. This is expected to increase the dependency ratio from 53.6% in 2019 to 54.7% towards 2025. The child and working age cohorts grew by 0.9% respectively (2019 Socio-economic Profile: BVLM).

According to a 2014/15 survey, over 66% of individuals living on farms in the Cape Winelands were below the age of 35, while only just over 1% were above 65 years of age. A large part of the Cape Winelands farming population (30.09%) was youth i.e. between the ages of 19 and 35 years old (Western Cape Government Farmworker Household Survey Report 2014/15).

Witzenberg's population shows an estimated relatively small increase in the children cohort between 2019 and 2024. Coupled with strong growth in the working and aged categories, this is expected to decrease the dependency ratio in Witzenberg (2018 Socio-economic Profile: WLM). However, according to Stats SA (2016) the area's biggest population cohort is youth aged 15–34 representing 38,4%. Of the youth cohort, the biggest number is aged between 15-19 (Stats SA Community Survey 2016). These demographics must be taken into account when considering education levels, youth unemployment, and teenage pregnancies.

Demographics by Gender
The sex ratio (number of men to 100 women) provides an indication of the gender breakdown in an area, and it is suggestive of labour force composition. levels.

The 2020 sex ratio for BVLM is 91.9, indicating in general considerably fewer males than females in the area. This ratio further decreases towards 2023 (91.4) which can be attributed to a wide range of factors such as an increase in male mortality rates and the potential outflow of working males. This typically results in more female headed households, larger household sizes, and higher grant dependency levels.

Conversely, the 2020 sex ratio for WLM is 106.7, indicating in general more males than females in the region. This ratio further increases towards 2023 (106,9) which suggests continued growth as a migrant receiving area.

South Africa's average sex ratio is around 95 men to 100 women. (Witzenberg Municipal Capacity Assessment 2019).

Demographics by Race
The population of both the BVLM and WLM is predominantly Coloured (63% and 66% respectively), followed by African (24% and 25% respectively) and Whites (10% and 7% respectively).

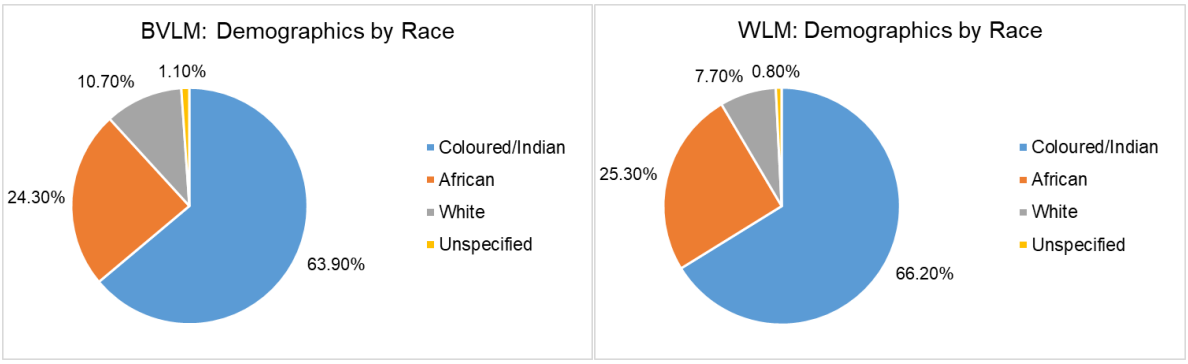

Figure 2: Demographics by race
(Breede Valley Municipal Capacity Assessment 2018; Witzenberg Municipal Capacity Assessment 2019)

Population Density
In 2019, the population density in BVLM was 49 people/km² while the WLM had only 13 people/km² (2019 Socio-economic Profile: BVLM).

Population Projections 2019 – 2024
The total population is estimated to increase to 194 104 by 2023 which equates to a 1% annual average growth rate for the BVLM. For the WLM, the total population is estimated to increase to 153 987 by 2023.

Table 3: BVLM and WLM Population Projections 2019 – 2024
(Western Cape Department of Social Development, 2019)

	2019	2020	2021	2022	2023	2024
BVLM	186 796	188 948	191 048	193 150	194 104	196 126
WLM	142 466	145 181	149 189	152 498	153 987	157 143

Education
Only 40,8% of children in the BVLM and 42,6% of children in the WLM aged 0–5 years attend an educational institution. In real terms, this means that 10 965 children in the BVLM and 8100 children in the WLM are not benefitting from early childhood education.

However, the distribution of the population aged 5–24 years attending an educational institution increases in both the BVLM and WLM to 57,8% and 63% respectively. This represents a drop in this population attending an educational institution in BVLM from 67,8% and an increase in WLM from 61,3% in 2011.

In the BVLM there is a lower proportion of the population aged 20+ without schooling (2,7%) compared to the WLM (3,9%). The adult population with some primary schooling is 10,5% in the BVLM and 14,2% in the WLM. The adult population that completed primary schooling is 6,5% in the BVLM and 9,2% in the WLM. The adult population who have completed secondary schooling is higher in the BVLM (34,2%) compared to 25,5% in the WLM. Only 40,5% of residents in BVLM and 41,2% of

residents in the WLM have some secondary schooling. The proportion of the population that has a higher education, however, is higher in the WLM (6,1%) than in the BVLM (5,7%) (Stats SA Community Survey 2016).

Matric Pass Rate

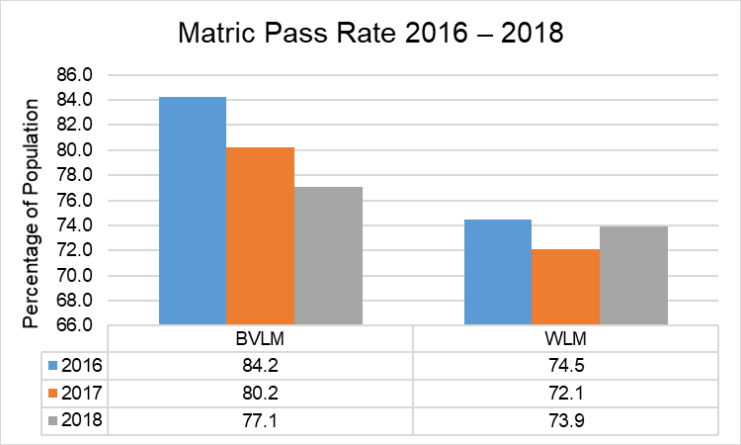

Figure 3: Matric pass rate 2016 – 2018
(2019 Socio-economic Profile: BVLM)

The matric pass rate in the BVLM dropped from 84.2% in 2016 to 77.1% in 2018, and in the WLM from 74,5% to 73,9% over the same period.

Factors affecting school performance include learner-teacher ratios which dropped in the BVLM from 27% in 2016 to 26.6% in 2018, and in the WLM from 34.4% in 2015 to 33.8% in 2017. This may be attributed to schools' declining ability to collect fees and to employ more teachers when needed. Educational performance could also be attributed to the availability (lack thereof) of adequate education facilities such as Early Childhood Development (ECD) centres, schools and Further Education and Training (FET) colleges as well as the availability of key learning resources such as libraries and access to internet.[2]

In 2018, 58 public schools were recorded in the BVLM, of which 79% of these were classified as no-fee schools. The majority of the schools are characterised as Quintile 1 or Quintile 2 schools, which indicates that they are situated in communities where high poverty indices are recorded by national government (BVLM IDP Review 2020-2021).

Learner enrolment in the BVLM increased at an annual average growth rate of 2.5% between 2016 and 2018. This could be attributed to several factors including changing demographics and socio-economic conditions. The learner retention rate, however, reflects a declining trend between 2016 and 2018 dropping from 67% in 2016 to 64% in 2018 and is likely influenced by a range of economic factors such as unemployment, poverty, indigent households, and teenage pregnancies. Learner enrolment in the WLM tapered off from 2015 to 2016 but increased slightly to 18 070 learners in 2017. This could be attributed to several factors including demographics and socio-economic context. The grade 12 dropout rate for Witzenberg learners increased from 35.5% to 36.6% between 2016 and 2017. Again, these high levels may be due to a number of economic factors such as unemployment, poverty, and teenage pregnancies (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

According to a 2014/15 survey, a mere 8% of the Cape Winelands farming population obtained their matric qualification with less than 1% having some type of tertiary qualification. High school learners are more likely to travel further than 4,9km to school, and many in the WLM and BVLM areas travel up to 10km. Walking and bus are the most common forms of transport (Western Cape Government Farmworker Household Survey Report 2014/15).

[2] Only 13,8% of the population in BVLM and 12.3% in WLM had access to internet (Stats SA Community Survey 2016)

The decrease in learner enrolment, high Grade 12 dropout rate, and the decreasing Matric pass rates are alarming. Low education means more people becoming less employable and labour productivity that is lower than it could be in an environment where sectors that traditionally absorb low-skilled labour are declining.

Health

Health is another major factor contributing to the general quality of life. The COVID-19 pandemic has led to the widespread loss of lives and livelihood across South Africa. HIV/AIDS, Tuberculosis, health of children, and maternal health are important health indicators.

COVID-19

According to Dr. Jantjie Taljaard, an infectious diseases physician at Stellenbosch University, the infection risk in farming communities is significant because people often work together in large numbers or confined spaces like factories or packhouses[3]. With agriculture deemed an essential service, many farm workers worked during the National Lockdown, choosing to risk their lives above their livelihood.

The BVLM and WLM were identified as a COVID-19 hotspot, with 3 464 cases and 194 deaths as a result of COVID-19 in the BVLM, and 1 614 cases and 97 deaths in the WLM. The increase of infection in youth between the ages of 25-35 was noted as an alarming trend.

Table 4: COVID-19 cases and recoveries

(25 September 2020: www.coronavirus.westerncape.gov.za/news/update-coronavirus)

Municipality	Cases	Recoveries
Cape Winelands District Municipality	**12 694**	**11 962**
Breede Valley	**3 464**	**3 270**
Witzenberg	**1 614**	**1 517**

HIV/AIDS

The BLM shows improvement in the number of patients that remain with treatment between 2017 and 2019, and a decrease in the number of new patients over the same period. The WLM also shows a drop in the number of new HIV/AIDS cases and an increase in the number of patients receiving Anti-retroviral Treatment (ART) between 2016 and 2018.

Table 5: ART treatment and HIV transmission rate

(2019 Socio-economic Profile: BVLM & 2018 Socio-economic Profile: WLM)

Area	Clients that remain with treatment		Number of new ART patients		HIV Transmission Rate	
	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19
Breede Valley	6 524	6 746	1178	1004	No data	No data
Area	**Registered patients receiving ART**		**Number of new ART patients**		**HIV Transmission Rate**	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Witzenberg	5 370	5 730	1 194	1 047	1.9	1.1

[3] https://www.foodformzansi.co.za/covid-19-virus-spreads-in-cape-farming-communities/

Tuberculosis (TB)
The number of TB patients in the BVLM area decreased from 2 005 in 2016/17 to 1 764 in 2017/18. It decreased slightly further to 1 738 in 2018/19. The WLM, had 924 TB patients in 2017/18 compared to 1 094 in 2016/17, also reflecting a decline in TB infections (2019 Socio-economic Profile BVLM & 2018 Socio-economic Profile WLM).

Child and Maternal Health
Immunisation rates in the BVLM municipal area increased from 60.8% in 2017/18 to 65.8% in 2018/19. The number of malnourished children under five years (per 100 000) decreased from 11.0 in 2017/18 to 9.0 in 2018/19. The neonatal mortality rate (NMR) (per 1 000 live births) improved from 17.2 in 2017/18 to 13.6 in 2018/19.

The immunisation rate in the WLM improved from 59.9% in 2016 to 67.3% in 2016. The number of malnourished children under five years (per 100 000 people) in 2016 was 2.9, and increased to 3.7 in 2017. The NMR (per 1 000 live births) improved from 15.0 in 2016/17 to 13.0 in 2016/17.

The maternal mortality rate (deaths per 100 000) in the BVLM area increased threefold between 2017/18 (59) and 2018/19 (193). Breede Valley's delivery rate to women under 20 years has improved from 16.8% in 2017/18 to 15% in 2018/19. The termination of pregnancy rate reflects a marginal increase from 0.9 in 2017/18 to 1.0 in 2018/19.

The maternal mortality rate in the WLM area remained at zero deaths per 100 000 live births in 2016/17 and 2017/18. The delivery rate to women 10 -14 years and 15 - 19 years deteriorated between 2015/16 and 2017/18 in WLM with 18.8 per 1 000 births to teenage mothers in 2017/18. This is of concern as these teenage girls are of school going age and pregnancies typically contribute to the high dropout rate. The termination of pregnancy rate remains steady at zero for 2016/17 and 2017/18 in the WLM Area (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Public Health Services
In 2018, the BVLM had 15 primary healthcare clinics which comprised of six fixed and nine mobile clinics. In addition, there is also one community day centre, one district hospital, as well as eight ART clinics/ sites and 21 TB clinics/sites.

In 2018, the WLM had 15 public healthcare clinics which comprised of eight fixed primary health clinics and six mobile clinics, as well as one community day centre. In addition, there is one district hospital, as well as seven ART treatment clinics/sites and 19 TB treatment clinics/sites.

Both municipalities have two ambulances per 10 000 inhabitants which are on par with the district average. Access to emergency medical services is critical for rural inhabitants due to the distances they have to travel to access health facilities (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

Poverty
Poverty can be defined as the inability to attain a minimal standard of living. GDP per capita, income inequality, and human development and income levels are key indicators of poverty.

At R44 489 in 2018, the BVLM area had the second lowest GDPR per capita in the CWDM which recorded a figure of R50 717. At R67 180 in 2017, WLM's GDPR per capita was marginally below that of the CWDM's figure of R71 426. While a useful indicator of overall per capita income, the GDPR does not reflect the distribution of that income, which according to Professor Murray Leibbrandt of The Southern Africa Labour and Development Research Unit, is stacked in favour of the top 10%, with the lowest 5% of the population getting only a fraction of that income. This is a major sign of growing inequality.

The National Development Plan set a target of reducing income inequality in South Africa from a Gini coefficient of 0.7 in 2010 to 0.6 by 2030. However, income inequality in the BVLM area increased from 0.565 in 2012 to 0.581 in 2015 and 0.594 in 2018. Similarly, income inequality has been on the increase in the WLM between 2012 and 2017. The sharp increase in inequality levels can be

attributed to the severe drought and slow economic growth which have harmed livelihoods and employment during this period.

There has been a general increase in the Human Development Index (HDI)[4] in the BVLM from 0.66 in 2012 to 0.69 in 2018. The HDI has also increased in the WLM from 0.66 in 2016 to 0.67 in 2017. The HDI serves as a composite indicator of social and economic development and overall well-being. The per capita income as per definition is expected to mimic the trend of the HDI (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

In real terms, 14,6% of households in the BVLM and 15% of households in the WLM ran out of money to buy food in the 12 months before the 2016 Statistics SA Community Survey. In the BVLM and WLM, 11,8% and 8,3% of households respectively reported skipping at least one meal in the 12 months before the survey (Stats SA 2016).

While more recent data is not available, it is a fair assumption that poverty levels have been exacerbated by the COVID-19 pandemic as discussed above.

Household income

Household income is an indicator of current poverty levels and provides information about the living standards prevalent in a particular community. A community's ability to meet their basic needs is determined by the level of household income.

Table 6: Household income distribution

(WLM Amended IDP 2017 – 2022)

Income Category	Cape Winelands	Witzenberg	Drakenstein	Stellenbosch	Breede Valley	Langeberg	
No income	13.1	6.4	12.8	20.4	12.0	10.0	
R1 - R6 314	1.9	1.7	1.8	2.0	1.7	2.5	
R6 315 - R12 628	3.5	4.0	3.2	3.5	3.1	4.3	Low Income
R12 629 - R25 257	13.4	18.7	10.7	10.6	15.2	15.8	
R25 258 - R50 514	20.1	25.8	17.1	16.6	21.8	24.3	
Subtotal	**51.9**	**56.6**	**45.5**	**53.1**	**53.8**	**57.0**	
R50 515 - R101 028	18.4	20.6	18.7	15.5	18.6	19.8	
R101 029 - R202 055	12.3	10.6	13.9	11.6	12.7	10.8	Middle Income
R202 056 - R404 111	8.8	6.8	10.7	8.5	8.5	7.3	
Subtotal	39.4	38.0	43.2	35.6	39.8	38.0	
R404 112 - R808 221	5.7	3.9	7.6	6.5	4.7	3.6	
R808 222 - R1 616 442	2.0	1.1	2.5	3.3	1.0	1.0	
R1 616 444 - R 3 232 885	0.5	0.3	0.6	1.0	0.3	0.2	High Income
R3 232 886+	0.4	0.2	0.4	0.7	0.3	0.2	
Subtotal	**8.6**	**5.4**	**11.2**	**11.4**	**6.4**	**5.0**	

The majority of households in the BVLM (53,8 %) fall under the low-income brackets. This could indicate that an increasing number of households find it difficult to survive and will ultimately become dependent on social assistance in the form of social grants in the absence of targeted sustainable employment creation programmes (BVLM IDP Review 2020-2021).

Within the CWDM, the WLM had the lowest level of households without income (6.4%) but the second highest level of low-income earners (56.6%), followed by the BVLM (53.8%).

According to a 2014/15 survey, an average of 43.9% of farm worker households in the Cape Winelands received at least one child support grant. The WLM had the lowest proportion of child support grants received (Western Cape Government Farmworker Household Survey Report 2014/15).

[4] The HDI is represented by a number between 0 and 1, where 1 indicates a high level of human development and 0 represents no human development.

Basic Services and Housing

Access to services is vital for the livelihoods of households. Lack of provision and lack of basic services often impact the poorest households in a given area.

Table 7: Access to services and housing

(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Community Survey 2016	Breede Valley	Witzenberg
Total number of households	**47,569**	**35,976**
Formal main dwelling	36 964 77.7%	29 969 83.3%
Water (piped inside dwelling/within 200m	46 077 96.9%	35 730 99.3%
Electricity (primary source of lighting)	45 105 94.8%	34 734 96.5%
Sanitation (flush or chemical toilet)	42 848 90.1%	34 017 94.6%
Refuse removal (at least weekly)	36 976 77.7%	31 343 87.1%

The table above indicates that the vast majority of households in the BVLM and WLM live in formal dwellings, have piped water inside or within 200m of their dwelling, use electricity for lighting, have a flush or chemical toilet, and at least weekly refuse removal.

One of the most important indicators of backlogs in service delivery is provided through examining the number of people living in informal settlements. In the BVLM and WLM, 4% and 5% of the population respectively live in informal areas both of which are above the national average of 3,2% (Municipal Capacity Assessment 2018).

The BVLM and WLM do not provide basic services to rural communities, including farm dwellers. Basic services are provided by the land owner with Eskom providing bulk electricity provision. The 2014/15 survey found that approximately 90% of the farmworker households have piped water, electricity, and flush toilets. Water is provided free to 90% of the farmworkers living on farms across the regions while refuse and sanitation service are free for all farmworkers (Western Cape Government Farmworker Household Survey Report 2014/15).

Crime

Crime rates within the BVLM show a decreasing trend since 2017. The murder rate (per 100 000 people) decreased from 50 to 42 in 2018/19. There were 111 reported sexual offenses in the area in 2017/18. Drug related crimes within the area decreased from 3 784 reported cases in 2017/18 to 2 921 cases in 2018/19. Residential burglary cases also decreased from 1 238 in 2017/18 to 949 in 2018/19 (2019 Socio-economic Profile BVLM).

However, crime in the WLM area shows an increasing trend since 2017. The murder rate increased by 11% from 36 in 2017 to 40 in 2018. Drug-related crimes (per 100 000 population) displayed an increase, up by 1.9% from 2 393 cases in 2017 to 2 438 cases in 2018. Residential burglary cases (per 100 000 population) decreased by 15.9% from 571 in 2017 to 480 in 2018. Sexual offenses reported dropped from 125 to 105, which equates to a reduction of 16% (2018 Socio-economic Profile: WLM).

The BVLM has 2,25 police stations per 100 000, while the WLM has 3,24%. These are both below the national average of 4,68 (Municipal Capacity Assessment 2018).

Crime statistics are reported at precinct level and it is difficult to gauge the level of crime on farms and in remote areas. Farm and rural dwellers have difficulty accessing police services, given distance to police stations, lack of transport, airtime, connectivity, and implicit costs. With regards to gender-based violence, it is widely recognised that credible statistics is scarce, a phenomenon more extreme in rural and farming areas.

Economy

Economic Performance

In 2017, the BVLM local economy was dominated by the finance, insurance, real estate and business services (R2.506 billion; 20%); wholesale and retail trade; catering and accommodation (R2.307 billion; 18.4%); and manufacturing (R1.705 billion; 13.6%) sectors. Combined, these top three sectors contributed R6.518 billion (or 51.8%) to the area's economy.

The 10-year trend shows the economy grew by an average annual rate of 2.5%, but tapered off significantly to 1.7% in more recent times (2014 to 2018). From 2008 to 2017, the finance, insurance, real estate, and business services sector registered the highest average growth rate (5%), followed by the construction (5%) and the wholesale and retail trade; catering and accommodation (3%) sectors. Growth in the agriculture, forestry, and fishing sector was robust at 10% in 2017. However, the sector was estimated to contract by 3.9% in 2018 as the effects of the drought intensifies (BVLM IDP Review 2020-2021; 2019 Socio-economic Profile BVLM).

Table 8: Three largest economic sectors of the BVLM and WLM
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Breede Valley Contribution to GDP 2017	**Finance, insurance, real estate & business services** **20%**	**Wholesale & retail trade, catering & accommodation** **18,4%**	**Manufacturing** **13,6%**
Witzenberg Contribution to GDP 2016	**Wholesale & retail trade, catering & accommodation** **17,4%**	**Finance, insurance, real estate & business services** **15,9%**	**Agriculture, forestry & fishing** **15,2%**

In 2016, the WLM local economy was dominated by the wholesale and retail trade, catering and accommodation sector (R1.4 billion or 17.4%), followed by the finance, insurance and real estate, and business services sector (R1.3 billion or 15,9%); agriculture, forestry and fishing sector (R1.2 billion or 15.2%); manufacturing (R1.2 billion or 14%) and general government (R928.9 million or 11%). Combined, these top five sectors contributed R6.1 billion (or 74%) to the WLM municipal economy, which was estimated be worth R8.2 billion in 2016.

The 10-year trend, between 2006 and 2016, showed that the construction sector registered the highest average growth rate (9%) in Witzenberg during this period, followed by the finance and business services sector (7.7%), general government (5.8%); community and social services (5.3%) and wholesale trade (5%). It is concerning that sectors with a significant contribution to the economy, such as agriculture (15%) and manufacturing (14%), registered the lowest growth rates in the period, 2.5% and 2.9% respectively. Growth of the agriculture sector shrunk into negative territory in 2015 and 2016 due to the severe drought but the estimated growth rate for 2017 was a healthy 6% (2018 Socio-economic Profile WLM).

Agriculture remains the largest employer (50%), however, the sector is experiencing a high rate of net job losses, and often only provides seasonal opportunities (Witzenberg Municipality Spatial Development Framework 2019).

Labour

Employment is the primary means by which individuals who are of working age can earn an income that will enable them to provide for their basic needs and improve their standard of living. As such, employment and unemployment rates are important indicators of socio-economic well-being.

Employment by sector

Table 9: Three largest employers by sector in the BVLM and WLM
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Breede Valley	**Agriculture, forestry & fishing** **24%**	**Wholesale & retail trade, catering & accommodation** **20,8%**	**Finance, insurance, real estate & business services** **15,7%**
Witzenberg	**Agriculture, forestry & fishing** **32%**	**Wholesale & retail trade, catering & accommodation** **18,6%**	**Community & social services** **13%**

The agriculture, forestry, and fishing sector contributed the most jobs (24%) in the BVLM and the WLM (32%). This is followed by the wholesale and retail trade, catering and accommodation, 20.8% in the BVLM and 18.6% in WLM; and finance, insurance, real estate, and business services (15.7%) in the BVLM and community and social services (13%) in the WLM.

The agriculture, forestry, and fishing sector reported net job losses (-9 051) between 2008 and 2017 in the BLM, while the WLM reported an average decrease in jobs (-9 517) between 2006 and 2016. Despite increased activity, the sector's contraction between 2008 and 2017 can be attributed to national recession and negative impacts of environmental factors, such as the drought experienced in the area over the past few years. This is a cause for concern, not least because it is one of the top three largest employers. Job shedding in a key economic sector such as agriculture is problematic, given that the local economy is based on the agricultural industry. Despite the contraction, agriculture remains the key economic driver and largest employer in the BVLM. (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM; WLM IDP).

The sector which reported the largest increase in jobs between 2008 and 2017 in the BVLM was the wholesale and retail trade, catering and accommodation sector (5 412) followed by finance, insurance, real estate and business services (5 131), community, social & personal services (3 032), construction (1 529) and the transport, storage and communication (1 207) sectors. The sector which reported the largest increase in jobs between 2006 and 2016 in the WLM was wholesale, retail, and trade (4 528), followed by community and social services (3 127); general government (2 848); and financial and business services (2 726) (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Skill level
The majority of workers in both the BVLM (2017) and WLM (2016) labour force were low-skilled (42% and 50% respectively) and semi-skilled (40% and 35% respectively). Only 18% of labour in BVLM and 14,8% in the WLM were considered to be skilled. The increase in the number of semi-skilled workers outpaced the growth in low-skilled and skilled workers during the period of 2014 and 2018 in BVLM, while in the WLM, the number of skilled workers increased much more than that of semi-skilled workers during the period 2006 – 2016, with a slight decrease experienced in the number of low-skilled workers (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Low-skilled jobs are most commonly adversely affected during an economic downturn and suggest low skilled workers are most vulnerable and face greater risks to income security due to socio-economic shocks.

Unemployment
In 2018, the unemployment rate, referring to individuals without work, but actively seeking work in a recent past period (usually four weeks), and are currently available for work, is 14,4% in the BVLM and 7,6% in the WLM. The youth unemployment rate is a serious problem in both areas and has reached 20% in the BVLM and 9,9% in the WLM. The youth unemployment rate refers to unemployed individuals aged 15 – 24 who are without work, actively seeking work in a recent past period (past four weeks), and currently available for work. (BVLM Municipal Capacity Assessment 2018; WLM Municipal Capacity Assessment 2019).

The proportion of formal to informal employment is 25,5% in the BVLM and 17,4% in the WLM. Informal employment identifies persons who are in precarious employment situations irrespective of whether or not the entity for which they work is in the formal or informal sector. Persons in informal employment, therefore, comprise all persons in the informal sector, employees in the formal sector, and persons working in private households who do not get basic benefits such as pension or medical aid contributions from their employer, and who do not have a written contract of employment. (BVLM Municipal Capacity Assessment 2018; WLM Municipal Capacity Assessment 2019).

The Farmworker Household Survey Report of 2014/15 reports on general demographic trends of farmworker households within the Cape Winelands. According to the study, BVLM had 1005 households and approximately 4222 people living and working on farms, while WLM had the highest number of households at 2482, and 8181 number of people. The study found that an overall of 62.6% of individuals living in farmworker households had permanent jobs both on and off the farm on which they reside. Approximately 18% of individuals living on farms were unemployed, while 19% had either temporary or seasonal work. It is important to note that these statistics presented are based on a survey conducted by the Western Cape Department of Agriculture during the 2014/15 financial period. It is therefore likely that figures have changed over the past six years. (Western Cape Government Farmworker Household Survey Report 2014/15; BVLM IDP Review 2020-2021).

4.2. Fieldwork and sourcing local knowledge

As discussed above, brief participant observation and a limited number of interviews were conducted to supplement secondary data. Fieldwork conducted for the SIA cannot be considered exhaustive by any means.

Key socio-economic issues listed by respondents confirm themes identified by the secondary data and include:

- Lack of economic development and job opportunities – especially for youth;
- Lack of recreational opportunities for youth;
- Increasing level of school dropout, lack of access to post school training, and other future enhancing opportunities among the youth resulting in despondency, apathy and growing rate of social ills;
- Increasing rate of teenage pregnancies;
- Poverty;
- Food insecurity; and
- Rising levels of crime, drug abuse and gangsterism.

The respondent representing Tankwa Ceres Karoo Farmers' Union added the following to this list:

- Lack of municipal services, such as road maintenance, transport, and policing; and
- Marginalization from renewable energy developments.

4.3. Lessons Learned from REIPPPP Social Investment Programs

In addition to its core business of renewable energy, the REIPPPP is designed to contribute to various developmental objectives such as job creation, social upliftment, and economic transformation. It also requires approved energy projects to share ownership with local communities.

According to the South African Government News Agency (2019)[5], the REIPPPP has attracted ZAR 209.4 billion (approx. USD 14.2 billion) in committed private sector investment into South Africa and created 38,701 jobs (full time for one year) since its inception in 2011. Many of these jobs have been for youth and women from surrounding communities. According to analysts (Nomjana, L., 2020)[6] other educational, health, and enterprise benefits experienced include:

- Over R1 billion spent by Independent Power Producers (IPPs) on education, by upskilling teachers, providing extra teachers and classrooms.
- Over 600 bursaries awarded to students from disadvantaged communities.

[5] https://www.sanews.gov.za/south-africa/renewable-energy-programme-attracts-r2094-billion-sa-economy
[6] https://www.futuregrowth.co.za/newsroom/reippp-comes-of-age/

- The provision of health facilities, while contributing to social development through feeding schemes, supporting old age homes, and early childhood development initiatives.
- Helping to establish more than 1 000 small enterprises.

Community trusts
Local community ownership is commonly structured through the establishment of a community trust who then receives the share dividends and is responsible for spending the funds on community projects. The board of trustees is typically made up of independent trustees, community representatives, and, if applicable, beneficiary representatives or power company representatives. However, while best placed to understand and address their community's needs, community trusts do not necessarily have all the skills, knowledge, or development expertise to function effectively. In the worst-case scenario community trusts become dysfunctional, and corrupt: "… as soon as monetary resources are introduced into a local impoverished area it raises significant potential for tensions, mistrust and corruption." (Tait, et al., 2013 page 18). Similarly, local municipalities lack skill and/or capacity for effective partnership.

In the absence of stronger guidance and leadership from the Department of Minerals Resources and Energy and the IPP Office, and effective institutional capacity on the ground, preferred bidders face several challenges, from the selection of trustees to the practicalities of operating trusts over the 20-year project life span. Furthermore, with a core business of producing energy, these companies themselves often lack the requisite knowledge, capacity and skill to set up and manage community trusts. In this context third party social development practitioners can fill the missing link: an advisory board to steward and/or mentor the process, trustees, an association to provide training and support to community trusts, and a body to advise industry on how to structure community trusts, are needed. (Roundtable Conversation Series – Economic Development in REIPPPP July 2016)[7].

Third-party approach
A possible solution mooted by the D.G Murray Trust (DGMT) is to include a civil society-based third-party organisation as a benefactor, while still ensuring that 100% of funds are directed back into the community. This would allow a community trust to use the experience of a social development specialist with a proven track record in implementing programmes that are well established and have demonstrated economies of scale. The lack of institutional capacity in or even near communities closest to renewable energy plants, which are typically located in remote rural areas, is another reason to consider this solution: trusts may have limited experience identifying the urgent needs of a community and finding the right implementation partners. In 2012, Lesedi Solar Park Trust (near Kimberly in the Northern Cape) opted for the third-party approach, appointing DGMT as a beneficiary organisation. Similarly, Letsatsi Solar Park Trust (in the Free State) appointed DGMT and the Rural Education Access Programme (REAP) as co-beneficiaries. (Horwitz, D., 2019)[8]

Community engagement, communication and collaboration
Communication with the beneficiary community is critical for success of the EDP as well as smooth development of the plant itself. It is vital that community members and organisations, local municipalities, ward councillors, and development organisations are not only well informed, but also have the capacity to understand implications for local job creation and wider development planning. Communication and capacity will foster community engagement in developing locally suitable processes and projects thereby maximising the potential value of the EDP.

As the REIPPPP stipulates that communities within a 50-kilometre radius of the project must benefit, beneficiary areas often overlap. Coordination between community trusts operating in overlapping areas is essential but likely insufficient. The competitive nature of the bidding process should not extend to projects' community benefits, and industry players should facilitate an enabling environment for collaboration. This collaboration could include general information sharing, commissioning research, or other support that would benefit the sector as a whole. In addition, regional government bodies or industry associations, with appropriate community accountability mechanisms, should oversee projects in broader regional areas to enable collaboration, streamline processes, give oversight, and improve the efficiency of revenue spending (Tait, L; et al., 2013).

[7] https://sawea.org.za/wp-content/uploads/2016/05/Report_2nd-Roundtable_Community-trusts_27July-2016.pdf
[8] https://dgmt.co.za/wp-content/uploads/2019/11/Renewable-Energy-September-Opp1-Single-FinalDigital.pdf

IPP community trust in Touws River
A concentrated photovoltaic (CPV) solar plant, owned by IPP Pele Green Energy, was constructed near Touws River in 2013, and has been running since 2015, with a 20-year licence to operate. The plant created 600 job opportunities in Touws River during its construction, and established a community trust to help ensure a more sustainable economy in the long term (Buthelezi, L., 2013[9]; Omarjee, L., 2018[10]).

"Our power plant, CPV1, invests a share of annual revenues in the socio-economic and enterprise development of our host community, Touwsrivier. The community also owns 5% of the power plant. Our focus is on the economic revival of the community. Our approach in working with rural communities is on self-sufficiency. Instead of viewing these communities as labour reserves, we've taken a view to see them as economic hubs and we are working to help them achieve economic independence." Gqi Raoleka, Managing Director, Pele Green Energy (A solar project in Touwsrivier is powering ahead. Global Africa Network January 29, 2018)[11]

Knowledge Pele is the part of Pele Energy group of companies which focuses on the social development aspects of the IPP's investments. Committed to using their investment to grow the local economy and ensure the community becomes self-sustaining, Knowledge Pele has a number of initiatives in Touws River, including a bursary programme, accredited enterprise development programmes for start-up and existing SMMEs, work experience programme, a hydroponic farm, and a rooftop solar panel system set up on a local no-fees primary school.

Potential future collaboration should the Applicant receive preferred bidder status
Regrettably, Knowledge Pele's programme manager responsible for their programme in Touws River declined to discuss their interventions with the specialist conducting this SIA (despite several attempts), citing non-disclosure agreements with the community. However, given the merits of collaboration outlined above, it would be well worth the Applicant and the appointed community development practitioner pursuing consultation with this organisation should development of the proposed solar projects go ahead (i.e. receive preferred bidder status and environmental authorisation).

It is worth repeating: The competitive nature of the bidding process should not extend to projects' community benefits, and industry players should facilitate an enabling environment for collaboration (Tait et al., 2013).

4.4. Project Site Specific Description

4.4.1. Witte Wall PV 1: PV Facility, Electrical Grid Infrastructure & Associated Infrastructure and Witte Wall PV 2: PV Facility, Electrical Grid Infrastructure & Associated Infrastructure

The Witte Wall PV 1 and PV 2 sites are located on the farm Witte Wall, located in the Tankwa Karoo, approximately 76 km northwest of the town of Touws River, in the Western Cape Province. The farm covers an area of 3634 hectares, while each 175 MW solar PV plant will cover an approximate footprint of 250 hectares.

Historically used as a winter grazing area for sheep, Witte Wall is currently used to breed antelope recreationally with no intention on the part of the owner to develop hunting or tourism.

The owner of Witte Wall does not reside on the property, but visits regularly and has a residence on the farm. The farm is managed by a resident farm manager. In addition, there are two families permanently resident of the farm, comprising two males, two females and one child. Both adult males are employed as labourers. The two adult females work as domestics on a casual basis. A third male labourer employed on the farm lives on the neighbouring farm. All workers are paid above the

[9] https://www.iol.co.za/business-report/companies/concentrated-solar-plant-to-deliver-22mw-1610703
[10] https://www.news24.com/fin24/economy/how-a-solar-plant-is-changing-the-fortunes-of-a-small-town-economy-20181014

[11] https://www.globalafricanetwork.com/company-news/a-solar-project-in-touwsrivier-is-powering-ahead/

minimum wage. Remuneration includes housing (with the exception noted above), monthly transportation to Ceres for shopping, and regular food parcels.

The road access to Witte Wall crosses the neighbouring farm, Hoek Doornen 172 and Karree Kolk 174.

According to Witte Wall farm manager and two neighbouring, but absent landowners, the proposed project will not inhibit current activities on their farms, disrupt social conditions, or employment. No concerns regarding visual impact, land use impact, security or good relations with neighbouring landowners were expressed. Interviewees view the proposal as contributing significantly to the economic well-being of their properties which have been particularly hard hit during the recent drought, (2015-present). Income received from leasing some of their land to the Applicant will assist in allowing these respondents to generate revenue from the farm and invest in its upkeep.

However, two neighbouring farmers, who live permanently on their farms, expressed a very different view: Speaking as immediate neighbours of the project site and the interim chairperson of the recently formed Tankwa Ceres Karoo Farmers' Union, the respondents raised several concerns. Negative impacts anticipated by the respondents include:

- Road degradation resulting in withdrawal of government services (including transportation to schools), increase transport costs to towns, damage to vehicles, road accidents, and a decline in tourism;
- Lack of traffic control and concomitant increase in road accidents;
- Dust clouds and storms precipitated by traffic and stripping of veld on construction sites;
- Dust damage to crops;
- Dangerous consequences of dust affecting visibility during hunts;
- Increase in itinerant job seekers and vagrancy;
- Lack of security for residents;
- Increased crime levels;
- Decrease in eco-tourism due to poor road conditions, dust, traffic, and damage to the area's reputation as quiet and pristine;
- Marginalisation of local stakeholders by the developer;
- Lack of open communication; and
- Lack of rehabilitation as part of the decommissioning phase.

The respondents stressed the desire for local residents to be consulted and kept informed about the proposed project. Moreover, they stressed the imperative that local residents should benefit from the proposed project as they are most affected by it. They strongly object to positive impacts such as employment opportunities and the economic development plan solely benefitting the nearby towns of Ceres and Touws River, and expressed concern that any monies received by municipalities from the proposed projects for development initiatives would not be used for social upliftment in the Tankwa Karoo, but be confined to towns. To this end several suggestions were made:

- Roads be upgraded prior to construction to cater for changed patterns in road use (frequency and weight);
- Roads be adequately maintained during the construction phase;
- Roads be upgraded after the construction phase;
- Stop go system and speed limits should be implemented to help prevent dust clouds;
- Tankwa Karoo residents should be given preference in employment: this will require an innovative recruitment process that does not rely on locals registering in a nearby town, as well as the provision of transport from decentralised points within the area (such as the Tankwa Farmstall for example);
- The loss of eco-tourism during the construction phase should be compensated for by use of local accommodation by consultants, contractors, and sub-contractors;
- Security should be provided for more than just project infrastructure and should include mechanisms that benefit the surrounding community such as visual policing, cameras along access roads, a repeater necessary for a radio system, and/or participation in the farm watch initiative;
- The veld should not be stripped of vegetation during construction as this will create a dust bowl that will be difficult if not impossible to rehabilitate;
- Donation of water tanks or solar panels to assist the most indigent community members;

- Sponsorship of events to support and/or generate tourism to the area;
- Drought relief for indigent farmers;
- Appoint a contact person responsible for liaising with local residents; and
- Establish good will and open communication with local residents.

4.5. Identification of Environmental Sensitivities

The identification of environmental sensitivities is not applicable (as discussed in Section 2.2 of this report). There are no socio-economic themes on the Screening Tool that could be confirmed or disputed, therefore no site sensitivity verification report is required. The current use of the land is confirmed and described above. Additional detail is provided in Appendix C.

5. Issues, Risks and Impacts

5.1. Identification of Potential Impacts/Risks

The potential impacts identified during the SIA are described in detail below for the construction, operational, and decommissioning phase of the proposed development as well as the cumulative impacts.

The impacts below apply to the Witte Wall PV 1 and Witte Wall PV 2 projects, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

Construction Phase
Potential impact 1: Disruption of local social structures
Potential impact 2: Increased social ills and risky behaviours
Potential impact 3: Increased burden on existing social and bulk services
Potential impact 4: Increased road use and road traffic related accidents and/or damage
Potential impact 5: Loss of privacy, safety and sense of place adjacent to the project site
Potential impact 6: Unrealistic expectations regarding local job creation
Potential impact 7: Creation of temporary employment
Potential impact 8: Increased household income attainment and standard of living
Potential impact 9: Potential increase in crime
Potential impact 10: Potential decrease in local eco-tourism
Potential impact 11: Potential marginalisation of local residents
Potential impact 12: Development and/or growth of locally-owned support industries

Operational Phase
Potential impact 1: Creation of long-term employment
Potential impact 2: Development and/or growth of locally-owned industries
Potential impact 3: Human development via the EDP

Decommissioning Phase
Potential impact 1: Job losses
Potential impact 2: Local economy stimulation

Cumulative Impacts
Cumulative impact 1: Exacerbated in-migration of job seekers
Cumulative impact 2: Combined impact of multiple EDPs

The no-go option
The no-go alternative implies that the proposed project would not be executed. Assuming that the solar facilities and associated infrastructure would not be developed at the proposed sites, there would be no increase in electricity generation from the facilities, and no economic benefit to the landowners, or additional socio-economic benefits associated with the potential income generated through the construction and operation of the facilities. Indeed, one of the impacts identified (discussed in Section 6 below) will materialise, should the proposed project not be developed. However, this does not imply that the no-go option has no impacts.

It should be noted that the development's potential negative impacts may well come into being, regardless of the proposed development as most are associated with non-project-related phenomena which could trigger similar job-seeking, influx, and socio-economic impacts as identified for the proposed development.

The potential positive impacts primarily relate to employment opportunities and the EDP. With the exception of the 60 jobs for each project created during the operation phase with an approximate 20-year lifespan, all other employment, while of direct benefit to employees for the duration of their contract, is temporary in nature. The EDP has potential to sustainably benefit a far wider number of people and is likely to result in positive impact. The benefits of both employment and the EDP are not inconsequential, and should be pursued.

Accordingly, the no-go option is likely to result in negative economic impacts on the project area, as the potentially positive impacts from the construction, operational, and decommissioning phases, including the EDP, employment and growth in the small-scale support industry, will be not be realised.

The no-development alternative also poses a lost opportunity for South Africa to supply renewable energy to its consumers. This in effect represents a negative social cost. In addition, the no-go option will not assist National or Provincial governments in achieving their renewable energy commitments.

5.2. Summary of Issues identified during the Public Consultation Phase

This will be documented, if relevant, after the BA Report has been released for public comment. This SIA did not include a public consultation process.

6. Impact Assessment

The impacts below apply to the Witte Wall PV 1 and Witte Wall PV 2 projects, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

6.1 Potential Impacts during the Construction Phase

6.1.1.1. Impact 1: Disruption of local social structures

The size of the anticipated workforce is the result of the scale of the proposed development. It is likely that job seekers from outside the study area will be attracted to the Tankwa Karoo and to the towns of Touws River and/or Ceres by the anticipated 400 to 460 unskilled jobs, and the 90 to 150 skilled jobs to be created during the 12 to 14 months construction period of the proposed development (i.e. per project). Such influx inevitably disrupts the existing social order which is challenged by alternative values, beliefs and practices. Social order disturbance can lead to general disorientation and deterioration of social capital, particularly in small and/or vulnerable communities.
Status: Negative
Mitigation required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.2. Impact 2: Increased social ills and risky behaviours

An increase in the number of people in the study area seeking work or working on the proposed development is likely to cause an increase in the number of social ills that are present in the study area. It is likely that substance abuse, the spread of communicable diseases, early sexual debut, prostitution, and increased criminal behaviour may manifest due to the likely disturbance of local social structures (discussed above) and temporary increase in spending power expected to result from increased local employment and/or workforce influx to the area. Even though such influx is not expected to be long-term, the impacts associated with risky social behaviour are of a long-term nature (for example addition, teenage motherhood, Foetal Alcohol Syndrome, school dropout, HIV/Aids transmission).

Status: Negative
Mitigation required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.
- The developers should be mindful of and regularly engage with landowners, farm residents and with Touws River and/or Ceres local communities. The former can be achieved through liaison with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations.
- The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse.
- Introduce weekly randomized alcohol and drug testing for all employees related to the project.
- Make condoms freely available to all employees related to the project.
- No construction workers should be allowed to sleep at the construction site.
- All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer.
- The construction workforce should receive COVID-19 and HIV awareness training before the commencement of construction.
- HIV and TB testing and counselling should be made available to the construction workforce free of charge.
- Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.

Impact significance (Pre-Mitigation): Moderate
Impact Significance (Post Mitigation): Low

6.1.1.3. Impact 3: Increased burden on existing social and bulk services

Jobseekers and migrant labour will by necessity be accommodated in the area. This influx, depending on its size, can place pressure on social structures and local government to provide housing, services and social facilities, albeit temporarily. It should be noted that the bulk of the unskilled workforce is likely to be housed in backyard dwellings within existing settlements, with its attendant health challenges (e.g. poor sanitation and variable access to electricity for heating and lighting purposes), and contributing to increased densification.
Status: Negative
Mitigation required:

- It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.4. Impact 4: Increased road use and road traffic related accidents and/or damage

An increase in traffic, including construction and/or vehicles carrying heavy loads associated with the construction phase of the proposed project can damage access road surfaces and/or cause excessive dust, impacting on road safety, access to and by social services (including inter-alia social grants, health facilities, transport), schools and retail, potentially damage vehicles and/or crops, and lead to a decline in tourism. It must also be noted that a Traffic Impact Statement was also commissioned to inform the BA Processes, which concluded that overall the proposed traffic generated during the construction phase is regarded as low to very low significance without the implementation of mitigation measures. The TIS also provided recommendations for management actions, and if these are adhered to, the proposed development is supported from a traffic engineering perspective.
Status: Negative
Mitigation required:

- Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during construction.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.5. Impact 5: Loss of privacy, safety and sense of place adjacent project site

The farm worker homes on Hoek Doornen neighbouring the proposed project site flank a servitude, currently proposed as the access road to the Witte Wall PV 1 & PV 2 sites. Deliveries and transportation of 400 – 460 unskilled and 90 – 150 skilled workers across their homestead will lead to a loss of privacy and potentially pose a threat to their safety, sense of place and well-being.

Status: Negative
Mitigation Required:

- No construction workers should be allowed to sleep at the construction sites.
- A maximum 60 km/h speed limit should be enforced on private roads.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.6. Impact 6: Unrealistic expectations regarding local job creation

Tankwa Karoo, Touws River and/or Ceres residents, as well as local and itinerant job seekers will have hopes and expectations of the proposed projects. These expectations need to be informed by accurate information from the developer or the appointed agent as soon as possible, to minimize unrealistic expectations and avoid potential negativity towards the proposed projects where possible. Failure to communicate honestly and proactively may lead to negative impacts such as public opposition, protests, damage to property and/or intimidation of project employees.

Status: Negative
Mitigation required:

- It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations have been granted.
- The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as computers and printers is negligible, particularly in the Tankwa Karoo.
- The existence of the employment desks and the relevant procedures associated with the selection and appointment of workers must be communicated to the local communities.
- Where possible, the developer should subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Very Low

6.1.1.7. Impact 7: Creation of temporary employment

As the construction of the facilities and associated infrastructure will require temporary employment of construction workers, supervisors, and engineers on-site, a limited number of temporary jobs will be created. According to information provided by the Applicant, these are anticipated to be between 400 and 460 unskilled employment opportunities, and 90 to 150 skilled employment opportunities for a period of up to 12 - 14 months. As discussed in this report, education and skill level within the study area is low, thereby rendering the majority of locals best suited for unskilled positions. While contributing to the employment situation primarily in the short term, even temporary employment will provide sorely needed income and, additionally provide opportunity for garnering work experience and

developing new skills in an environment where such opportunities are extremely rare and which may enable future employment. Debt is a potential negative impact associated with temporary employment and is likely to occur given the financial stressors facing communities within the project area. However, the risk of this negative impact is offset by the positive impacts created by employment, albeit temporary.

Equality is a fundamental principle of the South African Constitution and Bill of Rights. Remuneration, employment benefits, terms and conditions of employment as well as job classification and grading are expressly listed as employment policies or practices in respect of which unfair discrimination is prohibited by the Employment Equity Act (EEA) (Laubscher, T 2015)[12]. The EEA's amendment bill of July 2019, will regulate the setting of sector-specific employment targets (in some instances by 2025) to address the under-representation of certain population groups. It will also ensure that an employment equity certificate of compliance becomes a precondition for access to state contracts (BusinessTech).[13] Equal access to employment must be given due consideration in line with relevant legislation and the area's demographics: This is especially pertinent to the employment of women in the BVLM given its 2020 sex ratio of 91.9 as discussed in Section 4 above.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, the developer should subcontract to local construction companies.
- The developer should comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account.
- The developer should establish local employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details.
- Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment opportunities and the existence of the employment desk must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.
- The developer should offer debt education workshops for all project related employees.
- The developer is encouraged to provide on-the-job training and additional training programs to improve the chances of skills development during the construction phase.

Impact significance (Pre-Enhancement): Moderate

Impact Significance (Post Enhancement): Moderate

6.1.1.8. Impact 8: Increased household income attainment and standard of living

Employment created by the proposed development will provide opportunity to improve the standard of living for benefitting households, enhance purchasing power within the local community, and help stimulate the local economy, albeit temporarily. Therefore, the local business owners and individuals employed at these businesses as well as project employees will also likely experience some improvement in their income and pass these benefits onto their households.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.

Impact significance (Pre-Enhancement): Moderate

Impact Significance (Post Enhancement): Moderate

6.1.1.9. Impact 9: Potential increase in crime

The construction phase, in particular, will create an additional movement of people and vehicles to the project site, which can increase the chances of crime in the surrounding area. This impact could

[12] https://islssl.org/wp-content/uploads/2015/10/SouthAfrica-TalitaLaubscher.pdf

[13] https://businesstech.co.za/news/business/370656/south-africas-big-employment-equity-shake-up-is-coming/

cause the loss of a sense of safety and security, loss of livestock, flora, or valuables, as well as harm to person and/or property.
Status: Negative
Mitigation required:

- Access to the project site should be controlled with only authorised staff permitted entry.
- Movement to and from the project site should be controlled where construction workers are transported to and from the pick-up area and project site by the developer or the appointed agent only.
- The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation.
- The developer could consider erecting and/or contributing to the costs of erecting security cameras and/or a repeater to help improve crime prevention and management in the area.

Impact significance (Pre-Mitigation): Moderate
Impact Significance (Post Mitigation): Low

6.1.1.10. Impact 10: Potential decrease in local eco-tourism

The potential deteriorating road conditions, increase in dust, traffic, and likelihood of crime, as well as damage to the public perception of the area as attractive, quiet and pristine may lead to a decline in tourism in the Tankwa Karoo, particularly in areas close to the proposed project sites. Loss of revenue, albeit primarily during the construction phase, will negatively impact local eco-tourism business owners.
Status: Negative
Mitigation required:

- The developer should make use of local eco-tourism services and product providers where possible.
- The developer should provide consultants, contractors and other skilled project related staff with a list of local eco-tourism services and product providers with a clear request to support local eco-tourism, where possible.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Very Low

6.1.1.11. Impact 11: Potential marginalisation of local residents

To build goodwill and support for the proposed development and avoid alienation and potential negativity among Tankwa Karoo residents, the developer should liaise with local organisations, such as the Tankwa Ceres Karoo Farmers Union. Failure to communicate with local residents honestly and proactively may lead to negative impacts such as lack of cooperation, public opposition, and protests.
Status: Negative
Mitigation required:

- The developer should consider appointing a community liaison person tasked with establishing and maintaining effective communication with local residents and/or their representatives.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.12. Impact 12: Development and/or growth of locally-owned industries

There is limited opportunity for the growth of locally owned service industries such as local accommodation, catering, transport, construction, and suppliers of goods, such as construction materials, in response to construction-related activities and possible influx of consultants, contractors and other employees associated with the proposed development. Such opportunities are expected to be temporary.
Status: Positive
Enhancement required:

- The developer should make use of local service and goods providers where possible.
- The developer should provide consultants, contractors and other skilled project related staff with a list of local service and goods providers with a clear request to support local businesses where such services are required.

Impact significance (Pre-Enhancement): Low
Impact Significance (Post Enhancement): Low

6.1.1.13. Impact Summary Tables: Potential Impacts during the Construction Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Pre-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
CONSTRUCTION PHASE						
Disruption of local social structures	*Status*	Negative	Low Level 4	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	Moderate				
Increased social ills and risky behaviours	*Status*	Negative	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies • The developers should be mindful of and regularly engage with landowners, farm residents and with Touws River and/or Ceres local communities. The former can be achieved through liaison with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations. • The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse. • Introduce weekly randomized alcohol and drug testing for all employees related to the project. • Make condoms freely available to all employees related to the project. • No construction workers should be allowed to sleep at the construction site.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	n/a				

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts)* *Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Pre-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
				• All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer. • The construction workforce should receive COVID-19 and HIV awareness training prior to the commencement of construction. • HIV and TB testing and counselling should be made available to the construction workforce free of charge. • Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.		
Increased burden on existing social and bulk services	*Status*	Negative	Low Level 4	• It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	n/a				
Increased road use and road traffic related accidents and/or damage	*Status*	Negative	Low Level 4	Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during and construction.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Pre-Enhancement)	Confidence Level
DIRECT IMPACTS						
	Irreplaceability	n/a				
Loss of privacy, safety and sense of place adjacent project site	*Status*	Negative	Low Level 4	• No construction workers should be allowed to sleep at the construction sites. • A maximum 60 km/h speed limit should be enforced on private roads.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				
Unrealistic expectations regarding local job creation	*Status*	Negative	Low Level 4	• It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations has been granted. • The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates. • Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Medium to long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Pre-Enhancement)	Confidence Level
DIRECT IMPACTS						
				study area is low, and access to resources such as computers and printers is negligible, particularly in the Tankwa Karoo. • The existence of the employment desk, and the relevant procedures associated with the selection and appointment of workers must be communicated to the local communities. • Where possible, the developer should subcontract to local construction companies.		
Creation of temporary employment	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	Positive Local Long term Substantial Very likely High n/a	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, the developer should subcontract to local construction companies. • The developer should comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account. • The developer should establish local employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. • Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates. • Employment opportunities and the existence of the employment desk must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres. • The developer should offer debt education workshops for all project related employees.	Moderate Level 3	Medium

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Pre-Enhancement)	Confidence Level
DIRECT IMPACTS						
				• The developer is encouraged to provide on-the-job training and additional training programs to improve the chances of skills development during the construction phase.		
Increased household income attainment and standard of living	*Status*	Positive	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres local communities. • Employment opportunities and the existence of the employment desk must be communicated to the local communities in Tankwa Karoo, Touws River and/or Ceres.	Moderate Level 3	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential increase in crime	*Status*	Negative	Moderate Level 3	• Access to the project site should be controlled with only authorised staff permitted entry. • Movement to and from the project site should be controlled where construction workers are transported to and from the pick-up area and project site by the developer or the appointed agent only. • The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation. • The developer could consider erecting and/or contributing to the costs of erecting security cameras, and/or a repeater to help improve crime prevention and management in the area.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential decrease in local tourism	*Status*	Negative	Low Level 4	• The developer should make use of local eco-tourism services and product providers where possible. • The developer should provide consultants, contractors and other skilled project related staff with a list of local eco-tourism services and product providers with a clear request to support local eco-	Very Low Level 5	Medium
	Spatial Extent	local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts)* *Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Pre-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
	Irreplaceability	n/a		tourism, where possible.		
Potential marginalisation of local residents	*Status*	Negative	Low Level 4	• The developer should consider appointing a community liaison person tasked with establishing and maintaining effective communication with local residents and/or their representatives. •	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	n/a				
Development and/or growth of locally-owned industries	*Status*	Positive	Low Level 4	• The developer should make use of local service and goods providers where possible. • The developer should provide consultants, contractors and other skilled project related staff with a list of local service and goods providers with a clear request to support local businesses where such services are required.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				

6.1.2. Potential Impacts during the Operations Phase

6.1.2.1. Impact 1: Creation of long-term employment

A total of approximately 60 job opportunities will be created, comprising 20 skilled and 40 unskilled opportunities during the operation phase of the proposed development (for each project). Unskilled jobs will be linked to services such as panel cleaning, maintenance and security. Employment opportunities to be created during this phase equate to approximately 4800 person months (for skilled opportunities) and approximately 9600 person months (for unskilled opportunities) per project over the 20-year plant lifespan. As discussed in this report, education and skill level within the study area is low, thereby rendering the majority of locals best suited for unskilled positions. Equal access to employment must be given due consideration in line with relevant legislation and the area's demographics: This is especially pertinent to the employment of women in the BVLM given its 2020 sex ratio of 91.9 as discussed in Section 4 above.

These long-term job opportunities may provide income resilience to some community members employed by the proposed development and introduce an additional income stream to the area, thereby helping to diversify the areas economic base. Unskilled workers will likely benefit from skills transfer and knowledge development and this will contribute to expanding their skills set and enhance their future employment opportunities.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.
- The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates.
- The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account.
- Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.

Impact significance (Pre-Enhancement): Very low

Significance of impact (Post Enhancement): Very low

6.1.2.2. Impact 2: Development and/or growth of locally-owned industries

There is limited opportunity for the growth of locally owned service industries such as local accommodation, catering, transport, and suppliers of goods, such as cleaning and maintenance materials, in response to operation-related activities and possible influx of consultants, contractors and other employees associated with the proposed development.

Status: Positive

Enhancement required:

- The developer should procure goods and services locally where possible.
- The developer should provide consultants, and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required.

Impact significance (Pre- Enhancement): Very low

Impact Significance (Post Enhancement): Very low

6.1.2.3. Impact 3: Human development via the EDP

The Applicant indicated that an EDP will be developed, should the proposed project be selected as a preferred bidder in terms of the REIPPPP. The positive impacts thereof relate to the creation of employment, local spending and human capacity development. However, the attainment of these positive impacts will create substantial social and economic pull factors which are likely to attract job seekers (i.e. a potential negative impact). Such negative impacts are however considered to be completely acceptable in light of the much-needed development in the area.

Status: Positive

Enhancement required:

- The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and managed, bringing maximum benefit to the community. A third-party approach (as discussed in Section 4.3 of this report) is recommended.
- The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities.
- Such priorities must then be included in the EDP.
- Where possible, the EDP should align with the IDPs of the relevant Local Municipalities.

Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): High

6.1.2.4. Impact Summary Tables: Potential Impacts during the Operational Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Pre-enhancement)*	*Confidence Level*
DIRECT IMPACTS						
OPERATIONAL PHASE						
Creation of long-term employment	*Status*	Positive	Very Low Level 5	• The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres. • The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates. • The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account. • Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Slight				
	Probability	Very unlikely				
	Reversibility	High				
	Irreplaceability	n/a				
Development and/or growth of locally-owned industries	*Status*	Positive	Very Low Level 5	• The developer should procure goods and services locally where possible. • The developer should provide consultants, contractors and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Slight				
	Probability	Very unlikely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Human development via the EDP	*Status*	Positive	Moderate Level 3	• The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and	High Level 2	Medium
	Spatial Extent	Local				
	Duration	Long term				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Pre-enhancement)	Confidence Level
DIRECT IMPACTS						
	Consequence	Substantial		managed, bringing maximum benefit to the community. A third-party approach (as discussed in section 4.3) is recommended • The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities • Such priorities must then be included in the EDP. • Where possible, the EDP should align with the IDPs of the relevant Local Municipalities.		
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	n/a				

6.1.3. Potential Impacts during the Decommissioning Phase

6.1.3.1. Impact 1: Job losses

The proposed development has an expected 20-year life span after which it could be decommissioned. Decommissioning will result in job losses. Though unavoidable in such projects, appropriate measures should be taken to plan for retrenchments and to provide the affected community with alternatives where practical and appropriate.

Status: Negative

Mitigation required:

- The developer should comply with relevant South African labour legislation when retrenching employees.
- The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Low

6.1.3.2. Impact 2: Local economy stimulation

Expenditure will be allocated for decommissioning activities which will commence after the 20-year life span of the facility. Such expenditure will generate positive impacts on production, GDP, employment and household income, albeit relatively small and for a temporary period. Decommissioning activities will stimulate demand for transport services, accommodation and construction and other industries amongst others. The local economy will thus be stimulated for the duration of the decommissioning phase.

Status: Positive

Enhancement required: None available

Impact significance (Pre-Enhancement): Low

Impact Significance (Post Enhancement): Low

6.1.3.3. Impact Summary Tables: Potential Impacts during the Decommissioning Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Pre-enhancement)*	*Confidence Level*
DIRECT IMPACTS						
DECOMMISSIONING PHASE						
Job losses	*Status*	Negative	Low Level 4	• The developer should comply with relevant South African labour legislation when retrenching employees. • The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Local economy stimulation	*Status*	Positive	Low Level 4	None	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	n/a				
	Irreplaceability	n/a				

6.1.4. Cumulative Impacts

Table 10 provides a list of other renewable energy projects (approved) and proposed renewable energy projects (i.e. the proposed Ceres PV Development), and authorised and proposed EGI projects within the 30 km radius.

Table 10: List of projects to be considered for the cumulative impact assessments
(Adapted from Lanz, J. 2020)

DEA Reference	Title	Technology	MegaWatts
Approved Renewable Energy Projects			
14/12/16/3/3/1/1976	Kudusberg WEF	Wind	325
12/12/20/1783/1	Perdekraal 1	Wind	150
12/12/20/1783/2	Perdekraal 2	Wind	150
12/12/20/1787	Konstabel	Wind and Solar PV	170
12/12/20/1956	Touwsrivier	Solar PV	36
12/12/20/1988	Roggeveld Wind Farm	Wind	750
14/12/16/3/3/2/899	Rietkloof	Wind	36
14/12/16/3/3/2/810	Montague Road	Solar PV	75
14/12/16/3/3/2/900	Brandvalley WEF	Wind	147
14/12/16/3/3/1/1984	Tooverberg WEF	Wind	264
14/12/16/3/3/2/1115	Rondekop WEF	Wind	325
Proposed Renewable Energy Projects			
Pending	Proposed Ceres PV Development (9 PV Facilities)	Solar PV	1575
Existing Power Lines / EGI Projects			
Existing Line	Eskom BACCHUS DROERIVIER 1	EGI	N/A
Existing Line	Eskom DROERIVIER MULDERSVLEI 2	EGI	N/A
Existing Line	Eskom Gamma-Kappa 1st 765kV line	EGI	N/A
Existing Line	Eskom Kappa-Sterrekus (Omega) 1st 765kV line	EGI	N/A
Authorised Power Lines / EGI Projects			
14/12/16/3/3/1/1983	Tooverberg EGI	EGI	N/A
Not provided	Perdkekraal West EGI	EGI	N/A
Proposed Power Lines / EGI Projects			
Not applicable – in screening stage	Planned Eskom Gamma-Kappa 2nd 765kV line	EGI	N/A
Not applicable – in screening stage	Planned Eskom Kappa-Sterrekus 2nd 765kV line	EGI	N/A
Pending	Proposed Ceres PV Development (9 Power Lines)	EGI	N/A

The cumulative impacts apply to the construction and operational phases.

6.1.4.1. Impact 1: Exacerbated in-migration of job seekers

The incidence and severity of the in-migration of job seekers as well as increases in social deviance might increase as more solar energy facilities and associated EGI are developed in the area. This is of importance as several other solar energy developments are being proposed in the area, as listed in Table 10 above. However, such increases are similarly associated with most other forms of economic and social development and should therefore be expected from any industrial-scale developments in the study area. It should also be borne in mind that influx of job seekers does not necessarily equate in social deviance; i.e. influx of job seekers is a social disruptor which could result in social impacts.
Status: Negative
Mitigation required: None available
Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.4.2. Impact 2: Combined human development caused by multiple EDPs being implemented

Should more than one solar PV facility be developed in the study area; it is very likely that multiple community development funds/initiatives might be implemented by the relevant project developers as part of their respective obligations under REIPPPP. Such multiple EDPs is likely to enhance the creation of employment, local spending and human capacity development.
Status: Positive
Enhancement required: None available
Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): Moderate

6.1.4.3. Impact Summary Tables: Cumulative Impacts

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation)*	*Potential mitigation measures / Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation)*	*Confidence Level*
CUMULATIVE IMPACTS						
Exacerbated in-migration of job seekers	*Status*	Negative	Low Level 4	None	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium to long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Combined human development caused by multiple EDPs being implemented	*Status*	Positive	Moderate Level 3	None	Moderate Level 3	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	n/a				
	Irreplaceability	n/a				

7. Impact Assessment Summary

The overall impact significance findings, following the implementation of the proposed mitigation measures are shown in Table 11 below:

The impacts below apply to the Witte Wall PV 1 and Witte Wall PV 2 projects, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

Table 11: Overall impact significance (post mitigation)

Phase	Overall Impact Significance
Construction	Very low to Low (negative) / Low to Moderate (positive)
Operational	Very low to high (positive)
Decommissioning	Low (negative) / Low (positive)
Nature of Impact	**Overall Impact Significance**
Cumulative - Construction	Low (negative) / Moderate (positive)
Cumulative - Operational	Low (negative) / Moderate (positive)
Cumulative - Decommissioning	No impact

8. Legislative and Permit Requirements

No licences or permits are required in terms of the socio-economic impact of the proposed development.

However, it is important to note that the proposed project is aligned with the goals of national legislation down to local level. Specifically, it is aligned with the National Development Plan 2030 as it is linked to creating jobs and livelihoods, expanding infrastructure, and transitioning to a low-carbon economy. It is also linked to the 2019 Integrated Resources Plan (IRP), which notes that solar PV will account for 10.52 % of the total installed capacity by 2030. If these projects are selected as preferred bidders, then they will contribute towards this installed capacity. Furthermore, the proposed project falls within the Komsberg REDZ, in line with GN 114, which has gazetted a total of eight REDZs as an outcome of the Wind and Solar Phase 1 SEA, wherein wind and solar PV developments are incentivised and most suitable.

9. Environmental Management Programme Inputs

The key mitigation measures proposed by the specialist, and which needs to be included in the EMPr. are listed below.

Construction Phase

- Management Measures:
    - The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
    - Where possible, subcontract to local construction companies.
    - Tankwa Karoo residents should be given preference in employment: this will require an innovative recruitment process that does not rely on technology or locals registering in a nearby town, as well as the provision of transport from decentralised points within the area (such as the Tankwa Farmstall for example)
    - The developers should be mindful of and regularly engage with local landowners and farm residents and with Touws River and/or Ceres communities. The former can be achieved by liaising with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations.

- The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse.
- Introduce weekly randomized alcohol and drug testing for all employees related to the project.
- Make condoms freely available to all employees related to the project.
- No construction workers should be allowed to sleep at the construction site.
- A maximum speed limit of 60 km/hour should be enforced, on private roads.
- All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer.
- The construction workforce should receive COVID-19 and HIV awareness training before the commencement of construction.
- HIV and TB testing and counselling should be made available to the construction workforce free of charge.
- Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.
- The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations has been granted.
- The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as transport, computers and printers is negligible, particularly in the Tankwa Karoo.
- The existence of the employment desks and the relevant procedures associated with the selection and appointment of workers must be communicated to local communities.
- Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during and construction.
- The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation.
- The developer could consider erecting and/or contributing to the costs of erecting security cameras and/or a repeater to help improve crime prevention and management in and around the project area.
- The developer should make use of local eco-tourism services and product providers where possible.
- Appoint a contact person responsible for liaising with local residents.

- <u>Monitoring Actions:</u>
  - Composition of workforce to be monitored during construction to assess number of de facto local residents employed.
  - Compliance with employment legislation to be monitored.
  - Undertake a review of the following as stipulated in the EMPr:
    - Community communication strategy, dates and outcomes of engagement;
    - Code of Conduct, date and means of communication;
    - Testing dates and results;
    - Security records;

- Dates, duration, and content outline of prevention of disease training and register of attendance;
- Site access records;
- Location of access roads;
- Workforce and contractors register;
- Community engagement dates and outcomes of engagement records;
- Work desk/s work register/s;
- Record of debt education workshops and other skills training; and
- Access and transport arrangement records reviewed.

Operational Phase

- Management Measures:
  - The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres;
  - Employment opportunities and the existence of the employment desk must be communicated to the local communities in Tankwa Karoo, Touws River and/or Ceres;
  - The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates with preference given to Tankwa Karoo residents where possible;
  - The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account;
  - Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project;
  - The developer should procure goods and services locally where possible;
  - The developer should provide consultants, contractors and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required;
  - The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and managed, bringing maximum benefit to the community. A third-party approach (as discussed in section 4.3) is recommended;
  - The developer or the appointed agent must engage with local communities, NGOs, CBOs and local government structures to identify and agree upon priorities;
  - Such priorities must then be included in the EDP;
  - Where possible, the EDP should align with the IDPs of the relevant Local Municipalities;
  - Retain a contact person responsible for liaising with local residents.

- Monitoring Actions:
  - Review all employment records, and registers for compliance;
  - Review community engagement reports;
  - Review knowledge sharing and job training reports;
  - Review procurement records;
  - Review list of local good and service providers and distribution thereof to relevant parties;
  - Review EDP, public participation records and local IDPs.

Decommissioning Phase

- Management Actions:
  - The developer should comply with relevant South African labour legislation when retrenching employees;
  - The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning;
  - All project infrastructures should be decommissioned appropriately and thoroughly to avoid misuse;
  - Retain a contact person responsible for liaising with local residents.

- Monitoring Actions:
  - Review retrenchment plans.
  - Review training reports.

10. Final Specialist Statement and Authorisation Recommendation

Socio-economic impacts and the respective significance of these impacts are highly dependent on the receiving social and economic environment or context in which the impacts occur. For example, a small community like Touws River, with high unemployment rates and a declining economy would experience impacts differently compared to a community where everyone is fully employed and there is a growing economy with various economic drivers.

Secondary and primary data present the study area as characterised by substantial poverty, low employment and limited livelihood strategies. A depressed economy, lack of public and private enterprise together with seasonal nature of agricultural employment contributes to the high level of unemployment, depriving community members of realising an income, constraining empowerment and further economic development. While larger and better resourced with far more economic drivers, Ceres, too, has high levels of poverty, seasonal employment patterns and high rates of unemployment.

Risky social behaviour (i.e. teenage pregnancy, alcohol and drug addiction, school drop-out and gangsterism) is a major challenge in the area. Such deviance could threaten social capital on which much of the existing livelihood strategies depend.

Positive socio-economic impacts likely to result from the project include the creation of 90 to 150 skilled and 400 to 460 unskilled employment opportunities for the duration of the 12 to 14-month construction phase, 20 skilled and 40 unskilled employment opportunities during the operational phase of an expected 20 years. While the developer may not be able to fill skilled positions with locals, unskilled labour positions can be filled locally should the recommended mitigation measures be implemented. Local communities will also likely benefit from the concomitant growth opportunities for local businesses and support service industries and increased local spending which in turn will likely benefit local socio-economic development. These impacts will benefit communities through the creation of income generation opportunities and human development through skills development and training. In addition, local communities will benefit from the proposed EDP if well designed and well implemented.

On a macro level, positive impacts also include the generation of clean energy for the national grid which is under severe pressure and unable to meet demand, thereby curtailing economic advancement of the country. Therefore, the proposed development can also be seen as creating a positive social benefit for society.

Negative socio-economic impacts likely to result from the project include influx of opportunistic job seekers which could strain social structures and support networks, increase risky social behaviour such as prostitution and drug abuse, and burden existing services. Frustrated expectations of employment, created by the proposed development, could also contribute to feelings of distrust in the developer, and in isolated instances, damage to project property and/or potential intimidation of staff. Furthermore, given the time-bound nature of the development, the inevitable job losses at the end of each phase is high. The construction phase in particular will create an additional movement of people and vehicles to the site, which could increase the chances of theft in the surrounding properties. This impact could cause the loss of livestock, flora, or valuables. This (negative impact) can be managed by implementing recommended mitigation measures.

The overall significance rating of the negative socio-economic impacts associated with the proposed project during the construction phase is very low to low; whereas the overall significance rating of the positive socio-economic associated with the proposed project during construction is low to moderate, should mitigation and enhancement measures be implemented respectively.

The overall significance rating of the positive socio-economic impacts associated with the proposed projects during the operation phase is very low to high, should enhancement measures be implemented.

The overall significance rating of the socio-economic impacts associated with the proposed projects during decommissioning phase is low (negative)and low (positive) should mitigation measures and enhancement measures be implemented, respectively.

The cumulative impact during the construction and operational phases is low (negative) to moderate (positive). There is no cumulative impact of the decommissioning phase.

Mitigation measures included within Section 9 above should be included within the Environmental Authorisations, should it be granted by the DEFF. Based on the current socio-economic context of the area and the impacts identified, it is the opinion of the specialist that the project can go ahead, provided that the mitigation measures proposed are adopted and adhered to by the EA holder.

10.1 Statement and Reasoned Opinion

It should be accepted that the development of the proposed projects is likely to result in some form of negative social impact to the local community. However, such a negative impact needs to be weighed against the potential benefit likely to result from the same development. Given the overall very low to low significance of potential negative impacts associated with the project, as compared to the overall very low to high significance of potential positive impact of the project; it can be concluded that the prospective socio-economic benefits of the proposed project outweigh the socio-economic losses/impacts.

10.2 EA Condition Recommendations

From a socio-economic impact perspective, in light of the above argument, the specialist conducting this SIA is of the opinion that the proposed projects should be authorised by the competent authority.

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Appendices: Appendix A - Specialist Expertise

CURRICULUM VITAE of SANDRA HILL
Social Scientist & Community Development Practitioner
October 2020

Address: Wynberg, Cape Town
Phone: +27 82 729 2351
E-mail: sandra@write-now.co.za

CAREER PROFILE
Social scientist and community development practitioner

As a social scientist, I have been involved with the social and economic advancement of people in one form or another, for over twenty years. I have worked as a community worker, project coordinator, learning facilitator, non-profit organisation director, and development consultant. Community engagement, research, and writing have been key components in all these roles.

I am committed to ethical and well-conducted social science research that generates reliable information to help role-players anticipate future impacts and find solutions to social problems. Over the years, my fields of research included: gender, poverty, land reform, labour, project evaluation, participatory appraisal, social change, and organisational learning.

I hold an Honours degree in Social Science with undergraduate majors in sociology and social work. My formal training equipped me with the necessary theory, data gathering and analytical tools, and modes of meaningful community engagement to practice my profession.

EDUCATION

- MA in English (cum laude), University of the Western Cape, 2012 - 2013
- Honours in Social Science, Rhodes University, 1990
- Bachelor of Social Science (BSocSci), University of Cape Town, 1987 – 1989

PROFESSIONAL HISTORY

2012 - present: Writer, independent social science consultant, researcher, editor & facilitator (self-employed)
I engage with companies and development organisations to produce engaging written work. I have a strong ability to generate, distil, and present key information from a range of sources in an accessible and engaging form. This skill is rooted in more than twenty years' experience in social change practice at a community level.

Currently, I am involved in a series of articles investigating COVID-19's impact on various aspects of society including banking, fintech, health, and social innovation. I have worked on Meridian Economics' report on Eskom's financial crisis and the viability of coal-fired power in South Africa; Singiz's Evaluation of the Dell Young Leaders Programme; Environmental Monitoring Group's workshops and five-year report; Seed Knowledge Initiative publications and small-scale farmer workshop; NIMD's publication on inter-party dialogue; and the Barefoot Collective's practitioners' manual on learning and social change. I am also involved in Socio-economic Impact Assessments, including the proposed nine Solar PV and EGI projects near Touws River proposed by Veroniva (PTY)

Ltd, as well as seven proposed Solar PV Rinkhals projects near Kimberly proposed ABO Wind renewable energies (PTY) Ltd.

2006 - 2011: Community Development Resource Association (CDRA): Researcher & Organisational Development Practitioner

I was the lead facilitator of an international, three-year, action research project inquiring into social change. My role included designing the research methodology and training co-practitioners in research and writing skills. I also played a key role in analysing findings and compiling the final report.

1999 - 2006: Sandra Hill Consulting: Organisational Development Practitioner

I set up my own organisational development consultancy to assist other practitioners engaged in social change processes.

1995 - 1998: The Women on Farms Project: Founding Director

I established the Women on Farms Project as an independent organisation and was responsible for strategic planning; staff; organisational learning; design and implementation of programmes; monitoring and evaluation; fund-raising; and governance.

1992 - 1995: Lawyers for Human Rights: Women on Farms Project Coordinator

I initiated and co-ordinated the Women on Farms Project. During this time, I initiated and ran women's groups on Boland farms with a focus on adult education, empowerment, and community development.

1991: Foundation for Community Work: Community Worker

Using participatory processes, the purpose of my interventions was to build on local knowledge, enhance capacity development, and foster community empowerment.

KEY SKILLS & EXPERIENCE

Understanding of Social Change & Community Development

- My degrees in social science and subsequent short courses in Developmental Evaluation and Monitoring (CDRA 2011) and Observation, Insight and Intervention (Proteus Initiative 2009) have equipped me with both a broad theoretical framework but also a practical ability to understand social dynamics and to interpret social challenges and their potential impact on individuals, organisations, and communities at large.

Writing & Research Skills

- Excellent writing and editing skills.
- Good interviewing and group facilitation skills.
- Excellent ability to analyse and understand complex, and often nuanced data.

Facilitation and Interpersonal Skills

- Excellent facilitation skills supported by a thorough understanding of community development, group dynamics, and adult education.

REFERENCES

Elfrieda Pschorn-Strauss: Seed and Knowledge Initiative
elfrieda@seedandknowledge.org
+27 82 413 0502

Jessica Wilson: Independent Evaluator and Environmental Specialist
jessicawilson@theprocess.org.za
+27 83 326 4216

Appendix B - Specialist Statement of Independence

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

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

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

PROJECT TITLE

THE PROPOSED WITTE WALL 1 AND 2 SOLAR PV FACILITIES AND THEIR ASSOCIATED ELECTRICAL GRID INFRASTRUCTURE NEAR TOUWS RIVER, WESTERN CAPE PROVINCE

Kindly note the following:

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

Departmental Details

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

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

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

1. SPECIALIST INFORMATION

Specialist Company Name:	Sandra Hill – Social Scientist			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100%
Specialist name:	Sandra Hill			
Specialist Qualifications:	BSocSci (Honours)			
Professional affiliation/registration:	n/a			
Physical address:	1a Wolfe Street, Wynberg, Cape Town, 7800			
Postal address:	1a Wolfe Street, Wynberg, Cape Town, 7800			
Postal code:	7800	Cell:	082 729 2351	
Telephone:	082 729 2351	Fax:	n/a	
E-mail:	sandra@write-now.co.za			

2. DECLARATION BY THE SPECIALIST

I, **Sandra Hill**, declare that –

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

Signature of the Specialist

Sandra Hill – Social Scientist (sole proprietor)

Name of Company:

8 OCT 2020

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Sandra Hill**, swear under oath/affirm that all the information submitted or to be submitted for the purposes of this application is true & correct.

Signature of the Specialist

Sandra Hill – Social Scientist (sole proprietor)

Name of Company

8 OCT 2020

Date

Signature of the Commissioner of Oaths

121452-1 CONSTABLE
A.F. MASETI-MZINGELWA

SUID-AFRIKAANSE POLISIEDIENS

09 OCT

Date

Appendix C: Site Sensitivity Verification

It is important to note that there are no socio-economic themes on the National Web-based Environmental Screening Tool (Screening Tool) (as at October 2020), therefore the environmental sensitivity of the proposed project area as identified by the Screening Tool is not applicable. Therefore, no site sensitivity verification report is required.

However, prior to commencing with the specialist assessment in accordance with Appendix 6 of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014, a site visit was undertaken in order to confirm the current land use.

The details of the site visit are noted below:

Date of Site Visit	7 September 2020 (1 day)
Specialist Name	Sandra Hill
Professional Registration Number	Not Applicable
Specialist Affiliation / Company	Private

The land use confirmation was undertaken using desktop analysis, using available policy data and literature, as well as a site inspection and relevant municipal Spatial Development Plans and Integrated Development Plans.

The current use of the land is game farming and to breed antelope recreationally.

Appendix D: Impact Assessment Methodology

The impact assessment methodology followed for the specialist assessment is noted below.

The impact assessment includes:

- *the nature, significance and consequences of the impact and risk;*
- *the extent and duration of the impact and risk;*
- *the probability of the impact and risk occurring;*
- *the degree to which impacts and risks can be mitigated;*
- *the degree to which the impacts and risks can be reversed; and*
- *the degree to which the impacts and risks can cause loss of irreplaceable resources.*

As per the DEFFT Guideline 5: Assessment of Alternatives and Impacts, the following methodology is applied to the prediction and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect and cumulative:

- *Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.*
- *Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.*
- *Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.*

The impact assessment methodology includes the following aspects:

- *Nature of impact/risk - The type of effect that a proposed activity will have on the environment.*

- *Status - Whether the impact/risk on the overall environment will be:*
    - *Positive - environment overall will benefit from the impact/risk;*
    - *Negative - environment overall will be adversely affected by the impact/risk; or*
    - *Neutral - environment overall not be affected.*

- *Spatial extent – The size of the area that will be affected by the impact/risk:*
    - *Site specific;*
    - *Local (<10 km from site);*
    - *Regional (<100 km of site);*
    - *National; or*
    - *International (e.g. Greenhouse Gas emissions or migrant birds).*

- *Duration – The timeframe during which the impact/risk will be experienced:*
    - *Very short term (instantaneous);*
    - *Short term (less than 1 year);*
    - *Medium term (1 to 10 years);*
    - *Long term (the impact will cease after the operational life of the activity (i.e. the impact or risk will occur for the project duration)); or*
    - *Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e. the impact will occur beyond the project decommissioning)).*

- *Consequence – The anticipated consequence of the risk/impact:*
    - *Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);*
    - *Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);*
    - *Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);*
    - *Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or*
    - *Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).*

- *Reversibility of the Impacts - the extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase):*

- *High reversibility of impacts (impact is highly reversible at end of project life i.e. this is the most favourable assessment for the environment);*
- *Moderate reversibility of impacts;*
- *Low reversibility of impacts; or*
- *Impacts are non-reversible (impact is permanent, i.e. this is the least favourable assessment for the environment).*

- *Irreplaceability of Receiving Environment/Resource Loss caused by impacts/risks – the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase):*
  - *High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e. this is the least favourable assessment for the environment);*
  - *Moderate irreplaceability of resources;*
  - *Low irreplaceability of resources; or*
  - *Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e. this is the most favourable assessment for the environment).*

Using the criteria above, the impacts have been further assessed in terms of the following:

- *Probability – The probability of the impact/risk occurring:*
  - *Extremely unlikely (little to no chance of occurring);*
  - *Very unlikely (<30% chance of occurring);*
  - *Unlikely (30-50% chance of occurring)*
  - *Likely (51 – 90% chance of occurring); or*
  - *Very Likely (>90% chance of occurring regardless of prevention measures).*

To determine the significance of the identified impact/risk, the consequence is multiplied by probability (qualitatively as shown in Figure 1).

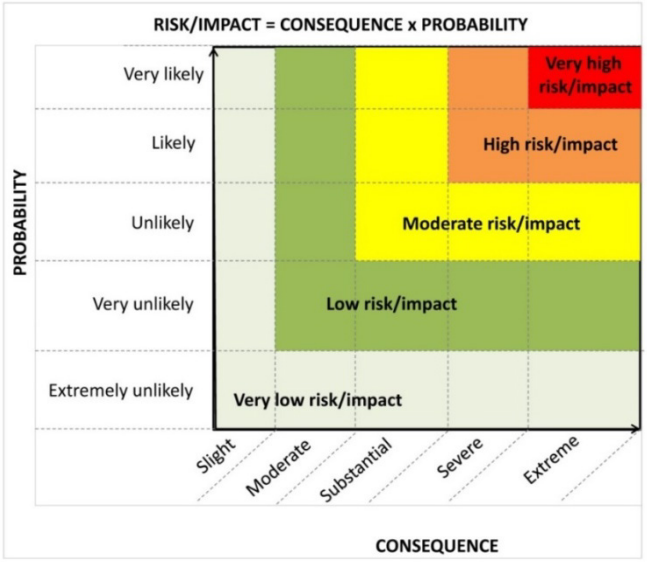


Figure 1. Guide to assessing risk/impact significance as a result of consequence and probability.

- *Significance – Will the impact cause a notable alteration of the environment?*
  - *Very low (the risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);*
  - *Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);*
  - *Moderate (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated);*
  - *High (the risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making); and*
  - *Very high (the risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-*

making (i.e. the project cannot be authorised unless major changes to the engineering design are carried out to reduce the significance rating)).

With the implementation of mitigation measures, the residual impacts/risks are ranked as follows in terms of significance:

- *Very low = 5;*
- *Low = 4;*
- *Moderate = 3;*
- *High = 2; and*
- *Very high = 1.*

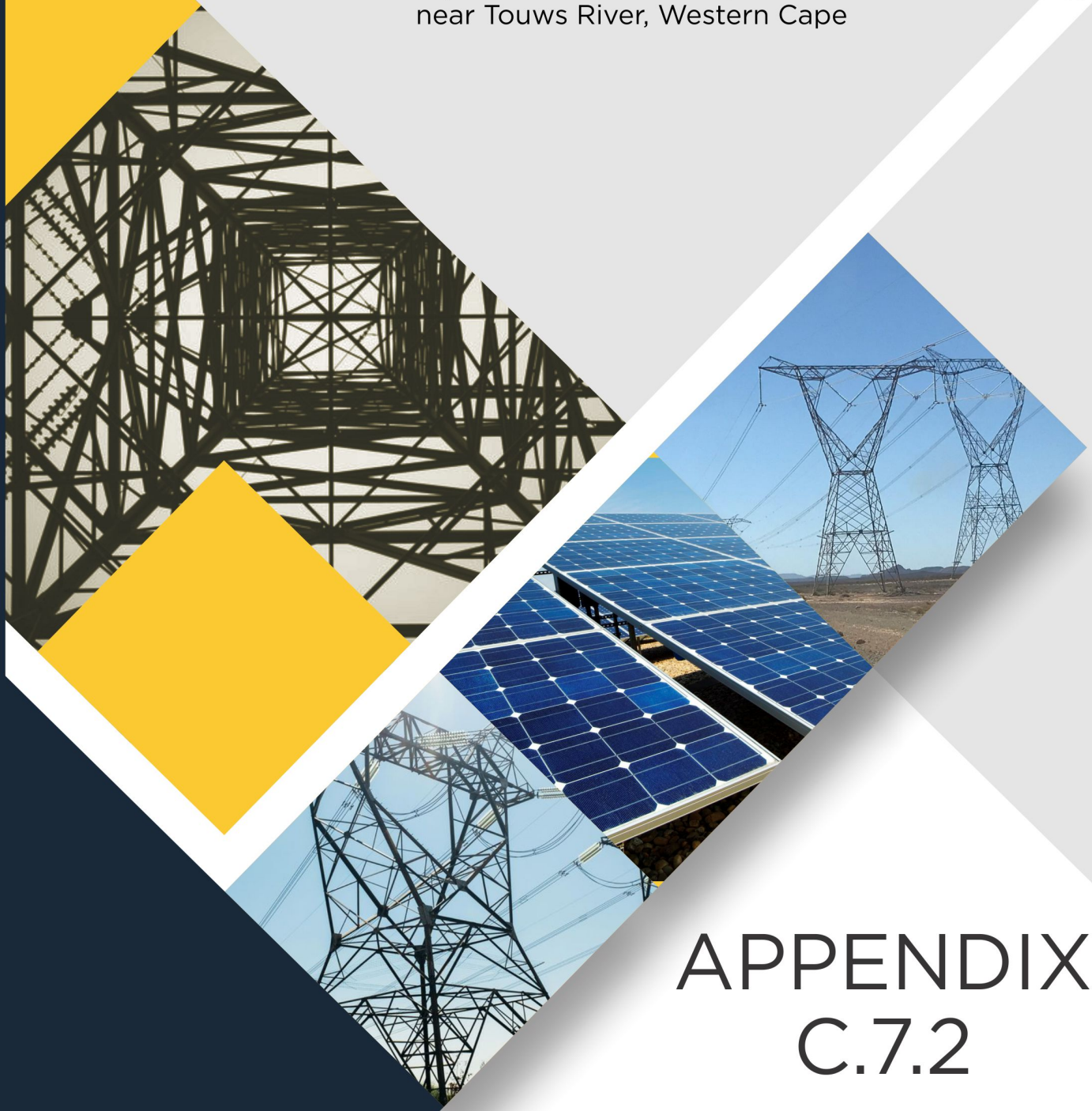
Confidence – The degree of confidence in predictions based on available information and specialist knowledge:

- *Low;*
- *Medium; or*
- *High.*

Appendix E: Compliance with the Appendix 6 of the 2014 EIA Regulations (as amended)

Requirements of Appendix 6 (Specialist Reports) of Government Notice R326 (Environmental Impact Assessment (EIA) Regulations of 2014, as amended)	***Section where this has been addressed in the Specialist Report***
1. (1) A specialist report prepared in terms of these Regulations must contain - *a) details of -* *i. the specialist who prepared the report; and* *ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;*	*i. Section 1.2* *ii. Appendix A*
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	*Appendix B*
c) an indication of the scope of, and the purpose for which, the report was prepared;	*Section 1*
(cA) an indication of the quality and age of base data used for the specialist report;	*Section 2*
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	*Section 3 and Section 4*
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 4.3 and Not Applicable*
g) an identification of any areas to be avoided, including buffers;	*Not Applicable*
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;	*Not Applicable*
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	*Section 2.2*
j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	*Section 5 and Section 6*
k) any mitigation measures for inclusion in the EMPr;	*Section 6 and Section 9*
l) any conditions for inclusion in the environmental authorisation;	*Section 10*
m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	*Section 9*
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; and* *ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;*	*Section 10.1 and Section 10.2*
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	*Section 2.1 and Section 5.2*
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	*Not Applicable at this stage, refer to the BA Report*
q) any other information requested by the competent authority.	*Not Applicable at this stage*
(2) Where a government notice 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.	*Not Applicable*

Basic Assessment for the Proposed Development of Electrical Grid Infrastructure to support the proposed nine 175 MW Solar Photovoltaic Facilities and associated Infrastructure (i.e. Witte Wall PV 1, Witte Wall PV 2, Grootfontein PV 1, Grootfontein PV 2, Grootfontein PV 3, Hoek Doornen PV 1, Hoek Doornen PV 2, Hoek Doornen PV 3, and Hoek Doornen PV 4), near Touws River, Western Cape



APPENDIX C.7.2

Socio-Economic Assessment for Grootfontein

SOCIO ECONOMIC SPECIALIST ASSESSMENT

BASIC ASSESSMENTS FOR THE PROPOSED DEVELOPMENT OF THREE 175 MW SOLAR PHOTOVOLTAIC FACILITIES, ELECTRICAL GRID INFRASTRUCTURE, AND ASSOCIATED INFRASTRUCTURE FOR THE GROOTFONTEIN PV 1, PV 2, AND PV 3 – NEAR TOUWS RIVER, WESTERN CAPE PROVINCE

Report prepared for:	*Report prepared by:*
CSIR – Environmental Management Services P O Box 320 Stellenbosch 7599 South Africa	Sandra Hill – Independent Consultant Wolfe St Wynberg 7200 South Africa

4 November 2020

Executive Summary

This socio-economic impact study, includes the individual land parcels on which the proposed projects will be developed if approved, the surrounding area known as the Tankwa Karoo (of which the land parcels are a part), and the nearest towns, Touws River and Ceres, as the anticipated socio-economic impacts will be spread to varying degrees across these localities. While Touws River falls within the Breede Valley Local Municipality, the project sites and Ceres fall within the Witzenberg Local Municipality.

The following socio-economic risks and challenges characterise the study area:

- High levels of unemployment
- Poverty
- Food insecurity
- Slow economic growth
- Marginalisation of rural communities
- Persisting drought
- Poor service delivery
- High levels of drug and/or alcohol abuse
- Deteriorating education outcomes
- Increasing rate of teenage pregnancy
- Social grant dependency
- Increasing gang activity
- COVID-19 hotspots (Touws River and Ceres) and the continuing impact of the pandemic on lives and livelihoods

Positive socio-economic impacts likely to result from the proposed projects include the creation of skilled and unskilled employment opportunities for the duration of the construction and the operational phases. While the developer may not be able to fill skilled positions with locals, unskilled labour positions can be filled locally should the recommended mitigation measures be implemented. Communities will also likely benefit from the concomitant growth opportunities for local businesses and support service industries, and increased local spending. These impacts will benefit local communities through the creation of income generation opportunities and human development through skills development and training. In addition, local communities will benefit from the proposed Economic Development Plan if well designed and well implemented.

On a macro level, positive impacts also include the generation of clean energy for the national grid which is under severe pressure and unable to meet demand, thereby curtailing the economic advancement of the country. Therefore, the proposed development can also be seen as creating a positive social benefit for society.

Negative socio-economic impacts likely to result from the project include an influx of opportunistic job seekers which could strain social structures and support networks, increase risky social behaviour such as prostitution and drug abuse, and burden existing services. Unsuccessful job seekers and other disenchanted community members who, realistically or unrealistically, expect to gain from the proposed development could engender ill feelings towards the proposed projects, and potentially lead to protest, damage to project property, and/or intimidation of staff.

Furthermore, given the time-bound nature of the development, the inevitable job losses at the end of each phase are high. The additional movement of people and vehicles to the site, particularly during the construction phase may increase the chances of crime on surrounding properties and a decline in eco-tourism. This (negative impact) can be managed by implementing recommended mitigation measures.

The overall significance rating of the negative socio-economic impacts associated with the proposed projects during the construction phase is very low to low; whereas the overall significance rating of the positive socio-economic associated with the proposed projects during construction is low to moderate, should mitigation and enhancement measures be implemented respectively.

The overall significance rating of the positive socio-economic impacts associated with the proposed projects during the operation phase is very low to high, should enhancement measures be implemented.

The overall significance rating of the socio-economic impacts associated with the proposed projects during decommissioning phase is low (negative) and low (positive), should mitigation measures and enhancement measures be implemented, respectively.

The cumulative impact during the construction and operational phases is low (negative) to moderate (positive). There is no cumulative impact of the decommissioning phase.

Given the overall very low to low significance of potential negative impacts associated with the projects, as compared to the overall very low to high significance of potential positive impact of the projects; it can be concluded that the prospective socio-economic benefits of the proposed projects outweigh the socio-economic losses/impacts.

From a social impact perspective, in light of the above argument, the specialist conducting this Socio-economic Assessment is of the opinion that the proposed projects should be authorised by the competent authority.

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List of Abbreviations

ART	Anti-retroviral Treatment
BA	Basic Assessment
BVLM	Breede Valley Local Municipality
CSIR	Council for Scientific and Industrial Research
CWDM	Cape Winelands District Municipality
DEFF	Department of Environment, Forestry and Fisheries
EA	Environmental Authorisation
ECD	Early Childhood Development
EDP	Economic Development Plan
EEA	Employment Equity Act
EIA	Environmental Impact Assessment
FET	Further Education and Training
HDI	Human Development Indicator/Index
MLL	Minimum Living Level
MW	Megawatt
NMR	Neonatal Mortality Rate
PV	Photovoltaic
NEMA	National Environmental Management Act
NMD	Notified Maximum Demand
IDP	Integrated Development Plan
REDZs	Renewable Energy Development Zones
REIPPPP	Renewable Energy Independent Power Producer Procurement Program
SDF	Spatial Development Framework
SIA	Socio-economic Impact Assessment
WLM	Witzenberg Local Municipality

Glossary

Definitions	
Dependency ratio	Refers to the number of persons on average dependent on every working person in a region (the number of people supported by each economically active person. The lower the dependency ratio the better.
Poverty	The inability to attain a minimal standard of living.
Minimum Living Level	Reflects the minimum amount a household needs to meet their basic need. The MLL for the Western Cape was R1606 per month in 2017.
Working Age Population	The portion of the population aged between 15 – 64.
Unemployment Rate	Refers to individuals without work, but actively seeking work in a recent past period (usually four weeks), and are currently available for work.
Gross Domestic Product	The sum of value added created by all residents within a certain period which is commonly a year.
Human Development Indicator/Index	The HDI serves as a composite indicator of social and economic development and overall well-being.
Human Capital	Refers to the physical and mental ability and the well-being of the population of an area.
Study Area	Refers to the area surrounding the site of the proposed development within an approximately 80km radius.

SOCIO-ECONOMIC IMPACT ASSESSMENT

This report serves as the Socio-economic Specialist Assessment that was prepared as part of the Basic Assessment (BA) for the proposed development of three 175 MW Solar Photovoltaic (PV) facilities, electrical grid infrastructure (EGI), and associated infrastructure (i.e. Grootfontein PV 1, Grootfontein PV 2, and Grootfontein PV 3) near Touws River in the Western Cape Province.

The Applicant is proposing to develop nine solar PV facilities, nine power lines and associated infrastructure to link the proposed PV facilities to the Eskom Kappa Substation. There are nine separate Project Applicants. Two PV facilities are being proposed on the farm Witte Wall 171; three PV Facilities are being proposed on the farm Grootfontein 149; and four PV Facilities are being proposed on the Farm Hoek Doornen 172. This Socio-economic Impact Assessment deals with the Grootfontein projects.

1. Introduction

1.1. Scope, Purpose and Objectives of this Specialist Report

This Socio-economic Impact Assessment (SIA) Report investigates the potential social disruptors and possible associated social impacts that may ensue from the development of the four proposed 175 MW Solar PV facilities and associated infrastructure on the farm Grootfontein (portions 5/149 and RE 149).

This socio-economic impact study includes the individual land parcels on which the proposed projects will be developed if approved, the surrounding area known as the Tankwa Karoo (of which the land parcels are a part), and the two nearest towns, Touws River and Ceres, as the anticipated socio-economic impacts will be spread to varying degrees across these localities.

The project is located within the Witzenberg Local Municipality (WLM). However, the closest town, Touws River (76 km by road), is located in the Breede Valley Local Municipality (BVLM), while the next closest town, Ceres (78 km by road) lies in the WLM.

Social disruptors and impacts most likely to significantly influence social and cultural concerns, values, consequences, and benefits to communities are the focus of this SIA.

The objective of this SIA is to assist with informed decision-making by the competent authority, Department of Environment, Forestry and Fisheries (DEFF), as well as the development of appropriate management measures relating to socio-economic impacts linked to the proposed project.

The purpose of the SIA is as follows:

- Undertake a policy review and assess the alignment of the proposed project with the national, provincial, and local socio-economic policies, with a focus on the compatibility of the project with the spatial planning, development objectives and land use management plans of the respective authorities.
- Profile the socio-economic status quo of the study area using secondary data.
- Identify and analyse the potential socio-economic impacts (direct, indirect, and cumulative) of the proposed project.
- Evaluate the potential positive impacts versus any negative socio-economic effects that may ensue as a result of the change in status quo of the affected and benefiting communities and economies.

1.2. Details of Specialist

This specialist assessment has been undertaken by Sandra Hill, an independent social science consultant, in response to a request by the Council for Scientific and Industrial Research (CSIR) on behalf of Veroniva (PTY) Ltd (the project developer), and forms part of a BA for the development of the proposed 175 MW Solar PV facilities, EGI, and associated infrastructure in the Tankwa Karoo, equidistant from the towns of Touws River and Ceres in the Komsberg Renewable Energy Development Zone (REDZ) (REDZ 2), located in the Western Cape Province. A curriculum vitae is included in Appendix A of this specialist assessment.

1.3. Terms of Reference

The following terms of reference were provided for this study:

- Comply with the Assessment Protocols that were published on 20 March 2020, in Government Gazette 43110, GN 320 (i.e. Part A, which provides the Site Sensitivity Verification Requirements where a Specialist Assessment is required but no Specific Assessment Protocol has been prescribed).
- Compile a Socio-economic Assessment in compliance with Appendix 6 of the 2014 National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (as amended). The Specialist Assessment must also be in adherence to any additional relevant legislation and guidelines that may be deemed necessary.
- Provide review input on the preferred infrastructure layout following the sensitivity analysis and layout identification (as applicable).
- Describe the socio-economic context of the study area, focusing on aspects that are potentially affected by a solar PV project and associated infrastructure, and taking into consideration the current situation as well as the trends, the local planning (Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs)), other developments in the area.
- Apply a variety of appropriate options for sourcing information, such as a review of analogous studies, available databases and social indicators, and use of interviews with key affected parties such as local communities, local landowners and government officials (local and regional) etc. and a site visit, if necessary. The REDZ Phase 1 Strategic Environmental Assessment (SEA) (DEA, 2015) should also be considered.
- Consider social issues such as potential in-migration of job seekers, opportunities offered by training and skills development, phasing of employment over the duration of the Renewable Energy Independent Power Producer Procurement Program (REIPPPP), cumulative effects with other REIPPPP projects in the local area, implications for local planning and resource use.
- Evaluate the implications of the social investment programme associated with REIPPPP projects on the local socio-economic context.
- Identify and assess the potential direct, indirect and cumulative impacts of the proposed development on the receiving environment from a socio-economic perspective.
- Identify any protocols, legal and permit requirements that are relevant to this project and the implications thereof.
- Provide recommendations with regards to potential monitoring programmes.
- Determine mitigation and/or management measures which could be implemented to as far as possible reduce the effect of negative impacts and enhance the effect of positive impacts. Also identify best practice management actions, monitoring requirements, and rehabilitation guidelines for all identified impacts for inclusion in the EMPr.
- Incorporate and address all issues and concerns raised by Stakeholders, Competent Authority, I&APs and the public during the Public Participation Process (where relevant and applicable).
- Review the Generic EMPr for 1) Power Lines and 2) Substations (GN 435) and confirm if there are any specific environmental sensitivities or attributes present on the site and any resultant site-specific impact management outcomes and actions that are not included in the pre-approved generic EMPr (Part B – Section 1).

2. Approach and Methodology

The approach to and methodology adopted for the SIA is discussed in this section.

Type of Specialist Investigation	Socio-economic Impact Assessment
Date and Duration of Specialist Site Visit	7 September 2020 (1 day)
Season	Spring – however the season is not relevant to the assessment and has no bearing on its findings.
Relevance of Season	The season in which the site visit was undertaken has no relevance and bearing on the findings of the assessment.

Approach: SIA Guidelines

The Guideline for Social Impact Assessment (Barbour, 2007) is used to provide policy and quality control guidelines for the SIA process used in this report. The guideline's key activities, objectives and areas of particular interest for assessment are elaborated on below.

Social Impact Assessment Guidelines (Barbour, 2007)
1. Key Activities
Describe and obtain an understanding of the proposed intervention (type, scale, location), the communities likely to be affected and determine the need and scope of the SIA
Collect baseline data on the current social environment and historical social trends
Identify and collect data on the SIA variables and social change processes related to the proposed intervention
Assess and document the significance of social impacts associated with the proposed intervention
Identify alternatives and mitigation measures
2. Key Objectives
Assess the proposed development in terms of its fit with the relevant legislative, policy and planning requirements
Identify and assess the factors that contribute to the overall quality of life (social wellbeing) of people not just their standard of living
Identify and assess the needs of vulnerable, at risk, groups and/or ethnic minorities or indigenous peoples
Clearly identify which individuals, groups, organisations and communities stand to benefit from the proposed intervention and those that stand to be negatively affected. In so doing the assessment must identify and emphasize vulnerable and underrepresented groups
Recognise that social, economic and biophysical systems and impacts are inextricably interconnect, and identify and understand the impact pathways created when changes in one domain trigger impacts across other domains
Acknowledge and incorporate local knowledge and experience into the assessment process
Identify and assess development opportunities and not merely the mitigation of negative or unintended outcomes
3. Key Areas of Particular Interest
Where vulnerable communities are present
With high poverty and unemployment levels
Where access to services, mobility and community networks are affected
Where local livelihoods depend on access to and use of environmental resources and services
Of important tourism or recreation value
Where the existing character and "sense of place" will be altered

Data Collection

To create a comprehensive understanding of the socio-economic environment that might be affected by the proposed development, a socio-economic overview was developed incorporating both secondary and primary data collection.

Data sources consulted to compile the socio-economic baseline include internet sources, for example, Statistics South Africa, to provide a broad overview of the socio-economic setting of the area; National, provincial and local policy and plans to determine whether the proposed project is aligned with the planning objectives of the various spheres of government, as well as previously conducted EIAs conducted to determine the potential impact and linkages to this assessment.

Primary data collection was done through face-to-face and/or telephonic interviews with land owners of the affected properties, municipal officials and community role-players to obtain additional context-specific information.

A site visit was undertaken on 7 September 2020 to the affected project farms, Touws River, and Ceres.

Data Analysis
Data analysis was conducted by evaluating relevant data from various sources published over different time periods in order to gain a long-term perspective. Information was analysed to establish status quo socio-economic conditions, prevailing social structures, local demographic trends, and potential change processes present in the study area.

The overview was then used to interpret the impacts and measure the extent of socio-economic impacts that could be derived from the proposed activities.

2.1. Information Sources

The project made use of both primary and secondary data to assess the impacts and desirability of the proposed project. Secondary data analysed was mainly derived from the following sources:

Data / Information	Source	Date	Type	Description
The South African Guideline for Involving Social Assessment Specialists in EIA (Barbour, 2007)	Western Cape Government	2007	Guidelines	Professional guidelines for conducting social impact assessment studies in South Africa
Statistics South Africa Census, 2011	Stats SA	2011	Census	Latest available census data
Statistics South Africa Community Survey, 2016	Stats SA	2016	Census	Latest available community survey data
Cape Winelands District Municipality Integrated Development Plan (IDP)	CWDM	2017/18 – 2021/22	Overview and planning document	Updated contextual overview and IDP
Witzenberg Local Municipality (WLM) Amended IDP	WLM	2017 – 2022	Overview and planning document	Updated contextual overview and IDP
Breede Valley Local (BVLM) Municipality Review of the IDP	BVLM	2020 - 2021	Overview and planning document	Updated contextual overview and IDP
National Development Plan 2030	National Government	2012	National planning document	Outlines long term development plan for South Africa
Municipal Capacity Assessment Witzenberg WC022	Municipal Demarcation Board	2018	Assessment	Overview of the environmental situation of the municipality, and summary of capacity information
Municipal Capacity Assessment Breede Valley WC025	Municipal Demarcation Board	2018	Assessment	Overview of the environmental situation of the municipality, and summary of capacity information
Socio-economic Profile: BVLM	Western Cape Government	2019	Profile	Socio-economic overview
Socio-economic Profile: WLM	Western Cape Government	2018	Profile	Socio-economic overview
Farmworker Household Survey Report	Western Cape Government	2014/15	Census	Comprehensive census of farm workers and dwellers in the CWDM.
CWDM Draft Spatial Development Framework (SDF)	Western Cape Government	2019	Strategic planning	Strategic planning
WLM SDF	WLM	2019	Spatial development	Spatial development planning

Primary data was generated through face-to-face and/or telephonic interviews with the following:

Name	Designation	Location	Technique	Date 2020
Jan Minnaar	Farm representative	Farm Grootfontein 149	Telephonic	8 September
Philip van Heerden	Farm Manager	Farm Witte Wall 171	Face-to-face	7 September
Erhard Buhr	Land Owner	Farm Hoek Doornen 172	Telephonic	5 October
Andre Vermeulen	Land Owner and interim chairperson of the Tankwa Ceres Karoo Farmers' Union	Farm Die Brak 241	Face-to-face	2 November
Leon Teunissen	Land Owner	Farm Karee Kolk 174	Telephonic	2 November
Brian Stander	National Department of Public Works	Farm Platfontien 240	Telephonic	23 October
Adwin Zinkfontein	Operational Manager	Touws River Clinic BVLM	Face-to-face	7 September
Riaan Fick	Socio-economic Development Manager	WLM	Telephonic	8 September
Nina King	Business Owner	Touws River	Face-to-face	7 September
Ashleigh Sibanda	Programme Manager at Knowledge Pele	Johannesburg	Telephonic	10 September

2.2. Assumptions, Limitations and Disclaimer

This SIA is based on several key assumptions, which are aligned with industry practice, and is consequently, subject to certain limitations. Therefore, relevant assumptions and limitations should be considered when deliberating this report. However, the assumptions and limitations are not expected to invalidate the findings of this report.

Key assumptions:

- The SIA is based on the technical information provided by the Applicant and which is assumed to be accurate (e.g. the proposed location, extent, scale of the project).
- The SIA is primarily based on secondary data. Accordingly, except for a single site visit and interviews as listed above, no primary research or social surveys have been conducted as part of this assessment. However, the level of assessment and its attendant data sources were deemed adequate for this study.
- The accuracy of secondary data sources directly influences the quality of this SIA. However, the data used in this assessment is published by reputable authors and therefore deemed to be of sufficient quality for this study.
- With regard to the primary data sources, it is assumed that the questions asked during the interviews were answered accurately.
- It is assumed that the socio-economic conditions, as found during the assessment, will not undergo significant changes between the date of data collection and the release of this report.

Key limitations:

- While of high quality and reputability, most secondary sources were published before the outbreak of COVID-19 and the concomitant widespread social and economic devastation.
- Socio-economic impacts are inherently interconnected and do not lend themselves to clear disaggregation into distinct impacts.
- Socio-economic impacts are notoriously difficult to quantify and represents different levels of significance to different individuals. Accordingly, the same impact might be experienced in vastly different ways by different individuals within the same community.

- Socio-economic impacts, being the product of human behaviour, are derived from baseline information and anticipated project implications; as opposed to being empirically measured.
- Humans and the communities in which they live are adaptable, dynamic and open systems. Accordingly, the communities under investigation in this SIA might react to various factors not necessarily related to the proposed development; thereby complicating clear inference of observed social change to anticipated project impacts.
- Secondary baseline information is useful in establishing a municipal-wide picture of the most prominent socio-economic trends; it is not particularly informative with regards to the specific conditions present in the Tankwa Karoo and in the towns of Touws River or Ceres.
- As at October 2020, there are no sensitivity layers on the Screening Tool for socio-economic features, and as such the environmental sensitivity as identified by the Screening Tool cannot be confirmed or disputed.

Approved and proposed energy developments within a 30 km radius were taken into consideration as they have the potential to create supplementary positive or negative socio-economic impacts identified in this study or vice versa. A list of these projects is provided in Section 6 of this report.

2.3. Consultation Processes Undertaken

Face-to-face and telephonic interviews were conducted with selected landowners, farm representatives, and Breede Valley, and Witzenberg Municipal officials. Participant observation conducted during a one-day site visit encompassing the affected project farms, Ceres, and Touws River.

3. Description of Project Aspects relevant to Socio-economic Assessment

As noted above, the Project Applicant is proposing to design, construct and operate nine 175 MW Solar PV power generation facilities north-east of Ceres in the Western Cape Province (referred to as Ceres Solar PV Development). The proposed project will make use of PV solar technology to generate electricity from the sun. Each solar PV facility will have a range of associated infrastructure, including an on-site substation, and will connect to the Eskom Kappa Substation via a 132 kV power line. The proposed projects will take place within REDZ 2, known as the Komsberg REDZ.

The proposed facilities will be constructed on portions of the following farms:
- Grootfontein (5/149 and RE 149)
- Hoekdooren (172)
- Witte Wall (171)

The power lines will traverse the aforementioned farms, as well as Die Brak (Farm 241) and Platfontein (Farm 240). Assessment of nine 132kV power lines covers the worst-case scenario. However, this number may be reduced depending on which projects win preferred bidder status in terms of the REIPPPP.

As noted above, this SIA deals with the proposed Grootfontein PV 1, Grootfontein PV 2 and Grootfontein PV 3 projects.

Each 175 MW plant will cover an approximate footprint of 250 hectares. The footprint includes the PV facility and infrastructure such as internal roads for each PV facility, while some of the main access roads will be outside of the 250 hectares.

From a socio-economic perspective, the most important project as aspects are:
- Employment creation over the lifetime of the project; and
- The Economic Development Plan (EDP) the Applicant is to develop for implementation should the project obtain preferred bidder status in terms of the REIPPPP.

Approximately 90 to 150 skilled and 400 to 460 unskilled employment opportunities will be generated during the construction phase (per project) which is expected to extend for 12 to 14 months.

Approximately 20 skilled and 40 unskilled employment opportunities will be generated during the operational phase of an expected 20 years. Unskilled jobs will be linked to services such as panel

cleaning, maintenance, and security. Employment opportunities to be created during this phase equate to approximately 4800 person months (for skilled opportunities) and approximately 9600 person months (for unskilled opportunities) per project over the 20-year plant lifespan.

It should be noted that the employment opportunities provided in this report are estimates and depend on the final engineering design and the REIPPPP Request for Proposal (RFP) provisions at that point in time.

While the Applicant does not yet have a fully articulated EDP as this will be dependent on the RFP IPP requirements, the broad objectives of the EDP are to:

- Create a local community trust which has an equity share in the project life to benefit historically disadvantaged communities.
- Initiate a training strategy to facilitate employment from local communities.
- Give preference to local suppliers of components and/or services for the construction of the facility.

The creation of employment opportunities, as well as the EDP, is likely to serve as an economic pull factor that may result in in-migration to the Tankwa Karoo, Touws River and/or Ceres area, as well as serve to provide potential positive project benefits to these local communities.

Refer to the key mitigation measures proposed by the specialist, and which needs to be included in the Environmental Management Programme (EMPr) listed in Section 9 of this report.

4. Baseline Environmental Description / Description of Receiving Environment

4.1. General Social and Economic Description

This baseline description is the same for Grootfontein PV 1, Grootfontein PV 2, and Grootfontein PV 3.

Secondary data sources

The study area is located within the Cape Winelands District Municipality (CWDM). The actual project footprint is located in the WLM. However, the closest town, Touws River, is located in the BVLM, while the next closest town, Ceres, lies in the WLM.

The Tankwa Karoo, colloquially described as the empty space on your map between Ceres, Calvinia and Sutherland, is sparsely populated and reflects the overall trend towards depopulation in the Karoo. The decline in the rural population and of many of its small towns is one of the area's most important changes since the mid-1950s. The Karoo is home to fewer than a million people (1.9% of the country's population), of whom three out of every four live in small country towns. The Karoo is politically and economically marginal, and administratively fragmented. Large scale land use shifts are impacting the region's economy and social fabric. These developments include renewable energy production facilities (solar and wind power), additional electricity power transmission corridors and the issuing of prospecting and mining rights over large areas for uranium and the extraction of shale gas. Agricultural production has intensified, with the expansion of irrigated croplands. Game farming and eco-tourism has also intensified, as has the trend towards 'lifestyle farmers', property owners whose income is not from farming. (Henschel, J; Hoffman, M; Walker, C. 2018)

The region has great potential for eco-tourism, not only for the Cape metropolitan market, but also international visitors with a range of tourism offerings such as wilderness experience, hunting, stargazing, mountain biking, bird watching, game viewing, plant-spotting, hiking, and several festivals.

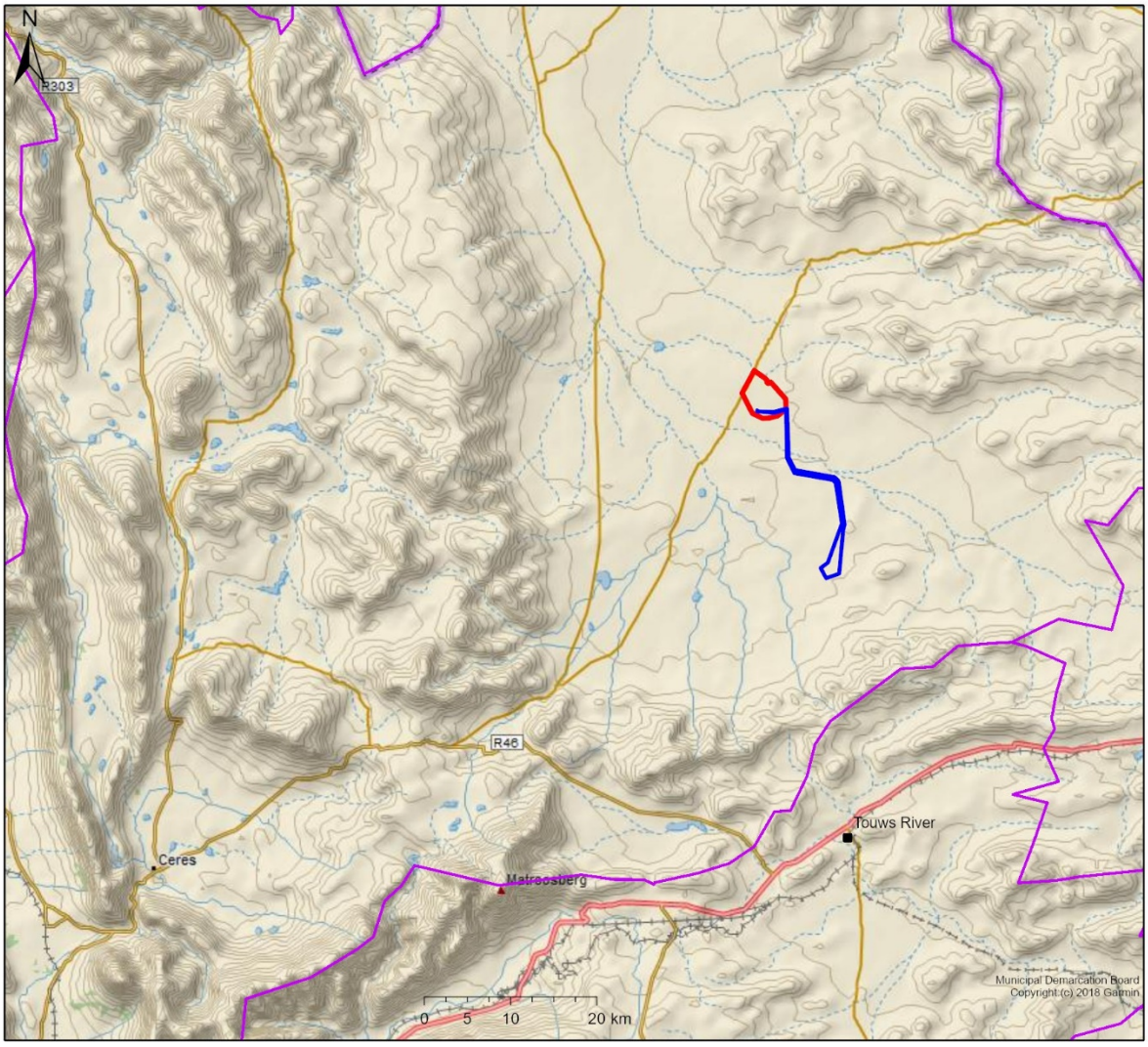

Figure 1: Map of project site, nearest towns and municipal boundaries

This map in Figure 1 shows Grootfontein PV 1, Grootfontein PV 2, and Grootfontein PV 3 project study area (red), corridor (blue), location of Touws River and Ceres, the BVLM and WLM boundaries (purple) and the N1 (pink).

The CWDM is a Category C municipality situated in the Western Cape Province adjacent to the City of Cape Town Metropolitan area. The CWDM is a landlocked area between the West Coast and Overberg coastal districts and includes five local municipalities, namely: Drakenstein, Stellenbosch, Witzenberg, Breede Valley and Langeberg. The language most often spoken in the household in Western Cape Province is Afrikaans representing 46,6%, followed by English representing 19,6%.

The BVLM covers an area of 3 834km² and serves the rural towns of De Doorns, Rawsonville, Touws River, and Worcester as well as the rural areas adjacent to and between these towns, and the Matroosberg rural area. Worcester serves as the administrative headquarter of the municipality and is also regarded as the primary economic service node.

The small town of Touws River falls within the BVLM. It is located on the southern edge of the Great Karoo, roughly 180 km by road from Cape Town, and 76km from the proposed development. The town lies adjacent to the national route (N1) between Cape Town and the North. It covers an area of 21,6km² and comprises several distinct areas including the old central part of town known as

Paddasvlei, Topkamp (the oldest housing area), Steenvliet, the original township for Coloured people, and Zion Park, an informal settlement.

Originally established as a railway town servicing trains travelling from Cape Town to the interior of the country since 1877, Touws River enjoyed almost a century of prosperity before the decline and subsequent total withdrawal of the railways in the 1980s led to its virtual collapse. The demise of the railways resulted in mass unemployment in Touws River as most people were at that time employed either directly by the railways or by one of the associated industries or businesses. Touws River today faces multiple socio-economic problems, a high level of human need, and low economic potential and development resources to stimulate and support recovery.

The major socio-economic risks and challenges facing the BVLM include (Breede Valley Review IDP 2020-2021; 2019 Socio-economic Profile BVLM):

- Income inequality;
- Food insecurity;
- Rising unemployment;
- Deteriorating education outcomes;
- Demand for adequate housing;
- The persisting drought in the Western Cape and in-migration of people to the Breede Valley;
- Adequate service delivery;
- The effect of poverty, especially on smaller towns such as Touws River;
- Culture of violence fuelled by gang activity;
- Load shedding adversely affecting the local economy; and
- The impact of COVID-19 on current and future municipal planning and operations, as well as society in general.

The WLM covers an area of 10 753km² and serves the rural towns of Ceres, Op-Die-Berg, Prince Alfred Hamlet, Tulbagh, and Wolseley, as well as the rural areas adjacent to and between these towns.

Ceres is the administrative centre and largest town in the WLM and serves as a regional hub for the surrounding towns. It is situated about 170 km north-east of Cape Town, and 78km from the proposed development. Established in the mid-1800s as more and more farmers moved into the area, Ceres is located along the original route north between Cape Town and Johannesburg. Ceres covers an area of 77,12km² and includes the residential areas of the old town, Bella Vista, historically a township for Coloured people, and Nduli, historically a township for Black people.

Ceres's importance within the broader agricultural economy and its role as a primary regional service centre has been recognized through the identification of a possible Agri-park development. While this bodes well for economic development, future development will be severely constrained by insufficient bulk services: the town has been crippled by water shortages and has already run at its Notified Maximum Demand (NMD) of 42,8 MVA of power that Eskom is required to provide. The implications thereof are four years and R360m of investment, meaning that 2021 is the earliest that NMD can be upgraded. Without significant bulk infrastructure upgrades – specifically related to electricity – the WLM will be unable to support any further growth (WLM SDF 2019).

The major socio-economic challenges facing the Witzenberg Municipal area include (Witzenberg Amended IDP 2017 – 2022; Witzenberg Municipality Spatial Development Framework 2019):

- The marginalization of rural communities, exacerbated by a general lack of skills and access to opportunities/ services in these areas;
- Predominance of seasonal agriculture-based labour shrinks revenue base;
- Rising level of unemployment
- People in poverty;
- Social Grant dependency;
- Increasing TB and HIV/Aids prevalence;
- Social ills – Crime, vandalism and substance abuse;
- Lack of economic growth; and
- Increasing population and demand for services.

Demographics

Table 1: Demographics of municipal areas and towns
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM; Stats SA Community Survey 2016)

Population estimates 2018	**Households** actual 2016
BREEDE VALLEY	
186 796	**47 569**
Touws River: 8 768 actual population 2016	
WITZENBERG	
140 124	**35 976**
Ceres: 36 043 actual population 2016	

The BVLM has a population of 186 796 (estimates in 2018), making it the second most populated municipal area in the CWDM (BVLM IDP Review 2020 – 2021 citing Stats SA Community Survey 2016). The BVLM area comprises 47 569 households[1] of which approximately 14,7% (7 000) are classified as indigent. The BVLM's 2020 average household size is 3,8 persons. (2019 Socio-economic Profile: BVLM). It is worth noting that although the number of households in the area is increasing, the actual size of households is trending downwards. This potentially implies an inflow of young professionals (either single, as couples or with small family groupings) into the area as a result of enhanced urbanisation. Other contributing factors include, but are not limited to, lower fertility rates, occurrences of divorce, ageing population, etc. (2019 Socio-economic Profile: BVLM). In 2016, Touws River actual population stood at 8 768 persons. (Stats SA Community Survey 2016).

The WLM has a population of 140 124, comprising 35 976 households (based on 2018 and 2016 data, respectively). The average household size is 3,6 persons. (2018 Socio-economic Profile: WLM). In 2016, Ceres actual population stood at 36 043 persons. (Stats SA Community Survey 2016).

According to a 2014/15 survey, 34 074 people live and or work on farms in the Cape Winelands area. Witzenberg had the highest number of households (2482) and individuals (8181), followed by Breede Valley, which contained 1005 households and 4222 individuals (Western Cape Government Farmworker Household Survey Report 2014/15).

[1] A household is seen as a group of persons who live together and provide themselves jointly with food or other essentials for living, or a single person who lives alone. (Municipal Capacity Assessment 2018)

Demographics by Age

Table 2: Demographic profile of Breede Valley and Witzenberg by age cohort
(2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM)

Year	Children: 0 – 14 Years	Working Age: 15 – 65 Years	Aged: 65+	Dependency Ratio (%)
Breede Valley: Age Cohorts, 2019 - 2025				
2019	55 143	121 646	10 007	53.6
2022	56 671	125 281	11 199	54.2
2025	58 057	128 072	12 056	54.7
Growth	0.9%	0.9%	3.2%	-
Witzenberg: Age Cohorts, 2011 - 2024				
2011	29 460	81 634	4 849	42.0
2019	34 457	100 049	8 974	43.4
2024	36 098	112 780	11 143	41.9
Growth	Not available			

The above table depicts the BVLM and WLM population composition per age cohorts. These groupings are also expressed as a dependency ratio which indicates the number of people supported by each economically active person. A higher dependency ratio means a more vulnerable community, higher pressure on social systems and the delivery of basic services.

In the BVLM area the largest population growth between 2019 and 2025 was estimated in the aged cohort which grew at an annual average rate of 3.2%. This is expected to increase the dependency ratio from 53.6% in 2019 to 54.7% towards 2025. The child and working age cohorts grew by 0.9% respectively (2019 Socio-economic Profile: BVLM).

According to a 2014/15 survey, over 66% of individuals living on farms in the Cape Winelands were below the age of 35, while only just over 1% were above 65 years of age. A large part of the Cape Winelands farming population (30.09%) was youth i.e. between the ages of 19 and 35 years old (Western Cape Government Farmworker Household Survey Report 2014/15).

Witzenberg's population shows an estimated relatively small increase in the children cohort between 2019 and 2024. Coupled with strong growth in the working and aged categories, this is expected to decrease the dependency ratio in Witzenberg (2018 Socio-economic Profile: WLM). However, according to Stats SA (2016) the area's biggest population cohort is youth aged 15–34 representing 38,4%. Of the youth cohort, the biggest number is aged between 15-19 (Stats SA Community Survey 2016). These demographics must be taken into account when considering education levels, youth unemployment, and teenage pregnancies.

Demographics by Gender
The sex ratio (number of men to 100 women) provides an indication of the gender breakdown in an area, and it is suggestive of labour force composition. levels.

The 2020 sex ratio for BVLM is 91.9, indicating in general considerably fewer males than females in the area. This ratio further decreases towards 2023 (91.4) which can be attributed to a wide range of factors such as an increase in male mortality rates and the potential outflow of working males. This typically results in more female headed households, larger household sizes, and higher grant dependency levels.

Conversely, the 2020 sex ratio for WLM is 106.7, indicating in general more males than females in the region. This ratio further increases towards 2023 (106,9) which suggests continued growth as a migrant receiving area.

South Africa's average sex ratio is around 95 men to 100 women. (Witzenberg Municipal Capacity Assessment 2019).

Demographics by Race
The population of both the BVLM and WLM is predominantly Coloured (63% and 66% respectively), followed by African (24% and 25% respectively) and Whites (10% and 7% respectively).

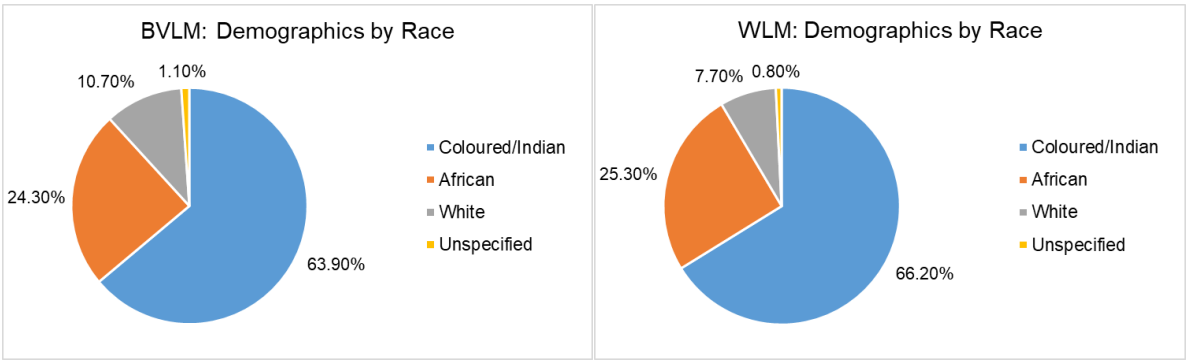

Figure 2: Demographics by race
(Breede Valley Municipal Capacity Assessment 2018; Witzenberg Municipal Capacity Assessment 2019)

Population Density
In 2019, the population density in BVLM was 49 people/km² while the WLM had only 13 people/km² (2019 Socio-economic Profile: BVLM).

Population Projections 2019 – 2024
The total population is estimated to increase to 194 104 by 2023 which equates to a 1% annual average growth rate for the BVLM. For the WLM, the total population is estimated to increase to 153 987 by 2023.

Table 3: BVLM and WLM Population Projections 2019 – 2024
(Western Cape Department of Social Development, 2019)

	2019	2020	2021	2022	2023	2024
BVLM	186 796	188 948	191 048	193 150	194 104	196 126
WLM	142 466	145 181	149 189	152 498	153 987	157 143

Education
Only 40,8% of children in the BVLM and 42,6% of children in the WLM aged 0–5 years attend an educational institution. In real terms, this means that 10 965 children in the BVLM and 8100 children in the WLM are not benefitting from early childhood education.

However, the distribution of the population aged 5–24 years attending an educational institution increases in both the BVLM and WLM to 57,8% and 63% respectively. This represents a drop in this population attending an educational institution in BVLM from 67,8% and an increase in WLM from 61,3% in 2011.

In the BVLM there is a lower proportion of the population aged 20+ without schooling (2,7%) compared to the WLM (3,9%). The adult population with some primary schooling is 10,5% in the BVLM and 14,2% in the WLM. The adult population that completed primary schooling is 6,5% in the BVLM and 9,2% in the WLM. The adult population who have completed secondary schooling is higher in the BVLM (34,2%) compared to 25,5% in the WLM. Only 40,5% of residents in BVLM and 41,2% of

residents in the WLM have some secondary schooling. The proportion of the population that has a higher education, however, is higher in the WLM (6,1%) than in the BVLM (5,7%) (Stats SA Community Survey 2016).

Matric Pass Rate

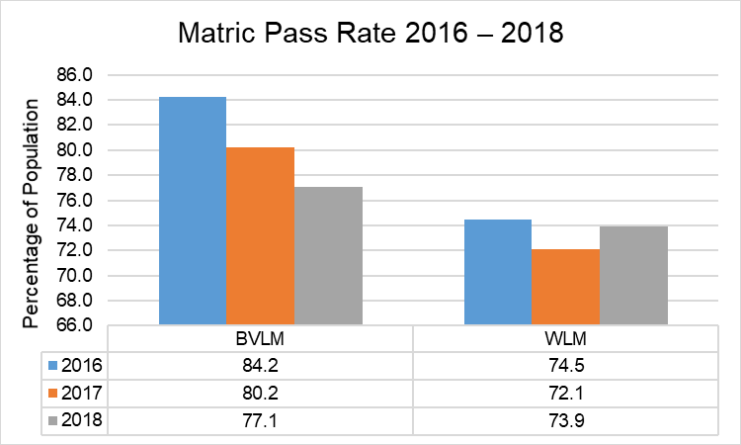

Figure 3: Matric pass rate 2016 – 2018
(2019 Socio-economic Profile: BVLM)

The matric pass rate in the BVLM dropped from 84.2% in 2016 to 77.1% in 2018, and in the WLM from 74,5% to 73,9% over the same period.

Factors affecting school performance include learner-teacher ratios which dropped in the BVLM from 27% in 2016 to 26.6% in 2018, and in the WLM from 34.4% in 2015 to 33.8% in 2017. This may be attributed to schools' declining ability to collect fees and to employ more teachers when needed. Educational performance could also be attributed to the availability (lack thereof) of adequate education facilities such as Early Childhood Development (ECD) centres, schools and Further Education and Training (FET) colleges as well as the availability of key learning resources such as libraries and access to internet.[2]

In 2018, 58 public schools were recorded in the BVLM, of which 79% of these were classified as no-fee schools. The majority of the schools are characterised as Quintile 1 or Quintile 2 schools, which indicates that they are situated in communities where high poverty indices are recorded by national government (BVLM IDP Review 2020-2021).

Learner enrolment in the BVLM increased at an annual average growth rate of 2.5% between 2016 and 2018. This could be attributed to several factors including changing demographics and socio-economic conditions. The learner retention rate, however, reflects a declining trend between 2016 and 2018 dropping from 67% in 2016 to 64% in 2018 and is likely influenced by a range of economic factors such as unemployment, poverty, indigent households, and teenage pregnancies. Learner enrolment in the WLM tapered off from 2015 to 2016 but increased slightly to 18 070 learners in 2017. This could be attributed to several factors including demographics and socio-economic context. The grade 12 dropout rate for Witzenberg learners increased from 35.5% to 36.6% between 2016 and 2017. Again, these high levels may be due to a number of economic factors such as unemployment, poverty, and teenage pregnancies (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

According to a 2014/15 survey, a mere 8% of the Cape Winelands farming population obtained their matric qualification with less than 1% having some type of tertiary qualification. High school learners are more likely to travel further than 4,9km to school, and many in the WLM and BVLM areas travel up to 10km. Walking and bus are the most common forms of transport (Western Cape Government Farmworker Household Survey Report 2014/15).

[2] Only 13,8% of the population in BVLM and 12.3% in WLM had access to internet (Stats SA Community Survey 2016)

The decrease in learner enrolment, high Grade 12 dropout rate, and the decreasing Matric pass rates are alarming. Low education means more people becoming less employable and labour productivity that is lower than it could be in an environment where sectors that traditionally absorb low-skilled labour are declining.

Health

Health is another major factor contributing to the general quality of life. The COVID-19 pandemic has led to the widespread loss of lives and livelihood across South Africa. HIV/AIDS, Tuberculosis, health of children, and maternal health are important health indicators.

COVID-19

According to Dr. Jantjie Taljaard, an infectious diseases physician at Stellenbosch University, the infection risk in farming communities is significant because people often work together in large numbers or confined spaces like factories or packhouses[3]. With agriculture deemed an essential service, many farm workers worked during the National Lockdown, choosing to risk their lives above their livelihood.

The BVLM and WLM were identified as a COVID-19 hotspot, with 3 464 cases and 194 deaths as a result of COVID-19 in the BVLM, and 1 614 cases and 97 deaths in the WLM. The increase of infection in youth between the ages of 25-35 was noted as an alarming trend.

Table 4: COVID-19 cases and recoveries

(25 September 2020: www.coronavirus.westerncape.gov.za/news/update-coronavirus)

Municipality	Cases	Recoveries
Cape Winelands District Municipality	**12 694**	**11 962**
Breede Valley	**3 464**	**3 270**
Witzenberg	**1 614**	**1 517**

HIV/AIDS

The BLM shows improvement in the number of patients that remain with treatment between 2017 and 2019, and a decrease in the number of new patients over the same period. The WLM also shows a drop in the number of new HIV/AIDS cases and an increase in the number of patients receiving Anti-retroviral Treatment (ART) between 2016 and 2018.

Table 5: ART treatment and HIV transmission rate

(2019 Socio-economic Profile: BVLM & 2018 Socio-economic Profile: WLM)

Area	Clients that remain with treatment		Number of new ART patients		HIV Transmission Rate	
	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19
Breede Valley	6 524	6 746	1178	1004	No data	No data
Area	**Registered patients receiving ART**		**Number of new ART patients**		**HIV Transmission Rate**	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Witzenberg	5 370	5 730	1 194	1 047	1.9	1.1

[3] https://www.foodformzansi.co.za/covid-19-virus-spreads-in-cape-farming-communities/

Tuberculosis (TB)
The number of TB patients in the BVLM area decreased from 2 005 in 2016/17 to 1 764 in 2017/18. It decreased slightly further to 1 738 in 2018/19. The WLM, had 924 TB patients in 2017/18 compared to 1 094 in 2016/17, also reflecting a decline in TB infections (2019 Socio-economic Profile BVLM & 2018 Socio-economic Profile WLM).

Child and Maternal Health
Immunisation rates in the BVLM municipal area increased from 60.8% in 2017/18 to 65.8% in 2018/19. The number of malnourished children under five years (per 100 000) decreased from 11.0 in 2017/18 to 9.0 in 2018/19. The neonatal mortality rate (NMR) (per 1 000 live births) improved from 17.2 in 2017/18 to 13.6 in 2018/19.

The immunisation rate in the WLM improved from 59.9% in 2016 to 67.3% in 2016. The number of malnourished children under five years (per 100 000 people) in 2016 was 2.9, and increased to 3.7 in 2017. The NMR (per 1 000 live births) improved from 15.0 in 2016/17 to 13.0 in 2016/17.

The maternal mortality rate (deaths per 100 000) in the BVLM area increased threefold between 2017/18 (59) and 2018/19 (193). Breede Valley's delivery rate to women under 20 years has improved from 16.8% in 2017/18 to 15% in 2018/19. The termination of pregnancy rate reflects a marginal increase from 0.9 in 2017/18 to 1.0 in 2018/19.

The maternal mortality rate in the WLM area remained at zero deaths per 100 000 live births in 2016/17 and 2017/18. The delivery rate to women 10 -14 years and 15 - 19 years deteriorated between 2015/16 and 2017/18 in WLM with 18.8 per 1 000 births to teenage mothers in 2017/18. This is of concern as these teenage girls are of school going age and pregnancies typically contribute to the high dropout rate. The termination of pregnancy rate remains steady at zero for 2016/17 and 2017/18 in the WLM Area (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Public Health Services
In 2018, the BVLM had 15 primary healthcare clinics which comprised of six fixed and nine mobile clinics. In addition, there is also one community day centre, one district hospital, as well as eight ART clinics/ sites and 21 TB clinics/sites.

In 2018, the WLM had 15 public healthcare clinics which comprised of eight fixed primary health clinics and six mobile clinics, as well as one community day centre. In addition, there is one district hospital, as well as seven ART treatment clinics/sites and 19 TB treatment clinics/sites.

Both municipalities have two ambulances per 10 000 inhabitants which are on par with the district average. Access to emergency medical services is critical for rural inhabitants due to the distances they have to travel to access health facilities (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

Poverty
Poverty can be defined as the inability to attain a minimal standard of living. GDP per capita, income inequality, and human development and income levels are key indicators of poverty.

At R44 489 in 2018, the BVLM area had the second lowest GDPR per capita in the CWDM which recorded a figure of R50 717. At R67 180 in 2017, WLM's GDPR per capita was marginally below that of the CWDM's figure of R71 426. While a useful indicator of overall per capita income, the GDPR does not reflect the distribution of that income, which according to Professor Murray Leibbrandt of The Southern Africa Labour and Development Research Unit, is stacked in favour of the top 10%, with the lowest 5% of the population getting only a fraction of that income. This is a major sign of growing inequality.

The National Development Plan set a target of reducing income inequality in South Africa from a Gini coefficient of 0.7 in 2010 to 0.6 by 2030. However, income inequality in the BVLM area increased from 0.565 in 2012 to 0.581 in 2015 and 0.594 in 2018. Similarly, income inequality has been on the increase in the WLM between 2012 and 2017. The sharp increase in inequality levels can be

attributed to the severe drought and slow economic growth which have harmed livelihoods and employment during this period.

There has been a general increase in the Human Development Index (HDI)[4] in the BVLM from 0.66 in 2012 to 0.69 in 2018. The HDI has also increased in the WLM from 0.66 in 2016 to 0.67 in 2017. The HDI serves as a composite indicator of social and economic development and overall well-being. The per capita income as per definition is expected to mimic the trend of the HDI (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

In real terms, 14,6% of households in the BVLM and 15% of households in the WLM ran out of money to buy food in the 12 months before the 2016 Statistics SA Community Survey. In the BVLM and WLM, 11,8% and 8,3% of households respectively reported skipping at least one meal in the 12 months before the survey (Stats SA 2016).

While more recent data is not available, it is a fair assumption that poverty levels have been exacerbated by the COVID-19 pandemic as discussed above.

Household income

Household income is an indicator of current poverty levels and provides information about the living standards prevalent in a particular community. A community's ability to meet their basic needs is determined by the level of household income.

Table 6: Household income distribution

(WLM Amended IDP 2017 – 2022)

Income Category	Cape Winelands	Witzenberg	Drakenstein	Stellenbosch	Breede Valley	Langeberg	
No income	13.1	6.4	12.8	20.4	12.0	10.0	
R1 - R6 314	1.9	1.7	1.8	2.0	1.7	2.5	
R6 315 - R12 628	3.5	4.0	3.2	3.5	3.1	4.3	Low Income
R12 629 - R25 257	13.4	18.7	10.7	10.6	15.2	15.8	
R25 258 - R50 514	20.1	25.8	17.1	16.6	21.8	24.3	
Subtotal	**51.9**	**56.6**	**45.5**	**53.1**	**53.8**	**57.0**	
R50 515 - R101 028	18.4	20.6	18.7	15.5	18.6	19.8	
R101 029 - R202 055	12.3	10.6	13.9	11.6	12.7	10.8	Middle Income
R202 056 - R404 111	8.8	6.8	10.7	8.5	8.5	7.3	
Subtotal	39.4	38.0	43.2	35.6	39.8	38.0	
R404 112 - R808 221	5.7	3.9	7.6	6.5	4.7	3.6	
R808 222 - R1 616 442	2.0	1.1	2.5	3.3	1.0	1.0	
R1 616 444 - R 3 232 885	0.5	0.3	0.6	1.0	0.3	0.2	High Income
R3 232 886+	0.4	0.2	0.4	0.7	0.3	0.2	
Subtotal	**8.6**	**5.4**	**11.2**	**11.4**	**6.4**	**5.0**	

The majority of households in the BVLM (53,8 %) fall under the low-income brackets. This could indicate that an increasing number of households find it difficult to survive and will ultimately become dependent on social assistance in the form of social grants in the absence of targeted sustainable employment creation programmes (BVLM IDP Review 2020-2021).

Within the CWDM, the WLM had the lowest level of households without income (6.4%) but the second highest level of low-income earners (56.6%), followed by the BVLM (53.8%).

According to a 2014/15 survey, an average of 43.9% of farm worker households in the Cape Winelands received at least one child support grant. The WLM had the lowest proportion of child support grants received (Western Cape Government Farmworker Household Survey Report 2014/15).

[4] The HDI is represented by a number between 0 and 1, where 1 indicates a high level of human development and 0 represents no human development.

Basic Services and Housing

Access to services is vital for the livelihoods of households. Lack of provision and lack of basic services often impact the poorest households in a given area.

Table 7: Access to services and housing

(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Community Survey 2016	Breede Valley	Witzenberg
Total number of households	**47,569**	**35,976**
Formal main dwelling	36 964 77.7%	29 969 83.3%
Water (piped inside dwelling/within 200m	46 077 96.9%	35 730 99.3%
Electricity (primary source of lighting)	45 105 94.8%	34 734 96.5%
Sanitation (flush or chemical toilet)	42 848 90.1%	34 017 94.6%
Refuse removal (at least weekly)	36 976 77.7%	31 343 87.1%

The table above indicates that the vast majority of households in the BVLM and WLM live in formal dwellings, have piped water inside or within 200m of their dwelling, use electricity for lighting, have a flush or chemical toilet, and at least weekly refuse removal.

One of the most important indicators of backlogs in service delivery is provided through examining the number of people living in informal settlements. In the BVLM and WLM, 4% and 5% of the population respectively live in informal areas both of which are above the national average of 3,2% (Municipal Capacity Assessment 2018).

The BVLM and WLM do not provide basic services to rural communities, including farm dwellers. Basic services are provided by the land owner with Eskom providing bulk electricity provision. The 2014/15 survey found that approximately 90% of the farmworker households have piped water, electricity, and flush toilets. Water is provided free to 90% of the farmworkers living on farms across the regions while refuse and sanitation service are free for all farmworkers (Western Cape Government Farmworker Household Survey Report 2014/15).

Crime

Crime rates within the BVLM show a decreasing trend since 2017. The murder rate (per 100 000 people) decreased from 50 to 42 in 2018/19. There were 111 reported sexual offenses in the area in 2017/18. Drug related crimes within the area decreased from 3 784 reported cases in 2017/18 to 2 921 cases in 2018/19. Residential burglary cases also decreased from 1 238 in 2017/18 to 949 in 2018/19 (2019 Socio-economic Profile BVLM).

However, crime in the WLM area shows an increasing trend since 2017. The murder rate increased by 11% from 36 in 2017 to 40 in 2018. Drug-related crimes (per 100 000 population) displayed an increase, up by 1.9% from 2 393 cases in 2017 to 2 438 cases in 2018. Residential burglary cases (per 100 000 population) decreased by 15.9% from 571 in 2017 to 480 in 2018. Sexual offenses reported dropped from 125 to 105, which equates to a reduction of 16% (2018 Socio-economic Profile: WLM).

The BVLM has 2,25 police stations per 100 000, while the WLM has 3,24%. These are both below the national average of 4,68 (Municipal Capacity Assessment 2018).

Crime statistics are reported at precinct level and it is difficult to gauge the level of crime on farms and in remote areas. Farm and rural dwellers have difficulty accessing police services, given distance to police stations, lack of transport, airtime, connectivity, and implicit costs. With regards to gender-based violence, it is widely recognised that credible statistics is scarce, a phenomenon more extreme in rural and farming areas.

Economy

Economic Performance

In 2017, the BVLM local economy was dominated by the finance, insurance, real estate and business services (R2.506 billion; 20%); wholesale and retail trade; catering and accommodation (R2.307 billion; 18.4%); and manufacturing (R1.705 billion; 13.6%) sectors. Combined, these top three sectors contributed R6.518 billion (or 51.8%) to the area's economy.

The 10-year trend shows the economy grew by an average annual rate of 2.5%, but tapered off significantly to 1.7% in more recent times (2014 to 2018). From 2008 to 2017, the finance, insurance, real estate, and business services sector registered the highest average growth rate (5%), followed by the construction (5%) and the wholesale and retail trade; catering and accommodation (3%) sectors. Growth in the agriculture, forestry, and fishing sector was robust at 10% in 2017. However, the sector was estimated to contract by 3.9% in 2018 as the effects of the drought intensifies (BVLM IDP Review 2020-2021; 2019 Socio-economic Profile BVLM).

Table 8: Three largest economic sectors of the BVLM and WLM
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Breede Valley Contribution to GDP 2017	**Finance, insurance, real estate & business services** **20%**	**Wholesale & retail trade, catering & accommodation** **18,4%**	**Manufacturing** **13,6%**
Witzenberg Contribution to GDP 2016	**Wholesale & retail trade, catering & accommodation** **17,4%**	**Finance, insurance, real estate & business services** **15,9%**	**Agriculture, forestry & fishing** **15,2%**

In 2016, the WLM local economy was dominated by the wholesale and retail trade, catering and accommodation sector (R1.4 billion or 17.4%), followed by the finance, insurance and real estate, and business services sector (R1.3 billion or 15,9%); agriculture, forestry and fishing sector (R1.2 billion or 15.2%); manufacturing (R1.2 billion or 14%) and general government (R928.9 million or 11%). Combined, these top five sectors contributed R6.1 billion (or 74%) to the WLM municipal economy, which was estimated be worth R8.2 billion in 2016.

The 10-year trend, between 2006 and 2016, showed that the construction sector registered the highest average growth rate (9%) in Witzenberg during this period, followed by the finance and business services sector (7.7%), general government (5.8%); community and social services (5.3%) and wholesale trade (5%). It is concerning that sectors with a significant contribution to the economy, such as agriculture (15%) and manufacturing (14%), registered the lowest growth rates in the period, 2.5% and 2.9% respectively. Growth of the agriculture sector shrunk into negative territory in 2015 and 2016 due to the severe drought but the estimated growth rate for 2017 was a healthy 6% (2018 Socio-economic Profile WLM).

Agriculture remains the largest employer (50%), however, the sector is experiencing a high rate of net job losses, and often only provides seasonal opportunities (Witzenberg Municipality Spatial Development Framework 2019).

Labour

Employment is the primary means by which individuals who are of working age can earn an income that will enable them to provide for their basic needs and improve their standard of living. As such, employment and unemployment rates are important indicators of socio-economic well-being.

Employment by sector

Table 9: Three largest employers by sector in the BVLM and WLM
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Breede Valley	**Agriculture, forestry & fishing** **24%**	**Wholesale & retail trade, catering & accommodation** **20,8%**	**Finance, insurance, real estate & business services** **15,7%**
Witzenberg	**Agriculture, forestry & fishing** **32%**	**Wholesale & retail trade, catering & accommodation** **18,6%**	**Community & social services** **13%**

The agriculture, forestry, and fishing sector contributed the most jobs (24%) in the BVLM and the WLM (32%). This is followed by the wholesale and retail trade, catering and accommodation, 20.8% in the BVLM and 18.6% in WLM; and finance, insurance, real estate, and business services (15.7%) in the BVLM and community and social services (13%) in the WLM.

The agriculture, forestry, and fishing sector reported net job losses (-9 051) between 2008 and 2017 in the BLM, while the WLM reported an average decrease in jobs (-9 517) between 2006 and 2016. Despite increased activity, the sector's contraction between 2008 and 2017 can be attributed to national recession and negative impacts of environmental factors, such as the drought experienced in the area over the past few years. This is a cause for concern, not least because it is one of the top three largest employers. Job shedding in a key economic sector such as agriculture is problematic, given that the local economy is based on the agricultural industry. Despite the contraction, agriculture remains the key economic driver and largest employer in the BVLM. (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM; WLM IDP).

The sector which reported the largest increase in jobs between 2008 and 2017 in the BVLM was the wholesale and retail trade, catering and accommodation sector (5 412) followed by finance, insurance, real estate and business services (5 131), community, social & personal services (3 032), construction (1 529) and the transport, storage and communication (1 207) sectors. The sector which reported the largest increase in jobs between 2006 and 2016 in the WLM was wholesale, retail, and trade (4 528), followed by community and social services (3 127); general government (2 848); and financial and business services (2 726) (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Skill level
The majority of workers in both the BVLM (2017) and WLM (2016) labour force were low-skilled (42% and 50% respectively) and semi-skilled (40% and 35% respectively). Only 18% of labour in BVLM and 14,8% in the WLM were considered to be skilled. The increase in the number of semi-skilled workers outpaced the growth in low-skilled and skilled workers during the period of 2014 and 2018 in BVLM, while in the WLM, the number of skilled workers increased much more than that of semi-skilled workers during the period 2006 – 2016, with a slight decrease experienced in the number of low-skilled workers (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Low-skilled jobs are most commonly adversely affected during an economic downturn and suggest low skilled workers are most vulnerable and face greater risks to income security due to socio-economic shocks.

Unemployment
In 2018, the unemployment rate, referring to individuals without work, but actively seeking work in a recent past period (usually four weeks), and are currently available for work, is 14,4% in the BVLM and 7,6% in the WLM. The youth unemployment rate is a serious problem in both areas and has reached 20% in the BVLM and 9,9% in the WLM. The youth unemployment rate refers to unemployed individuals aged 15 – 24 who are without work, actively seeking work in a recent past period (past four weeks), and currently available for work. (BVLM Municipal Capacity Assessment 2018; WLM Municipal Capacity Assessment 2019).

The proportion of formal to informal employment is 25,5% in the BVLM and 17,4% in the WLM. Informal employment identifies persons who are in precarious employment situations irrespective of whether or not the entity for which they work is in the formal or informal sector. Persons in informal employment, therefore, comprise all persons in the informal sector, employees in the formal sector, and persons working in private households who do not get basic benefits such as pension or medical aid contributions from their employer, and who do not have a written contract of employment. (BVLM Municipal Capacity Assessment 2018; WLM Municipal Capacity Assessment 2019).

The Farmworker Household Survey Report of 2014/15 reports on general demographic trends of farmworker households within the Cape Winelands. According to the study, BVLM had 1005 households and approximately 4222 people living and working on farms, while WLM had the highest number of households at 2482, and 8181 number of people. The study found that an overall of 62.6% of individuals living in farmworker households had permanent jobs both on and off the farm on which they reside. Approximately 18% of individuals living on farms were unemployed, while 19% had either temporary or seasonal work. It is important to note that these statistics presented are based on a survey conducted by the Western Cape Department of Agriculture during the 2014/15 financial period. It is therefore likely that figures have changed over the past six years. (Western Cape Government Farmworker Household Survey Report 2014/15; BVLM IDP Review 2020-2021).

4.2. Fieldwork and sourcing local knowledge

As discussed above, brief participant observation and a limited number of interviews were conducted to supplement secondary data. Fieldwork conducted for the SIA cannot be considered exhaustive by any means.

Key socio-economic issues listed by respondents confirm themes identified by the secondary data and include:

- Lack of economic development and job opportunities – especially for youth;
- Lack of recreational opportunities for youth;
- Increasing level of school dropout, lack of access to post school training, and other future enhancing opportunities among the youth resulting in despondency, apathy and growing rate of social ills;
- Increasing rate of teenage pregnancies;
- Poverty;
- Food insecurity; and
- Rising levels of crime, drug abuse and gangsterism.

The respondent representing Tankwa Ceres Karoo Farmers' Union added the following to this list:

- Lack of municipal services, such as road maintenance, transport, and policing; and
- Marginalization from renewable energy developments.

4.3. Lessons Learned from REIPPPP Social Investment Programs

In addition to its core business of renewable energy, the REIPPPP is designed to contribute to various developmental objectives such as job creation, social upliftment, and economic transformation. It also requires approved energy projects to share ownership with local communities.

According to the South African Government News Agency (2019)[5], the REIPPPP has attracted ZAR 209.4 billion (approx. USD 14.2 billion) in committed private sector investment into South Africa and created 38,701 jobs (full time for one year) since its inception in 2011. Many of these jobs have been for youth and women from surrounding communities. According to analysts (Nomjana, L., 2020)[6] other educational, health, and enterprise benefits experienced include:

- Over R1 billion spent by Independent Power Producers (IPPs) on education, by upskilling teachers, providing extra teachers and classrooms.

[5] https://www.sanews.gov.za/south-africa/renewable-energy-programme-attracts-r2094-billion-sa-economy
[6] https://www.futuregrowth.co.za/newsroom/reippp-comes-of-age/

- Over 600 bursaries awarded to students from disadvantaged communities.
- The provision of health facilities, while contributing to social development through feeding schemes, supporting old age homes, and early childhood development initiatives.
- Helping to establish more than 1 000 small enterprises.

Community trusts
Local community ownership is commonly structured through the establishment of a community trust who then receives the share dividends and is responsible for spending the funds on community projects. The board of trustees is typically made up of independent trustees, community representatives, and, if applicable, beneficiary representatives or power company representatives. However, while best placed to understand and address their community's needs, community trusts do not necessarily have all the skills, knowledge, or development expertise to function effectively. In the worst-case scenario community trusts become dysfunctional, and corrupt: "… as soon as monetary resources are introduced into a local impoverished area it raises significant potential for tensions, mistrust and corruption." (Tait, et al., 2013 page 18). Similarly, local municipalities lack skill and/or capacity for effective partnership.

In the absence of stronger guidance and leadership from the Department of Minerals Resources and Energy and the IPP Office, and effective institutional capacity on the ground, preferred bidders face several challenges, from the selection of trustees to the practicalities of operating trusts over the 20-year project life span. Furthermore, with a core business of producing energy, these companies themselves often lack the requisite knowledge, capacity and skill to set up and manage community trusts. In this context third party social development practitioners can fill the missing link: an advisory board to steward and/or mentor the process, trustees, an association to provide training and support to community trusts, and a body to advise industry on how to structure community trusts, are needed. (Roundtable Conversation Series – Economic Development in REIPPPP July 2016)[7].

Third-party approach
A possible solution mooted by the D.G Murray Trust (DGMT) is to include a civil society-based third-party organisation as a benefactor, while still ensuring that 100% of funds are directed back into the community. This would allow a community trust to use the experience of a social development specialist with a proven track record in implementing programmes that are well established and have demonstrated economies of scale. The lack of institutional capacity in or even near communities closest to renewable energy plants, which are typically located in remote rural areas, is another reason to consider this solution: trusts may have limited experience identifying the urgent needs of a community and finding the right implementation partners. In 2012, Lesedi Solar Park Trust (near Kimberly in the Northern Cape) opted for the third-party approach, appointing DGMT as a beneficiary organisation. Similarly, Letsatsi Solar Park Trust (in the Free State) appointed DGMT and the Rural Education Access Programme (REAP) as co-beneficiaries. (Horwitz, D., 2019)[8]

Community engagement, communication and collaboration
Communication with the beneficiary community is critical for success of the EDP as well as smooth development of the plant itself. It is vital that community members and organisations, local municipalities, ward councillors, and development organisations are not only well informed, but also have the capacity to understand implications for local job creation and wider development planning. Communication and capacity will foster community engagement in developing locally suitable processes and projects thereby maximising the potential value of the EDP.

As the REIPPPP stipulates that communities within a 50-kilometre radius of the project must benefit, beneficiary areas often overlap. Coordination between community trusts operating in overlapping areas is essential but likely insufficient. The competitive nature of the bidding process should not extend to projects' community benefits, and industry players should facilitate an enabling environment for collaboration. This collaboration could include general information sharing, commissioning research, or other support that would benefit the sector as a whole. In addition, regional government bodies or industry associations, with appropriate community accountability mechanisms, should

[7] https://sawea.org.za/wp-content/uploads/2016/05/Report_2nd-Roundtable_Community-trusts_27July-2016.pdf
[8] https://dgmt.co.za/wp-content/uploads/2019/11/Renewable-Energy-September-Opp1-Single-FinalDigital.pdf

oversee projects in broader regional areas to enable collaboration, streamline processes, give oversight, and improve the efficiency of revenue spending (Tait, L; et al., 2013).

IPP community trust in Touws River

A concentrated photovoltaic (CPV) solar plant, owned by IPP Pele Green Energy, was constructed near Touws River in 2013, and has been running since 2015, with a 20-year licence to operate. The plant created 600 job opportunities in Touws River during its construction, and established a community trust to help ensure a more sustainable economy in the long term (Buthelezi, L., 2013[9]; Omarjee, L., 2018[10]).

"Our power plant, CPV1, invests a share of annual revenues in the socio-economic and enterprise development of our host community, Touwsrivier. The community also owns 5% of the power plant. Our focus is on the economic revival of the community. Our approach in working with rural communities is on self-sufficiency. Instead of viewing these communities as labour reserves, we've taken a view to see them as economic hubs and we are working to help them achieve economic independence." Gqi Raoleka, Managing Director, Pele Green Energy (A solar project in Touwsrivier is powering ahead. Global Africa Network January 29, 2018)[11]

Knowledge Pele is the part of Pele Energy group of companies which focuses on the social development aspects of the IPP's investments. Committed to using their investment to grow the local economy and ensure the community becomes self-sustaining, Knowledge Pele has a number of initiatives in Touws River, including a bursary programme, accredited enterprise development programmes for start-up and existing SMMEs, work experience programme, a hydroponic farm, and a rooftop solar panel system set up on a local no-fees primary school.

Potential future collaboration should the Applicant receive preferred bidder status

Regrettably, Knowledge Pele's programme manager responsible for their programme in Touws River declined to discuss their interventions with the specialist conducting this SIA (despite several attempts), citing non-disclosure agreements with the community. However, given the merits of collaboration outlined above, it would be well worth the Applicant and the appointed community development practitioner pursuing consultation with this organisation should development of the proposed solar projects go ahead (i.e. receive preferred bidder status and environmental authorisation).

It is worth repeating: The competitive nature of the bidding process should not extend to projects' community benefits, and industry players should facilitate an enabling environment for collaboration (Tait et al., 2013).

4.4. Project Site Specific Description

4.4.1. GROOTFONTEIN PV 1, GROOTFONTEIN PV 2, and GROOTFONTEIN PV 3: PV Facilities, Electrical Grid Infrastructure and Associated Infrastructure

The Grootfontein PV 1, PV 2 and PV 3 are located on the farm Grootfontein, located approximately 76 km northwest of the town of Touws River, in the Western Cape Province. The two farm portions (5/149 and RE 149) cover 1,622 and 1,150 hectares respectively, while each 175 MW solar PV plant will cover an approximate footprint of 250 hectares.

Historically used as a winter grazing area for sheep, there is currently no agricultural activity on the farm given the drought's impact on the vegetation. When there is grazing, sheep come for three months a year.

There are no permanent residents or employees on the farm. A shepherd lives on the farm for the duration of the sheep's stay when and if they are moved on to Grootfontein for grazing.

[9] https://www.iol.co.za/business-report/companies/concentrated-solar-plant-to-deliver-22mw-1610703

[10] https://www.news24.com/fin24/economy/how-a-solar-plant-is-changing-the-fortunes-of-a-small-town-economy-20181014

[11] https://www.globalafricanetwork.com/company-news/a-solar-project-in-touwsrivier-is-powering-ahead/

Grootfontein (5/149 and RE 149) is owned by a trust. The farm was up for sale, but given the drought, they were unable to find a buyer However, the farm was thereafter removed from the market and engagements made between the trust and the Project Developer.

According to a representative of the farm and two of his immediate neighbours, the proposed project will not inhibit current activities on their farms, disrupt social conditions, or employment. No concerns regarding visual impact, land use impact, security or good relations with neighbouring landowners were expressed. Respondents view the proposal as contributing significantly to the economic well-being of their properties which have been particularly hard hit during the recent drought, (2015-present). Income received from leasing some of their land to the Applicant will assist in allowing these respondents to generate revenue from the farm and invest in its upkeep.

However, two neighbouring farmers, who live permanently on their farms, expressed a very different view: Speaking as immediate neighbours of the project site and the interim chairperson of the recently formed Tankwa Ceres Karoo Farmers' Union, the respondents raised several concerns. Negative impacts anticipated by the respondents include:

- Road degradation resulting in withdrawal of government services (including transportation to schools), increase transport costs to towns, damage to vehicles, road accidents, and a decline in tourism;
- Lack of traffic control and concomitant increase in road accidents;
- Dust clouds and storms precipitated by traffic and stripping of veld on construction sites;
- Dust damage to crops;
- Dangerous consequences of dust affecting visibility during hunts;
- Increase in itinerant job seekers and vagrancy;
- Lack of security for residents;
- Increased crime levels;
- Decrease in eco-tourism due to poor road conditions, dust, traffic, and damage to the area's reputation as quiet and pristine;
- Marginalisation of local stakeholders by the developer;
- Lack of open communication; and
- Lack of rehabilitation as part of the decommissioning phase.

The respondents stressed the desire for local residents to be consulted and kept informed about the proposed project. Moreover, they stressed the imperative that local residents should benefit from the proposed project as they are most affected by it. They strongly object to positive impacts such as employment opportunities and the economic development plan solely benefitting the nearby towns of Ceres and Touws River, and expressed concern that any monies received by municipalities from the proposed projects for development initiatives would not be used for social upliftment in the Tankwa Karoo, but be confined to the towns. To this end several suggestions were made:

- Roads be upgraded prior to construction to cater for changed patterns in road use (frequency and weight);
- Roads be adequately maintained during the construction phase;
- Roads be upgraded after the construction phase;
- Stop go system and speed limits should be implemented to help prevent dust clouds;
- Tankwa Karoo residents should be given preference in employment: this will require an innovative recruitment process that does not rely on locals registering in a nearby town, as well as the provision of transport from decentralised points within the area (such as the Tankwa Farmstall for example);
- The loss of eco-tourism during the construction phase should be compensated for by use of local accommodation by consultants, contractors, and sub-contractors;
- Security should be provided for more than just project infrastructure and should include mechanisms that benefit the surrounding community such as visual policing, cameras along access roads, a repeater necessary for a radio system, and/or participation in the farm watch initiative;
- The veld should not be stripped of vegetation during construction as this will create a dust bowl that will be difficult if not impossible to rehabilitate;
- Donation of water tanks or solar panels to assist the most indigent community members;
- Sponsorship of events to support and/or generate tourism to the area;
- Drought relief for indigent farmers;

- Appoint a contact person responsible for liaising with local residents; and
- Establish good will and open communication with local residents.

4.5. Identification of Environmental Sensitivities

The identification of environmental sensitivities is not applicable (as discussed in Section 2.2 of this report). There are no socio-economic themes on the Screening Tool that could be confirmed or disputed, therefore no site sensitivity verification report is required. The current use of the land is confirmed and described above. Additional detail is provided in Appendix C.

5. Issues, Risks and Impacts

5.1. Identification of Potential Impacts/Risks

The potential impacts identified during the SIA are described in detail below for the construction, operational, and decommissioning phase of the proposed development as well as the cumulative impacts.

The impacts below apply to the Grootfontein PV 1, PV 2, PV 3, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

Construction Phase
Potential impact 1: Disruption of local social structures
Potential impact 2: Increased social ills and risky behaviours
Potential impact 3: Increased burden on existing social and bulk services
Potential impact 4: Increased road use and road traffic related accidents and/or damage
Potential impact 5: Unrealistic expectations regarding local job creation
Potential impact 6: Creation of temporary employment
Potential impact 7: Increased household income attainment and standard of living
Potential impact 8: Potential increase in crime
Potential impact 9: Potential decrease in local eco-tourism
Potential impact 10: Potential marginalisation of local residents
Potential impact 11: Development and/or growth of locally-owned support industries

Operational Phase
Potential impact 1: Creation of long-term employment
Potential impact 2: Development and/or growth of locally-owned industries
Potential impact 3: Human development via the EDP

Decommissioning Phase
Potential impact 1: Job losses
Potential impact 2: Local economy stimulation

Cumulative Impacts
Cumulative impact 1: Exacerbated in-migration of job seekers
Cumulative impact 2: Combined impact of multiple EDPs

The no-go option
The no-go alternative implies that the proposed project would not be executed. Assuming that the solar facilities and associated infrastructure would not be developed at the proposed sites, there would be no increase in electricity generation from the facilities, and no economic benefit to the landowners, or additional socio-economic benefits associated with the potential income generated through the construction and operation of the facilities. Indeed, one of the impacts identified (discussed in Section 6 below) will materialise, should the proposed project not be developed. However, this does not imply that the no-go option has no impacts.

It should be noted that the development's potential negative impacts may well come into being, regardless of the proposed development as most are associated with non-project-related phenomena

which could trigger similar job-seeking, influx, and socio-economic impacts as identified for the proposed development.

The potential positive impacts primarily relate to employment opportunities and the EDP. With the exception of the 60 jobs for each project created during the operation phase with an approximate 20-year lifespan, all other employment, while of direct benefit to employees for the duration of their contract, is temporary in nature. The EDP has potential to sustainably benefit a far wider number of people and is likely to result in positive impact. The benefits of both employment and the EDP are not inconsequential, and should be pursued.

Accordingly, the no-go option is likely to result in negative economic impacts on the project area, as the potentially positive impacts from the construction, operational, and decommissioning phases, including the EDP, employment and growth in the small-scale support industry, will be not be realised.

The no-development alternative also poses a lost opportunity for South Africa to supply renewable energy to its consumers. This in effect represents a negative social cost. In addition, the no-go option will not assist National or Provincial governments in achieving their renewable energy commitments.

5.2. Summary of Issues identified during the Public Consultation Phase

This will be documented, if relevant, after the BA Report has been released for public comment. This SIA did not include a public consultation process.

6. Impact Assessment

The impacts below apply to the Grootfontein PV 1, PV 2, PV 3, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

6.1 Potential Impacts during the Construction Phase

6.1.1.1. Impact 1: Disruption of local social structures

The size of the anticipated workforce is the result of the scale of the proposed development. It is likely that job seekers from outside the study area will be attracted to the Tankwa Karoo and to the towns of Touws River and/or Ceres by the anticipated 400 to 460 unskilled jobs, and the 90 to 150 skilled jobs to be created during the 12 to 14 months construction period of the proposed development (i.e. per project). Such influx inevitably disrupts the existing social order which is challenged by alternative values, beliefs and practices. Social order disturbance can lead to general disorientation and deterioration of social capital, particularly in small and/or vulnerable communities.
Status: Negative
Mitigation required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.2. Impact 2: Increased social ills and risky behaviours

An increase in the number of people in the study area seeking work or working on the proposed development is likely to cause an increase in the number of social ills that are present in the study area. It is likely that substance abuse, the spread of communicable diseases, early sexual debut, prostitution, and increased criminal behaviour may manifest due to the likely disturbance of local social structures (discussed above) and temporary increase in spending power expected to result from increased local employment and/or workforce influx to the area. Even though such influx is not expected to be long-term, the impacts associated with risky social behaviour are of a long-term nature (for example addition, teenage motherhood, Foetal Alcohol Syndrome, school dropout, HIV/Aids transmission).
Status: Negative
Mitigation required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.
- The developers should be mindful of and regularly engage with landowners, farm residents and with Touws River and/or Ceres local communities. The former can be achieved through liaison with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations.
- The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse.
- Introduce weekly randomized alcohol and drug testing for all employees related to the project.
- Make condoms freely available to all employees related to the project.
- No construction workers should be allowed to sleep at the construction site.
- All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer.
- The construction workforce should receive COVID-19 and HIV awareness training before the commencement of construction.
- HIV and TB testing and counselling should be made available to the construction workforce free of charge.
- Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.

Impact significance (Pre-Mitigation): Moderate
Impact Significance (Post Mitigation): Low

6.1.1.3. Impact 3: Increased burden on existing social and bulk services

Jobseekers and migrant labour will by necessity be accommodated in the area. This influx, depending on its size, can place pressure on social structures and local government to provide housing, services and social facilities, albeit temporarily. It should be noted that the bulk of the unskilled workforce is likely to be housed in backyard dwellings within existing settlements, with its attendant health challenges (e.g. poor sanitation and variable access to electricity for heating and lighting purposes), and contributing to increased densification.

Status: Negative
Mitigation required:

- It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.4. Impact 4: Increased road use and road traffic related accidents and/or damage

An increase in traffic, including construction and/or vehicles carrying heavy loads associated with the construction phase of the proposed project can damage access road surfaces and/or cause excessive dust, impacting on road safety, access to and by social services (including inter-alia social grants, health facilities, transport), schools and retail, potentially damage vehicles and/or crops, and lead to a decline in tourism. It must also be noted that a Traffic Impact Statement was also commissioned to inform the BA Processes, which concluded that overall the proposed traffic generated during the construction phase is regarded as low to very low significance without the implementation of mitigation measures. The TIS also provided recommendations for management actions, and if these are adhered to, the proposed development is supported from a traffic engineering perspective.

Status: Negative
Mitigation required:

- Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during construction.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.5. Impact 5: Unrealistic expectations regarding local job creation

Tankwa Karoo, Touws River and/or Ceres residents, as well as local and itinerant job seekers will have hopes and expectations of the proposed projects. These expectations need to be informed by accurate information from the developer or the appointed agent as soon as possible, to minimize unrealistic expectations and avoid potential negativity towards the proposed projects where possible. Failure to communicate honestly and proactively may lead to negative impacts such as public opposition, protests, damage to property and/or intimidation of project employees.
Status: Negative
Mitigation required:

- It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations have been granted.
- The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as computers and printers is negligible, particularly in the Tankwa Karoo.
- The existence of the employment desks and the relevant procedures associated with the selection and appointment of workers must be communicated to the local communities.
- Where possible, the developer should subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Very Low

6.1.1.6. Impact 6: Creation of temporary employment

As the construction of the facilities and associated infrastructure will require temporary employment of construction workers, supervisors, and engineers on-site, a limited number of temporary jobs will be created. According to information provided by the Applicant, these are anticipated to be between 400 and 460 unskilled employment opportunities, and 90 to 150 skilled employment opportunities for a period of up to 12 - 14 months. As discussed in this report, education and skill level within the study area is low, thereby rendering the majority of locals best suited for unskilled positions. While contributing to the employment situation primarily in the short term, even temporary employment will provide sorely needed income and, additionally provide opportunity for garnering work experience and developing new skills in an environment where such opportunities are extremely rare and which may enable future employment. Debt is a potential negative impact associated with temporary employment and is likely to occur given the financial stressors facing communities within the project area. However, the risk of this negative impact is offset by the positive impacts created by employment, albeit temporary.

Equality is a fundamental principle of the South African Constitution and Bill of Rights. Remuneration, employment benefits, terms and conditions of employment as well as job classification and grading are expressly listed as employment policies or practices in respect of which unfair discrimination is prohibited by the Employment Equity Act (EEA) (Laubscher, T 2015)[12]. The EEA's amendment bill of July 2019, will regulate the setting of sector-specific employment targets (in some instances by 2025) to address the under-representation of certain population groups. It will also ensure that an employment equity certificate of compliance becomes a precondition for access to state contracts

[12] https://islssl.org/wp-content/uploads/2015/10/SouthAfrica-TalitaLaubscher.pdf

(BusinessTech).[13] Equal access to employment must be given due consideration in line with relevant legislation and the area's demographics: This is especially pertinent to the employment of women in the BVLM given its 2020 sex ratio of 91.9 as discussed in Section 4 above.
Status: Positive
Enhancement required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, the developer should subcontract to local construction companies.
- The developer should comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account.
- The developer should establish local employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details.
- Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment opportunities and the existence of the employment desk must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.
- The developer should offer debt education workshops for all project related employees.
- The developer is encouraged to provide on-the-job training and additional training programs to improve the chances of skills development during the construction phase.

Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): Moderate

6.1.1.7. Impact 7: Increased household income attainment and standard of living

Employment created by the proposed development will provide opportunity to improve the standard of living for benefitting households, enhance purchasing power within the local community, and help stimulate the local economy, albeit temporarily. Therefore, the local business owners and individuals employed at these businesses as well as project employees will also likely experience some improvement in their income and pass these benefits onto their households.
Status: Positive
Enhancement required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.

Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): Moderate

6.1.1.8. Impact 8: Potential increase in crime

The construction phase, in particular, will create an additional movement of people and vehicles to the project site, which can increase the chances of crime in the surrounding area. This impact could cause the loss of a sense of safety and security, loss of livestock, flora, or valuables, as well as harm to person and/or property.
Status: Negative
Mitigation required:

- Access to the project site should be controlled with only authorised staff permitted entry.
- Movement to and from the project site should be controlled where construction workers are transported to and from the pick-up area and project site by the developer or the appointed agent only.
- The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation.
- The developer could consider erecting and/or contributing to the costs of erecting security cameras and/or a repeater to help improve crime prevention and management in the area.

Impact significance (Pre-Mitigation): Moderate
Impact Significance (Post Mitigation): Low

[13] https://businesstech.co.za/news/business/370656/south-africas-big-employment-equity-shake-up-is-coming/

6.1.1.9. Impact 9: Potential decrease in local eco-tourism

The potential deteriorating road conditions, increase in dust, traffic, and likelihood of crime, as well as damage to the public perception of the area as attractive, quiet and pristine may lead to a decline in tourism in the Tankwa Karoo, particularly in areas close to the proposed project sites. Loss of revenue, albeit primarily during the construction phase, will negatively impact local eco-tourism business owners.

Status: Negative

Mitigation required:

- The developer should make use of local eco-tourism services and product providers where possible.
- The developer should provide consultants, contractors and other skilled project related staff with a list of local eco-tourism services and product providers with a clear request to support local eco-tourism, where possible.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Very Low

6.1.1.10. Impact 10: Potential marginalisation of local residents

To build goodwill and support for the proposed development and avoid alienation and potential negativity among Tankwa Karoo residents, the developer should liaise with local organisations, such as the Tankwa Ceres Karoo Farmers Union. Failure to communicate with local residents honestly and proactively may lead to negative impacts such as lack of cooperation, public opposition, and protests.

Status: Negative

Mitigation required:

- The developer should consider appointing a community liaison person tasked with establishing and maintaining effective communication with local residents and/or their representatives.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Low

6.1.1.11. Impact 11: Development and/or growth of locally-owned industries

There is limited opportunity for the growth of locally owned service industries such as local accommodation, catering, transport, construction, and suppliers of goods, such as construction materials, in response to construction-related activities and possible influx of consultants, contractors and other employees associated with the proposed development. Such opportunities are expected to be temporary.

Status: Positive

Enhancement required:

- The developer should make use of local service and goods providers where possible.
- The developer should provide consultants, contractors and other skilled project related staff with a list of local service and goods providers with a clear request to support local businesses where such services are required.

Impact significance (Pre-Enhancement): Low

Impact Significance (Post Enhancement): Low

6.1.1.12. Impact Summary Tables: Potential Impacts during the Construction Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
CONSTRUCTION PHASE						
Disruption of local social structures	*Status*	Negative	Low Level 4	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	Moderate				
Increased social ills and risky behaviours	*Status*	Negative	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies • The developers should be mindful of and regularly engage with landowners, farm residents and with Touws River and/or Ceres local communities. The former can be achieved through liaison with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations. • The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse. • Introduce weekly randomized alcohol and drug testing for all employees related to the project. • Make condoms freely available to all employees related to the project. • No construction workers should be allowed to sleep at the construction site. • All COVID regulations and safety precautions in	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	n/a				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
				force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer. • The construction workforce should receive COVID-19 and HIV awareness training prior to the commencement of construction. • HIV and TB testing and counselling should be made available to the construction workforce free of charge. • Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.		
Increased burden on existing social and bulk services	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	Negative Local Short to medium term Moderate Likely Moderate n/a	Low Level 4	• It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies.	Low Level 4	Medium
Increased road use and road traffic related accidents and/or damage	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility*	Negative Local Short to medium term Moderate Likely High	Low Level 4	Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during and construction.	Low Level 4	Medium

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
	Irreplaceability	n/a				
Unrealistic expectations regarding local job creation	*Status*	Negative	Low Level 4	• It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations has been granted. • The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates. • Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as computers and printers is negligible, particularly in the Tankwa Karoo. • The existence of the employment desk, and the relevant procedures associated with the selection and appointment of workers must be communicated to the local communities.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Medium to long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
				• Where possible, the developer should subcontract to local construction companies.		
Creation of temporary employment	*Status*	Positive	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, the developer should subcontract to local construction companies. • The developer should comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account. • The developer should establish local employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. • Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates. • Employment opportunities and the existence of the employment desk must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres. • The developer should offer debt education workshops for all project related employees. • The developer is encouraged to provide on-the-job training and additional training programs to improve the chances of skills development during the construction phase.	Moderate Level 3	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				
Increased household income	*Status*	Positive	Moderate Level 3	• The developer should make every effort to	Moderate Level 3	Medium
	Spatial Extent	Local				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
attainment and standard of living	*Duration*	Long term		ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres local communities. • Employment opportunities and the existence of the employment desk must be communicated to the local communities in Tankwa Karoo, Touws River and/or Ceres.		
	Consequence	Substantial				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential increase in crime	*Status*	Negative	Moderate Level 3	• Access to the project site should be controlled with only authorised staff permitted entry. • Movement to and from the project site should be controlled where construction workers are transported to and from the pick-up area and project site by the developer or the appointed agent only. • The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation. • The developer could consider erecting and/or contributing to the costs of erecting security cameras, and/or a repeater to help improve crime prevention and management in the area.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential decrease in local tourism	*Status*	Negative	Low Level 4	• The developer should make use of local eco-tourism services and product providers where possible. • The developer should provide consultants, contractors and other skilled project related staff with a list of local eco-tourism services and product providers with a clear request to support local eco-tourism, where possible.	Very Low Level 5	Medium
	Spatial Extent	local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential marginalisation of local residents	*Status*	Negative	Low Level 4	• The developer should consider appointing a community liaison person tasked with establishing and maintaining effective communication with local residents and/or their	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Permanent				
	Consequence	Moderate				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
	Probability	Likely		representatives. •		
	Reversibility	Low				
	Irreplaceability	n/a				
Development and/or growth of locally-owned industries	*Status*	Positive	Low Level 4	• The developer should make use of local service and goods providers where possible. • The developer should provide consultants, contractors and other skilled project related staff with a list of local service and goods providers with a clear request to support local businesses where such services are required.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				

6.1.2. Potential Impacts during the Operations Phase

6.1.2.1. Impact 1: Creation of long-term employment

A total of approximately 60 job opportunities will be created, comprising 20 skilled and 40 unskilled opportunities during the operation phase of the proposed development (for each project). Unskilled jobs will be linked to services such as panel cleaning, maintenance and security. Employment opportunities to be created during this phase equate to approximately 4800 person months (for skilled opportunities) and approximately 9600 person months (for unskilled opportunities) per project over the 20-year plant lifespan. As discussed in this report, education and skill level within the study area is low, thereby rendering the majority of locals best suited for unskilled positions. Equal access to employment must be given due consideration in line with relevant legislation and the area's demographics: This is especially pertinent to the employment of women in the BVLM given its 2020 sex ratio of 91.9 as discussed in Section 4 above.

These long-term job opportunities may provide income resilience to some community members employed by the proposed development and introduce an additional income stream to the area, thereby helping to diversify the areas economic base. Unskilled workers will likely benefit from skills transfer and knowledge development and this will contribute to expanding their skills set and enhance their future employment opportunities.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.
- The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates.
- The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account.
- Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.

Impact significance (Pre-Enhancement): Very low

Significance of impact (Post Enhancement): Very low

6.1.2.2. Impact 2: Development and/or growth of locally-owned industries

There is limited opportunity for the growth of locally owned service industries such as local accommodation, catering, transport, and suppliers of goods, such as cleaning and maintenance materials, in response to operation-related activities and possible influx of consultants, contractors and other employees associated with the proposed development.

Status: Positive

Enhancement required:

- The developer should procure goods and services locally where possible.
- The developer should provide consultants, and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required.

Impact significance (Pre- Enhancement): Very low

Impact Significance (Post Enhancement): Very low

6.1.2.3. Impact 3: Human development via the EDP

The Applicant indicated that an EDP will be developed, should the proposed project be selected as a preferred bidder in terms of the REIPPPP. The positive impacts thereof relate to the creation of employment, local spending and human capacity development. However, the attainment of these positive impacts will create substantial social and economic pull factors which are likely to attract job seekers (i.e. a potential negative impact). Such negative impacts are however considered to be completely acceptable in light of the much-needed development in the area.

Status: Positive

Enhancement required:

- The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and managed, bringing maximum benefit to the community. A third-party approach (as discussed in Section 4.3 of this report) is recommended.
- The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities.
- Such priorities must then be included in the EDP.
- Where possible, the EDP should align with the IDPs of the relevant Local Municipalities.

Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): High

6.1.2.4. Impact Summary Tables: Potential Impacts during the Operational Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-enhancement)*	*Confidence Level*
DIRECT IMPACTS						
OPERATIONAL PHASE						
Creation of long-term employment	*Status*	Positive	Very Low Level 5	• The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres. • The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates. • The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account. • Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Slight				
	Probability	Very unlikely				
	Reversibility	High				
	Irreplaceability	n/a				
Development and/or growth of locally-owned industries	*Status*	Positive	Very Low Level 5	• The developer should procure goods and services locally where possible. • The developer should provide consultants, contractors and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Slight				
	Probability	Very unlikely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Human development via the EDP	*Status*	Positive	Moderate Level 3	• The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and	High Level 2	Medium
	Spatial Extent	Local				
	Duration	Long term				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-enhancement)	Confidence Level
DIRECT IMPACTS						
	Consequence	Substantial		managed, bringing maximum benefit to the community. A third-party approach (as discussed in section 4.3) is recommended • The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities • Such priorities must then be included in the EDP. • Where possible, the EDP should align with the IDPs of the relevant Local Municipalities.		
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	n/a				

6.1.3. Potential Impacts during the Decommissioning Phase

6.1.3.1. Impact 1: Job losses

The proposed development has an expected 20-year life span after which it could be decommissioned. Decommissioning will result in job losses. Though unavoidable in such projects, appropriate measures should be taken to plan for retrenchments and to provide the affected community with alternatives where practical and appropriate.

Status: Negative

Mitigation required:

- The developer should comply with relevant South African labour legislation when retrenching employees.
- The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Low

6.1.3.2. Impact 2: Local economy stimulation

Expenditure will be allocated for decommissioning activities which will commence after the 20-year life span of the facility. Such expenditure will generate positive impacts on production, GDP, employment and household income, albeit relatively small and for a temporary period. Decommissioning activities will stimulate demand for transport services, accommodation and construction and other industries amongst others. The local economy will thus be stimulated for the duration of the decommissioning phase.

Status: Positive

Enhancement required: None available

Impact significance (Pre-Enhancement): Low

Impact Significance (Post Enhancement): Low

6.1.3.3. Impact Summary Tables: Potential Impacts during the Decommissioning Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-enhancement)*	*Confidence Level*
DIRECT IMPACTS						
DECOMMISSIONING PHASE						
Job losses	*Status*	Negative	Low Level 4	• The developer should comply with relevant South African labour legislation when retrenching employees. • The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Local economy stimulation	*Status*	Positive	Low Level 4	None	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	n/a				
	Irreplaceability	n/a				

6.1.4. Cumulative Impacts

Table 10 provides a list of other renewable energy projects (approved) and proposed renewable energy projects (i.e. the proposed Ceres PV Development), and authorised and proposed EGI projects within the 30 km radius.

Table 10: List of projects to be considered for the cumulative impact assessments
(Adapted from Lanz, J. 2020)

DEA Reference	Title	Technology	MegaWatts
Approved Renewable Energy Projects			
14/12/16/3/3/1/1976	Kudusberg WEF	Wind	325
12/12/20/1783/1	Perdekraal 1	Wind	150
12/12/20/1783/2	Perdekraal 2	Wind	150
12/12/20/1787	Konstabel	Wind and Solar PV	170
12/12/20/1956	Touwsrivier	Solar PV	36
12/12/20/1988	Roggeveld Wind Farm	Wind	750
14/12/16/3/3/2/899	Rietkloof	Wind	36
14/12/16/3/3/2/810	Montague Road	Solar PV	75
14/12/16/3/3/2/900	Brandvalley WEF	Wind	147
14/12/16/3/3/1/1984	Tooverberg WEF	Wind	264
14/12/16/3/3/2/1115	Rondekop WEF	Wind	325
Proposed Renewable Energy Projects			
Pending	Proposed Ceres PV Development (9 PV Facilities)	Solar PV	1575
Existing Power Lines / EGI Projects			
Existing Line	Eskom BACCHUS DROERIVIER 1	EGI	N/A
Existing Line	Eskom DROERIVIER MULDERSVLEI 2	EGI	N/A
Existing Line	Eskom Gamma-Kappa 1st 765kV line	EGI	N/A
Existing Line	Eskom Kappa-Sterrekus (Omega) 1st 765kV line	EGI	N/A
Authorised Power Lines / EGI Projects			
14/12/16/3/3/1/1983	Tooverberg EGI	EGI	N/A
Not provided	Perdkekraal West EGI	EGI	N/A
Proposed Power Lines / EGI Projects			
Not applicable – in screening stage	Planned Eskom Gamma-Kappa 2nd 765kV line	EGI	N/A
Not applicable – in screening stage	Planned Eskom Kappa-Sterrekus 2nd 765kV line	EGI	N/A
Pending	Proposed Ceres PV Development (9 Power Lines)	EGI	N/A

The cumulative impacts apply to the construction and operational phases.

6.1.4.1. Impact 1: Exacerbated in-migration of job seekers

The incidence and severity of the in-migration of job seekers as well as increases in social deviance might increase as more solar energy facilities and associated EGI are developed in the area. This is of importance as several other solar energy developments are being proposed in the area, as listed in Table 10 above. However, such increases are similarly associated with most other forms of economic and social development and should therefore be expected from any industrial-scale developments in the study area. It should also be borne in mind that influx of job seekers does not necessarily equate in social deviance; i.e. influx of job seekers is a social disruptor which could result in social impacts.
Status: Negative
Mitigation required: None available
Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.4.2. Impact 2: Combined human development caused by multiple EDPs being implemented

Should more than one solar PV facility be developed in the study area; it is very likely that multiple community development funds/initiatives might be implemented by the relevant project developers as part of their respective obligations under REIPPPP. Such multiple EDPs is likely to enhance the creation of employment, local spending and human capacity development.
Status: Positive
Enhancement required: None available
Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): Moderate

6.1.4.3. Impact Summary Tables: Cumulative Impacts

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures / Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-enhancement)*	*Confidence Level*
CUMULATIVE IMPACTS						
Exacerbated in-migration of job seekers	*Status*	Negative	Low Level 4	None	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium to long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Combined human development caused by multiple EDPs being implemented	*Status*	Positive	Moderate Level 3	None	Moderate Level 3	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	n/a				
	Irreplaceability	n/a				

7. Impact Assessment Summary

The overall impact significance findings, following the implementation of the proposed mitigation measures are shown in Table 11 below:

The impacts below apply to the Grootfontein PV 1, PV 2 and PV 3, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

Table 11: Overall impact significance (post mitigation)

Phase	Overall Impact Significance
Construction	Very low to Low (negative) / Low to Moderate (positive)
Operational	Very low to high (positive)
Decommissioning	Low (negative) / Low (positive)
Nature of Impact	**Overall Impact Significance**
Cumulative - Construction	Low (negative) / Moderate (positive)
Cumulative - Operational	Low (negative) / Moderate (positive)
Cumulative - Decommissioning	No impact

8. Legislative and Permit Requirements

No licences or permits are required in terms of the socio-economic impact of the proposed development.

However, it is important to note that the proposed project is aligned with the goals of national legislation down to local level. Specifically, it is aligned with the National Development Plan 2030 as it is linked to creating jobs and livelihoods, expanding infrastructure, and transitioning to a low-carbon economy. It is also linked to the 2019 Integrated Resources Plan (IRP), which notes that solar PV will account for 10.52 % of the total installed capacity by 2030. If these projects are selected as preferred bidders, then they will contribute towards this installed capacity. Furthermore, the proposed project falls within the Komsberg REDZ, in line with GN 114, which has gazetted a total of eight REDZs as an outcome of the Wind and Solar Phase 1 SEA, wherein wind and solar PV developments are incentivised and most suitable.

9. Environmental Management Programme Inputs

The key mitigation measures proposed by the specialist, and which needs to be included in the EMPr. are listed below.

Construction Phase

- Management Measures:
    - The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
    - Where possible, subcontract to local construction companies.
    - Tankwa Karoo residents should be given preference in employment: this will require an innovative recruitment process that does not rely on technology or locals registering in a nearby town, as well as the provision of transport from decentralised points within the area (such as the Tankwa Farmstall for example).
    - The developers should be mindful of and regularly engage with local landowners and farm residents and with Touws River and/or Ceres communities. The former can be achieved by liaising with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations.

- The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse.
- Introduce weekly randomized alcohol and drug testing for all employees related to the project.
- Make condoms freely available to all employees related to the project.
- No construction workers should be allowed to sleep at the construction site.
- All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer.
- The construction workforce should receive COVID-19 and HIV awareness training before the commencement of construction.
- HIV and TB testing and counselling should be made available to the construction workforce free of charge.
- Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.
- The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations has been granted.
- The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as transport, computers and printers is negligible, particularly in the Tankwa Karoo.
- The existence of the employment desks and the relevant procedures associated with the selection and appointment of workers must be communicated to local communities.
- Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during and construction.
- The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation.
- The developer could consider erecting and/or contributing to the costs of erecting security cameras and/or a repeater to help improve crime prevention and management in and around the project area.
- The developer should make use of local eco-tourism services and product providers where possible.
- Appoint a contact person responsible for liaising with local residents.

- <u>Monitoring Actions:</u>
  - Composition of workforce to be monitored during construction to assess number of de facto local residents employed.
  - Compliance with employment legislation to be monitored.
  - Undertake a review of the following as stipulated in the EMPr:
    - Community communication strategy, dates and outcomes of engagement;
    - Code of Conduct, date and means of communication;
    - Testing dates and results;
    - Security records;
    - Dates, duration, and content outline of prevention of disease training and register of attendance;

- Site access records;
- Location of access roads;
- Workforce and contractors register;
- Community engagement dates and outcomes of engagement records;
- Work desk/s work register/s;
- Record of debt education workshops and other skills training; and
- Access and transport arrangement records reviewed.

Operational Phase

- Management Measures:
  - The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres;
  - Employment opportunities and the existence of the employment desk must be communicated to the local communities in Tankwa Karoo, Touws River and/or Ceres;
  - The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates with preference given to Tankwa Karoo residents where possible;
  - The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account;
  - Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project;
  - The developer should procure goods and services locally where possible;
  - The developer should provide consultants, contractors and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required;
  - The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and managed, bringing maximum benefit to communities. A third-party approach (as discussed in section 4.3) is recommended;
  - The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities;
  - Such priorities must then be included in the EDP;
  - Where possible, the EDP should align with the IDPs of the relevant Local Municipalities;
  - Retain a contact person responsible for liaising with local residents.

- Monitoring Actions:
  - Review all employment records, and registers for compliance;
  - Review community engagement reports;
  - Review knowledge sharing and job training reports;
  - Review procurement records;
  - Review list of local good and service providers and distribution thereof to relevant parties;
  - Review EDP, public participation records and local IDPs.

Decommissioning Phase

- Management Actions:
  - The developer should comply with relevant South African labour legislation when retrenching employees;
  - The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning;
  - All project infrastructures should be decommissioned appropriately and thoroughly to avoid misuse;
  - Retain a contact person responsible for liaising with local residents.

- Monitoring Actions:
  - Review retrenchment plans;
  - Review training reports.

10. Final Specialist Statement and Authorisation Recommendation

Socio-economic impacts and the respective significance of these impacts are highly dependent on the receiving social and economic environment or context in which the impacts occur. For example, a small community like Touws River, with high unemployment rates and a declining economy would experience impacts differently compared to a community where everyone is fully employed and there is a growing economy with various economic drivers.

Secondary and primary data present the study area as characterised by substantial poverty, low employment and limited livelihood strategies. A depressed economy, lack of public and private enterprise together with seasonal nature of agricultural employment contributes to the high level of unemployment, depriving community members of realising an income, constraining empowerment and further economic development. While larger and better resourced with far more economic drivers, Ceres, too, has high levels of poverty, seasonal employment patterns and high rates of unemployment.

Risky social behaviour (i.e. teenage pregnancy, alcohol and drug addiction, school drop-out and gangsterism) is a major challenge in the area. Such deviance could threaten social capital on which much of the existing livelihood strategies depend.

Positive socio-economic impacts likely to result from the project include the creation of 90 to 150 skilled and 400 to 460 unskilled employment opportunities for the duration of the 12 to 14-month construction phase, 20 skilled and 40 unskilled employment opportunities during the operational phase of an expected 20 years. While the developer may not be able to fill skilled positions with locals, unskilled labour positions can be filled locally should the recommended mitigation measures be implemented. Local communities will also likely benefit from the concomitant growth opportunities for local businesses and support service industries and increased local spending which in turn will likely benefit local socio-economic development. These impacts will benefit communities through the creation of income generation opportunities and human development through skills development and training. In addition, local communities will benefit from the proposed EDP if well designed and well implemented.

On a macro level, positive impacts also include the generation of clean energy for the national grid which is under severe pressure and unable to meet demand, thereby curtailing economic advancement of the country. Therefore, the proposed development can also be seen as creating a positive social benefit for society.

Negative socio-economic impacts likely to result from the project include influx of opportunistic job seekers which could strain social structures and support networks, increase risky social behaviour such as prostitution and drug abuse, and burden existing services. Frustrated expectations of employment, created by the proposed development, could also contribute to feelings of distrust in the developer, and in isolated instances, damage to project property and/or potential intimidation of staff. Furthermore, given the time-bound nature of the development, the inevitable job losses at the end of each phase is high. The construction phase in particular will create an additional movement of people and vehicles to the site, which could increase the chances of theft in the surrounding properties. This impact could cause the loss of livestock, flora, or valuables. This (negative impact) can be managed by implementing recommended mitigation measures.

The overall significance rating of the negative socio-economic impacts associated with the proposed project during the construction phase is very low to low; whereas the overall significance rating of the positive socio-economic associated with the proposed project during construction is low to moderate, should mitigation and enhancement measures be implemented respectively.

The overall significance rating of the positive socio-economic impacts associated with the proposed projects during the operation phase is very low to high, should enhancement measures be implemented.

The overall significance rating of the socio-economic impacts associated with the proposed projects during decommissioning phase is low (negative) and low (positive) should mitigation measures and enhancement measures be implemented, respectively.

The cumulative impact during the construction and operational phases is low (negative) to moderate (positive). There is no cumulative impact of the decommissioning phase.

Mitigation measures included within Section 9 above should be included within the Environmental Authorisations, should it be granted by the DEFF. Based on the current socio-economic context of the area and the impacts identified, it is the opinion of the specialist that the project can go ahead, provided that the mitigation measures proposed are adopted and adhered to by the EA holder.

10.1 Statement and Reasoned Opinion

It should be accepted that the development of the proposed projects is likely to result in some form of negative social impact to the local community. However, such a negative impact needs to be weighed against the potential benefit likely to result from the same development. Given the overall very low to low significance of potential negative impacts associated with the project, as compared to the overall very low to high significance of potential positive impact of the project; it can be concluded that the prospective socio-economic benefits of the proposed project outweigh the socio-economic losses/impacts.

10.2 EA Condition Recommendations

From a socio-economic impact perspective, in light of the above argument, the specialist conducting this SIA is of the opinion that the proposed projects should be authorised by the competent authority.

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Appendices: Appendix A - Specialist Expertise

CURRICULUM VITAE of SANDRA HILL
Social Scientist & Community Development Practitioner
October 2020

Address: Wynberg, Cape Town
Phone: +27 82 729 2351
E-mail: sandra@write-now.co.za

CAREER PROFILE
Social scientist and community development practitioner

As a social scientist, I have been involved with the social and economic advancement of people in one form or another, for over twenty years. I have worked as a community worker, project coordinator, learning facilitator, non-profit organisation director, and development consultant. Community engagement, research, and writing have been key components in all these roles.

I am committed to ethical and well-conducted social science research that generates reliable information to help role-players anticipate future impacts and find solutions to social problems. Over the years, my fields of research included: gender, poverty, land reform, labour, project evaluation, participatory appraisal, social change, and organisational learning.

I hold an Honours degree in Social Science with undergraduate majors in sociology and social work. My formal training equipped me with the necessary theory, data gathering and analytical tools, and modes of meaningful community engagement to practice my profession.

EDUCATION

- MA in English (cum laude), University of the Western Cape, 2012 - 2013
- Honours in Social Science, Rhodes University, 1990
- Bachelor of Social Science (BSocSci), University of Cape Town, 1987 – 1989

PROFESSIONAL HISTORY

2012 - present: Writer, independent social science consultant, researcher, editor & facilitator (self-employed)
I engage with companies and development organisations to produce engaging written work. I have a strong ability to generate, distil, and present key information from a range of sources in an accessible and engaging form. This skill is rooted in more than twenty years' experience in social change practice at a community level.

Currently, I am involved in a series of articles investigating COVID-19's impact on various aspects of society including banking, fintech, health, and social innovation. I have worked on Meridian Economics' report on Eskom's financial crisis and the viability of coal-fired power in South Africa; Singiz's Evaluation of the Dell Young Leaders Programme; Environmental Monitoring Group's workshops and five-year report; Seed Knowledge Initiative publications and small-scale farmer workshop; NIMD's publication on inter-party dialogue; and the Barefoot Collective's practitioners' manual on learning and social change. I am also involved in Socio-economic Impact Assessments, including the proposed nine Solar PV and EGI projects near Touws River proposed by Veroniva (PTY)

Ltd, as well as seven proposed Solar PV Rinkhals projects near Kimberly proposed ABO Wind renewable energies (PTY) Ltd.

2006 - 2011: Community Development Resource Association (CDRA): Researcher & Organisational Development Practitioner

I was the lead facilitator of an international, three-year, action research project inquiring into social change. My role included designing the research methodology and training co-practitioners in research and writing skills. I also played a key role in analysing findings and compiling the final report.

1999 - 2006: Sandra Hill Consulting: Organisational Development Practitioner

I set up my own organisational development consultancy to assist other practitioners engaged in social change processes.

1995 - 1998: The Women on Farms Project: Founding Director

I established the Women on Farms Project as an independent organisation and was responsible for strategic planning; staff; organisational learning; design and implementation of programmes; monitoring and evaluation; fund-raising; and governance.

1992 - 1995: Lawyers for Human Rights: Women on Farms Project Coordinator

I initiated and co-ordinated the Women on Farms Project. During this time, I initiated and ran women's groups on Boland farms with a focus on adult education, empowerment, and community development.

1991: Foundation for Community Work: Community Worker

Using participatory processes, the purpose of my interventions was to build on local knowledge, enhance capacity development, and foster community empowerment.

KEY SKILLS & EXPERIENCE

Understanding of Social Change & Community Development

- My degrees in social science and subsequent short courses in Developmental Evaluation and Monitoring (CDRA 2011) and Observation, Insight and Intervention (Proteus Initiative 2009) have equipped me with both a broad theoretical framework but also a practical ability to understand social dynamics and to interpret social challenges and their potential impact on individuals, organisations, and communities at large.

Writing & Research Skills

- Excellent writing and editing skills.
- Good interviewing and group facilitation skills.
- Excellent ability to analyse and understand complex, and often nuanced data.

Facilitation and Interpersonal Skills

- Excellent facilitation skills supported by a thorough understanding of community development, group dynamics, and adult education.

REFERENCES

Elfrieda Pschorn-Strauss: Seed and Knowledge Initiative
elfrieda@seedandknowledge.org
+27 82 413 0502

Jessica Wilson: Independent Evaluator and Environmental Specialist
jessicawilson@theprocess.org.za
+27 83 326 4216

Appendix B - Specialist Statement of Independence

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

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

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

PROJECT TITLE

THE PROPOSED GROOTFONTEIN 1, 2 AND 3 SOLAR PV FACILITIES AND THEIR ASSOCIATED ELECTRICAL GRID INFRASTRUCTURE NEAR TOUWS RIVER, WESTERN CAPE PROVINCE

Kindly note the following:

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

Departmental Details

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

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

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

1. **SPECIALIST INFORMATION**

Specialist Company Name:	Sandra Hill – Social Scientist			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100%
Specialist name:	Sandra Hill			
Specialist Qualifications:	BSocSci (Honours)			
Professional affiliation/registration:	n/a			
Physical address:	1a Wolfe Street, Wynberg, Cape Town, 7800			
Postal address:	1a Wolfe Street, Wynberg, Cape Town, 7800			
Postal code:	7800	Cell:	082 729 2351	
Telephone:	082 729 2351	Fax:	n/a	
E-mail:	sandra@write-now.co.za			

2. **DECLARATION BY THE SPECIALIST**

I, **Sandra Hill**, declare that –

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

Signature of the Specialist

Sandra Hill – Social Scientist (sole proprietor)

Name of Company:

8 OCT 2020

Date

3. **UNDERTAKING UNDER OATH/ AFFIRMATION**

I, **Sandra Hill**, swear under oath/affirm that all the information submitted or to be submitted for the purposes of this application is true & correct.

Signature of the Specialist

Sandra Hill – Social Scientist (sole proprietor)

Name of Company

8 OCT 2020

Date

Signature of the Commissioner of Oaths

1214321-7 CONSTABLE
A.F. MASETI-MZINGELWA

SUID-AFRIKAANSE POLISIEDIENS

09 OCT

Date

Appendix C: Site Sensitivity Verification

It is important to note that there are no socio-economic themes on the National Web-based Environmental Screening Tool (Screening Tool) (as at October 2020), therefore the environmental sensitivity of the proposed project area as identified by the Screening Tool is not applicable. Therefore, no site sensitivity verification report is required.

However, prior to commencing with the specialist assessment in accordance with Appendix 6 of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014, a site visit was undertaken in order to confirm the current land use.

The details of the site visit are noted below:

Date of Site Visit	7 September 2020 (1 day)
Specialist Name	Sandra Hill
Professional Registration Number	Not Applicable
Specialist Affiliation / Company	Private

The land use confirmation was undertaken using desktop analysis, using available policy data and literature, as well as a site inspection and relevant municipal Spatial Development Plans and Integrated Development Plans.

Historically used as a winter grazing area for sheep, there is currently no agricultural activity on the farm given the drought's impact on the vegetation. When there is grazing, sheep come for three months a year.

Appendix D: Impact Assessment Methodology

The impact assessment methodology followed for the specialist assessment is noted below.

The impact assessment includes:

- *the nature, significance and consequences of the impact and risk;*
- *the extent and duration of the impact and risk;*
- *the probability of the impact and risk occurring;*
- *the degree to which impacts and risks can be mitigated;*
- *the degree to which the impacts and risks can be reversed; and*
- *the degree to which the impacts and risks can cause loss of irreplaceable resources.*

As per the DEFFT Guideline 5: Assessment of Alternatives and Impacts, the following methodology is applied to the prediction and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect and cumulative:

- *Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.*
- *Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.*
- *Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.*

The impact assessment methodology includes the following aspects:

- *Nature of impact/risk - The type of effect that a proposed activity will have on the environment.*

- *Status - Whether the impact/risk on the overall environment will be:*
    - *Positive - environment overall will benefit from the impact/risk;*
    - *Negative - environment overall will be adversely affected by the impact/risk; or*
    - *Neutral - environment overall not be affected.*

- *Spatial extent – The size of the area that will be affected by the impact/risk:*
    - *Site specific;*
    - *Local (<10 km from site);*
    - *Regional (<100 km of site);*
    - *National; or*
    - *International (e.g. Greenhouse Gas emissions or migrant birds).*

- *Duration – The timeframe during which the impact/risk will be experienced:*
    - *Very short term (instantaneous);*
    - *Short term (less than 1 year);*
    - *Medium term (1 to 10 years);*
    - *Long term (the impact will cease after the operational life of the activity (i.e. the impact or risk will occur for the project duration)); or*
    - *Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e. the impact will occur beyond the project decommissioning)).*

- *Consequence – The anticipated consequence of the risk/impact:*
    - *Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);*
    - *Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);*
    - *Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);*
    - *Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or*
    - *Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).*

- *Reversibility of the Impacts - the extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase):*

- *High reversibility of impacts (impact is highly reversible at end of project life i.e. this is the most favourable assessment for the environment);*
- *Moderate reversibility of impacts;*
- *Low reversibility of impacts; or*
- *Impacts are non-reversible (impact is permanent, i.e. this is the least favourable assessment for the environment).*

- *Irreplaceability of Receiving Environment/Resource Loss caused by impacts/risks – the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase):*
  - *High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e. this is the least favourable assessment for the environment);*
  - *Moderate irreplaceability of resources;*
  - *Low irreplaceability of resources; or*
  - *Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e. this is the most favourable assessment for the environment).*

Using the criteria above, the impacts have been further assessed in terms of the following:

- *Probability – The probability of the impact/risk occurring:*
  - *Extremely unlikely (little to no chance of occurring);*
  - *Very unlikely (<30% chance of occurring);*
  - *Unlikely (30-50% chance of occurring)*
  - *Likely (51 – 90% chance of occurring); or*
  - *Very Likely (>90% chance of occurring regardless of prevention measures).*

To determine the significance of the identified impact/risk, the consequence is multiplied by probability (qualitatively as shown in Figure 1).

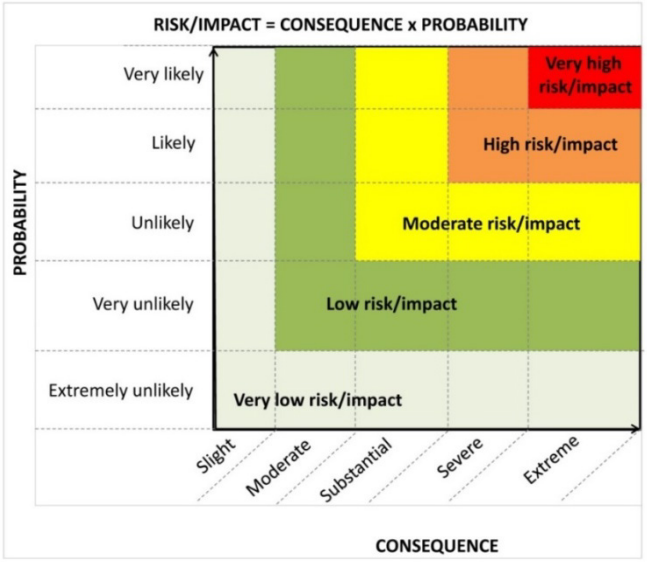


Figure 1. Guide to assessing risk/impact significance as a result of consequence and probability.

- *Significance – Will the impact cause a notable alteration of the environment?*
  - *Very low (the risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);*
  - *Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);*
  - *Moderate (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated);*
  - *High (the risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making); and*
  - *Very high (the risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-*

making (i.e. the project cannot be authorised unless major changes to the engineering design are carried out to reduce the significance rating)).

With the implementation of mitigation measures, the residual impacts/risks are ranked as follows in terms of significance:

- *Very low = 5;*
- *Low = 4;*
- *Moderate = 3;*
- *High = 2; and*
- *Very high = 1.*

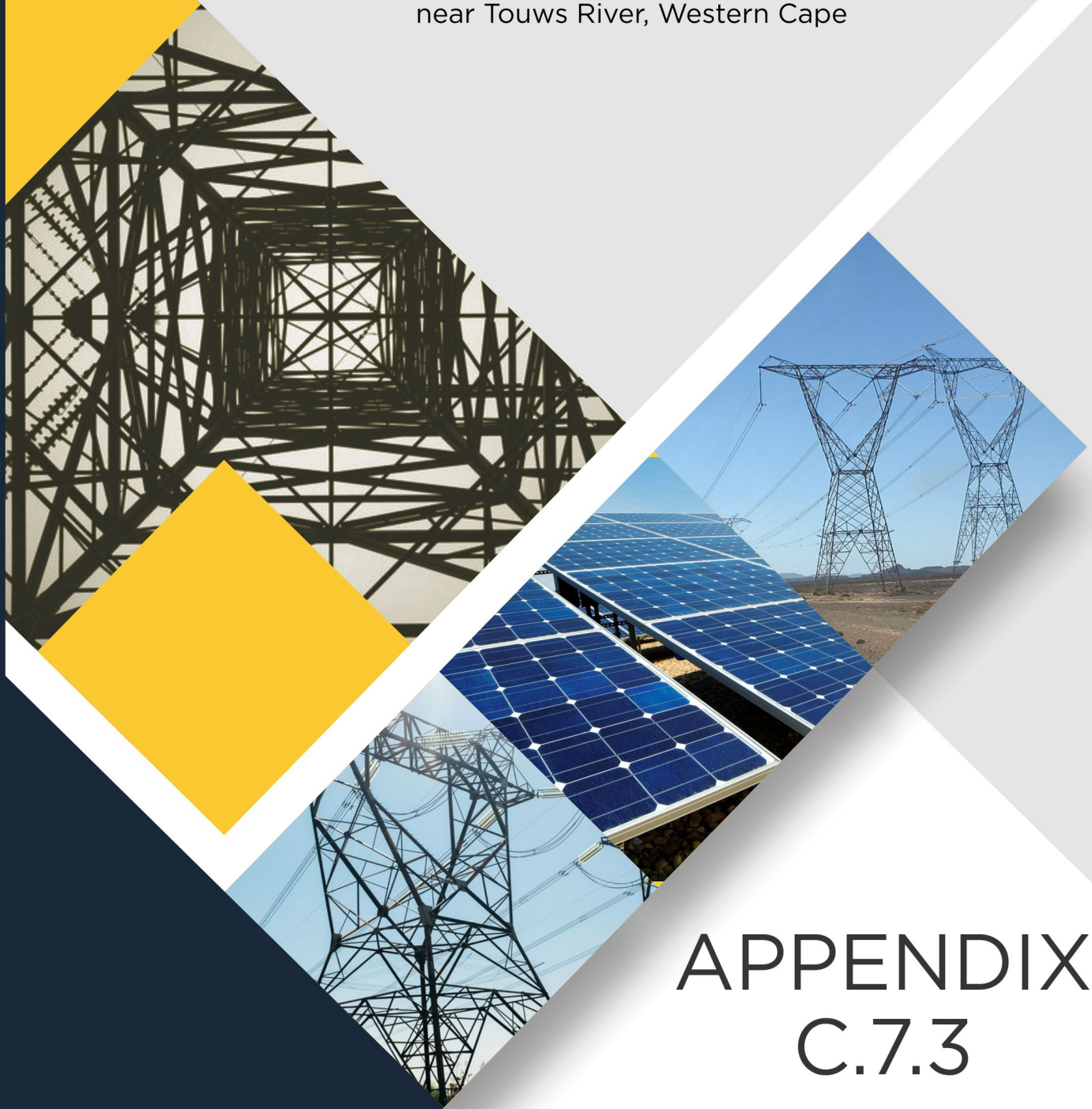
Confidence – The degree of confidence in predictions based on available information and specialist knowledge:

- *Low;*
- *Medium; or*
- *High.*

Appendix E: Compliance with the Appendix 6 of the 2014 EIA Regulations (as amended)

Requirements of Appendix 6 (Specialist Reports) of Government Notice R326 (Environmental Impact Assessment (EIA) Regulations of 2014, as amended)	***Section where this has been addressed in the Specialist Report***
1. (1) A specialist report prepared in terms of these Regulations must contain - *a) details of -* *i. the specialist who prepared the report; and* *ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;*	*i. Section 1.2* *ii. Appendix A*
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	*Appendix B*
c) an indication of the scope of, and the purpose for which, the report was prepared;	*Section 1*
(cA) an indication of the quality and age of base data used for the specialist report;	*Section 2*
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	*Section 3 and Section 4*
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 4.3 and Not Applicable*
g) an identification of any areas to be avoided, including buffers;	*Not Applicable*
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;	*Not Applicable*
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	*Section 2.2*
j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	*Section 5 and Section 6*
k) any mitigation measures for inclusion in the EMPr;	*Section 6 and Section 9*
l) any conditions for inclusion in the environmental authorisation;	*Section 10*
m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	*Section 9*
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; and* *ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;*	*Section 10.1 and Section 10.2*
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	*Section 2.1 and Section 5.2*
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	*Not Applicable at this stage, refer to the BA Report*
q) any other information requested by the competent authority.	*Not Applicable at this stage*
(2) Where a government notice 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.	*Not Applicable*

Basic Assessment for the Proposed Development of Electrical Grid Infrastructure to support the proposed nine 175 MW Solar Photovoltaic Facilities and associated Infrastructure (i.e. Witte Wall PV 1, Witte Wall PV 2, Grootfontein PV 1, Grootfontein PV 2, Grootfontein PV 3, Hoek Doornen PV 1, Hoek Doornen PV 2, Hoek Doornen PV 3, and Hoek Doornen PV 4), near Touws River, Western Cape



APPENDIX C.7.3

Socio-Economic Assessment for Hoek Doornen

SOCIO ECONOMIC SPECIALIST ASSESSMENT

BASIC ASSESSMENTS FOR THE PROPOSED DEVELOPMENT OF FOUR 175 MW SOLAR PHOTOVOLTAIC FACILITIES, ELECTRICAL GRID INFRASTRUCTURE, AND ASSOCIATED INFRASTRUCTURE FOR THE HOEK DOORNEN PROJECTS PV 1, PV 2, PV 3, AND PV 4 – NEAR TOUWS RIVER, WESTERN CAPE PROVINCE

Report prepared for:	*Report prepared by:*
CSIR – Environmental Management Services P O Box 320 Stellenbosch 7599 South Africa	Sandra Hill – Independent Consultant Wolfe St Wynberg 7200 South Africa

4 November 2020

Executive Summary

This socio-economic impact study, includes the individual land parcels on which the proposed projects will be developed if approved, the surrounding area known as the Tankwa Karoo (of which the land parcels are a part), and the nearest towns, Touws River and Ceres, as the anticipated socio-economic impacts will be spread to varying degrees across these localities. While Touws River falls within the Breede Valley Local Municipality, the project sites and Ceres fall within the Witzenberg Local Municipality.

The following socio-economic risks and challenges characterise the study area:

- High levels of unemployment
- Poverty
- Food insecurity
- Slow economic growth
- Marginalisation of rural communities
- Persisting drought
- Poor service delivery
- High levels of drug and/or alcohol abuse
- Deteriorating education outcomes
- Increasing rate of teenage pregnancy
- Social grant dependency
- Increasing gang activity
- COVID-19 hotspots (Touws River and Ceres) and the continuing impact of the pandemic on lives and livelihoods

Positive socio-economic impacts likely to result from the proposed projects include the creation of skilled and unskilled employment opportunities for the duration of the construction and the operational phases. While the developer may not be able to fill skilled positions with locals, unskilled labour positions can be filled locally should the recommended mitigation measures be implemented. Communities will also likely benefit from the concomitant growth opportunities for local businesses and support service industries, and increased local spending. These impacts will benefit local communities through the creation of income generation opportunities and human development through skills development and training. In addition, local communities will benefit from the proposed Economic Development Plan if well designed and well implemented.

On a macro level, positive impacts also include the generation of clean energy for the national grid which is under severe pressure and unable to meet demand, thereby curtailing the economic advancement of the country. Therefore, the proposed development can also be seen as creating a positive social benefit for society.

Negative socio-economic impacts likely to result from the project include an influx of opportunistic job seekers which could strain social structures and support networks, increase risky social behaviour such as prostitution and drug abuse, and burden existing services. Unsuccessful job seekers and other disenchanted community members who, realistically or unrealistically, expect to gain from the proposed development could engender ill feelings towards the proposed projects, and potentially lead to protest, damage to project property, and/or intimidation of staff.

Furthermore, given the time-bound nature of the development, the inevitable job losses at the end of each phase are high. The additional movement of people and vehicles to the site, particularly during the construction phase may increase the chances of crime on surrounding properties and a decline in eco-tourism. This (negative impact) can be managed by implementing recommended mitigation measures.

The overall significance rating of the negative socio-economic impacts associated with the proposed projects during the construction phase is very low to low; whereas the overall significance rating of the positive socio-economic associated with the proposed projects during construction is low to moderate, should mitigation and enhancement measures be implemented respectively.

The overall significance rating of the positive socio-economic impacts associated with the proposed projects during the operation phase is very low to high, should enhancement measures be implemented.

The overall significance rating of the socio-economic impacts associated with the proposed projects during decommissioning phase is low (negative) and low (positive), should mitigation measures and enhancement measures be implemented, respectively.

The cumulative impact during the construction and operational phases is low (negative) to moderate (positive). There is no cumulative impact of the decommissioning phase.

Given the overall very low to low significance of potential negative impacts associated with the projects, as compared to the overall very low to high significance of potential positive impact of the projects; it can be concluded that the prospective socio-economic benefits of the proposed projects outweigh the socio-economic losses/impacts.

From a social impact perspective, in light of the above argument, the specialist conducting this Socio-economic Assessment is of the opinion that the proposed projects should be authorised by the competent authority.

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List of Abbreviations

ART	Anti-retroviral Treatment
BA	Basic Assessment
BVLM	Breede Valley Local Municipality
CSIR	Council for Scientific and Industrial Research
CWDM	Cape Winelands District Municipality
DEFF	Department of Environment, Forestry and Fisheries
EA	Environmental Authorisation
ECD	Early Childhood Development
EDP	Economic Development Plan
EEA	Employment Equity Act
EIA	Environmental Impact Assessment
FET	Further Education and Training
HDI	Human Development Indicator/Index
MLL	Minimum Living Level
MW	Megawatt
NMR	Neonatal Mortality Rate
PV	Photovoltaic
NEMA	National Environmental Management Act
NMD	Notified Maximum Demand
IDP	Integrated Development Plan
REDZs	Renewable Energy Development Zones
REIPPPP	Renewable Energy Independent Power Producer Procurement Program
SDF	Spatial Development Framework
SIA	Socio-economic Impact Assessment
WLM	Witzenberg Local Municipality

Glossary

Definitions	
Dependency ratio	Refers to the number of persons on average dependent on every working person in a region (the number of people supported by each economically active person. The lower the dependency ratio the better.
Poverty	The inability to attain a minimal standard of living.
Minimum Living Level	Reflects the minimum amount a household needs to meet their basic need. The MLL for the Western Cape was R1606 per month in 2017.
Working Age Population	The portion of the population aged between 15 – 64.
Unemployment Rate	Refers to individuals without work, but actively seeking work in a recent past period (usually four weeks), and are currently available for work.
Gross Domestic Product	The sum of value added created by all residents within a certain period which is commonly a year.
Human Development Indicator/Index	The HDI serves as a composite indicator of social and economic development and overall well-being.
Human Capital	Refers to the physical and mental ability and the well-being of the population of an area.
Study Area	Refers to the area surrounding the site of the proposed development within an approximately 80km radius.

SOCIO-ECONOMIC IMPACT ASSESSMENT

This report serves as the Socio-economic Specialist Assessment that was prepared as part of the Basic Assessment (BA) for the proposed development of four 175 MW Solar Photovoltaic (PV) facilities, electrical grid infrastructure (EGI), and associated infrastructure (i.e. Hoek Doornen PV 1, Hoek Doornen PV 2, Hoek Doornen PV 3, and Hoek Doornen PV 4) near Touws River in the Western Cape Province.

The Applicant is proposing to develop nine solar PV facilities, nine power lines and associated infrastructure to link the proposed PV facilities to the Eskom Kappa Substation. There are nine separate Project Applicants. Two PV facilities are being proposed on the farm Witte Wall 171; three PV Facilities are being proposed on the farm Grootfontein 149; and four PV Facilities are being proposed on the Farm Hoek Doornen 172. This Socio-economic Impact Assessment deals with the Hoek Doornen projects.

1. Introduction

1.1. Scope, Purpose and Objectives of this Specialist Report

This Socio-economic Impact Assessment (SIA) Report investigates the potential social disruptors and possible associated social impacts that may ensue from the development of the four proposed 175 MW Solar PV facilities and associated infrastructure on the farm Hoek Doornen 172.

This Socio-economic impact study includes the individual land parcels on which the proposed projects will be developed if approved, the surrounding area known as the Tankwa Karoo (of which the land parcels are a part), and the two nearest towns, Touws River and Ceres, as the anticipated socio-economic impacts will be spread to varying degrees across these localities.

The project is located within the Witzenberg Local Municipality (WLM). However, the closest town, Touws River (76 km by road), is located in the Breede Valley Local Municipality (BVLM), while the next closest town, Ceres (78 km by road) lies in the WLM.

Social disruptors and impacts most likely to significantly influence social and cultural concerns, values, consequences, and benefits to communities are the focus of this SIA.

The objective of this SIA is to assist with informed decision-making by the competent authority, Department of Environment, Forestry and Fisheries (DEFF), as well as the development of appropriate management measures relating to socio-economic impacts linked to the proposed project.

The purpose of the SIA is as follows:

- Undertake a policy review and assess the alignment of the proposed project with the national, provincial, and local socio-economic policies, with a focus on the compatibility of the project with the spatial planning, development objectives and land use management plans of the respective authorities.
- Profile the socio-economic status quo of the study area using secondary data.
- Identify and analyse the potential socio-economic impacts (direct, indirect, and cumulative) of the proposed project.
- Evaluate the potential positive impacts versus any negative socio-economic effects that may ensue as a result of the change in status quo of the affected and benefiting communities and economies.

1.2. Details of Specialist

This specialist assessment has been undertaken by Sandra Hill, an independent social science consultant, in response to a request by the Council for Scientific and Industrial Research (CSIR) on behalf of Veroniva (PTY) Ltd (the project developer), and forms part of a BA for the development of the proposed 175 MW Solar PV facilities, EGI, and associated infrastructure in the Tankwa Karoo, equidistant from the towns of Touws River and Ceres in the Komsberg Renewable Energy Development Zone (REDZ) (REDZ 2), located in the Western Cape Province. A curriculum vitae is included in Appendix A of this specialist assessment.

1.3. Terms of Reference

The following terms of reference were provided for this study:

- Comply with the Assessment Protocols that were published on 20 March 2020, in Government Gazette 43110, GN 320 (i.e. Part A, which provides the Site Sensitivity Verification Requirements where a Specialist Assessment is required but no Specific Assessment Protocol has been prescribed).
- Compile a Socio-economic Assessment in compliance with Appendix 6 of the 2014 National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (as amended). The Specialist Assessment must also be in adherence to any additional relevant legislation and guidelines that may be deemed necessary.
- Provide review input on the preferred infrastructure layout following the sensitivity analysis and layout identification (as applicable).
- Describe the socio-economic context of the study area, focusing on aspects that are potentially affected by a solar PV project and associated infrastructure, and taking into consideration the current situation as well as the trends, the local planning (Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs)), other developments in the area.
- Apply a variety of appropriate options for sourcing information, such as a review of analogous studies, available databases and social indicators, and use of interviews with key affected parties such as local communities, local landowners and government officials (local and regional) etc. and a site visit, if necessary. The REDZ Phase 1 Strategic Environmental Assessment (SEA) (DEA, 2015) should also be considered.
- Consider social issues such as potential in-migration of job seekers, opportunities offered by training and skills development, phasing of employment over the duration of the Renewable Energy Independent Power Producer Procurement Program (REIPPPP), cumulative effects with other REIPPPP projects in the local area, implications for local planning and resource use.
- Evaluate the implications of the social investment programme associated with REIPPPP projects on the local socio-economic context.
- Identify and assess the potential direct, indirect and cumulative impacts of the proposed development on the receiving environment from a socio-economic perspective.
- Identify any protocols, legal and permit requirements that are relevant to this project and the implications thereof.
- Provide recommendations with regards to potential monitoring programmes.
- Determine mitigation and/or management measures which could be implemented to as far as possible reduce the effect of negative impacts and enhance the effect of positive impacts. Also identify best practice management actions, monitoring requirements, and rehabilitation guidelines for all identified impacts for inclusion in the EMPr.
- Incorporate and address all issues and concerns raised by Stakeholders, Competent Authority, I&APs and the public during the Public Participation Process (where relevant and applicable).
- Review the Generic EMPr for 1) Power Lines and 2) Substations (GN 435) and confirm if there are any specific environmental sensitivities or attributes present on the site and any resultant site-specific impact management outcomes and actions that are not included in the pre-approved generic EMPr (Part B – Section 1).

2. Approach and Methodology

The approach to and methodology adopted for the SIA is discussed in this section.

Type of Specialist Investigation	Socio-economic Impact Assessment
Date and Duration of Specialist Site Visit	7 September 2020 (1 day)
Season	Spring – however the season is not relevant to the assessment and has no bearing on its findings.
Relevance of Season	The season in which the site visit was undertaken has no relevance and bearing on the findings of the assessment.

Approach: SIA Guidelines
The Guideline for Social Impact Assessment (Barbour, 2007) is used to provide policy and quality control guidelines for the SIA process used in this report. The guideline's key activities, objectives and areas of particular interest for assessment are elaborated on below.

Social Impact Assessment Guidelines (Barbour, 2007)
1. Key Activities
Describe and obtain an understanding of the proposed intervention (type, scale, location), the communities likely to be affected and determine the need and scope of the SIA
Collect baseline data on the current social environment and historical social trends
Identify and collect data on the SIA variables and social change processes related to the proposed intervention
Assess and document the significance of social impacts associated with the proposed intervention
Identify alternatives and mitigation measures
2. Key Objectives
Assess the proposed development in terms of its fit with the relevant legislative, policy and planning requirements
Identify and assess the factors that contribute to the overall quality of life (social wellbeing) of people not just their standard of living
Identify and assess the needs of vulnerable, at risk, groups and/or ethnic minorities or indigenous peoples
Clearly identify which individuals, groups, organisations and communities stand to benefit from the proposed intervention and those that stand to be negatively affected. In so doing the assessment must identify and emphasize vulnerable and underrepresented groups
Recognise that social, economic and biophysical systems and impacts are inextricably interconnect, and identify and understand the impact pathways created when changes in one domain trigger impacts across other domains
Acknowledge and incorporate local knowledge and experience into the assessment process
Identify and assess development opportunities and not merely the mitigation of negative or unintended outcomes
3. Key Areas of Particular Interest
Where vulnerable communities are present
With high poverty and unemployment levels
Where access to services, mobility and community networks are affected
Where local livelihoods depend on access to and use of environmental resources and services
Of important tourism or recreation value
Where the existing character and "sense of place" will be altered

Data Collection
To create a comprehensive understanding of the socio-economic environment that might be affected by the proposed development, a socio-economic overview was developed incorporating both secondary and primary data collection.

Data sources consulted to compile the socio-economic baseline include internet sources, for example, Statistics South Africa, to provide a broad overview of the socio-economic setting of the area; National, provincial and local policy and plans to determine whether the proposed project is aligned with the planning objectives of the various spheres of government, as well as previously conducted EIAs conducted to determine the potential impact and linkages to this assessment.

Primary data collection was done through face-to-face and/or telephonic interviews with land owners of the affected properties, municipal officials and community role-players to obtain additional context-specific information.

A site visit was undertaken on 7 September 2020 to the affected project farms, Touws River, and Ceres.

Data Analysis
Data analysis was conducted by evaluating relevant data from various sources published over different time periods in order to gain a long-term perspective. Information was analysed to establish status quo socio-economic conditions, prevailing social structures, local demographic trends, and potential change processes present in the study area.

The overview was then used to interpret the impacts and measure the extent of socio-economic impacts that could be derived from the proposed activities.

2.1. Information Sources

The project made use of both primary and secondary data to assess the impacts and desirability of the proposed project. Secondary data analysed was mainly derived from the following sources:

Data / Information	Source	Date	Type	Description
The South African Guideline for Involving Social Assessment Specialists in EIA (Barbour, 2007)	Western Cape Government	2007	Guidelines	Professional guidelines for conducting social impact assessment studies in South Africa
Statistics South Africa Census, 2011	Stats SA	2011	Census	Latest available census data
Statistics South Africa Community Survey, 2016	Stats SA	2016	Census	Latest available community survey data
Cape Winelands District Municipality Integrated Development Plan (IDP)	CWDM	2017/18 – 2021/22	Overview and planning document	Updated contextual overview and IDP
Witzenberg Local Municipality (WLM) Amended IDP	WLM	2017 – 2022	Overview and planning document	Updated contextual overview and IDP
Breede Valley Local (BVLM) Municipality Review of the IDP	BVLM	2020 - 2021	Overview and planning document	Updated contextual overview and IDP
National Development Plan 2030	National Government	2012	National planning document	Outlines long term development plan for South Africa
Municipal Capacity Assessment Witzenberg WC022	Municipal Demarcation Board	2018	Assessment	Overview of the environmental situation of the municipality, and summary of capacity information
Municipal Capacity Assessment Breede Valley WC025	Municipal Demarcation Board	2018	Assessment	Overview of the environmental situation of the municipality, and summary of capacity information
Socio-economic Profile: BVLM	Western Cape Government	2019	Profile	Socio-economic overview
Socio-economic Profile: WLM	Western Cape Government	2018	Profile	Socio-economic overview
Farmworker Household Survey Report	Western Cape Government	2014/15	Census	Comprehensive census of farm workers and dwellers in the CWDM.
CWDM Draft Spatial Development Framework (SDF)	Western Cape Government	2019	Strategic planning	Strategic planning
WLM SDF	WLM	2019	Spatial development	Spatial development planning

Primary data was generated through face-to-face and/or telephonic interviews with the following:

Name	Designation	Location	Technique	Date 2020
Jan Minnaar	Farm representative	Farm Grootfontein 149	Telephonic	8 September
Philip van Heerden	Farm Manager	Farm Witte Wall 171	Face-to-face	7 September
Erhard Buhr	Land Owner	Farm Hoek Doornen 172	Telephonic	5 October
Andre Vermeulen	Land Owner and interim chairperson of the Tankwa Ceres Karoo Farmers' Union	Farm Die Brak 241	Face-to-face	2 November
Leon Teunissen	Land Owner	Farm Karee Kolk 174	Telephonic	2 November
Brian Stander	National Department of Public Works	Farm Platfontien 240	Telephonic	23 October
Adwin Zinkfontein	Operational Manager	Touws River Clinic BVLM	Face-to-face	7 September
Riaan Fick	Socio-economic Development Manager	WLM	Telephonic	8 September
Nina King	Business Owner	Touws River	Face-to-face	7 September
Ashleigh Sibanda	Programme Manager at Knowledge Pele	Johannesburg	Telephonic	10 September

2.2. Assumptions, Limitations and Disclaimer

This SIA is based on several key assumptions, which are aligned with industry practice, and is consequently, subject to certain limitations. Therefore, relevant assumptions and limitations should be considered when deliberating this report. However, the assumptions and limitations are not expected to invalidate the findings of this report.

Key assumptions:

- The SIA is based on the technical information provided by the Applicant and which is assumed to be accurate (e.g. the proposed location, extent, scale of the project).
- The SIA is primarily based on secondary data. Accordingly, except for a single site visit and interviews as listed above, no primary research or social surveys have been conducted as part of this assessment. However, the level of assessment and its attendant data sources were deemed adequate for this study.
- The accuracy of secondary data sources directly influences the quality of this SIA. However, the data used in this assessment is published by reputable authors and therefore deemed to be of sufficient quality for this study.
- With regard to the primary data sources, it is assumed that the questions asked during the interviews were answered accurately.
- It is assumed that the socio-economic conditions, as found during the assessment, will not undergo significant changes between the date of data collection and the release of this report.

Key limitations:

- While of high quality and reputability, most secondary sources were published before the outbreak of COVID-19 and the concomitant widespread social and economic devastation.
- Socio-economic impacts are inherently interconnected and do not lend themselves to clear disaggregation into distinct impacts.
- Socio-economic impacts are notoriously difficult to quantify and represents different levels of significance to different individuals. Accordingly, the same impact might be experienced in vastly different ways by different individuals within the same community.

- Socio-economic impacts, being the product of human behaviour, are derived from baseline information and anticipated project implications; as opposed to being empirically measured.
- Humans and the communities in which they live are adaptable, dynamic and open systems. Accordingly, the communities under investigation in this SIA might react to various factors not necessarily related to the proposed development; thereby complicating clear inference of observed social change to anticipated project impacts.
- Secondary baseline information is useful in establishing a municipal-wide picture of the most prominent socio-economic trends; it is not particularly informative with regards to the specific conditions present in the Tankwa Karoo and in the towns of Touws River or Ceres.
- As at October 2020, there are no sensitivity layers on the Screening Tool for socio-economic features, and as such the environmental sensitivity as identified by the Screening Tool cannot be confirmed or disputed.

Approved and proposed energy developments within a 30 km radius were taken into consideration as they have the potential to create supplementary positive or negative socio-economic impacts identified in this study or vice versa. A list of these projects is provided in Section 6 of this report.

2.3. Consultation Processes Undertaken

Face-to-face and telephonic interviews were conducted with selected landowners, farm representatives, and Breede Valley, and Witzenberg Municipal officials. Participant observation conducted during a one-day site visit encompassing the affected project farms, Ceres, and Touws River.

3. Description of Project Aspects relevant to Socio-economic Assessment

As noted above, the Project Applicant is proposing to design, construct and operate nine 175 MW Solar PV power generation facilities north-east of Ceres in the Western Cape Province (referred to as Ceres Solar PV Development). The proposed project will make use of PV solar technology to generate electricity from the sun. Each solar PV facility will have a range of associated infrastructure, including an on-site substation, and will connect to the Eskom Kappa Substation via a 132 kV power line. The proposed projects will take place within REDZ 2, known as the Komsberg REDZ.

The proposed facilities will be constructed on portions of the following farms:
- Grootfontein (5/149 and RE 149)
- Hoekdooren (172)
- Witte Wall (171)

The power lines will traverse the aforementioned farms, as well as Die Brak (Farm 241) and Platfontein (Farm 240). Assessment of nine 132kV power lines covers the worst-case scenario. However, this number may be reduced depending on which projects win preferred bidder status in terms of the REIPPPP.

As noted above, this SIA deals with the proposed Hoek Doornen PV 1; Hoek Doornen PV 2; Hoek Doornen PV 3; and Hoek Doornen PV 4 projects.

Each 175 MW plant will cover an approximate footprint of 250 hectares. The footprint includes the PV facility and infrastructure such as internal roads for each PV facility, while some of the main access roads will be outside of the 250 hectares.

From a socio-economic perspective, the most important project as aspects are:
- Employment creation over the lifetime of the project; and
- The Economic Development Plan (EDP) the Applicant is to develop for implementation should the project obtain preferred bidder status in terms of the REIPPPP.

Approximately 90 to 150 skilled and 400 to 460 unskilled employment opportunities will be generated during the construction phase (per project) which is expected to extend for 12 to 14 months.

Approximately 20 skilled and 40 unskilled employment opportunities will be generated during the operational phase of an expected 20 years. Unskilled jobs will be linked to services such as panel

cleaning, maintenance, and security. Employment opportunities to be created during this phase equate to approximately 4800 person months (for skilled opportunities) and approximately 9600 person months (for unskilled opportunities) per project over the 20-year plant lifespan.

It should be noted that the employment opportunities provided in this report are estimates and depend on the final engineering design and the REIPPPP Request for Proposal (RFP) provisions at that point in time.

While the Applicant does not yet have a fully articulated EDP as this will be dependent on the RFP IPP requirements, the broad objectives of the EDP are to:

- Create a local community trust which has an equity share in the project life to benefit historically disadvantaged communities.
- Initiate a training strategy to facilitate employment from local communities.
- Give preference to local suppliers of components and/or services for the construction of the facility.

The creation of employment opportunities, as well as the EDP, is likely to serve as an economic pull factor that may result in in-migration to the Tankwa Karoo, Touws River and/or Ceres area, as well as serve to provide potential positive project benefits to these local communities.

Refer to the key mitigation measures proposed by the specialist, and which needs to be included in the Environmental Management Programme (EMPr) listed in Section 9 of this report.

4. Baseline Environmental Description / Description of Receiving Environment

4.1. General Social and Economic Description

This baseline description is the same for Hoek Doornen PV 1; Hoek Doornen PV 2; Hoek Doornen PV 3; and Hoek Doornen PV 4 projects.

Secondary data sources

The study area is located within the Cape Winelands District Municipality (CWDM). The actual project footprint is located in the WLM. However, the closest town, Touws River, is located in the BVLM, while the next closest town, Ceres, lies in the WLM.

The Tankwa Karoo, colloquially described as the empty space on your map between Ceres, Calvinia and Sutherland, is sparsely populated and reflects the overall trend towards depopulation in the Karoo. The decline in the rural population and of many of its small towns is one of the area's most important changes since the mid-1950s. The Karoo is home to fewer than a million people (1.9% of the country's population), of whom three out of every four live in small country towns. The Karoo is politically and economically marginal, and administratively fragmented. Large scale land use shifts are impacting the region's economy and social fabric. These developments include renewable energy production facilities (solar and wind power), additional electricity power transmission corridors and the issuing of prospecting and mining rights over large areas for uranium and the extraction of shale gas. Agricultural production has intensified, with the expansion of irrigated croplands. Game farming and eco-tourism has also intensified, as has the trend towards 'lifestyle farmers', property owners whose income is not from farming. (Henschel, J; Hoffman, M; Walker, C. 2018)

The region has great potential for eco-tourism, not only for the Cape metropolitan market, but also international visitors with a range of tourism offerings such as wilderness experience, hunting, stargazing, mountain biking, bird watching, game viewing, plant-spotting, hiking, and several festivals.

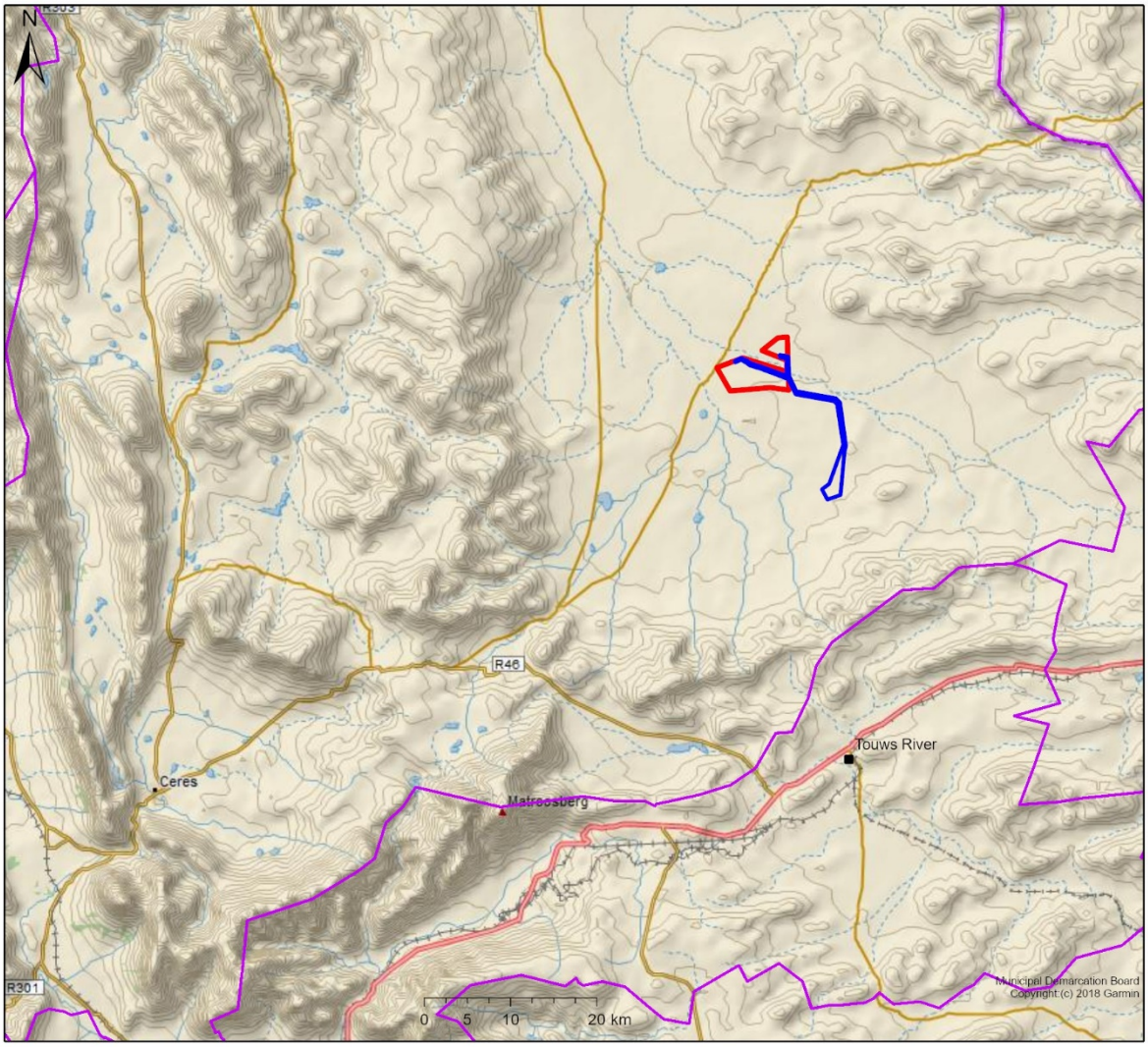

Figure 1: Map of project site, nearest towns and municipal boundaries

The map in Figure 1 shows Hoek Doornen project sites (yellow), EGI corridor (blue), location of Touws River and Ceres, the BVLM and WLM boundaries (purple) and the N1 (pink).

The CWDM is a Category C municipality situated in the Western Cape Province adjacent to the City of Cape Town Metropolitan area. The CWDM is a landlocked area between the West Coast and Overberg coastal districts and includes five local municipalities, namely: Drakenstein, Stellenbosch, Witzenberg, Breede Valley and Langeberg. The language most often spoken in the household in Western Cape Province is Afrikaans representing 46,6%, followed by English representing 19,6%.

The BVLM covers an area of 3 834km² and serves the rural towns of De Doorns, Rawsonville, Touws River, and Worcester as well as the rural areas adjacent to and between these towns, and the Matroosberg rural area. Worcester serves as the administrative headquarter of the municipality and is also regarded as the primary economic service node.

The small town of Touws River falls within the BVLM. It is located on the southern edge of the Great Karoo, roughly 180 km by road from Cape Town, and 76km from the proposed development. The town lies adjacent to the national route (N1) between Cape Town and the North. It covers an area of 21,6km² and comprises several distinct areas including the old central part of town known as Paddasvlei, Topkamp (the oldest housing area), Steenvliet, the original township for Coloured people, and Zion Park, an informal settlement.

Originally established as a railway town servicing trains travelling from Cape Town to the interior of the country since 1877, Touws River enjoyed almost a century of prosperity before the decline and subsequent total withdrawal of the railways in the 1980s led to its virtual collapse. The demise of the railways resulted in mass unemployment in Touws River as most people were at that time employed either directly by the railways or by one of the associated industries or businesses. Touws River today faces multiple socio-economic problems, a high level of human need, and low economic potential and development resources to stimulate and support recovery.

The major socio-economic risks and challenges facing the BVLM include (Breede Valley Review IDP 2020-2021; 2019 Socio-economic Profile BVLM):

- Income inequality;
- Food insecurity;
- Rising unemployment;
- Deteriorating education outcomes;
- Demand for adequate housing;
- The persisting drought in the Western Cape and in-migration of people to the Breede Valley;
- Adequate service delivery;
- The effect of poverty, especially on smaller towns such as Touws River;
- Culture of violence fuelled by gang activity;
- Load shedding adversely affecting the local economy; and
- The impact of COVID-19 on current and future municipal planning and operations, as well as society in general.

The WLM covers an area of 10 753km² and serves the rural towns of Ceres, Op-Die-Berg, Prince Alfred Hamlet, Tulbagh, and Wolseley, as well as the rural areas adjacent to and between these towns.

Ceres is the administrative centre and largest town in the WLM and serves as a regional hub for the surrounding towns. It is situated about 170 km north-east of Cape Town, and 78km from the proposed development. Established in the mid-1800s as more and more farmers moved into the area, Ceres is located along the original route north between Cape Town and Johannesburg. Ceres covers an area of 77,12km² and includes the residential areas of the old town, Bella Vista, historically a township for Coloured people, and Nduli, historically a township for Black people.

Ceres's importance within the broader agricultural economy and its role as a primary regional service centre has been recognized through the identification of a possible Agri-park development. While this bodes well for economic development, future development will be severely constrained by insufficient bulk services: the town has been crippled by water shortages and has already run at its Notified Maximum Demand (NMD) of 42,8 MVA of power that Eskom is required to provide. The implications thereof are four years and R360m of investment, meaning that 2021 is the earliest that NMD can be upgraded. Without significant bulk infrastructure upgrades – specifically related to electricity – the WLM will be unable to support any further growth (WLM SDF 2019).

The major socio-economic challenges facing the Witzenberg Municipal area include (Witzenberg Amended IDP 2017 – 2022; Witzenberg Municipality Spatial Development Framework 2019):

- The marginalization of rural communities, exacerbated by a general lack of skills and access to opportunities/ services in these areas;
- Predominance of seasonal agriculture-based labour shrinks revenue base;
- Rising level of unemployment
- People in poverty;
- Social Grant dependency;
- Increasing TB and HIV/Aids prevalence;
- Social ills – Crime, vandalism and substance abuse;
- Lack of economic growth; and
- Increasing population and demand for services.

Demographics

Table 1: Demographics of municipal areas and towns
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM; Stats SA Community Survey 2016)

Population estimates 2018	**Households** actual 2016
BREEDE VALLEY	
186 796	**47 569**
Touws River: 8 768 actual population 2016	
WITZENBERG	
140 124	**35 976**
Ceres: 36 043 actual population 2016	

The BVLM has a population of 186 796 (estimates in 2018), making it the second most populated municipal area in the CWDM (BVLM IDP Review 2020 – 2021 citing Stats SA Community Survey 2016). The BVLM area comprises 47 569 households[1] of which approximately 14,7% (7 000) are classified as indigent. The BVLM's 2020 average household size is 3,8 persons. (2019 Socio-economic Profile: BVLM). It is worth noting that although the number of households in the area is increasing, the actual size of households is trending downwards. This potentially implies an inflow of young professionals (either single, as couples or with small family groupings) into the area as a result of enhanced urbanisation. Other contributing factors include, but are not limited to, lower fertility rates, occurrences of divorce, ageing population, etc. (2019 Socio-economic Profile: BVLM). In 2016, Touws River actual population stood at 8 768 persons. (Stats SA Community Survey 2016).

The WLM has a population of 140 124, comprising 35 976 households (based on 2018 and 2016 data, respectively). The average household size is 3,6 persons. (2018 Socio-economic Profile: WLM). In 2016, Ceres actual population stood at 36 043 persons. (Stats SA Community Survey 2016).

According to a 2014/15 survey, 34 074 people live and or work on farms in the Cape Winelands area. Witzenberg had the highest number of households (2482) and individuals (8181), followed by Breede Valley, which contained 1005 households and 4222 individuals (Western Cape Government Farmworker Household Survey Report 2014/15).

[1] A household is seen as a group of persons who live together and provide themselves jointly with food or other essentials for living, or a single person who lives alone. (Municipal Capacity Assessment 2018)

Demographics by Age

Table 2: Demographic profile of Breede Valley and Witzenberg by age cohort
(2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM)

Year	Children: 0 – 14 Years	Working Age: 15 – 65 Years	Aged: 65+	Dependency Ratio (%)
Breede Valley: Age Cohorts, 2019 - 2025				
2019	55 143	121 646	10 007	53.6
2022	56 671	125 281	11 199	54.2
2025	58 057	128 072	12 056	54.7
Growth	0.9%	0.9%	3.2%	-
Witzenberg: Age Cohorts, 2011 - 2024				
2011	29 460	81 634	4 849	42.0
2019	34 457	100 049	8 974	43.4
2024	36 098	112 780	11 143	41.9
Growth	Not available			

The above table depicts the BVLM and WLM population composition per age cohorts. These groupings are also expressed as a dependency ratio which indicates the number of people supported by each economically active person. A higher dependency ratio means a more vulnerable community, higher pressure on social systems and the delivery of basic services.

In the BVLM area the largest population growth between 2019 and 2025 was estimated in the aged cohort which grew at an annual average rate of 3.2%. This is expected to increase the dependency ratio from 53.6% in 2019 to 54.7% towards 2025. The child and working age cohorts grew by 0.9% respectively (2019 Socio-economic Profile: BVLM).

According to a 2014/15 survey, over 66% of individuals living on farms in the Cape Winelands were below the age of 35, while only just over 1% were above 65 years of age. A large part of the Cape Winelands farming population (30.09%) was youth i.e. between the ages of 19 and 35 years old (Western Cape Government Farmworker Household Survey Report 2014/15).

Witzenberg's population shows an estimated relatively small increase in the children cohort between 2019 and 2024. Coupled with strong growth in the working and aged categories, this is expected to decrease the dependency ratio in Witzenberg (2018 Socio-economic Profile: WLM). However, according to Stats SA (2016) the area's biggest population cohort is youth aged 15–34 representing 38,4%. Of the youth cohort, the biggest number is aged between 15-19 (Stats SA Community Survey 2016). These demographics must be taken into account when considering education levels, youth unemployment, and teenage pregnancies.

Demographics by Gender
The sex ratio (number of men to 100 women) provides an indication of the gender breakdown in an area, and it is suggestive of labour force composition. levels.

The 2020 sex ratio for BVLM is 91.9, indicating in general considerably fewer males than females in the area. This ratio further decreases towards 2023 (91.4) which can be attributed to a wide range of factors such as an increase in male mortality rates and the potential outflow of working males. This typically results in more female headed households, larger household sizes, and higher grant dependency levels.

Conversely, the 2020 sex ratio for WLM is 106.7, indicating in general more males than females in the region. This ratio further increases towards 2023 (106,9) which suggests continued growth as a migrant receiving area.

South Africa's average sex ratio is around 95 men to 100 women. (Witzenberg Municipal Capacity Assessment 2019).

Demographics by Race
The population of both the BVLM and WLM is predominantly Coloured (63% and 66% respectively), followed by African (24% and 25% respectively) and Whites (10% and 7% respectively).

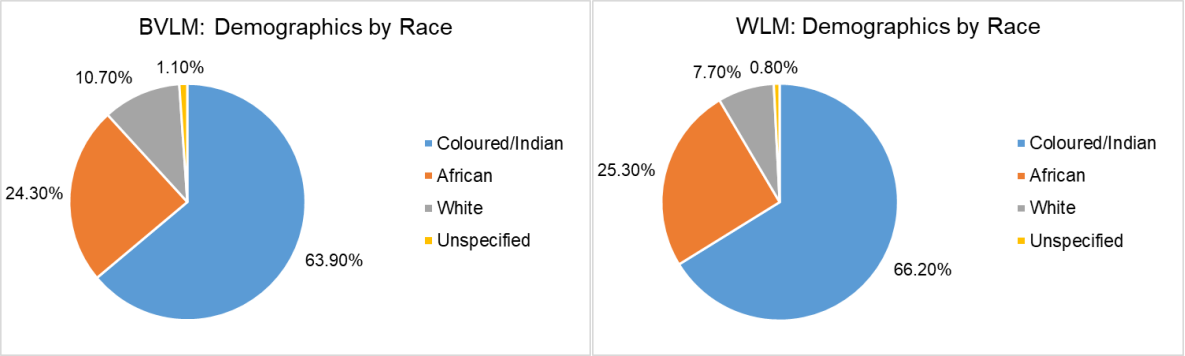

Figure 2: Demographics by race
(Breede Valley Municipal Capacity Assessment 2018; Witzenberg Municipal Capacity Assessment 2019)

Population Density
In 2019, the population density in BVLM was 49 people/km² while the WLM had only 13 people/km² (2019 Socio-economic Profile: BVLM).

Population Projections 2019 – 2024
The total population is estimated to increase to 194 104 by 2023 which equates to a 1% annual average growth rate for the BVLM. For the WLM, the total population is estimated to increase to 153 987 by 2023.

Table 3: BVLM and WLM Population Projections 2019 – 2024
(Western Cape Department of Social Development, 2019)

	2019	2020	2021	2022	2023	2024
BVLM	186 796	188 948	191 048	193 150	194 104	196 126
WLM	142 466	145 181	149 189	152 498	153 987	157 143

Education
Only 40,8% of children in the BVLM and 42,6% of children in the WLM aged 0–5 years attend an educational institution. In real terms, this means that 10 965 children in the BVLM and 8100 children in the WLM are not benefitting from early childhood education.

However, the distribution of the population aged 5–24 years attending an educational institution increases in both the BVLM and WLM to 57,8% and 63% respectively. This represents a drop in this population attending an educational institution in BVLM from 67,8% and an increase in WLM from 61,3% in 2011.

In the BVLM there is a lower proportion of the population aged 20+ without schooling (2,7%) compared to the WLM (3,9%). The adult population with some primary schooling is 10,5% in the BVLM and 14,2% in the WLM. The adult population that completed primary schooling is 6,5% in the BVLM and 9,2% in the WLM. The adult population who have completed secondary schooling is higher in the BVLM (34,2%) compared to 25,5% in the WLM. Only 40,5% of residents in BVLM and 41,2% of

residents in the WLM have some secondary schooling. The proportion of the population that has a higher education, however, is higher in the WLM (6,1%) than in the BVLM (5,7%) (Stats SA Community Survey 2016).

Matric Pass Rate

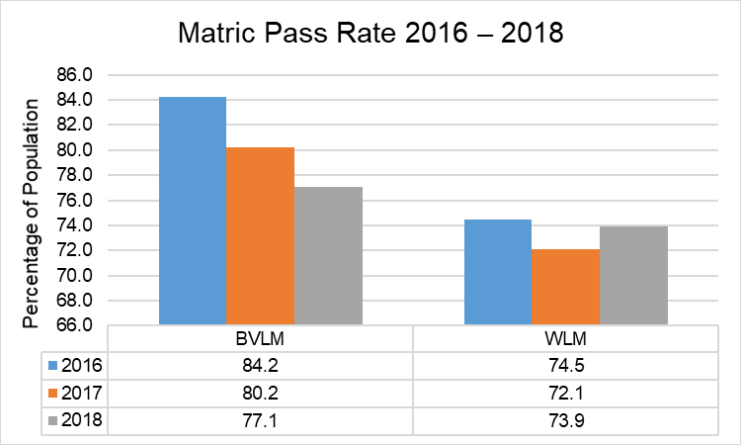

Figure 3: Matric pass rate 2016 – 2018
(2019 Socio-economic Profile: BVLM)

The matric pass rate in the BVLM dropped from 84.2% in 2016 to 77.1% in 2018, and in the WLM from 74,5% to 73,9% over the same period.

Factors affecting school performance include learner-teacher ratios which dropped in the BVLM from 27% in 2016 to 26.6% in 2018, and in the WLM from 34.4% in 2015 to 33.8% in 2017. This may be attributed to schools' declining ability to collect fees and to employ more teachers when needed. Educational performance could also be attributed to the availability (lack thereof) of adequate education facilities such as Early Childhood Development (ECD) centres, schools and Further Education and Training (FET) colleges as well as the availability of key learning resources such as libraries and access to internet.[2]

In 2018, 58 public schools were recorded in the BVLM, of which 79% of these were classified as no-fee schools. The majority of the schools are characterised as Quintile 1 or Quintile 2 schools, which indicates that they are situated in communities where high poverty indices are recorded by national government (BVLM IDP Review 2020-2021).

Learner enrolment in the BVLM increased at an annual average growth rate of 2.5% between 2016 and 2018. This could be attributed to several factors including changing demographics and socio-economic conditions. The learner retention rate, however, reflects a declining trend between 2016 and 2018 dropping from 67% in 2016 to 64% in 2018 and is likely influenced by a range of economic factors such as unemployment, poverty, indigent households, and teenage pregnancies. Learner enrolment in the WLM tapered off from 2015 to 2016 but increased slightly to 18 070 learners in 2017. This could be attributed to several factors including demographics and socio-economic context. The grade 12 dropout rate for Witzenberg learners increased from 35.5% to 36.6% between 2016 and 2017. Again, these high levels may be due to a number of economic factors such as unemployment, poverty, and teenage pregnancies (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

According to a 2014/15 survey, a mere 8% of the Cape Winelands farming population obtained their matric qualification with less than 1% having some type of tertiary qualification. High school learners are more likely to travel further than 4,9km to school, and many in the WLM and BVLM areas travel up to 10km. Walking and bus are the most common forms of transport (Western Cape Government Farmworker Household Survey Report 2014/15).

[2] Only 13,8% of the population in BVLM and 12.3% in WLM had access to internet (Stats SA Community Survey 2016)

The decrease in learner enrolment, high Grade 12 dropout rate, and the decreasing Matric pass rates are alarming. Low education means more people becoming less employable and labour productivity that is lower than it could be in an environment where sectors that traditionally absorb low-skilled labour are declining.

Health

Health is another major factor contributing to the general quality of life. The COVID-19 pandemic has led to the widespread loss of lives and livelihood across South Africa. HIV/AIDS, Tuberculosis, health of children, and maternal health are important health indicators.

COVID-19

According to Dr. Jantjie Taljaard, an infectious diseases physician at Stellenbosch University, the infection risk in farming communities is significant because people often work together in large numbers or confined spaces like factories or packhouses[3]. With agriculture deemed an essential service, many farm workers worked during the National Lockdown, choosing to risk their lives above their livelihood.

The BVLM and WLM were identified as a COVID-19 hotspot, with 3 464 cases and 194 deaths as a result of COVID-19 in the BVLM, and 1 614 cases and 97 deaths in the WLM. The increase of infection in youth between the ages of 25-35 was noted as an alarming trend.

Table 4: COVID-19 cases and recoveries

(25 September 2020: www.coronavirus.westerncape.gov.za/news/update-coronavirus)

Municipality	Cases	Recoveries
Cape Winelands District Municipality	**12 694**	**11 962**
Breede Valley	**3 464**	**3 270**
Witzenberg	**1 614**	**1 517**

HIV/AIDS

The BLM shows improvement in the number of patients that remain with treatment between 2017 and 2019, and a decrease in the number of new patients over the same period. The WLM also shows a drop in the number of new HIV/AIDS cases and an increase in the number of patients receiving Anti-retroviral Treatment (ART) between 2016 and 2018.

Table 5: ART treatment and HIV transmission rate

(2019 Socio-economic Profile: BVLM & 2018 Socio-economic Profile: WLM)

Area	Clients that remain with treatment		Number of new ART patients		HIV Transmission Rate	
	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19
Breede Valley	6 524	6 746	1178	1004	No data	No data
Area	**Registered patients receiving ART**		**Number of new ART patients**		**HIV Transmission Rate**	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Witzenberg	5 370	5 730	1 194	1 047	1.9	1.1

[3] https://www.foodformzansi.co.za/covid-19-virus-spreads-in-cape-farming-communities/

Tuberculosis (TB)
The number of TB patients in the BVLM area decreased from 2 005 in 2016/17 to 1 764 in 2017/18. It decreased slightly further to 1 738 in 2018/19. The WLM, had 924 TB patients in 2017/18 compared to 1 094 in 2016/17, also reflecting a decline in TB infections (2019 Socio-economic Profile BVLM & 2018 Socio-economic Profile WLM).

Child and Maternal Health
Immunisation rates in the BVLM municipal area increased from 60.8% in 2017/18 to 65.8% in 2018/19. The number of malnourished children under five years (per 100 000) decreased from 11.0 in 2017/18 to 9.0 in 2018/19. The neonatal mortality rate (NMR) (per 1 000 live births) improved from 17.2 in 2017/18 to 13.6 in 2018/19.

The immunisation rate in the WLM improved from 59.9% in 2016 to 67.3% in 2016. The number of malnourished children under five years (per 100 000 people) in 2016 was 2.9, and increased to 3.7 in 2017. The NMR (per 1 000 live births) improved from 15.0 in 2016/17 to 13.0 in 2016/17.

The maternal mortality rate (deaths per 100 000) in the BVLM area increased threefold between 2017/18 (59) and 2018/19 (193). Breede Valley's delivery rate to women under 20 years has improved from 16.8% in 2017/18 to 15% in 2018/19. The termination of pregnancy rate reflects a marginal increase from 0.9 in 2017/18 to 1.0 in 2018/19.

The maternal mortality rate in the WLM area remained at zero deaths per 100 000 live births in 2016/17 and 2017/18. The delivery rate to women 10 -14 years and 15 - 19 years deteriorated between 2015/16 and 2017/18 in WLM with 18.8 per 1 000 births to teenage mothers in 2017/18. This is of concern as these teenage girls are of school going age and pregnancies typically contribute to the high dropout rate. The termination of pregnancy rate remains steady at zero for 2016/17 and 2017/18 in the WLM Area (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Public Health Services
In 2018, the BVLM had 15 primary healthcare clinics which comprised of six fixed and nine mobile clinics. In addition, there is also one community day centre, one district hospital, as well as eight ART clinics/ sites and 21 TB clinics/sites.

In 2018, the WLM had 15 public healthcare clinics which comprised of eight fixed primary health clinics and six mobile clinics, as well as one community day centre. In addition, there is one district hospital, as well as seven ART treatment clinics/sites and 19 TB treatment clinics/sites.

Both municipalities have two ambulances per 10 000 inhabitants which are on par with the district average. Access to emergency medical services is critical for rural inhabitants due to the distances they have to travel to access health facilities (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

Poverty
Poverty can be defined as the inability to attain a minimal standard of living. GDP per capita, income inequality, and human development and income levels are key indicators of poverty.

At R44 489 in 2018, the BVLM area had the second lowest GDPR per capita in the CWDM which recorded a figure of R50 717. At R67 180 in 2017, WLM's GDPR per capita was marginally below that of the CWDM's figure of R71 426. While a useful indicator of overall per capita income, the GDPR does not reflect the distribution of that income, which according to Professor Murray Leibbrandt of The Southern Africa Labour and Development Research Unit, is stacked in favour of the top 10%, with the lowest 5% of the population getting only a fraction of that income. This is a major sign of growing inequality.

The National Development Plan set a target of reducing income inequality in South Africa from a Gini coefficient of 0.7 in 2010 to 0.6 by 2030. However, income inequality in the BVLM area increased from 0.565 in 2012 to 0.581 in 2015 and 0.594 in 2018. Similarly, income inequality has been on the increase in the WLM between 2012 and 2017. The sharp increase in inequality levels can be attributed to the severe drought and slow economic growth which have harmed livelihoods and employment during this period.

There has been a general increase in the Human Development Index (HDI)[4] in the BVLM from 0.66 in 2012 to 0.69 in 2018. The HDI has also increased in the WLM from 0.66 in 2016 to 0.67 in 2017. The HDI serves as a composite indicator of social and economic development and overall well-being. The per capita income as per definition is expected to mimic the trend of the HDI (2019 Socio-economic Profile: BVLM; 2018 Socio-economic Profile: WLM).

In real terms, 14,6% of households in the BVLM and 15% of households in the WLM ran out of money to buy food in the 12 months before the 2016 Statistics SA Community Survey. In the BVLM and WLM, 11,8% and 8,3% of households respectively reported skipping at least one meal in the 12 months before the survey (Stats SA 2016).

While more recent data is not available, it is a fair assumption that poverty levels have been exacerbated by the COVID-19 pandemic as discussed above.

Household income

Household income is an indicator of current poverty levels and provides information about the living standards prevalent in a particular community. A community's ability to meet their basic needs is determined by the level of household income.

Table 6: Household income distribution

(WLM Amended IDP 2017 – 2022)

Income Category	Cape Winelands	Witzenberg	Drakenstein	Stellenbosch	Breede Valley	Langeberg	
No income	13.1	6.4	12.8	20.4	12.0	10.0	
R1 - R6 314	1.9	1.7	1.8	2.0	1.7	2.5	
R6 315 - R12 628	3.5	4.0	3.2	3.5	3.1	4.3	Low Income
R12 629 - R25 257	13.4	18.7	10.7	10.6	15.2	15.8	
R25 258 - R50 514	20.1	25.8	17.1	16.6	21.8	24.3	
Subtotal	**51.9**	**56.6**	**45.5**	**53.1**	**53.8**	**57.0**	
R50 515 - R101 028	18.4	20.6	18.7	15.5	18.6	19.8	
R101 029 - R202 055	12.3	10.6	13.9	11.6	12.7	10.8	Middle Income
R202 056 - R404 111	8.8	6.8	10.7	8.5	8.5	7.3	
Subtotal	39.4	38.0	43.2	35.6	39.8	38.0	
R404 112 - R808 221	5.7	3.9	7.6	6.5	4.7	3.6	
R808 222 - R1 616 442	2.0	1.1	2.5	3.3	1.0	1.0	
R1 616 444 - R 3 232 885	0.5	0.3	0.6	1.0	0.3	0.2	High Income
R3 232 886+	0.4	0.2	0.4	0.7	0.3	0.2	
Subtotal	**8.6**	**5.4**	**11.2**	**11.4**	**6.4**	**5.0**	

The majority of households in the BVLM (53,8 %) fall under the low-income brackets. This could indicate that an increasing number of households find it difficult to survive and will ultimately become dependent on social assistance in the form of social grants in the absence of targeted sustainable employment creation programmes (BVLM IDP Review 2020-2021).

Within the CWDM, the WLM had the lowest level of households without income (6.4%) but the second highest level of low-income earners (56.6%), followed by the BVLM (53.8%).

According to a 2014/15 survey, an average of 43.9% of farm worker households in the Cape Winelands received at least one child support grant. The WLM had the lowest proportion of child support grants received (Western Cape Government Farmworker Household Survey Report 2014/15).

[4] The HDI is represented by a number between 0 and 1, where 1 indicates a high level of human development and 0 represents no human development.

Basic Services and Housing

Access to services is vital for the livelihoods of households. Lack of provision and lack of basic services often impact the poorest households in a given area.

Table 7: Access to services and housing

(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Community Survey 2016	Breede Valley	Witzenberg
Total number of households	**47,569**	**35,976**
Formal main dwelling	36 964 77.7%	29 969 83.3%
Water (piped inside dwelling/within 200m	46 077 96.9%	35 730 99.3%
Electricity (primary source of lighting)	45 105 94.8%	34 734 96.5%
Sanitation (flush or chemical toilet)	42 848 90.1%	34 017 94.6%
Refuse removal (at least weekly)	36 976 77.7%	31 343 87.1%

The table above indicates that the vast majority of households in the BVLM and WLM live in formal dwellings, have piped water inside or within 200m of their dwelling, use electricity for lighting, have a flush or chemical toilet, and at least weekly refuse removal.

One of the most important indicators of backlogs in service delivery is provided through examining the number of people living in informal settlements. In the BVLM and WLM, 4% and 5% of the population respectively live in informal areas both of which are above the national average of 3,2% (Municipal Capacity Assessment 2018).

The BVLM and WLM do not provide basic services to rural communities, including farm dwellers. Basic services are provided by the land owner with Eskom providing bulk electricity provision. The 2014/15 survey found that approximately 90% of the farmworker households have piped water, electricity, and flush toilets. Water is provided free to 90% of the farmworkers living on farms across the regions while refuse and sanitation service are free for all farmworkers (Western Cape Government Farmworker Household Survey Report 2014/15).

Crime

Crime rates within the BVLM show a decreasing trend since 2017. The murder rate (per 100 000 people) decreased from 50 to 42 in 2018/19. There were 111 reported sexual offenses in the area in 2017/18. Drug related crimes within the area decreased from 3 784 reported cases in 2017/18 to 2 921 cases in 2018/19. Residential burglary cases also decreased from 1 238 in 2017/18 to 949 in 2018/19 (2019 Socio-economic Profile BVLM).

However, crime in the WLM area shows an increasing trend since 2017. The murder rate increased by 11% from 36 in 2017 to 40 in 2018. Drug-related crimes (per 100 000 population) displayed an increase, up by 1.9% from 2 393 cases in 2017 to 2 438 cases in 2018. Residential burglary cases (per 100 000 population) decreased by 15.9% from 571 in 2017 to 480 in 2018. Sexual offenses reported dropped from 125 to 105, which equates to a reduction of 16% (2018 Socio-economic Profile: WLM).

The BVLM has 2,25 police stations per 100 000, while the WLM has 3,24%. These are both below the national average of 4,68 (Municipal Capacity Assessment 2018).

Crime statistics are reported at precinct level and it is difficult to gauge the level of crime on farms and in remote areas. Farm and rural dwellers have difficulty accessing police services, given distance to police stations, lack of transport, airtime, connectivity, and implicit costs. With regards to gender-based violence, it is widely recognised that credible statistics is scarce, a phenomenon more extreme in rural and farming areas.

Economy

Economic Performance

In 2017, the BVLM local economy was dominated by the finance, insurance, real estate and business services (R2.506 billion; 20%); wholesale and retail trade; catering and accommodation (R2.307 billion; 18.4%); and manufacturing (R1.705 billion; 13.6%) sectors. Combined, these top three sectors contributed R6.518 billion (or 51.8%) to the area's economy.

The 10-year trend shows the economy grew by an average annual rate of 2.5%, but tapered off significantly to 1.7% in more recent times (2014 to 2018). From 2008 to 2017, the finance, insurance, real estate, and business services sector registered the highest average growth rate (5%), followed by the construction (5%) and the wholesale and retail trade; catering and accommodation (3%) sectors. Growth in the agriculture, forestry, and fishing sector was robust at 10% in 2017. However, the sector was estimated to contract by 3.9% in 2018 as the effects of the drought intensifies (BVLM IDP Review 2020-2021; 2019 Socio-economic Profile BVLM).

Table 8: Three largest economic sectors of the BVLM and WLM
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Breede Valley Contribution to GDP 2017	**Finance, insurance, real estate & business services** **20%**	**Wholesale & retail trade, catering & accommodation** **18,4%**	**Manufacturing** **13,6%**
Witzenberg Contribution to GDP 2016	**Wholesale & retail trade, catering & accommodation** **17,4%**	**Finance, insurance, real estate & business services** **15,9%**	**Agriculture, forestry & fishing** **15,2%**

In 2016, the WLM local economy was dominated by the wholesale and retail trade, catering and accommodation sector (R1.4 billion or 17.4%), followed by the finance, insurance and real estate, and business services sector (R1.3 billion or 15,9%); agriculture, forestry and fishing sector (R1.2 billion or 15.2%); manufacturing (R1.2 billion or 14%) and general government (R928.9 million or 11%). Combined, these top five sectors contributed R6.1 billion (or 74%) to the WLM municipal economy, which was estimated be worth R8.2 billion in 2016.

The 10-year trend, between 2006 and 2016, showed that the construction sector registered the highest average growth rate (9%) in Witzenberg during this period, followed by the finance and business services sector (7.7%), general government (5.8%); community and social services (5.3%) and wholesale trade (5%). It is concerning that sectors with a significant contribution to the economy, such as agriculture (15%) and manufacturing (14%), registered the lowest growth rates in the period, 2.5% and 2.9% respectively. Growth of the agriculture sector shrunk into negative territory in 2015 and 2016 due to the severe drought but the estimated growth rate for 2017 was a healthy 6% (2018 Socio-economic Profile WLM).

Agriculture remains the largest employer (50%), however, the sector is experiencing a high rate of net job losses, and often only provides seasonal opportunities (Witzenberg Municipality Spatial Development Framework 2019).

Labour

Employment is the primary means by which individuals who are of working age can earn an income that will enable them to provide for their basic needs and improve their standard of living. As such, employment and unemployment rates are important indicators of socio-economic well-being.

Employment by sector

Table 9: Three largest employers by sector in the BVLM and WLM
(2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM)

Breede Valley	**Agriculture, forestry & fishing** **24%**	**Wholesale & retail trade, catering & accommodation** **20,8%**	**Finance, insurance, real estate & business services** **15,7%**
Witzenberg	**Agriculture, forestry & fishing** **32%**	**Wholesale & retail trade, catering & accommodation** **18,6%**	**Community & social services** **13%**

The agriculture, forestry, and fishing sector contributed the most jobs (24%) in the BVLM and the WLM (32%). This is followed by the wholesale and retail trade, catering and accommodation, 20.8% in the BVLM and 18.6% in WLM; and finance, insurance, real estate, and business services (15.7%) in the BVLM and community and social services (13%) in the WLM.

The agriculture, forestry, and fishing sector reported net job losses (-9 051) between 2008 and 2017 in the BLM, while the WLM reported an average decrease in jobs (-9 517) between 2006 and 2016. Despite increased activity, the sector's contraction between 2008 and 2017 can be attributed to national recession and negative impacts of environmental factors, such as the drought experienced in the area over the past few years. This is a cause for concern, not least because it is one of the top three largest employers. Job shedding in a key economic sector such as agriculture is problematic, given that the local economy is based on the agricultural industry. Despite the contraction, agriculture remains the key economic driver and largest employer in the BVLM. (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM; WLM IDP).

The sector which reported the largest increase in jobs between 2008 and 2017 in the BVLM was the wholesale and retail trade, catering and accommodation sector (5 412) followed by finance, insurance, real estate and business services (5 131), community, social & personal services (3 032), construction (1 529) and the transport, storage and communication (1 207) sectors. The sector which reported the largest increase in jobs between 2006 and 2016 in the WLM was wholesale, retail, and trade (4 528), followed by community and social services (3 127); general government (2 848); and financial and business services (2 726) (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Skill level
The majority of workers in both the BVLM (2017) and WLM (2016) labour force were low-skilled (42% and 50% respectively) and semi-skilled (40% and 35% respectively). Only 18% of labour in BVLM and 14,8% in the WLM were considered to be skilled. The increase in the number of semi-skilled workers outpaced the growth in low-skilled and skilled workers during the period of 2014 and 2018 in BVLM, while in the WLM, the number of skilled workers increased much more than that of semi-skilled workers during the period 2006 – 2016, with a slight decrease experienced in the number of low-skilled workers (2019 Socio-economic Profile BVLM; 2018 Socio-economic Profile WLM).

Low-skilled jobs are most commonly adversely affected during an economic downturn and suggest low skilled workers are most vulnerable and face greater risks to income security due to socio-economic shocks.

Unemployment
In 2018, the unemployment rate, referring to individuals without work, but actively seeking work in a recent past period (usually four weeks), and are currently available for work, is 14,4% in the BVLM and 7,6% in the WLM. The youth unemployment rate is a serious problem in both areas and has reached 20% in the BVLM and 9,9% in the WLM. The youth unemployment rate refers to unemployed individuals aged 15 – 24 who are without work, actively seeking work in a recent past period (past four weeks), and currently available for work. (BVLM Municipal Capacity Assessment 2018; WLM Municipal Capacity Assessment 2019).

The proportion of formal to informal employment is 25,5% in the BVLM and 17,4% in the WLM. Informal employment identifies persons who are in precarious employment situations irrespective of whether or not the entity for which they work is in the formal or informal sector. Persons in informal employment, therefore, comprise all persons in the informal sector, employees in the formal sector, and persons working in private households who do not get basic benefits such as pension or medical aid contributions from their employer, and who do not have a written contract of employment. (BVLM Municipal Capacity Assessment 2018; WLM Municipal Capacity Assessment 2019).

The Farmworker Household Survey Report of 2014/15 reports on general demographic trends of farmworker households within the Cape Winelands. According to the study, BVLM had 1005 households and approximately 4222 people living and working on farms, while WLM had the highest number of households at 2482, and 8181 number of people. The study found that an overall of 62.6% of individuals living in farmworker households had permanent jobs both on and off the farm on which they reside. Approximately 18% of individuals living on farms were unemployed, while 19% had either temporary or seasonal work. It is important to note that these statistics presented are based on a survey conducted by the Western Cape Department of Agriculture during the 2014/15 financial period. It is therefore likely that figures have changed over the past six years. (Western Cape Government Farmworker Household Survey Report 2014/15; BVLM IDP Review 2020-2021).

4.2. Fieldwork and sourcing local knowledge

As discussed above, brief participant observation and a limited number of interviews were conducted to supplement secondary data. Fieldwork conducted for the SIA cannot be considered exhaustive by any means.

Key socio-economic issues listed by respondents confirm themes identified by the secondary data and include:

- Lack of economic development and job opportunities – especially for youth;
- Lack of recreational opportunities for youth;
- Increasing level of school dropout, lack of access to post school training, and other future enhancing opportunities among the youth resulting in despondency, apathy and growing rate of social ills;
- Increasing rate of teenage pregnancies;
- Poverty;
- Food insecurity; and
- Rising levels of crime, drug abuse and gangsterism.

The respondent representing Tankwa Ceres Karoo Farmers' Union added the following to this list:

- Lack of municipal services, such as road maintenance, transport, and policing; and
- Marginalization from renewable energy developments.

4.3. Lessons Learned from REIPPPP Social Investment Programs

In addition to its core business of renewable energy, the REIPPPP is designed to contribute to various developmental objectives such as job creation, social upliftment, and economic transformation. It also requires approved energy projects to share ownership with local communities.

According to the South African Government News Agency (2019)[5], the REIPPPP has attracted ZAR 209.4 billion (approx. USD 14.2 billion) in committed private sector investment into South Africa and created 38,701 jobs (full time for one year) since its inception in 2011. Many of these jobs have been for youth and women from surrounding communities. According to analysts (Nomjana, L., 2020)[6] other educational, health, and enterprise benefits experienced include:

- Over R1 billion spent by Independent Power Producers (IPPs) on education, by upskilling teachers, providing extra teachers and classrooms.
- Over 600 bursaries awarded to students from disadvantaged communities.

[5] https://www.sanews.gov.za/south-africa/renewable-energy-programme-attracts-r2094-billion-sa-economy
[6] https://www.futuregrowth.co.za/newsroom/reippp-comes-of-age/

- The provision of health facilities, while contributing to social development through feeding schemes, supporting old age homes, and early childhood development initiatives.
- Helping to establish more than 1 000 small enterprises.

Community trusts
Local community ownership is commonly structured through the establishment of a community trust who then receives the share dividends and is responsible for spending the funds on community projects. The board of trustees is typically made up of independent trustees, community representatives, and, if applicable, beneficiary representatives or power company representatives. However, while best placed to understand and address their community's needs, community trusts do not necessarily have all the skills, knowledge, or development expertise to function effectively. In the worst-case scenario community trusts become dysfunctional, and corrupt: "… as soon as monetary resources are introduced into a local impoverished area it raises significant potential for tensions, mistrust and corruption." (Tait, et al., 2013 page 18). Similarly, local municipalities lack skill and/or capacity for effective partnership.

In the absence of stronger guidance and leadership from the Department of Minerals Resources and Energy and the IPP Office, and effective institutional capacity on the ground, preferred bidders face several challenges, from the selection of trustees to the practicalities of operating trusts over the 20-year project life span. Furthermore, with a core business of producing energy, these companies themselves often lack the requisite knowledge, capacity and skill to set up and manage community trusts. In this context third party social development practitioners can fill the missing link: an advisory board to steward and/or mentor the process, trustees, an association to provide training and support to community trusts, and a body to advise industry on how to structure community trusts, are needed. (Roundtable Conversation Series – Economic Development in REIPPPP July 2016)[7].

Third-party approach
A possible solution mooted by the D.G Murray Trust (DGMT) is to include a civil society-based third-party organisation as a benefactor, while still ensuring that 100% of funds are directed back into the community. This would allow a community trust to use the experience of a social development specialist with a proven track record in implementing programmes that are well established and have demonstrated economies of scale. The lack of institutional capacity in or even near communities closest to renewable energy plants, which are typically located in remote rural areas, is another reason to consider this solution: trusts may have limited experience identifying the urgent needs of a community and finding the right implementation partners. In 2012, Lesedi Solar Park Trust (near Kimberly in the Northern Cape) opted for the third-party approach, appointing DGMT as a beneficiary organisation. Similarly, Letsatsi Solar Park Trust (in the Free State) appointed DGMT and the Rural Education Access Programme (REAP) as co-beneficiaries. (Horwitz, D., 2019)[8]

Community engagement, communication and collaboration
Communication with the beneficiary community is critical for success of the EDP as well as smooth development of the plant itself. It is vital that community members and organisations, local municipalities, ward councillors, and development organisations are not only well informed, but also have the capacity to understand implications for local job creation and wider development planning. Communication and capacity will foster community engagement in developing locally suitable processes and projects thereby maximising the potential value of the EDP.

As the REIPPPP stipulates that communities within a 50-kilometre radius of the project must benefit, beneficiary areas often overlap. Coordination between community trusts operating in overlapping areas is essential but likely insufficient. The competitive nature of the bidding process should not extend to projects' community benefits, and industry players should facilitate an enabling environment for collaboration. This collaboration could include general information sharing, commissioning research, or other support that would benefit the sector as a whole. In addition, regional government bodies or industry associations, with appropriate community accountability mechanisms, should oversee projects in broader regional areas to enable collaboration, streamline processes, give oversight, and improve the efficiency of revenue spending (Tait, L; et al., 2013).

[7] https://sawea.org.za/wp-content/uploads/2016/05/Report_2nd-Roundtable_Community-trusts_27July-2016.pdf
[8] https://dgmt.co.za/wp-content/uploads/2019/11/Renewable-Energy-September-Opp1-Single-FinalDigital.pdf

IPP community trust in Touws River
A concentrated photovoltaic (CPV) solar plant, owned by IPP Pele Green Energy, was constructed near Touws River in 2013, and has been running since 2015, with a 20-year licence to operate. The plant created 600 job opportunities in Touws River during its construction, and established a community trust to help ensure a more sustainable economy in the long term (Buthelezi, L., 2013[9]; Omarjee, L., 2018[10]).

"Our power plant, CPV1, invests a share of annual revenues in the socio-economic and enterprise development of our host community, Touwsrivier. The community also owns 5% of the power plant. Our focus is on the economic revival of the community. Our approach in working with rural communities is on self-sufficiency. Instead of viewing these communities as labour reserves, we've taken a view to see them as economic hubs and we are working to help them achieve economic independence." Gqi Raoleka, Managing Director, Pele Green Energy (A solar project in Touwsrivier is powering ahead. Global Africa Network January 29, 2018)[11]

Knowledge Pele is the part of Pele Energy group of companies which focuses on the social development aspects of the IPP's investments. Committed to using their investment to grow the local economy and ensure the community becomes self-sustaining, Knowledge Pele has a number of initiatives in Touws River, including a bursary programme, accredited enterprise development programmes for start-up and existing SMMEs, work experience programme, a hydroponic farm, and a rooftop solar panel system set up on a local no-fees primary school.

Potential future collaboration should the Applicant receive preferred bidder status
Regrettably, Knowledge Pele's programme manager responsible for their programme in Touws River declined to discuss their interventions with the specialist conducting this SIA (despite several attempts), citing non-disclosure agreements with the community. However, given the merits of collaboration outlined above, it would be well worth the Applicant and the appointed community development practitioner pursuing consultation with this organisation should development of the proposed solar projects go ahead (i.e. receive preferred bidder status and environmental authorisation).

It is worth repeating: The competitive nature of the bidding process should not extend to projects' community benefits, and industry players should facilitate an enabling environment for collaboration (Tait et al., 2013).

4.4. Project Site Specific Description

4.4.1. HOEK DOORNEN PV 1, PV 2, PV 3, AND PV 4: PV Facilities, Electrical Grid Infrastructure, and Associated Infrastructure

The Hoek Doornen PV 1, PV 2, PV 3, and PV 4 sites are located on the farm Hoek Doornen, located approximately 76 km northwest of the town of Touws River, in the Western Cape Province. The farm covers an area of 2,372 hectares, while each 175 MW solar PV plant will cover an approximate footprint of 250 hectares.

Historically used as a winter grazing area for sheep, there is currently no agricultural activity on the farm.

Hoek Doornen is owned by a non-resident landowner who visits occasionally, and has a small residence on the farm. There are no employees on the farm, and only three residents.

The servitude to the neighbouring farm, Witte Wall, crosses Hoek Doornen 172 and Karree Kolk 174.

[9] https://www.iol.co.za/business-report/companies/concentrated-solar-plant-to-deliver-22mw-1610703
[10] https://www.news24.com/fin24/economy/how-a-solar-plant-is-changing-the-fortunes-of-a-small-town-economy-20181014

[11] https://www.globalafricanetwork.com/company-news/a-solar-project-in-touwsrivier-is-powering-ahead/

According to landowner and two of his immediate neighbours, the proposed project will not inhibit current activities on their farms, disrupt social conditions, or employment. No concerns regarding visual impact, land use impact, security or good relations with neighbouring landowners were expressed. Respondents view the proposal as contributing significantly to the economic well-being of their properties which have been particularly hard hit during the recent drought, (2015-present). Income received from leasing some of their land to the Applicant will assist in allowing these respondents to generate revenue from the farm and invest in its upkeep.

However, two neighbouring farmers, who live permanently on their farms, expressed a very different view: Speaking as immediate neighbours of the project site and the interim chairperson of the recently formed Tankwa Ceres Karoo Farmers' Union, the respondents raised several concerns. Negative impacts anticipated by the respondents include:

- Road degradation resulting in withdrawal of government services (including transportation to schools), increase transport costs to towns, damage to vehicles, road accidents, and a decline in tourism;
- Lack of traffic control and concomitant increase in road accidents;
- Dust clouds and storms precipitated by traffic and stripping of veld on construction sites;
- Dust damage to crops;
- Dangerous consequences of dust affecting visibility during hunts;
- Increase in itinerant job seekers and vagrancy;
- Lack of security for residents;
- Increased crime levels;
- Decrease in eco-tourism due to poor road conditions, dust, traffic, and damage to the area's reputation as quiet and pristine;
- Marginalisation of local stakeholders by the developer;
- Lack of open communication; and
- Lack of rehabilitation as part of the decommissioning phase.

The respondents stressed the desire for local residents to be consulted and kept informed about the proposed project. Moreover, they stressed the imperative that local residents should benefit from the proposed project as they are most affected by it. They strongly object to positive impacts such as employment opportunities and the economic development plan solely benefitting the nearby towns of Ceres and Touws River, and expressed concern that any monies received by municipalities from the proposed projects for development initiatives would not be used for social upliftment in the Tankwa Karoo, but be confined to towns. To this end several suggestions were made:

- Roads be upgraded prior to construction to cater for changed patterns in road use (frequency and weight);
- Roads be adequately maintained during the construction phase;
- Roads be upgraded after the construction phase;
- Stop go system and speed limits should be implemented to help prevent dust clouds;
- Tankwa Karoo residents should be given preference in employment: this will require an innovative recruitment process that does not rely on locals registering in a nearby town, as well as the provision of transport from decentralised points within the area (such as the Tankwa Farmstall for example);
- The loss of eco-tourism during the construction phase should be compensated for by use of local accommodation by consultants, contractors, and sub-contractors;
- Security should be provided for more than just project infrastructure and should include mechanisms that benefit the surrounding community such as visual policing, cameras along access roads, a repeater necessary for a radio system, and/or participation in the farm watch initiative;
- The veld should not be stripped of vegetation during construction as this will create a dust bowl that will be difficult if not impossible to rehabilitate;
- Donation of water tanks or solar panels to assist the most indigent community members;
- Sponsorship of events to support and/or generate tourism to the area;
- Drought relief for indigent farmers;
- Appoint a contact person responsible for liaising with local residents; and
- Establish good will and open communication with local residents.

4.5. Identification of Environmental Sensitivities

The identification of environmental sensitivities is not applicable (as discussed in Section 2.2 of this report). There are no socio-economic themes on the Screening Tool that could be confirmed or disputed, therefore no site sensitivity verification report is required. The current use of the land is confirmed and described above. Additional detail is provided in Appendix C.

5. Issues, Risks and Impacts

5.1. Identification of Potential Impacts/Risks

The potential impacts identified during the SIA are described in detail below for the construction, operational, and decommissioning phase of the proposed development as well as the cumulative impacts.

The impacts below apply to the Hoek Doornen PV 1, PV 2, PV 3, PV 4 projects, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

Construction Phase
Potential impact 1: Disruption of local social structures
Potential impact 2: Increased social ills and risky behaviours
Potential impact 3: Increased burden on existing social and bulk services
Potential impact 4: Increased road use and road traffic related accidents and/or damage
Potential impact 5: Loss of privacy, safety and sense of place adjacent to the project site
Potential impact 6: Unrealistic expectations regarding local job creation
Potential impact 7: Creation of temporary employment
Potential impact 8: Increased household income attainment and standard of living
Potential impact 9: Potential increase in crime
Potential impact 10: Potential decrease in local eco-tourism
Potential impact 11: Potential marginalisation of local residents
Potential impact 12: Development and/or growth of locally-owned support industries

Operational Phase
Potential impact 1: Creation of long-term employment
Potential impact 2: Development and/or growth of locally-owned industries
Potential impact 3: Human development via the EDP

Decommissioning Phase
Potential impact 1: Job losses
Potential impact 2: Local economy stimulation

Cumulative Impacts
Cumulative impact 1: Exacerbated in-migration of job seekers
Cumulative impact 2: Combined impact of multiple EDPs

The no-go option
The no-go alternative implies that the proposed project would not be executed. Assuming that the solar facilities and associated infrastructure would not be developed at the proposed sites, there would be no increase in electricity generation from the facilities, and no economic benefit to the landowners, or additional socio-economic benefits associated with the potential income generated through the construction and operation of the facilities. Indeed, one of the impacts identified (discussed in Section 6 below) will materialise, should the proposed project not be developed. However, this does not imply that the no-go option has no impacts.

It should be noted that the development's potential negative impacts may well come into being, regardless of the proposed development as most are associated with non-project-related phenomena which could trigger similar job-seeking, influx, and socio-economic impacts as identified for the proposed development.

The potential positive impacts primarily relate to employment opportunities and the EDP. With the exception of the 60 jobs for each project created during the operation phase with an approximate 20-year lifespan, all other employment, while of direct benefit to employees for the duration of their contract, is temporary in nature. The EDP has potential to sustainably benefit a far wider number of people and is likely to result in positive impact. The benefits of both employment and the EDP are not inconsequential, and should be pursued.

Accordingly, the no-go option is likely to result in negative economic impacts on the project area, as the potentially positive impacts from the construction, operational, and decommissioning phases, including the EDP, employment and growth in the small-scale support industry, will be not be realised.

The no-development alternative also poses a lost opportunity for South Africa to supply renewable energy to its consumers. This in effect represents a negative social cost. In addition, the no-go option will not assist National or Provincial governments in achieving their renewable energy commitments.

5.2. Summary of Issues identified during the Public Consultation Phase

This will be documented, if relevant, after the BA Report has been released for public comment. This SIA did not include a public consultation process.

6. Impact Assessment

The impacts below apply to the Hoek Doornen PV 1, PV 2, PV 3, PV 4 projects, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

6.1 Potential Impacts during the Construction Phase

6.1.1.1. Impact 1: Disruption of local social structures

The size of the anticipated workforce is the result of the scale of the proposed development. It is likely that job seekers from outside the study area will be attracted to the Tankwa Karoo and to the towns of Touws River and/or Ceres by the anticipated 400 to 460 unskilled jobs, and the 90 to 150 skilled jobs to be created during the 12 to 14 months construction period of the proposed development (i.e. per project). Such influx inevitably disrupts the existing social order which is challenged by alternative values, beliefs and practices. Social order disturbance can lead to general disorientation and deterioration of social capital, particularly in small and/or vulnerable communities.
Status: Negative
Mitigation required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.2. Impact 2: Increased social ills and risky behaviours

An increase in the number of people in the study area seeking work or working on the proposed development is likely to cause an increase in the number of social ills that are present in the study area. It is likely that substance abuse, the spread of communicable diseases, early sexual debut, prostitution, and increased criminal behaviour may manifest due to the likely disturbance of local social structures (discussed above) and temporary increase in spending power expected to result from increased local employment and/or workforce influx to the area. Even though such influx is not expected to be long-term, the impacts associated with risky social behaviour are of a long-term nature (for example addition, teenage motherhood, Foetal Alcohol Syndrome, school dropout, HIV/Aids transmission).
Status: Negative
Mitigation required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

- The developers should be mindful of and regularly engage with landowners, farm residents and with Touws River and/or Ceres local communities. The former can be achieved through liaison with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations.
- The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse.
- Introduce weekly randomized alcohol and drug testing for all employees related to the project.
- Make condoms freely available to all employees related to the project.
- No construction workers should be allowed to sleep at the construction site.
- All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer.
- The construction workforce should receive COVID-19 and HIV awareness training before the commencement of construction.
- HIV and TB testing and counselling should be made available to the construction workforce free of charge.
- Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.

Impact significance (Pre-Mitigation): Moderate
Impact Significance (Post Mitigation): Low

6.1.1.3. Impact 3: Increased burden on existing social and bulk services

Jobseekers and migrant labour will by necessity be accommodated in the area. This influx, depending on its size, can place pressure on social structures and local government to provide housing, services and social facilities, albeit temporarily. It should be noted that the bulk of the unskilled workforce is likely to be housed in backyard dwellings within existing settlements, with its attendant health challenges (e.g. poor sanitation and variable access to electricity for heating and lighting purposes), and contributing to increased densification.
Status: Negative
Mitigation required:

- It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.4. Impact 4: Increased road use and road traffic related accidents and/or damage

An increase in traffic, including construction and/or vehicles carrying heavy loads associated with the construction phase of the proposed project can damage access road surfaces and/or cause excessive dust, impacting on road safety, access to and by social services (including inter-alia social grants, health facilities, transport), schools and retail, potentially damage vehicles and/or crops, and lead to a decline in tourism. It must also be noted that a Traffic Impact Statement was also commissioned to inform the BA Processes, which concluded that overall the proposed traffic generated during the construction phase is regarded as low to very low significance without the implementation of mitigation measures. The TIS also provided recommendations for management actions, and if these are adhered to, the proposed development is supported from a traffic engineering perspective.
Status: Negative
Mitigation required:

- Traffic expert should be consulted post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during construction.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.5. **Impact 5: Loss of privacy, safety and sense of place**

The farm worker homes on Hoek Doornen flank a servitude, currently proposed as the access road to the Witte Wall PV 1 & PV 2 sites. Deliveries, and transportation of 400 – 460 unskilled and 90 – 150 skilled workers across their homestead will lead to a loss of privacy and potentially pose a threat to their safety, sense of place and well-being.

Status: Negative

Mitigation Required:

- No construction workers should be allowed to sleep at the construction sites.
- A maximum 60 km/h speed limit should be enforced on private roads.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Low

6.1.1.6. Impact 6: Unrealistic expectations regarding local job creation

Tankwa Karoo, Touws River and/or Ceres residents, as well as local and itinerant job seekers will have hopes and expectations of the proposed projects. These expectations need to be informed by accurate information from the developer or the appointed agent as soon as possible, to minimize unrealistic expectations and avoid potential negativity towards the proposed projects where possible. Failure to communicate honestly and proactively may lead to negative impacts such as public opposition, protests, damage to property and/or intimidation of project employees.

Status: Negative

Mitigation required:

- It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations have been granted.
- The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as computers and printers is negligible, particularly in the Tankwa Karoo.
- The existence of the employment desks and the relevant procedures associated with the selection and appointment of workers must be communicated to the local communities.
- Where possible, the developer should subcontract to local construction companies.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Very Low

6.1.1.7. Impact 7: Creation of temporary employment

As the construction of the facilities and associated infrastructure will require temporary employment of construction workers, supervisors, and engineers on-site, a limited number of temporary jobs will be created. According to information provided by the Applicant, these are anticipated to be between 400 and 460 unskilled employment opportunities, and 90 to 150 skilled employment opportunities for a period of up to 12 - 14 months. As discussed in this report, education and skill level within the study area is low, thereby rendering the majority of locals best suited for unskilled positions. While contributing to the employment situation primarily in the short term, even temporary employment will provide sorely needed income and, additionally provide opportunity for garnering work experience and developing new skills in an environment where such opportunities are extremely rare and which may enable future employment. Debt is a potential negative impact associated with temporary employment and is likely to occur given the financial stressors facing communities within the project area. However, the risk of this negative impact is offset by the positive impacts created by employment, albeit temporary.

Equality is a fundamental principle of the South African Constitution and Bill of Rights. Remuneration, employment benefits, terms and conditions of employment as well as job classification and grading

are expressly listed as employment policies or practices in respect of which unfair discrimination is prohibited by the Employment Equity Act (EEA) (Laubscher, T 2015)[12]. The EEA's amendment bill of July 2019, will regulate the setting of sector-specific employment targets (in some instances by 2025) to address the under-representation of certain population groups. It will also ensure that an employment equity certificate of compliance becomes a precondition for access to state contracts (BusinessTech).[13] Equal access to employment must be given due consideration in line with relevant legislation and the area's demographics: This is especially pertinent to the employment of women in the BVLM given its 2020 sex ratio of 91.9 as discussed in Section 4 above.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Where possible, the developer should subcontract to local construction companies.
- The developer should comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account.
- The developer should establish local employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details.
- Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment opportunities and the existence of the employment desk must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.
- The developer should offer debt education workshops for all project related employees.
- The developer is encouraged to provide on-the-job training and additional training programs to improve the chances of skills development during the construction phase.

Impact significance (Pre-Enhancement): Moderate

Impact Significance (Post Enhancement): Moderate

6.1.1.8. Impact 8: Increased household income attainment and standard of living

Employment created by the proposed development will provide opportunity to improve the standard of living for benefitting households, enhance purchasing power within the local community, and help stimulate the local economy, albeit temporarily. Therefore, the local business owners and individuals employed at these businesses as well as project employees will also likely experience some improvement in their income and pass these benefits onto their households.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.

Impact significance (Pre-Enhancement): Moderate

Impact Significance (Post Enhancement): Moderate

6.1.1.9. Impact 9: Potential increase in crime

The construction phase, in particular, will create an additional movement of people and vehicles to the project site, which can increase the chances of crime in the surrounding area. This impact could cause the loss of a sense of safety and security, loss of livestock, flora, or valuables, as well as harm to person and/or property.

Status: Negative

Mitigation required:

- Access to the project site should be controlled with only authorised staff permitted entry.
- Movement to and from the project site should be controlled where construction workers are transported to and from the pick-up area and project site by the developer or the appointed agent only.

[12] https://islssl.org/wp-content/uploads/2015/10/SouthAfrica-TalitaLaubscher.pdf

[13] https://businesstech.co.za/news/business/370656/south-africas-big-employment-equity-shake-up-is-coming/

- The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation.
- The developer could consider erecting and/or contributing to the costs of erecting security cameras and/or a repeater to help improve crime prevention and management in the area.

Impact significance (Pre-Mitigation): Moderate
Impact Significance (Post Mitigation): Low

6.1.1.10. Impact 10: Potential decrease in local eco-tourism

The potential deteriorating road conditions, increase in dust, traffic, and likelihood of crime, as well as damage to the public perception of the area as attractive, quiet and pristine may lead to a decline in tourism in the Tankwa Karoo, particularly in areas close to the proposed project sites. Loss of revenue, albeit primarily during the construction phase, will negatively impact local eco-tourism business owners.

Status: Negative

Mitigation required:

- The developer should make use of local eco-tourism services and product providers where possible.
- The developer should provide consultants, contractors and other skilled project related staff with a list of local eco-tourism services and product providers with a clear request to support local eco-tourism, where possible.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Very Low

6.1.1.11. Impact 11: Potential marginalisation of local residents

To build goodwill and support for the proposed development and avoid alienation and potential negativity among Tankwa Karoo residents, the developer should liaise with local organisations, such as the Tankwa Ceres Karoo Farmers Union. Failure to communicate with local residents honestly and proactively may lead to negative impacts such as lack of cooperation, public opposition, and protests.

Status: Negative

Mitigation required:

- The developer should consider appointing a community liaison person tasked with establishing and maintaining effective communication with local residents and/or their representatives.

Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.1.12. Impact 12: Development and/or growth of locally-owned industries

There is limited opportunity for the growth of locally owned service industries such as local accommodation, catering, transport, construction, and suppliers of goods, such as construction materials, in response to construction-related activities and possible influx of consultants, contractors and other employees associated with the proposed development. Such opportunities are expected to be temporary.

Status: Positive

Enhancement required:

- The developer should make use of local service and goods providers where possible.
- The developer should provide consultants, contractors and other skilled project related staff with a list of local service and goods providers with a clear request to support local businesses where such services are required.

Impact significance (Pre-Enhancement): Low
Impact Significance (Post Enhancement): Low

6.1.1.13. Impact Summary Tables: Potential Impacts during the Construction Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
CONSTRUCTION PHASE						
Disruption of local social structures	*Status*	Negative	Low Level 4	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	Moderate				
Increased social ills and risky behaviours	*Status*	Negative	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies • The developers should be mindful of and regularly engage with landowners, farm residents and with Touws River and/or Ceres local communities. The former can be achieved through liaison with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations. • The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse. • Introduce weekly randomized alcohol and drug testing for all employees related to the project. • Make condoms freely available to all employees related to the project. • No construction workers should be allowed to sleep at the construction site. • All COVID regulations and safety precautions in	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	n/a				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
				force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer. • The construction workforce should receive COVID-19 and HIV awareness training prior to the commencement of construction. • HIV and TB testing and counselling should be made available to the construction workforce free of charge. • Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.		
Increased burden on existing social and bulk services	*Status*	Negative	Low Level 4	• It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, subcontract to local construction companies	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	n/a				
Increased road use and road traffic related accidents and/or damage	*Status*	Negative	Low Level 4	Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during and construction.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
Loss of privacy, safety and sense of place adjacent to the project site	*Status*	Negative	Low Level 4	• No construction workers should be allowed to sleep at the construction sites. • A maximum 60 km/h speed limit should be enforced on private roads.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				
Unrealistic expectations regarding local job creation	*Status*	Negative	Low Level 4	• It is strongly suggested that a 'locals first' policy with regard to labour needs is implemented. The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations has been granted. • The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates. • Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Medium to long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
				as computers and printers is negligible, particularly in the Tankwa Karoo. • The existence of the employment desk, and the relevant procedures associated with the selection and appointment of workers must be communicated to the local communities. • Where possible, the developer should subcontract to local construction companies.		
Creation of temporary employment	*Status* *Spatial Extent* *Duration* *Consequence* *Probability* *Reversibility* *Irreplaceability*	Positive Local Long term Substantial Very likely High n/a	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Where possible, the developer should subcontract to local construction companies. • The developer should comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account. • The developer should establish local employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. • Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates. • Employment opportunities and the existence of the employment desk must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres. • The developer should offer debt education workshops for all project related employees. • The developer is encouraged to provide on-the-job	Moderate Level 3	Medium

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-Enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-Enhancement)	Confidence Level
DIRECT IMPACTS						
				training and additional training programs to improve the chances of skills development during the construction phase.		
Increased household income attainment and standard of living	*Status*	Positive	Moderate Level 3	• The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres local communities. • Employment opportunities and the existence of the employment desk must be communicated to the local communities in Tankwa Karoo, Touws River and/or Ceres.	Moderate Level 3	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential increase in crime	*Status*	Negative	Moderate Level 3	• Access to the project site should be controlled with only authorised staff permitted entry. • Movement to and from the project site should be controlled where construction workers are transported to and from the pick-up area and project site by the developer or the appointed agent only. • The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation. • The developer could consider erecting and/or contributing to the costs of erecting security cameras, and/or a repeater to help improve crime prevention and management in the area.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				
Potential decrease in local tourism	*Status*	Negative	Low Level 4	• The developer should make use of local eco-tourism services and product providers where possible. • The developer should provide consultants, contractors and other skilled project related staff with a list of local eco-tourism services and product providers with a clear request to support local eco-tourism, where possible.	Very Low Level 5	Medium
	Spatial Extent	local				
	Duration	Short to medium term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	High				
	Irreplaceability	n/a				

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-Enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-Enhancement)*	*Confidence Level*
DIRECT IMPACTS						
Potential marginalisation of local residents	*Status*	Negative	Low Level 4	• The developer should consider appointing a community liaison person tasked with establishing and maintaining effective communication with local residents and/or their representatives. •	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Permanent				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	Low				
	Irreplaceability	n/a				
Development and/or growth of locally-owned industries	*Status*	Positive	Low Level 4	• The developer should make use of local service and goods providers where possible. • The developer should provide consultants, contractors and other skilled project related staff with a list of local service and goods providers with a clear request to support local businesses where such services are required.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	High				
	Irreplaceability	n/a				

6.1.2. Potential Impacts during the Operations Phase

6.1.2.1. Impact 1: Creation of long-term employment

A total of approximately 60 job opportunities will be created, comprising 20 skilled and 40 unskilled opportunities during the operation phase of the proposed development (for each project). Unskilled jobs will be linked to services such as panel cleaning, maintenance and security. Employment opportunities to be created during this phase equate to approximately 4800 person months (for skilled opportunities) and approximately 9600 person months (for unskilled opportunities) per project over the 20-year plant lifespan. As discussed in this report, education and skill level within the study area is low, thereby rendering the majority of locals best suited for unskilled positions. Equal access to employment must be given due consideration in line with relevant legislation and the area's demographics: This is especially pertinent to the employment of women in the BVLM given its 2020 sex ratio of 91.9 as discussed in Section 4 above.

These long-term job opportunities may provide income resilience to some community members employed by the proposed development and introduce an additional income stream to the area, thereby helping to diversify the areas economic base. Unskilled workers will likely benefit from skills transfer and knowledge development and this will contribute to expanding their skills set and enhance their future employment opportunities.

Status: Positive

Enhancement required:

- The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
- Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres.
- The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates.
- The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account.
- Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.

Impact significance (Pre-Enhancement): Very low

Significance of impact (Post Enhancement): Very low

6.1.2.2. Impact 2: Development and/or growth of locally-owned industries

There is limited opportunity for the growth of locally owned service industries such as local accommodation, catering, transport, and suppliers of goods, such as cleaning and maintenance materials, in response to operation-related activities and possible influx of consultants, contractors and other employees associated with the proposed development.

Status: Positive

Enhancement required:

- The developer should procure goods and services locally where possible.
- The developer should provide consultants, and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required.

Impact significance (Pre- Enhancement): Very low

Impact Significance (Post Enhancement): Very low

6.1.2.3. Impact 3: Human development via the EDP

The Applicant indicated that an EDP will be developed, should the proposed project be selected as a preferred bidder in terms of the REIPPPP. The positive impacts thereof relate to the creation of employment, local spending and human capacity development. However, the attainment of these positive impacts will create substantial social and economic pull factors which are likely to attract job seekers (i.e. a potential negative impact). Such negative impacts are however considered to be completely acceptable in light of the much-needed development in the area.

Status: Positive

Enhancement required:

- The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and managed, bringing maximum benefit to the community. A third-party approach (as discussed in Section 4.3 of this report) is recommended.
- The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities.
- Such priorities must then be included in the EDP.
- Where possible, the EDP should align with the IDPs of the relevant Local Municipalities.

Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): High

6.1.2.4. Impact Summary Tables: Potential Impacts during the Operational Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-enhancement)*	*Confidence Level*
DIRECT IMPACTS						
OPERATIONAL PHASE						
Creation of long-term employment	*Status*	Positive	Very Low Level 5	• The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres. • Employment opportunities and the existence of the employment desks must be communicated to the local communities in the Tankwa Karoo, Touws River and/or Ceres. • The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates. • The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account. • Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Slight				
	Probability	Very unlikely				
	Reversibility	High				
	Irreplaceability	n/a				
Development and/or growth of locally-owned industries	*Status*	Positive	Very Low Level 5	• The developer should procure goods and services locally where possible. • The developer should provide consultants, contractors and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required.	Very Low Level 5	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Slight				
	Probability	Very unlikely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Human development via the EDP	*Status*	Positive	Moderate Level 3	• The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and	High Level 2	Medium
	Spatial Extent	Local				
	Duration	Long term				

Impact	Impact Criteria		Significance & Ranking (Pre-Mitigation / Pre-enhancement)	Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)	Significance & Ranking (Post-Mitigation / Post-enhancement)	Confidence Level
DIRECT IMPACTS						
	Consequence	Substantial		managed, bringing maximum benefit to the community. A third-party approach (as discussed in section 4.3) is recommended • The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities • Such priorities must then be included in the EDP. • Where possible, the EDP should align with the IDPs of the relevant Local Municipalities.		
	Probability	Likely				
	Reversibility	Moderate				
	Irreplaceability	n/a				

6.1.3. Potential Impacts during the Decommissioning Phase

6.1.3.1. Impact 1: Job losses

The proposed development has an expected 20-year life span after which it could be decommissioned. Decommissioning will result in job losses. Though unavoidable in such projects, appropriate measures should be taken to plan for retrenchments and to provide the affected community with alternatives where practical and appropriate.

Status: Negative

Mitigation required:

- The developer should comply with relevant South African labour legislation when retrenching employees.
- The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning.

Impact significance (Pre-Mitigation): Low

Impact Significance (Post Mitigation): Low

6.1.3.2. Impact 2: Local economy stimulation

Expenditure will be allocated for decommissioning activities which will commence after the 20-year life span of the facility. Such expenditure will generate positive impacts on production, GDP, employment and household income, albeit relatively small and for a temporary period. Decommissioning activities will stimulate demand for transport services, accommodation and construction and other industries amongst others. The local economy will thus be stimulated for the duration of the decommissioning phase.

Status: Positive

Enhancement required: None available

Impact significance (Pre-Enhancement): Low

Impact Significance (Post Enhancement): Low

6.1.3.3. Impact Summary Tables: Potential Impacts during the Decommissioning Phase

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures (Negative Impacts) Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-enhancement)*	*Confidence Level*
DIRECT IMPACTS						
DECOMMISSIONING PHASE						
Job losses	*Status*	Negative	Low Level 4	• The developer should comply with relevant South African labour legislation when retrenching employees. • The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning.	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Local economy stimulation	*Status*	Positive	Low Level 4	None	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Short term				
	Consequence	Moderate				
	Probability	Very likely				
	Reversibility	n/a				
	Irreplaceability	n/a				

6.1.4. Cumulative Impacts

Table 10 provides a list of other renewable energy projects (approved) and proposed renewable energy projects (i.e. the proposed Ceres PV Development), and authorised and proposed EGI projects within the 30 km radius.

Table 10: List of projects to be considered for the cumulative impact assessments
(Adapted from Lanz, J. 2020)

DEA Reference	Title	Technology	MegaWatts
Approved Renewable Energy Projects			
14/12/16/3/3/1/1976	Kudusberg WEF	Wind	325
12/12/20/1783/1	Perdekraal 1	Wind	150
12/12/20/1783/2	Perdekraal 2	Wind	150
12/12/20/1787	Konstabel	Wind and Solar PV	170
12/12/20/1956	Touwsrivier	Solar PV	36
12/12/20/1988	Roggeveld Wind Farm	Wind	750
14/12/16/3/3/2/899	Rietkloof	Wind	36
14/12/16/3/3/2/810	Montague Road	Solar PV	75
14/12/16/3/3/2/900	Brandvalley WEF	Wind	147
14/12/16/3/3/1/1984	Tooverberg WEF	Wind	264
14/12/16/3/3/2/1115	Rondekop WEF	Wind	325
Proposed Renewable Energy Projects			
Pending	Proposed Ceres PV Development (9 PV Facilities)	Solar PV	1575
Existing Power Lines / EGI Projects			
Existing Line	Eskom BACCHUS DROERIVIER 1	EGI	N/A
Existing Line	Eskom DROERIVIER MULDERSVLEI 2	EGI	N/A
Existing Line	Eskom Gamma-Kappa 1st 765kV line	EGI	N/A
Existing Line	Eskom Kappa-Sterrekus (Omega) 1st 765kV line	EGI	N/A
Authorised Power Lines / EGI Projects			
14/12/16/3/3/1/1983	Tooverberg EGI	EGI	N/A
Not provided	Perdkekraal West EGI	EGI	N/A
Proposed Power Lines / EGI Projects			
Not applicable – in screening stage	Planned Eskom Gamma-Kappa 2nd 765kV line	EGI	N/A
Not applicable – in screening stage	Planned Eskom Kappa-Sterrekus 2nd 765kV line	EGI	N/A
Pending	Proposed Ceres PV Development (9 Power Lines)	EGI	N/A

The cumulative impacts apply to the construction and operational phases.

6.1.4.1. Impact 1: Exacerbated in-migration of job seekers

The incidence and severity of the in-migration of job seekers as well as increases in social deviance might increase as more solar energy facilities and associated EGI are developed in the area. This is of importance as several other solar energy developments are being proposed in the area, as listed in Table 10 above. However, such increases are similarly associated with most other forms of economic and social development and should therefore be expected from any industrial-scale developments in the study area. It should also be borne in mind that influx of job seekers does not necessarily equate in social deviance; i.e. influx of job seekers is a social disruptor which could result in social impacts.
Status: Negative
Mitigation required: None available
Impact significance (Pre-Mitigation): Low
Impact Significance (Post Mitigation): Low

6.1.4.2. Impact 2: Combined human development caused by multiple EDPs being implemented

Should more than one solar PV facility be developed in the study area; it is very likely that multiple community development funds/initiatives might be implemented by the relevant project developers as part of their respective obligations under REIPPPP. Such multiple EDPs is likely to enhance the creation of employment, local spending and human capacity development.
Status: Positive
Enhancement required: None available
Impact significance (Pre-Enhancement): Moderate
Impact Significance (Post Enhancement): Moderate

6.1.4.3. Impact Summary Tables: Cumulative Impacts

Impact	*Impact Criteria*		*Significance & Ranking (Pre-Mitigation / Pre-enhancement)*	*Potential mitigation measures / Potential enhancement measures (Positive Impacts)*	*Significance & Ranking (Post-Mitigation / Post-enhancement)*	*Confidence Level*
CUMULATIVE IMPACTS						
Exacerbated in-migration of job seekers	*Status*	Negative	Low Level 4	None	Low Level 4	Medium
	Spatial Extent	Local				
	Duration	Medium to long term				
	Consequence	Moderate				
	Probability	Likely				
	Reversibility	n/a				
	Irreplaceability	n/a				
Combined human development caused by multiple EDPs being implemented	*Status*	Positive	Moderate Level 3	None	Moderate Level 3	Medium
	Spatial Extent	Local				
	Duration	Long term				
	Consequence	Substantial				
	Probability	Likely				
	Reversibility	n/a				
	Irreplaceability	n/a				

7. Impact Assessment Summary

The overall impact significance findings, following the implementation of the proposed mitigation measures are shown in Table 11 below:

The impacts below apply to the Hoek Doornen PV 1, PV 2, PV 3, PV 4, and it applies to all infrastructure proposed as part of these projects i.e. for the Solar PV Facility, power lines and the associated infrastructure.

Table 11: Overall impact significance (post mitigation)

Phase	Overall Impact Significance
Construction	Very low to Low (negative) / Low to Moderate (positive)
Operational	Very low to high (positive)
Decommissioning	Low (negative) / Low (positive)
Nature of Impact	**Overall Impact Significance**
Cumulative - Construction	Low (negative) / Moderate (positive)
Cumulative - Operational	Low (negative) / Moderate (positive)
Cumulative - Decommissioning	No impact

8. Legislative and Permit Requirements

No licences or permits are required in terms of the socio-economic impact of the proposed development.

However, it is important to note that the proposed project is aligned with the goals of national legislation down to local level. Specifically, it is aligned with the National Development Plan 2030 as it is linked to creating jobs and livelihoods, expanding infrastructure, and transitioning to a low-carbon economy. It is also linked to the 2019 Integrated Resources Plan (IRP), which notes that solar PV will account for 10.52 % of the total installed capacity by 2030. If these projects are selected as preferred bidders, then they will contribute towards this installed capacity. Furthermore, the proposed project falls within the Komsberg REDZ, in line with GN 114, which has gazetted a total of eight REDZs as an outcome of the Wind and Solar Phase 1 SEA, wherein wind and solar PV developments are incentivised and most suitable.

9. Environmental Management Programme Inputs

The key mitigation measures proposed by the specialist, and which needs to be included in the EMPr. are listed below.

Construction Phase

- Management Measures:
    - The developer should make every effort to ensure the majority of construction workers are de facto residents of the Tankwa Karoo, Touws River and/or Ceres.
    - Where possible, subcontract to local construction companies.
    - Tankwa Karoo residents should be given preference in employment: this will require an innovative recruitment process that does not rely on technology or locals registering in a nearby town, as well as the provision of transport from decentralised points within the area (such as the Tankwa Farmstall for example).
    - The developers should be mindful of and regularly engage with local landowners and farm residents and with Touws River and/or Ceres communities. The former can be achieved by liaising with the Tankwa Ceres Karoo Farmers' Union. The latter can be achieved in collaboration with local community organisations.

- The developer should develop and clearly communicate a Code of Conduct for all employees related to the project, which includes zero tolerance of activities such as violence, alcohol and drug abuse.
- Introduce weekly randomized alcohol and drug testing for all employees related to the project.
- Make condoms freely available to all employees related to the project.
- No construction workers should be allowed to sleep at the construction site.
- A maximum speed limit of 60 km/hour should be enforced on private roads.
- All COVID regulations and safety precautions in force at the time of construction, operation and decommissioning must be communicated to workforce, enforced and upheld by the developer.
- The construction workforce should receive COVID-19 and HIV awareness training before the commencement of construction.
- HIV and TB testing and counselling should be made available to the construction workforce free of charge.
- Local HIV infection rates/ARV treatment loads must be monitored annually through close interaction with the local clinic. Should infections and treatment loads increase at a rate greater than the anticipated rate of increase; the developers (or the appointed agent) must re-evaluate its HIV awareness training, take corrective action where necessary, and repeat said training.
- The developer must engage the local communities in the study area on the nature, duration, number and availability of employment opportunities well in advance of any construction activities taking place. It is recommended that existing social structures be utilised for such interaction, and that the process be commenced once environmental authorisations has been granted.
- The developer should establish employment desks in the Tankwa Karoo, Touws River and/or Ceres to facilitate employment-related queries, and maintain a register of applicants which reflects their respective expertise, skill level and contact/residential details. Whenever planned or ad hoc employment is considered, the register should be consulted to identify appropriately qualified candidates.
- Employment procedures should not preclude the educationally and resource poor. As discussed in this report, education and skill level within the study area is low, and access to resources such as transport, computers and printers is negligible, particularly in the Tankwa Karoo.
- The existence of the employment desks and the relevant procedures associated with the selection and appointment of workers must be communicated to local communities.
- Traffic expert should be consulted, post Environmental Authorisation and prior to construction, and a road and traffic management plan devised and implemented to mitigate potential negative consequences of increased road use during and construction.
- The developer could consider forming or participating in a local safety forum and/or community watch to address any concerns related to possible crime escalation.
- The developer could consider erecting and/or contributing to the costs of erecting security cameras and/or a repeater to help improve crime prevention and management in and around the project area.
- The developer should make use of local eco-tourism services and product providers where possible.
- Appoint a contact person responsible for liaising with local residents.

- <u>Monitoring Actions:</u>
  - Composition of workforce to be monitored during construction to assess number of de facto local residents employed.
  - Compliance with employment legislation to be monitored.
  - Undertake a review of the following as stipulated in the EMPr:
    - Community communication strategy, dates and outcomes of engagement;
    - Code of Conduct, date and means of communication;
    - Testing dates and results;
    - Security records;

- Dates, duration, and content outline of prevention of disease training and register of attendance;
- Site access records;
- Location of access roads;
- Workforce and contractors register;
- Community engagement dates and outcomes of engagement records;
- Work desk/s work register/s;
- Record of debt education workshops and other skills training; and
- Access and transport arrangement records reviewed.

Operational Phase

- Management Measures:
  - The developer should make every effort to ensure the majority of unskilled workers employed during this phase are de facto residents of the Tankwa Karoo, Touws River and/or Ceres;
  - Employment opportunities and the existence of the employment desk must be communicated to the local communities in Tankwa Karoo, Touws River and/or Ceres;
  - The employment desk registers compiled during construction phase should be consulted to identify appropriately qualified candidates with preference given to Tankwa Karoo residents where possible;
  - The developer must comply with the EEA and make every effort to ensure equal access to employment, taking the demographics of the area into account;
  - Contracts ensuring that knowledge sharing and on-the-job training should be enforced as a condition for the development of the project;
  - The developer should procure goods and services locally where possible;
  - The developer should provide consultants, contractors and other project related staff with a list of local service providers with a clear request to support local businesses where such services are required;
  - The EDP to be developed must be prepared by community development practitioners, to ensure that it can be effectively implemented and managed, bringing maximum benefit to communities. A third-party approach (as discussed in section 4.3) is recommended;
  - The developer or the appointed agent must engage with local communities, religious organisations, organised agriculture, NGOs, CBOs and local government structures to identify and agree upon priorities;
  - Such priorities must then be included in the EDP;
  - Where possible, the EDP should align with the IDPs of the relevant Local Municipalities;
  - Retain a contact person responsible for liaising with local residents.

- Monitoring Actions:
  - Review all employment records, and registers for compliance;
  - Review community engagement reports;
  - Review knowledge sharing and job training reports;
  - Review procurement records;
  - Review list of local good and service providers and distribution thereof to relevant parties;
  - Review EDP, public participation records and local IDPs.

Decommissioning Phase

- Management Actions:
  - The developer should comply with relevant South African labour legislation when retrenching employees;
  - The developer should implement appropriate succession training of locally employed staff earmarked for retrenchment during decommissioning;
  - All project infrastructures should be decommissioned appropriately and thoroughly to avoid misuse;
  - Retain a contact person responsible for liaising with local residents.

- Monitoring Actions:
  - Review retrenchment plans;
  - Review training reports.

10. Final Specialist Statement and Authorisation Recommendation

Socio-economic impacts and the respective significance of these impacts are highly dependent on the receiving social and economic environment or context in which the impacts occur. For example, a small community like Touws River, with high unemployment rates and a declining economy would experience impacts differently compared to a community where everyone is fully employed and there is a growing economy with various economic drivers.

Secondary and primary data present the study area as characterised by substantial poverty, low employment and limited livelihood strategies. A depressed economy, lack of public and private enterprise together with seasonal nature of agricultural employment contributes to the high level of unemployment, depriving community members of realising an income, constraining empowerment and further economic development. While larger and better resourced with far more economic drivers, Ceres, too, has high levels of poverty, seasonal employment patterns and high rates of unemployment.

Risky social behaviour (i.e. teenage pregnancy, alcohol and drug addiction, school drop-out and gangsterism) is a major challenge in the area. Such deviance could threaten social capital on which much of the existing livelihood strategies depend.

Positive socio-economic impacts likely to result from the project include the creation of 90 to 150 skilled and 400 to 460 unskilled employment opportunities for the duration of the 12 to 14-month construction phase, 20 skilled and 40 unskilled employment opportunities during the operational phase of an expected 20 years. While the developer may not be able to fill skilled positions with locals, unskilled labour positions can be filled locally should the recommended mitigation measures be implemented. Local communities will also likely benefit from the concomitant growth opportunities for local businesses and support service industries and increased local spending which in turn will likely benefit local socio-economic development. These impacts will benefit communities through the creation of income generation opportunities and human development through skills development and training. In addition, local communities will benefit from the proposed EDP if well designed and well implemented.

On a macro level, positive impacts also include the generation of clean energy for the national grid which is under severe pressure and unable to meet demand, thereby curtailing economic advancement of the country. Therefore, the proposed development can also be seen as creating a positive social benefit for society.

Negative socio-economic impacts likely to result from the project include influx of opportunistic job seekers which could strain social structures and support networks, increase risky social behaviour such as prostitution and drug abuse, and burden existing services. Frustrated expectations of employment, created by the proposed development, could also contribute to feelings of distrust in the developer, and in isolated instances, damage to project property and/or potential intimidation of staff. Furthermore, given the time-bound nature of the development, the inevitable job losses at the end of each phase is high. The construction phase in particular will create an additional movement of people and vehicles to the site, which could increase the chances of theft in the surrounding properties. This impact could cause the loss of livestock, flora, or valuables. This (negative impact) can be managed by implementing recommended mitigation measures.

The overall significance rating of the negative socio-economic impacts associated with the proposed project during the construction phase is very low to low; whereas the overall significance rating of the positive socio-economic associated with the proposed project during construction is low to moderate, should mitigation and enhancement measures be implemented respectively.

The overall significance rating of the positive socio-economic impacts associated with the proposed projects during the operation phase is very low to high, should enhancement measures be implemented.

The overall significance rating of the socio-economic impacts associated with the proposed projects during decommissioning phase is low (negative) and low (positive) should mitigation measures and enhancement measures be implemented, respectively.

The cumulative impact during the construction and operational phases is low (negative) to moderate (positive). There is no cumulative impact of the decommissioning phase.

Mitigation measures included within Section 9 above should be included within the Environmental Authorisations, should it be granted by the DEFF. Based on the current socio-economic context of the area and the impacts identified, it is the opinion of the specialist that the project can go ahead, provided that the mitigation measures proposed are adopted and adhered to by the EA holder.

10.1 Statement and Reasoned Opinion

It should be accepted that the development of the proposed projects is likely to result in some form of negative social impact to the local community. However, such a negative impact needs to be weighed against the potential benefit likely to result from the same development. Given the overall very low to low significance of potential negative impacts associated with the project, as compared to the overall very low to high significance of potential positive impact of the project; it can be concluded that the prospective socio-economic benefits of the proposed project outweigh the socio-economic losses/impacts.

10.2 EA Condition Recommendations

From a socio-economic impact perspective, in light of the above argument, the specialist conducting this SIA is of the opinion that the proposed projects should be authorised by the competent authority.

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Appendices: Appendix A - Specialist Expertise

CURRICULUM VITAE of SANDRA HILL
Social Scientist & Community Development Practitioner
October 2020

Address: Wynberg, Cape Town
Phone: +27 82 729 2351
E-mail: sandra@write-now.co.za

CAREER PROFILE
Social scientist and community development practitioner

As a social scientist, I have been involved with the social and economic advancement of people in one form or another, for over twenty years. I have worked as a community worker, project coordinator, learning facilitator, non-profit organisation director, and development consultant. Community engagement, research, and writing have been key components in all these roles.

I am committed to ethical and well-conducted social science research that generates reliable information to help role-players anticipate future impacts and find solutions to social problems. Over the years, my fields of research included: gender, poverty, land reform, labour, project evaluation, participatory appraisal, social change, and organisational learning.

I hold an Honours degree in Social Science with undergraduate majors in sociology and social work. My formal training equipped me with the necessary theory, data gathering and analytical tools, and modes of meaningful community engagement to practice my profession.

EDUCATION

- MA in English (cum laude), University of the Western Cape, 2012 - 2013
- Honours in Social Science, Rhodes University, 1990
- Bachelor of Social Science (BSocSci), University of Cape Town, 1987 – 1989

PROFESSIONAL HISTORY

2012 - present: Writer, independent social science consultant, researcher, editor & facilitator (self-employed)
I engage with companies and development organisations to produce engaging written work. I have a strong ability to generate, distil, and present key information from a range of sources in an accessible and engaging form. This skill is rooted in more than twenty years' experience in social change practice at a community level.

Currently, I am involved in a series of articles investigating COVID-19's impact on various aspects of society including banking, fintech, health, and social innovation. I have worked on Meridian Economics' report on Eskom's financial crisis and the viability of coal-fired power in South Africa; Singiz's Evaluation of the Dell Young Leaders Programme; Environmental Monitoring Group's workshops and five-year report; Seed Knowledge Initiative publications and small-scale farmer workshop; NIMD's publication on inter-party dialogue; and the Barefoot Collective's practitioners' manual on learning and social change. I am also involved in Socio-economic Impact Assessments, including the proposed nine Solar PV and EGI projects near Touws River proposed by Veroniva (PTY)

Ltd, as well as seven proposed Solar PV Rinkhals projects near Kimberly proposed ABO Wind renewable energies (PTY) Ltd.

2006 - 2011: Community Development Resource Association (CDRA): Researcher & Organisational Development Practitioner

I was the lead facilitator of an international, three-year, action research project inquiring into social change. My role included designing the research methodology and training co-practitioners in research and writing skills. I also played a key role in analysing findings and compiling the final report.

1999 - 2006: Sandra Hill Consulting: Organisational Development Practitioner

I set up my own organisational development consultancy to assist other practitioners engaged in social change processes.

1995 - 1998: The Women on Farms Project: Founding Director

I established the Women on Farms Project as an independent organisation and was responsible for strategic planning; staff; organisational learning; design and implementation of programmes; monitoring and evaluation; fund-raising; and governance.

1992 - 1995: Lawyers for Human Rights: Women on Farms Project Coordinator

I initiated and co-ordinated the Women on Farms Project. During this time, I initiated and ran women's groups on Boland farms with a focus on adult education, empowerment, and community development.

1991: Foundation for Community Work: Community Worker

Using participatory processes, the purpose of my interventions was to build on local knowledge, enhance capacity development, and foster community empowerment.

KEY SKILLS & EXPERIENCE

Understanding of Social Change & Community Development

- My degrees in social science and subsequent short courses in Developmental Evaluation and Monitoring (CDRA 2011) and Observation, Insight and Intervention (Proteus Initiative 2009) have equipped me with both a broad theoretical framework but also a practical ability to understand social dynamics and to interpret social challenges and their potential impact on individuals, organisations, and communities at large.

Writing & Research Skills

- Excellent writing and editing skills.
- Good interviewing and group facilitation skills.
- Excellent ability to analyse and understand complex, and often nuanced data.

Facilitation and Interpersonal Skills

- Excellent facilitation skills supported by a thorough understanding of community development, group dynamics, and adult education.

REFERENCES

Elfrieda Pschorn-Strauss: Seed and Knowledge Initiative
elfrieda@seedandknowledge.org
+27 82 413 0502

Jessica Wilson: Independent Evaluator and Environmental Specialist
jessicawilson@theprocess.org.za
+27 83 326 4216

Appendix B - Specialist Statement of Independence

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

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

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

PROJECT TITLE

THE PROPOSED HOEK DOORNEN 1, 2, 3 AND 4 SOLAR PV FACILITIES AND THEIR ASSOCIATED ELECTRICAL GRID INFRASTRUCTURE NEAR TOUWS RIVER, WESTERN CAPE PROVINCE

Kindly note the following:

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

Departmental Details

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

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

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

1. SPECIALIST INFORMATION

Specialist Company Name:	Sandra Hill – Social Scientist			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100%
Specialist name:	Sandra Hill			
Specialist Qualifications:	BSocSci (Honours)			
Professional affiliation/registration:	n/a			
Physical address:	1a Wolfe Street, Wynberg, Cape Town, 7800			
Postal address:	1a Wolfe Street, Wynberg, Cape Town, 7800			
Postal code:	7800	Cell:	082 729 2351	
Telephone:	082 729 2351	Fax:	n/a	
E-mail:	sandra@write-now.co.za			

2. DECLARATION BY THE SPECIALIST

I, **Sandra Hill**, declare that –

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

Signature of the Specialist

Sandra Hill – Social Scientist (sole proprietor)

Name of Company:

8 OCT 2020

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Sandra Hill**, swear under oath/affirm that all the information submitted or to be submitted for the purposes of this application is true & correct.

Signature of the Specialist

Sandra Hill – Social Scientist (sole proprietor)

Name of Company

8 OCT 2020

Date

Signature of the Commissioner of Oaths

724452 - CONSTABLE
A.F. MASETI-MZINGELWA

SUID-AFRIKAANSE POLISIEDIENS

09 OCT

Date

Appendix C: Site Sensitivity Verification

It is important to note that there are no socio-economic themes on the National Web-based Environmental Screening Tool (Screening Tool) (as at October 2020), therefore the environmental sensitivity of the proposed project area as identified by the Screening Tool is not applicable. Therefore, no site sensitivity verification report is required.

However, prior to commencing with the specialist assessment in accordance with Appendix 6 of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014, a site visit was undertaken in order to confirm the current land use.

The details of the site visit are noted below:

Date of Site Visit	7 September 2020 (1 day)
Specialist Name	Sandra Hill
Professional Registration Number	Not Applicable
Specialist Affiliation / Company	Private

The land use confirmation was undertaken using desktop analysis, using available policy data and literature, as well as a site inspection and relevant municipal Spatial Development Plans and Integrated Development Plans.

Historically used as a winter grazing area for sheep, there is currently no agricultural activity on the farm.

Appendix D: Impact Assessment Methodology

The impact assessment methodology followed for the specialist assessment is noted below.

The impact assessment includes:

- *the nature, significance and consequences of the impact and risk;*
- *the extent and duration of the impact and risk;*
- *the probability of the impact and risk occurring;*
- *the degree to which impacts and risks can be mitigated;*
- *the degree to which the impacts and risks can be reversed; and*
- *the degree to which the impacts and risks can cause loss of irreplaceable resources.*

As per the DEFFT Guideline 5: Assessment of Alternatives and Impacts, the following methodology is applied to the prediction and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect and cumulative:

- *Direct impacts are impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.*
- *Indirect impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.*
- *Cumulative impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.*

The impact assessment methodology includes the following aspects:

- *Nature of impact/risk - The type of effect that a proposed activity will have on the environment.*

- *Status - Whether the impact/risk on the overall environment will be:*
    - *Positive - environment overall will benefit from the impact/risk;*
    - *Negative - environment overall will be adversely affected by the impact/risk; or*
    - *Neutral - environment overall not be affected.*

- *Spatial extent – The size of the area that will be affected by the impact/risk:*
    - *Site specific;*
    - *Local (<10 km from site);*
    - *Regional (<100 km of site);*
    - *National; or*
    - *International (e.g. Greenhouse Gas emissions or migrant birds).*

- *Duration – The timeframe during which the impact/risk will be experienced:*
    - *Very short term (instantaneous);*
    - *Short term (less than 1 year);*
    - *Medium term (1 to 10 years);*
    - *Long term (the impact will cease after the operational life of the activity (i.e. the impact or risk will occur for the project duration)); or*
    - *Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e. the impact will occur beyond the project decommissioning)).*

- *Consequence – The anticipated consequence of the risk/impact:*
    - *Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);*
    - *Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);*
    - *Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);*
    - *Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or*
    - *Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).*

- *Reversibility of the Impacts - the extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase):*

- *High reversibility of impacts (impact is highly reversible at end of project life i.e. this is the most favourable assessment for the environment);*
- *Moderate reversibility of impacts;*
- *Low reversibility of impacts; or*
- *Impacts are non-reversible (impact is permanent, i.e. this is the least favourable assessment for the environment).*

- *Irreplaceability of Receiving Environment/Resource Loss caused by impacts/risks – the degree to which the impact causes irreplaceable loss of resources assuming that the project has reached the end of its life cycle (decommissioning phase):*
  - *High irreplaceability of resources (project will destroy unique resources that cannot be replaced, i.e. this is the least favourable assessment for the environment);*
  - *Moderate irreplaceability of resources;*
  - *Low irreplaceability of resources; or*
  - *Resources are replaceable (the affected resource is easy to replace/rehabilitate, i.e. this is the most favourable assessment for the environment).*

Using the criteria above, the impacts have been further assessed in terms of the following:

- *Probability – The probability of the impact/risk occurring:*
  - *Extremely unlikely (little to no chance of occurring);*
  - *Very unlikely (<30% chance of occurring);*
  - *Unlikely (30-50% chance of occurring)*
  - *Likely (51 – 90% chance of occurring); or*
  - *Very Likely (>90% chance of occurring regardless of prevention measures).*

To determine the significance of the identified impact/risk, the consequence is multiplied by probability (qualitatively as shown in Figure 1).

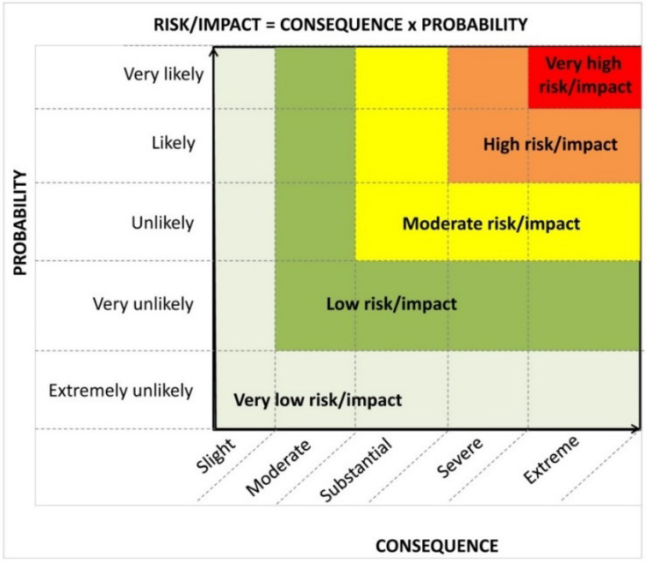

Figure 1. Guide to assessing risk/impact significance as a result of consequence and probability.

- *Significance – Will the impact cause a notable alteration of the environment?*
  - *Very low (the risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);*
  - *Low (the risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures, and will not have an influence on decision-making);*
  - *Moderate (the risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures, and will only have an influence on the decision-making if not mitigated);*
  - *High (the risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-making); and*
  - *Very high (the risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision-*

making (i.e. the project cannot be authorised unless major changes to the engineering design are carried out to reduce the significance rating)).

With the implementation of mitigation measures, the residual impacts/risks are ranked as follows in terms of significance:

- *Very low = 5;*
- *Low = 4;*
- *Moderate = 3;*
- *High = 2; and*
- *Very high = 1.*

Confidence – The degree of confidence in predictions based on available information and specialist knowledge:

- *Low;*
- *Medium; or*
- *High.*

Appendix E: Compliance with the Appendix 6 of the 2014 EIA Regulations (as amended)

Requirements of Appendix 6 (Specialist Reports) of Government Notice R326 (Environmental Impact Assessment (EIA) Regulations of 2014, as amended)	***Section where this has been addressed in the Specialist Report***
1. (1) A specialist report prepared in terms of these Regulations must contain - *a) details of -* *i. the specialist who prepared the report; and* *ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;*	*i. Section 1.2* *ii. Appendix A*
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	*Appendix B*
c) an indication of the scope of, and the purpose for which, the report was prepared;	*Section 1*
(cA) an indication of the quality and age of base data used for the specialist report;	*Section 2*
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	*Section 3 and Section 4*
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 4.3 and Not Applicable*
g) an identification of any areas to be avoided, including buffers;	*Not Applicable*
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;	*Not Applicable*
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	*Section 2.2*
j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	*Section 5 and Section 6*
k) any mitigation measures for inclusion in the EMPr;	*Section 6 and Section 9*
l) any conditions for inclusion in the environmental authorisation;	*Section 10*
m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	*Section 9*
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; and* *ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;*	*Section 10.1 and Section 10.2*
o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	*Section 2.1 and Section 5.2*
p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	*Not Applicable at this stage, refer to the BA Report*
q) any other information requested by the competent authority.	*Not Applicable at this stage*
(2) Where a government notice 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.	*Not Applicable*