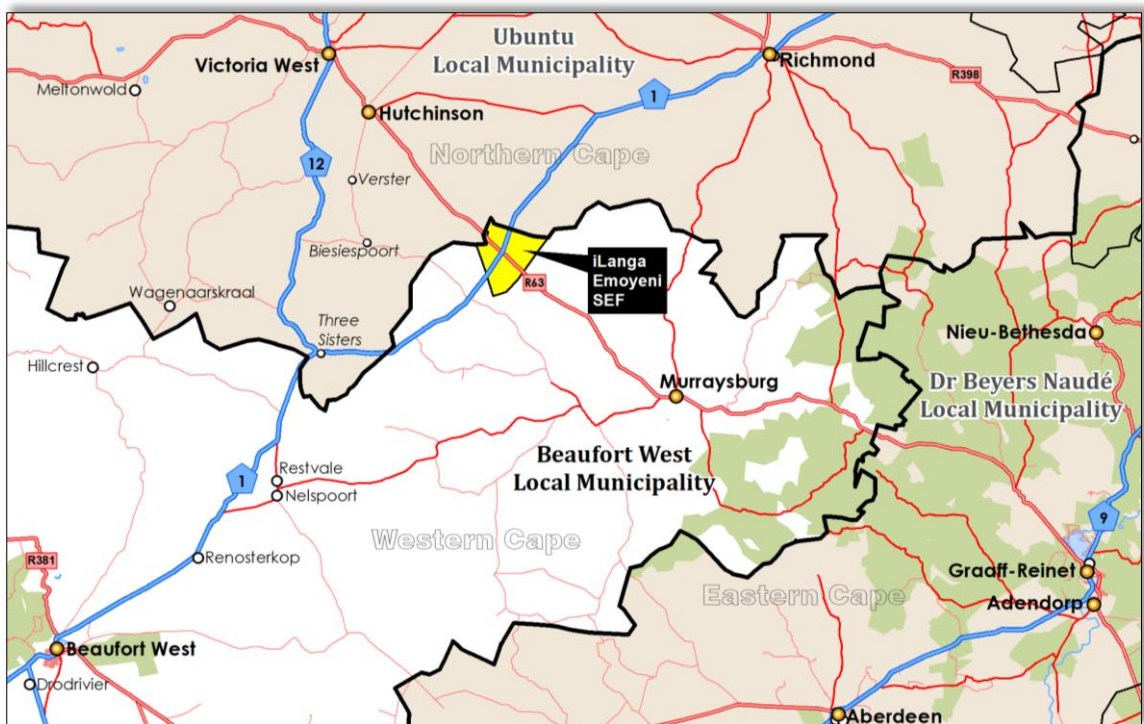


iLanga Emoyeni Solar Energy Facility

Application for :

- Consent Use : Renewable Energy Structures
 - Permanent Departure : Height & Setback Lines
- on Remainder Farm Schietkuil No. 3



Report Number : 1829E/02

November 2023

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Note : The data and content contained in this report, annexures and maps are based on information as received and interpreted by Urban Dynamics Eastern Cape from secondary sources, including the Client, Land Owner and Specialist Studies. Although Urban Dynamics Eastern Cape attempts, at all times, to present accurate and reliable information, we make no warranty of any kind, expressed or implied, to the accuracy and reliability of information sourced and obtained from secondary sources.

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3. Power of Attorney
4. Deeds Office Enquiry
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Note : All Basic Assessment Reports and Specialist Studies can be made available on request

1. The Applicant

Urban Dynamics Eastern Cape (UDEEC) has been commissioned by Seriti Green Developments South Africa, on behalf of the owner of Remainder Farm Schietkuil No. 3, north-west of Murraysburg, at the intersection of the N1 and R63 routes (Western Cape, Beaufort West Municipality), to prepare and submit an application to obtain the necessary development rights to develop a solar PV facility for the generation of renewable energy, known as the iLanga Emoyeni PV Solar Energy Facility (SEF).

Refer to Annexure 3 : Power of Attorney

Refer to Map 1 : Regional Locality

Urban Dynamics EC forms part of a professional consultant team that conducted various specialist studies, supplied supporting documentation and undertook detailed site analysis and design. The detailed professional work done will enable the Municipality to take an informed decision and grant the required development rights to implement this SEF project.

2. The Project & Location

The iLanga Emoyeni SEF is situated \pm 40 km north-west of Murraysburg at the intersection of the N1 and R63 routes, on the border of the Western and North Cape Provinces, in the Beaufort West Local Municipality and Central Karoo District Municipality. The facility is situated on Remainder Farm Schietkuil No. 3 (8990.2130 ha).

The project comprises of 3 Solar Energy Facilities (iLanga Emoyeni PV 1, PV 2 and PV 3) and an Overhead Powerline (OHPL) grid connection to the Gamma Substation, collectively known, for the purpose of this report, as the iLanga Emoyeni PV Solar Energy Facility (iLanga Emoyeni SEF). The iLanga Emoyeni SEF is situated completely within the Beaufort West Wind and Solar Renewable Energy Development Zone (REDZ11).

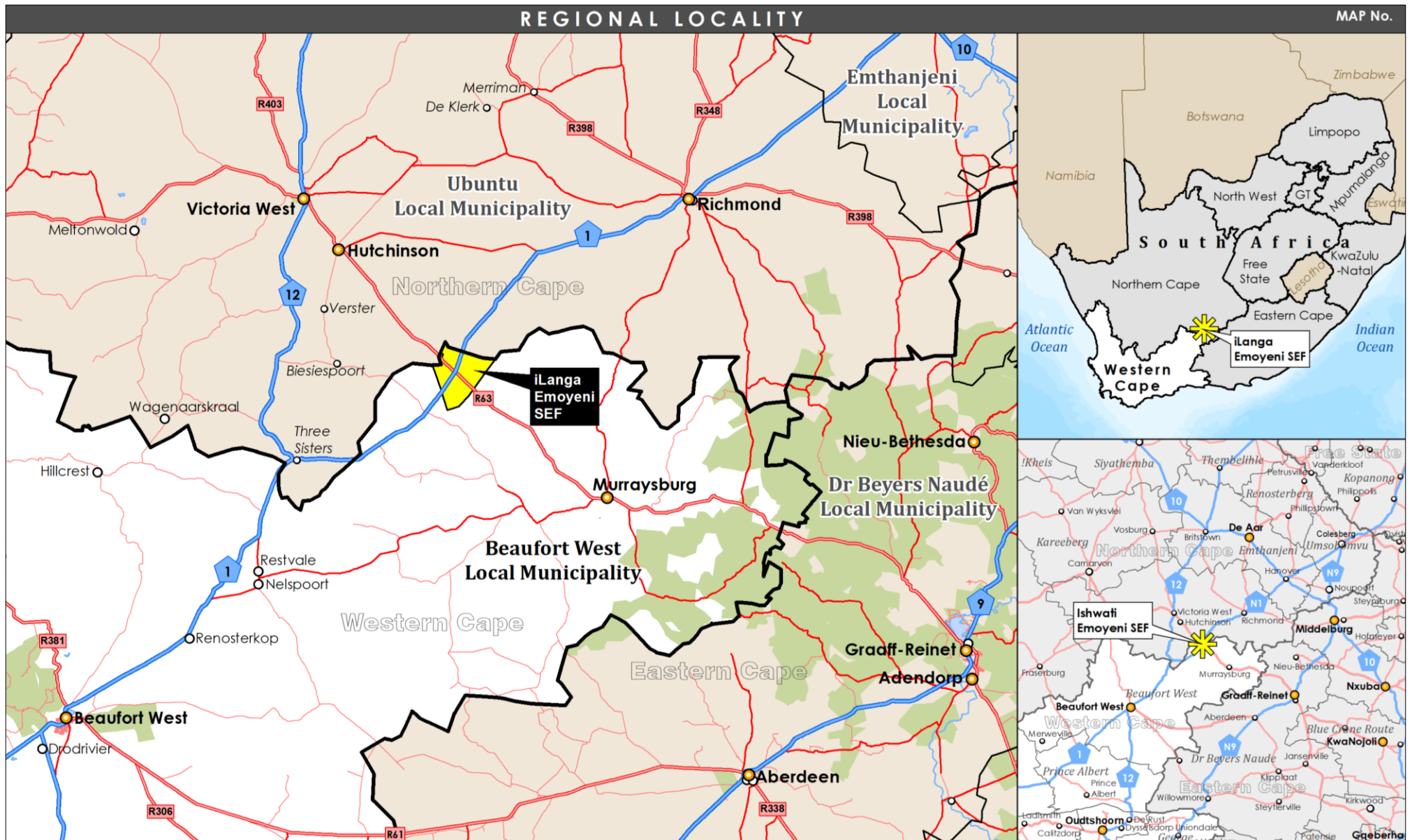
The project includes various PV Arrays, Access Roads, Electric Cabling, Substations, Battery Energy Storage Systems (BESS), Operational & Maintenance Areas, Laydown Areas and Grid Connection Powerlines. The project has an estimated generation capacity of 568 MW.

Project detail and scale are outlined in detail under Paragraph 4.3 of this report.

Refer to Map 1 : Regional Locality

Refer to Map 2 : Property Description & Cadastral Information

Refer to Map 3 : Aerial View



Map 1 : Regional Locality

3. Affected Properties

The iLanga Emoyeni SEF is situated the Remainder Farm Schietkuil No. 3. This farm will accommodate all solar panels, support infrastructure and access roads.

Refer to Map 2 : Property Description & Cadastral Information

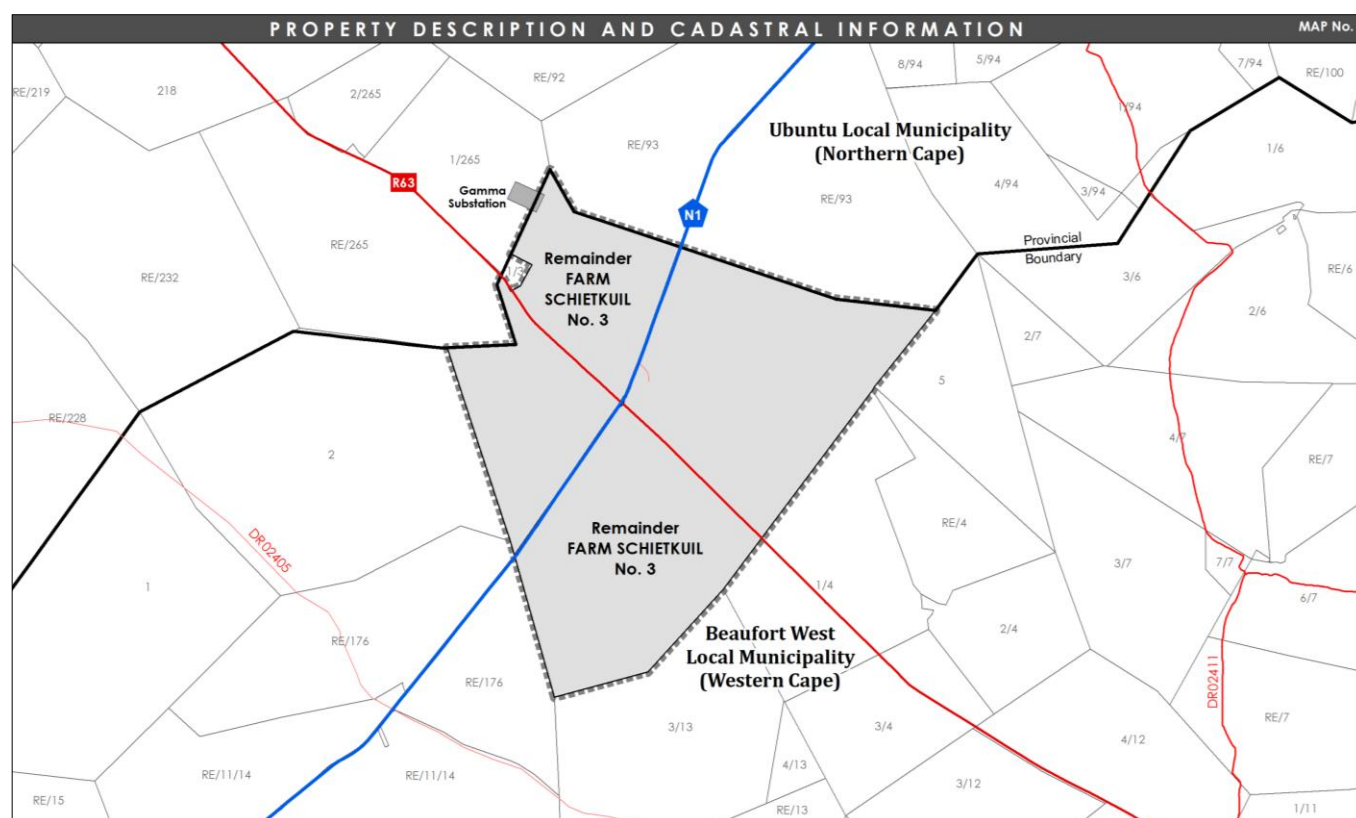
The table further confirms ownership, title deed number, area, restrictive title conditions and registered bonds.

Property Description	Owner	Title Deed No.	Area (ha)	Restrictive Conditions	Bonds
Remainder Farm Schietkuil No. 3	Rookop Trust	T76646/2003	8928.3221	No	No

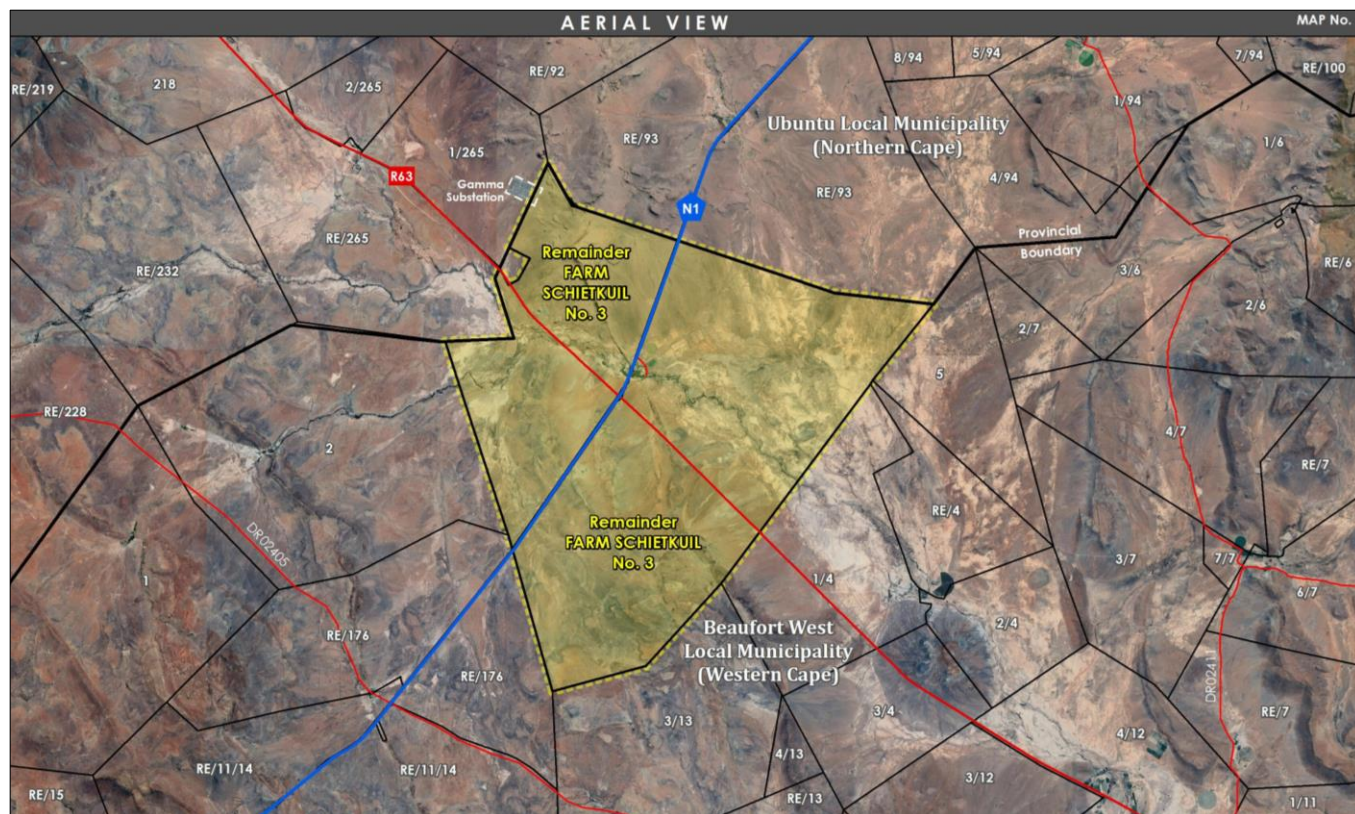
Refer to Annexure 4 : Deeds Office Enquiry

Refer to Annexure 5 : Title Deed

Refer to Annexure 6 : Conveyancing Certificates



Map 2 : Property Description & Cadastral Information



Map 3 : Property Description & Cadastral Information : Aerial

4. The Application

4.1 Objective

The objective of this application is to obtain the necessary development rights in terms of the Beaufort West By-law on Municipal Land Use Planning (2019) from the Beaufort West Municipality to implement, construct, operate and maintain a Solar Energy Facility and associated infrastructure on the subject land portion.

The location of the SEF site has been identified through a detailed assessment and scoping process. The layout and siting of solar panels were refined through an iterative process with input from various environmental and technical specialists as part of the design and Environmental Impact Assessment processes.

4.2 Legislation

Land use rights within the Beaufort West Municipality are managed through the :

- Spatial Planning & Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA)
- Western Cape Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)
- By-law on Municipal Land Use Planning for Beaufort West Municipality (2019)
- Beaufort West Standard Zoning Scheme By-Law (2020)

The relevant legislation, as indicated above, outlines the application procedures and processes, basis for decision making and various administrative arrangements through the application cycle, i.e. pre-application consultation, application, public participation, Authorised Official (AO) and Municipal Planning Tribunal (MPT) decision making and conditions of implementation.

In order to construct, operate and maintain the iLanga Emoyeni SEF, development approval is required for the following :

▣ **Consent Use : Renewable Energy Structure**

A solar energy facility, by its nature and scale, functions in harmony with the rural area. The rural character and renewable energy facilities are therefore compatible land uses, in support of each other.

Land use rights within the Beaufort West Municipal area are managed by the By-law on Municipal Land Use Planning for Beaufort West Municipality and the Beaufort West Standard Zoning Scheme By-Law.

The Beaufort West Standard Zoning Scheme By-Law makes provision for “**Renewable energy structures**”, as a consent use, on agriculture land and is defined as :

“any wind turbine, solar energy generating apparatus, including solar photo-voltaic and concentrated solar thermal, hydro turbines or bio mass facility or any grouping thereof, that captures and converts wind, solar radiation or bio mass into energy for commercial gain; and includes any appurtenant structure necessary for, or directly associated with, generation of renewable energy, or any test facility or structure that may lead to the generation of energy on a commercial basis, excluding electrical grid connections”.

“**Appurtenant structures**” means :

- *All appurtenant structures to a renewable energy structure prescribed by the Municipality concerning bulk, height, yard sizes, building lines, open space, parking and building coverage requirements are subject to applicable by-laws.*
- *Appurtenant structures, including equipment shelters, storage facilities, transformers and sub-stations must be architecturally compatible with the receiving environment as required by the Municipality, and contained within a renewable energy structure site development plan submitted for approval by the Municipality.*
- *Appurtenant structures may only be used for the storage of equipment or other uses directly related to the operation of the particular facility that they are associated with.*
- *Appurtenant structures must be screened from view by indigenous vegetation or be joined and clustered to minimise adverse visual impacts.*

The Beaufort West Standard Zoning Scheme By-Law further outlines development parameters for Renewable Energy Structures and Appurtenant Structures.

In order to ensure permanent development rights for iLanga Emoyeni SEF, approval for Permanent Consent Use : Renewable Energy Structures and Appurtenant Structures will be required. The 30 m building line on agriculture zoned land will be retained.

▣ **Departure : Height & Setback Lines**

The Beaufort West Standard Zoning Scheme By-Law contains height restrictions of 8.5 m for buildings in a Renewable Energy Facility.

Although the Beaufort West Standard Zoning Scheme By-Law is silent on setbacks for a Renewable Energy Structure, other than wind turbines, the Municipality confirmed during the pre-application session, that 100 m setbacks might be imposed. All Solar PV arrays are 100 m setbacks. However, given the design requirements, the main collector substation is approximately 30 m from the farm boundary, along Portion 1 of Farm Schietkuil No. 3.

This application therefore includes departure applications :

- Departure of Height from 8.5 m to 15 m for all buildings and structures
- Departure / confirmation of the setback of the main collector substation to 30 m

▣ **Lease & Servitude**

The Solar Energy Facility developer and/or proponent will lease the entire farm (Schietkuil No. 3). Approvals of long term lease areas are therefore not required.

It should be noted that the homestead, workers' cottages, arable fields and facilities associated with the Schietkuil holiday farm will remain under the landowner's control.

Existing servitudes registered in favour of Eskom and/or any other party will be honoured and development will be subject to existing servitude restrictions.

Internal high voltage powerlines and substations (132 kV and above) will ultimately be registered as servitudes in favour of Eskom. Registration of servitudes for powerlines and access are exempt in terms of Section 24 of the By-law on Municipal Land Use Planning for Beaufort West Municipality. A separate request, as contemplated in terms of Section 24 (2) of the By-law on Municipal Land Use Planning for Beaufort West Municipality, will be submitted prior to servitude registration.

▣ **Approval of Site Plan**

The Beaufort West Standard Zoning Scheme By-Law requires :

- A site development plan must be submitted to the Municipality for its approval.
- The site must be surveyed and the exact delineation of the construction footprint must be shown in the site development plan.
- To the extent necessary, any relevant measures contained in these regulations must be incorporated into the site development plan submitted to the Municipality for approval.

Given the unique nature of solar energy facilities and the requirements of the relevant environmental guidelines, Environmental Authorisations, final IPP agreements and Government Departments, final micro-siting and placement of solar panels, roads, infrastructure and powerlines can only be finalised once all relevant approvals have been received and technical design requirements finalised. It is anticipated that minor amendments will be made to the Site Plan. As indicated and as part of this application, the final Site Plan will be submitted to the Municipality for endorsement prior to commencement of construction.

Refer to Map 4 : Site Plan (Overall) (1829E-SPA-1 dated 07/2023)

Refer to Map 5 : iLanga Emoyeni PV 1 REF Site Plan (1829E-SPV1-1 dated 07/2023)

Refer to Map 6 : iLanga Emoyeni PV 2 REF Site Plan (1829E-SPV2-1 dated 07/2023)

Refer to Map 7 : iLanga Emoyeni PV 3 REF Site Plan (1829E-SPV3-1 dated 07/2023)

4.3 Application

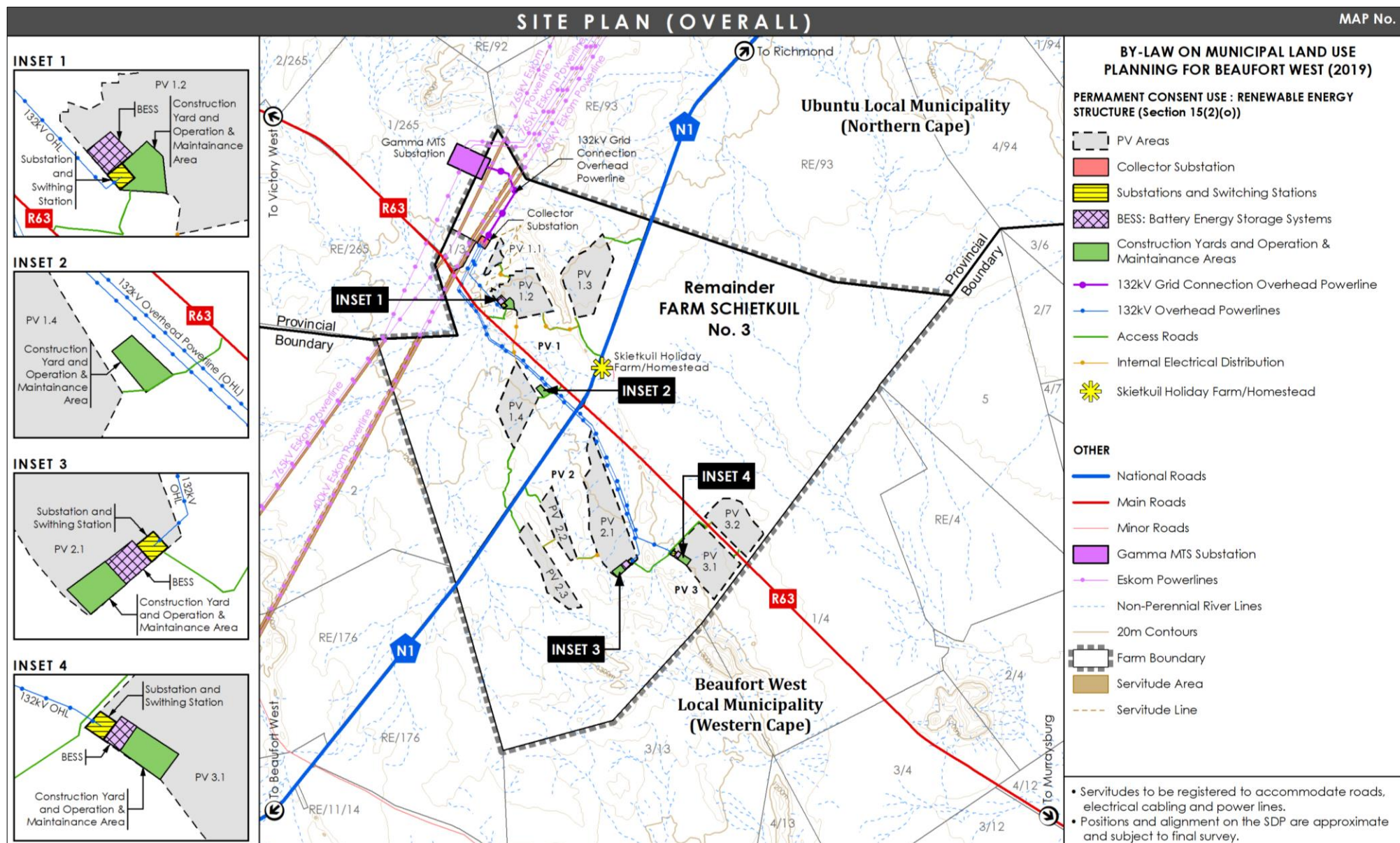
Application is submitted for the following :

1. **Consent Use (Permanent) : Renewable Energy Structure**, including **appurtenant structures**, in terms of Section 15 (2) (o) of the Beaufort West Land Use Planning By-laws (2019), for PV Area Footprints, Substations and Switching Stations, Collector Substation, Battery Energy Storage System (BESS), Construction Yard, Operation & Maintenance Areas, Overhead Powerlines, Access Roads and Internal Electrical Distribution, on Remainder Farm Schietkuil No. 3, as indicated on the Site Plan (1829E-SPA-1 dated 07/2023) and the Development Parameters, as indicated in the table below
2. **Departure**, in terms of Section 15 (2) (b) of the Beaufort West Land Use Planning By-laws (2019), of height from 8.5 m to 15 m and the setback (Main Collector Substation) to 30 m
3. **Approval of Site Plan** (1829E-SPA-1 dated 07/2023)

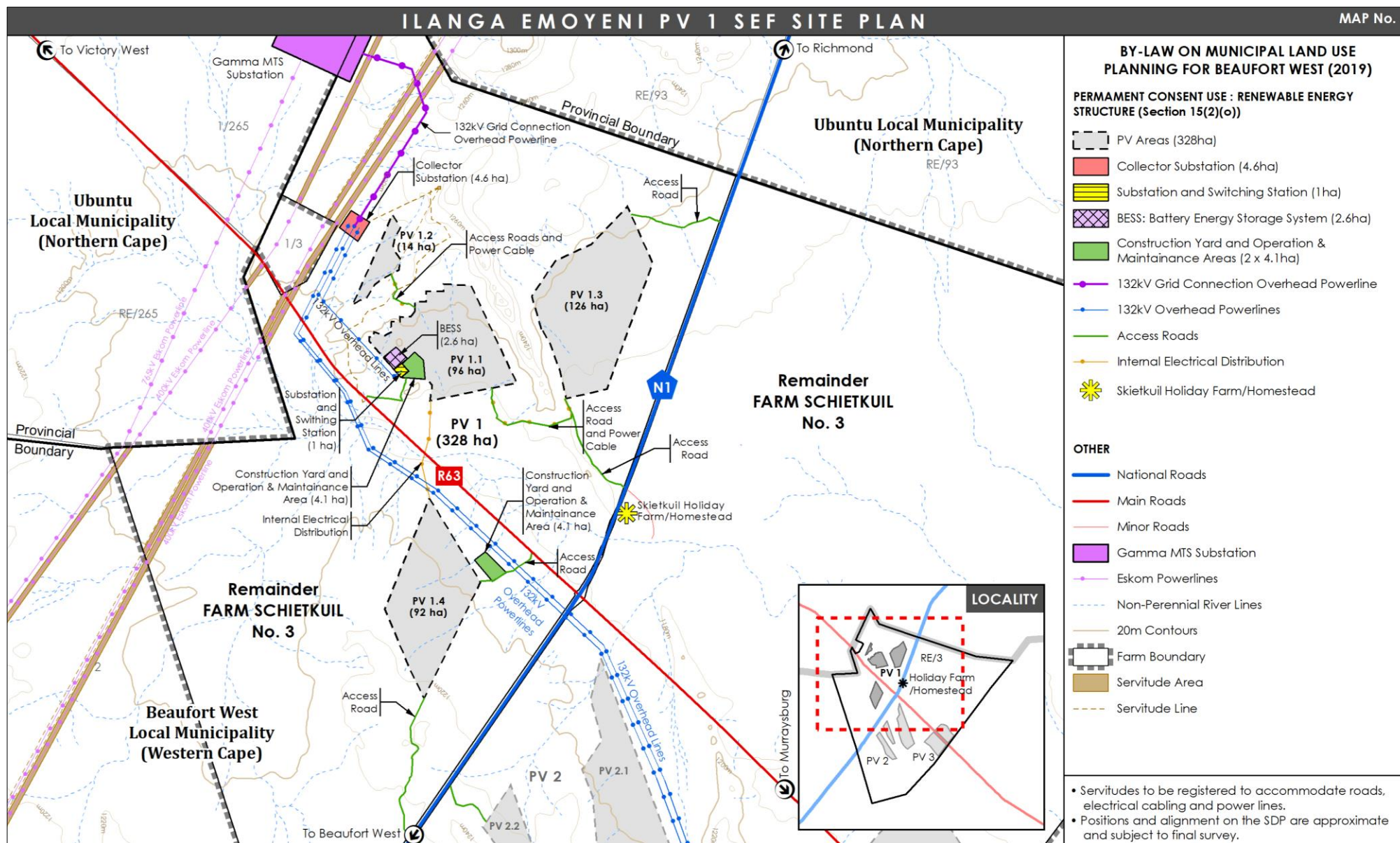
Development Parameters

Consent Use	Renewable Energy Structure, including Appurtenant Structures		
Definitions	<p>Renewable Energy Structure means (a) any wind turbine, solar energy generating apparatus, including solar photo-voltaic and concentrated solar thermal, hydro turbines or bio mass facility or any grouping thereof, that captures and converts wind, solar radiation or bio mass into energy for commercial gain; and (b) includes any appurtenant structure necessary for, or directly associated with, generation of renewable energy, or any test facility or structure that may lead to the generation of energy on a commercial basis, excluding electrical grid connections</p> <p>Appurtenant Structures means (a) Equipment shelters, storage facilities, transformers and sub-stations must be architecturally compatible with the receiving environment as required by the Municipality, and contained within a renewable energy structure site development plan submitted for approval by the Municipality; (b) Appurtenant structures may only be used for the storage of equipment or other uses directly related to the operation of the particular facility that they are associated with</p>		
Total Farm Area (Remainder Farm Schietkuil No. 3)	± 8 990 ha		
Grid Connection	132 kV grid connection between iLanga Emoyeni SEF Collector Substation and Gamma Substation		
Collector Substation	≤ 4.6 ha		
Access / Access Roads	Access roads ≤ 10 m wide with stormwater controls, an access control gates and security huts, ablutions and project signboards		
Internal Powerlines	≤ 33 kV powerlines as cables placed in excavated trenches and overhead powerlines on wooden poles, where trenched cabling is not possible		
	iLanga Emoyeni 1 SEF	iLanga Emoyeni 2 SEF	iLanga Emoyeni 3 SEF
Export Capacity	≤ 220 MW	≤ 201 MW	≤ 147 MW
Height (Renewable Energy Structure & Appurtenant Structures)	15 m	15 m	15 m
Components			
Development Area including PV array & Appurtenant Structures	≤ 328 ha	≤ 300 ha	≤ 220 ha
Construction Yard, Operation & Maintenance Area	≤ 4.1 ha x 2	≤ 4 ha	≤ 4 ha
Substation & Switching Station	≤ 1 ha	≤ 1.3 ha	≤ 1.2 ha
Battery Energy Storage System (BESS)	≤ 2.6 ha	≤ 2.6 ha	≤ 1.5 ha
Setback (Main Collector Substation)	30 m		

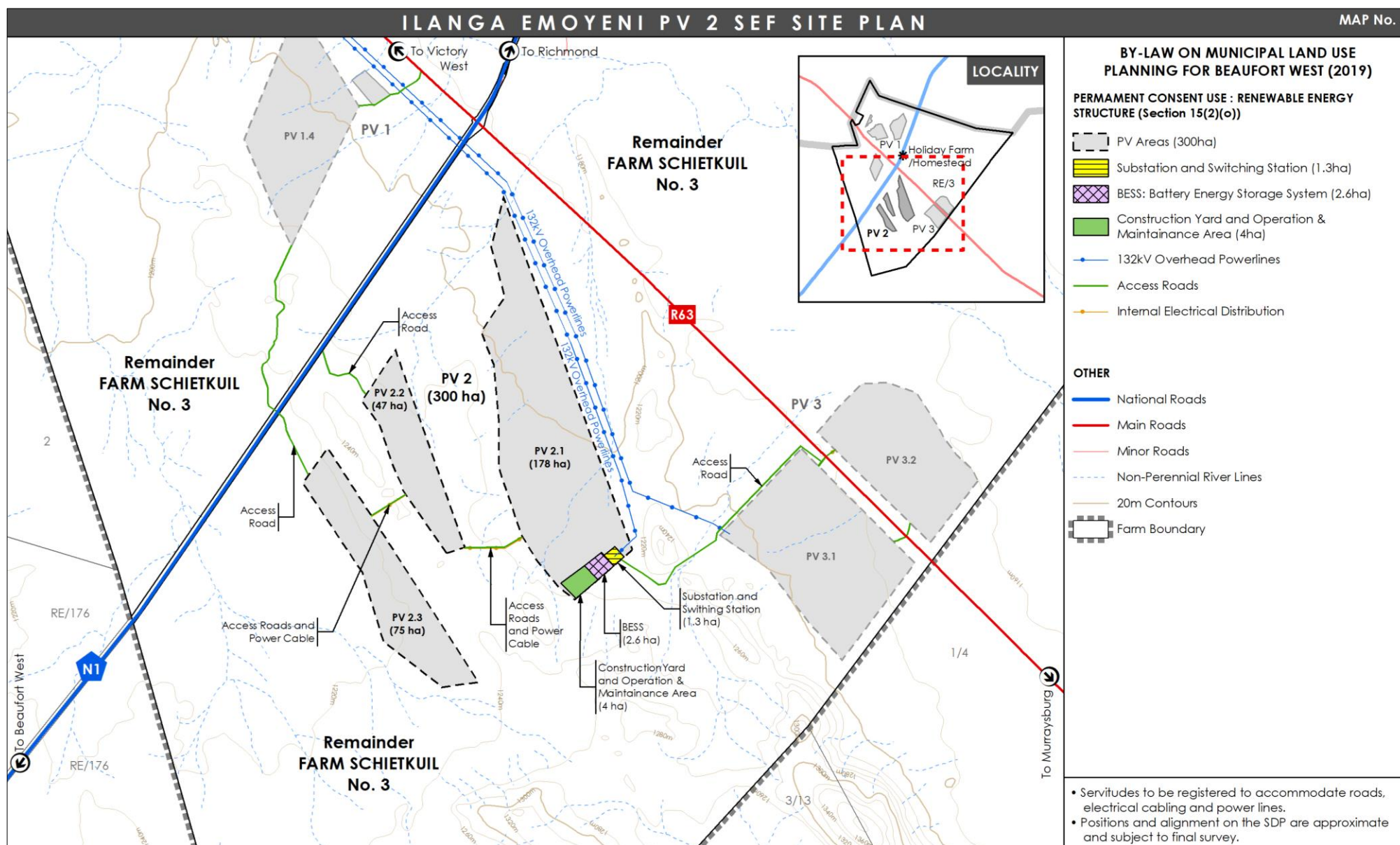
Development Parameters

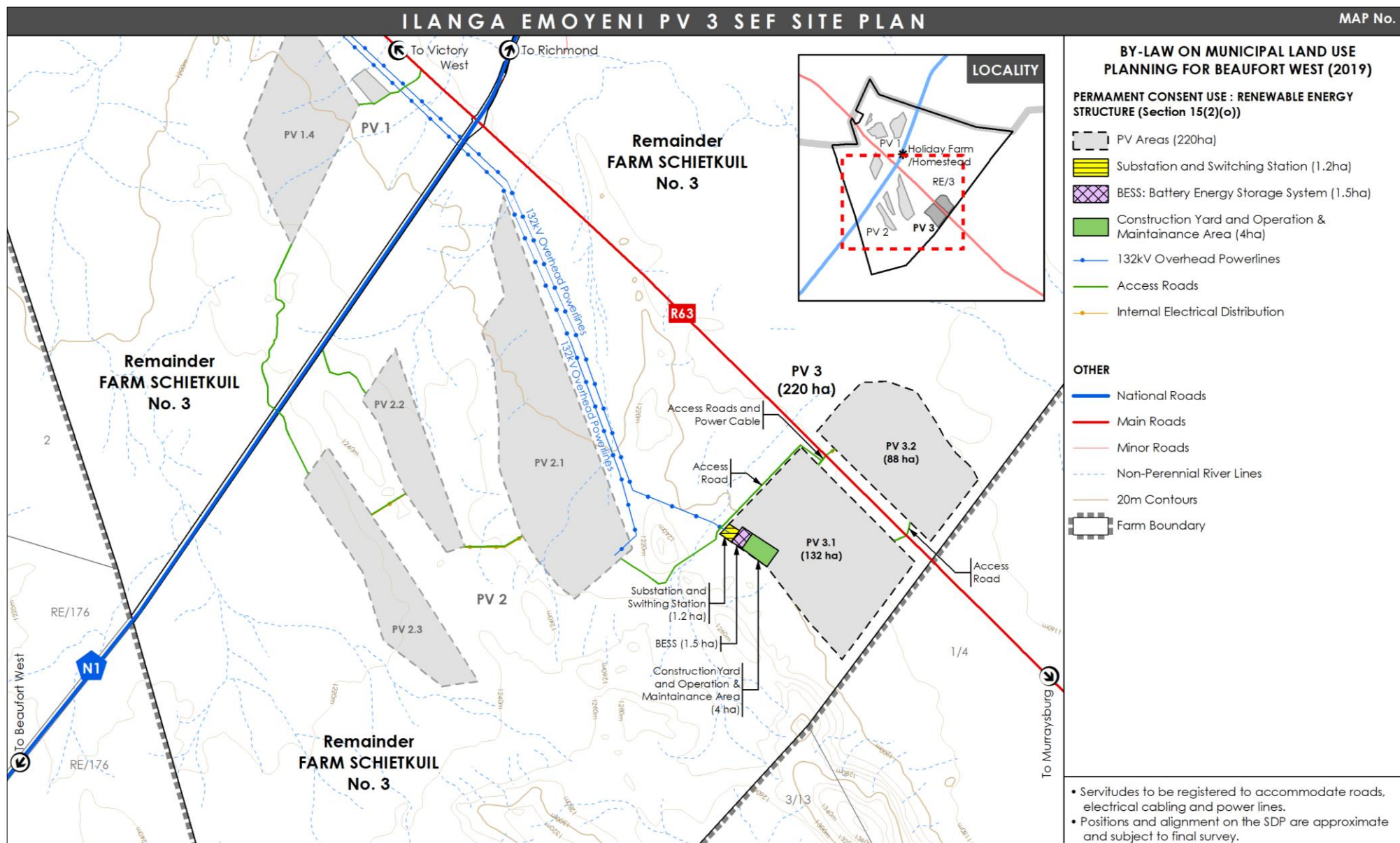


Map 4 : Site Plan (Overall)



Map 5 : iLanga Emojeni PV 1 REF Site Plan





Map 7 : iLanga Emoyeni PV 3 REF Site Plan

5. Existing Zoning, Land Use & Site Description

5.1 Zoning

In terms of the Zoning Scheme and the Beaufort West Municipality Zoning Register, the properties are zoned Agricultural Zone 1, permitting development parameters in the Table below :

	Agricultural Zone 1
Primary Use	Agriculture
Definition	<i>Agriculture means the cultivation of land for raising crops and other plants, including plantations, the keeping and breeding of animals, birds or bees, stud farming, game farming, intensive horticulture; intensive animal farming; a riding school or natural veld.</i>
Building Lines	30 m

The Beaufort West Municipality approved a Consent Use (Utility Service Substation) on a portion of the Farm Schietkuil No. 3 on 8 November 2022. The approved site size is approximately 8 ha and situated in the north-west corner of the farm, adjacent to the Gamma Substation. The purpose of this approval (substation) is to receive electricity generated by the Ishwati Emoyeni, Umsinde Emoyeni and Khangela Emoyeni Wind Farms (approved by the Beaufort West Municipality on 8 November 2022).

Refer to Annexure 8 : Previous Beaufort West Municipal Approval (08.11.2022)

5.2 Land Use & Site Description

The following extracts from the Final Basic Assessment Reports describe the study area.

- *The project is located in the semi-arid karoo stretching 600 km from Calvinia in the west to Cradock in the east, and approximately 600 km from Marydale to the north to Calitzdorp in the south.*
- *The site is comprised of wide, open plains covered with grasses and low woody scrub or open ground with intermittent rocky outcroppings, ridges, low inselbergs, and hills.*
- *The region where the project is proposed is within an arid environment landscape within the Nama-karoo biome. The following features are core elements within the greater landscapes.*
 - *Skietkuil Guest Farm and dryland agriculture farming*
 - *Nama-karoo landscape*
 - *Eskom Gamma Substation and power line corridor*
 - *N1 National Highway and R63 tourist view corridors*
 - *Renewable Energy projects*



Sense of place (site photos)

- Skietkuil Holiday Farm provides 5 cottages inclusive of a restaurant and a swimming pool.
- The Nama-Karoo is underlain by a succession of sedimentary rocks that includes the Cape Supergroup followed by Dwyka tillites and then other fossil rich sediments of the Karoo Supergroup.
- The site for the development has low agricultural potential and no dryland cropping potential predominantly because of aridity constraints but also because of soil constraints. As a result of the constraints, agricultural production is limited to low density grazing.
- The climatic variation, geology and soils associated with this region have given rise to a complex of plains and hardeveld dominated by dwarf succulent shrubs interspersed with grasses, geophytes and annual herbs. Variation in the timing of the rainfall and the amount received between years has resulted in variation in the structure, cover and productivity of the vegetation present as well as a diversity of plant forms that range from ephemerals, annuals, geophytes, grasses, succulents, deciduous and evergreen perennial shrubs and trees.
- Soils that have arisen from the sedimentary and igneous rock are typically weakly structured and skeletal. The project area is characterised by moderately deep, calcareous, sandy-clay loams which contain calcrete and calcareous horizons in the flat areas and shallow soils on the slopes and plateaus of the mesas and buttes.
- This region is characterised by an arid climate with most rainfall occurring over the summer months (December to April). Mean Annual Rainfall (MAR) increases from 70mm in the north west (near the desert biome) to 500mm in the south east with rainfall quantity and reliability increasing eastwards. The project site is located in the north-eastern portion of the biome, near Beaufort West, and receives a MAR of 392mm per annum with mean annual highs reaching 32 °C and mean annual lows of 4.4 °C.
- The economy in the Karoo has been largely based on extensive sheep and goat farming. Irrigation-based agriculture is concentrated along the rivers. The arid areas are sparsely populated, and in some areas, the population density is less than 1 or 2 people per km².



Main House on Schietkuil



Mid-20th century house at the farmstead and now used as guest accommodation. It has been altered



Photograph taken from the R63 eastbound

6. Activity Description & Parameters

The following table outlines the development parameters of the iLanga Emoyeni SEF.

Development Parameters

Consent Use	Renewable Energy Structure, including Appurtenant Structures		
Definitions	<p>Renewable Energy Structure means (a) any wind turbine, solar energy generating apparatus, including solar photo-voltaic and concentrated solar thermal, hydro turbines or bio mass facility or any grouping thereof, that captures and converts wind, solar radiation or bio mass into energy for commercial gain; and (b) includes any appurtenant structure necessary for, or directly associated with, generation of renewable energy, or any test facility or structure that may lead to the generation of energy on a commercial basis, excluding electrical grid connections</p> <p>Appurtenant Structures means (a) Equipment shelters, storage facilities, transformers and sub-stations must be architecturally compatible with the receiving environment as required by the Municipality, and contained within a renewable energy structure site development plan submitted for approval by the Municipality; (b) Appurtenant structures may only be used for the storage of equipment or other uses directly related to the operation of the particular facility that they are associated with</p>		
Total Farm Area (Remainder Farm Schietkuil No. 3)	± 8 990 ha		
Grid Connection	132 kV grid connection between iLanga Emoyeni SEF Collector Substation and Gamma Substation		
Collector Substation	≤ 4.6 ha		
Access / Access Roads	Access roads ≤ 10 m wide with stormwater controls, an access control gates and security huts, ablutions and project signboards		
Internal Powerlines	≤ 33 kV powerlines as cables placed in excavated trenches and overhead powerlines on wooden poles, where trenched cabling is not possible		
	iLanga Emoyeni 1 SEF	iLanga Emoyeni 2 SEF	iLanga Emoyeni 3 SEF
Export Capacity	≤ 220 MW	≤ 201 MW	≤ 147 MW
Height (Renewable Energy Structure & Appurtenant Structures)	15 m	15 m	15 m
Components			
Development Area including PV array & Appurtenant Structures	≤ 328 ha	≤ 300 ha	≤ 220 ha
Construction Yard, Operation & Maintenance Area	≤ 4.1 ha x 2	≤ 4 ha	≤ 4 ha
Substation & Switching Station	≤ 1 ha	≤ 1.3 ha	≤ 1.2 ha
Battery Energy Storage System (BESS)	≤ 2.6 ha	≤ 2.6 ha	≤ 1.5 ha
Setback (Main Collector Substation)	30 m		

Development Parameters

The following assessments were conducted prior to and during the Scoping Phase for the iLanga Emoyeni SEF 1, 2, 3 and the grid connection to identify and assess possible impact :

- Climate
- Terrestrial and Aquatic ecology
- Avifauna
- Heritage and archaeology
- Palaeontology
- Socio-economic aspects
- Agricultural production, potential and soils
- Visual landscape

- Electromagnetic Interference (EMI)
- Defence
- Geotechnical Assessment

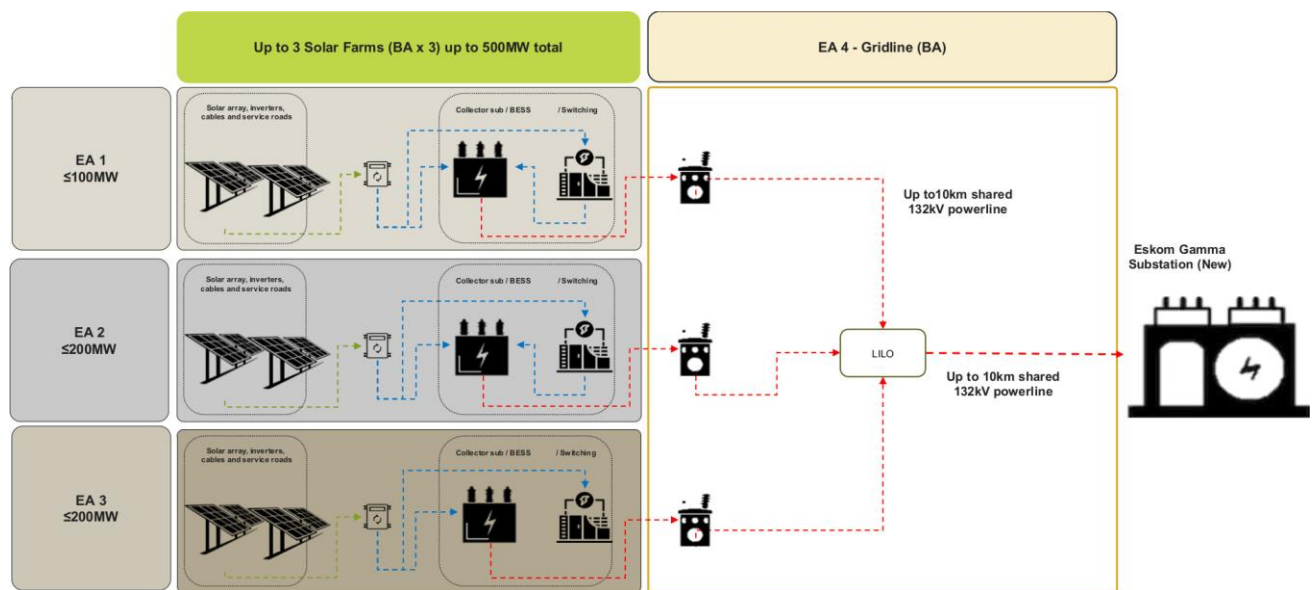
Copies of the Specialist Assessments can be made available on request.

The following are examples of typical PV Solar Energy components.

6.1 Typical SEF Components

A Solar Energy Facility requires several key components to facilitate the generation of electricity at a large scale. This includes :

- PV Modules
- Inverters and Transformers
- Mounting Systems
- Powerlines
- Switching Stations
- Collector Substation
- Battery Energy Storage Systems (BESS)
- Access
- Internal Powerlines



Flow diagram of grid connection between the Gamma MTS and the three proposed SEFs

■ PV Modules

The solar arrays in the development zones are comprised of solar PV panels. The solar PV panels use materials that convert solar radiation directly into electricity.

Photovoltaic solar cells are divided into two distinct groups: Traditional crystalline silicon solar cells and thin film solar cells. The absorbed solar radiation excites the electrons inside the cells and produces what is referred to as the photovoltaic effect.

The crystalline silicon solar cells are made from monocrystalline or polycrystalline silicon. The thin film technologies are comprised of thinner layers of semiconductor material. Photovoltaic solar power plants are comprised of solar modules that are connected together to form solar arrays for the production of electricity and each panel produces between 275 and 600 watts of Direct Current (DC) power per module. An array produces up to 0.65 MW/ha (subject to panels / racking systems, local conditions, etc.) on a sunny day. DC electricity is produced from the solar array which in turn is connected to inverters for conversion to alternating current (AC). Power from the inverters is then stepped up via transformers to higher voltages suitable for transmission and connection with the national grid.



Typical commercial Solar PV modules in an array

The size of the PV modules varies, but can typically be 2 to 4 m² each and are sufficiently durable to last more than 20 years. These modules are mounted on rack systems that are either fixed or tracking (Single or dual axis, meaning the racks turn the panels through the day to face the sun).

▣ **Inverters & Transformers**

In utility scale PV plants, solar PV modules are connected in series form PV strings, which produce DC power at a low voltage (typically 1 000 – 1 500 V). This DC voltage is transformed into AC voltage by an inverter. Inverters are also key to the synchronisation and integration of the DC system into the grid. There are primarily three types of inverters, namely :

- Central inverters
- String inverters
- Micro inverters

For central inverters, the inverter and the transformer are typically housed together in a Power Conversion Unit (PCU). A central unit in the form of a shipping container is provided that is fully equipped and houses the inverter (sometimes multiple inverters) along with an LV/MV transformer. There are numerous PCU types available that vary significantly across manufacturers however the basic requirements typically allow the inclusion of the following :

- Inverters
- Inverter (LV/MV) step-up transformer
- MV Switchgear
- Auxiliary transformer
- LV Auxiliary distribution board
- PCU Earthing
- UPS
- Supervisory control and data acquisition (SCADA) communication cubicle

For plants that use string inverters, a central unit containing a distribution board for collecting the inverters and an LV/MV transformer is required. This unit is referred to as the Pad-mounted Transformer Kiosk (PTK).

Unlike string inverters that transform power for a string of PV modules, micro inverters transform the power of each module individually. For large scale projects, this translates to higher initial equipment, control and instrumentation costs as well as complex maintenance. Therefore, central inverters or string inverters will likely be selected for this project.

▣ Mounting Systems (Racking)

Solar power plants can either have fixed tilt systems or tracking systems.

⇒ Fixed-tilt Systems

In fixed-tilt solar PV installations, the solar panels are mounted at a predetermined tilt and azimuth angle – remaining in this configuration permanently. The fixed PV configuration does not have any moving parts and hence is easier and cheaper to install and maintain resulting in increased reliability as opposed to tracking PV. Furthermore, a fixed tilt PV system is less constrained by uneven terrain, making it easier to install.



Fixed-tilt system

⇒ Tracking Systems

Tracking PV installations have the added benefit and capability of tracking the sun's movement throughout the day to maximise the energy collected. This is accomplished by reducing the angle of incidence – thus resulting in more energy and producing power earlier and later in the day than a fixed PV system.



A single axis tracking system

Within tracking PV, there are many options that are available :

- Single-axis trackers, which follow the sun's azimuth east-west each day.
- Single-axis tracking with fixed tilt, which follow the sun's azimuth east-west each day and is tilted at a fixed angle year-round depending on the latitude of the location.
- Dual-axis tracking, which follows both the azimuth and altitude angle above the horizon on a daily and seasonal basis respectively. These are expensive systems and require more space so are not typically used in utility scale facilities.

▣ Powerlines

The Gridline will comprise four powerline sections, one connecting each IPP substation to the Collector Substation and one connecting the collector station with the existing Eskom Gamma MTS.

All powerlines are ≤ 132 kV capacity and will use the standard suite of free-standing monopole pylons ≤ 32 m tall and acceptable to Eskom.

Anchored pylons or other variations may be required where the powerlines change direction or for any long spans (i.e. spanning valleys or ridge slopes). Pylons are typically spaced at 200 m – 250 m intervals in a straightaway, on level ground but could be greater or lesser depending on alignment and topography.

■ **Switching Stations**

A switching station located at each IPP substation will allow Eskom to isolate a de-energise each section of the powerline for maintenance and repair purposes. The switching stations are co-located with the IPP substations. Up to three switching stations will be required.

■ **Collector Substation**

Power generated by up to three solar facilities will be conveyed to the collector station where it will be combined into a single 132 kV powerline connected to Eskom's Gamma MTS. This facility will contain a control room and various busbars and switchgear necessary for the isolation of the various powerlines in the operations and maintenance phase. Note this is shared infrastructure and will only be required if two or more of the iLanga Emoyeni SEFs are approved and constructed.

■ **Battery Energy Storage Systems (BESS)**

Each PV Cluster includes the possibility for the development of a Battery Energy Storage System (BESS). This will allow for a more continuous source of electricity to the grid as battery facilities can help to smooth out the fluctuations in energy generation from the renewable energy sources and allow them to be closer to conventional generation systems in this regard.



Example of a Lithium-Ion BESS installation

A BESS will be located in close proximity to each respective Substation. Each BESS will be fenced off and will be linked to the Substation and will not have any additional office / operation / maintenance infrastructure as those of the Substation. However, each BESS may require its own substation, and if this is the case this substation would include typical substation components and be located within the BESS footprint.

Each BESS will be compliant with all local laws and regulations and health and safety requirements governing battery facilities. The physical footprint of each BESS, regardless of technology and grid connection will be up to 2.6 ha with a peak discharge value of ≤ 100 MW to ≤ 400 MWh.

■ **Access**

Proposed access roads will be up to 10 m wide with stormwater controls and drainage crossings where required, and access control gate and security hut, ablutions, and project signboard. Access roads will use existing farm roads and tracks as far as possible but will employ lengthening to reach the development zones and widening to safely accommodate construction traffic.

■ **Internal Powerlines**

Powerlines are required to connect the development zones and deliver power to the IPP substation. ≤ 33 kV powerline cables will be placed in excavated trenches alongside the access roads.

Where trenched cabling is not practical, overhead ≤ 33 kV powerlines are proposed using wooden poles ≤ 12 m tall.

▣ **Construction Yards**

Temporary laydown areas required for the construction of the gridline will be situated inside the collector station (i.e. the 2 ha yard). Laydown areas for the construction of the iLanga Solar PV1, PV2 and PV3 facilities would serve as laydown areas for the development of the powerlines and electrical yards.

6.2 Services

▣ **Employment**

The construction phase would endure for approximately 14 months, however, this would vary depending on implementation phases, seasonal and environmental conditions at the time of construction. During construction phase, direct job creation opportunities related to the construction of the development and indirectly through expenditure on sectors supplying goods and services will contribute toward the creation of employment. During the operational phase, operational expenditure on the proposed development is expected to continue employment creation. Such jobs will be made up of both highly skilled, skilled, and unskilled employment opportunities. The unskilled labourers are generally trained by the contractors and sourced from local communities. The provision of employment opportunities would improve the income levels of the employees thus, in turn, improving on their standard of living.

The project should utilise semi- and unskilled workers from within Beaufort West Local Municipality to alleviate local unemployment. Knowledge sharing and on the job training should be viewed as a prerequisite, where feasible, for all service contractors/service providers working on the development and employing local labour.

▣ **Water Supply**

The combined project (iLanga Emoyeni PV 1, 2, 3 and Grid Connection) will require $\leq 35\,000$ m³/yr water during the construction phase for concrete mixing for the foundations, sundry construction purposes, dust suppression and drinking water for the construction workers. Water will either be :

- Trucked to site for this purpose from a borehole, or;
- Alternately the construction contractor may obtain water from the site (existing dams or ground water abstractions)

This is subject to the necessary agreements with the landowners concerned, water quality assessments and receipt of the necessary authorisation from the Department of Water and Sanitation (DWS). The contractor appointed for construction phase will be responsible for sourcing water for the construction phase from a sustainable source and with the necessary approvals in place.

A suitable location will be identified for the borehole and a Water Use Licence Application process as required by the National Water Act will be initiated prior to construction. Aboveground buffer tanks (exceeding 250 m³) will be established at the well head or nearby to store abstracted ground water and supply water trucks during construction and operations.

In the operational phase $\leq 26\,155$ m³/yr of water will be required for cleaning of the PV panels, ablutions, and general use.

Should the groundwater be used for potable water, it must first be tested and treated to the SANS potable water standards.

Groundwater is a critical resource in the semi-arid karoo, and every effort must be taken to limit its use and avoid contamination of either the surface and groundwater resources with sewage or other contaminants. The borehole must therefore be sleeved, and the well head raised and protected against any form of surface contamination.

■ **Waste**

⇒ General Waste

Rubbish bins will be placed at key locations around the site in both the construction and operations phases. Solid waste would be collected as needed and returned to a central waste area at the construction yard in the construction phase or O&M area in the Operations phase. As soon as a truck load of waste has accumulated, this will be transported to the nearest registered landfill for disposal. The EMPr will make recommendations regarding the reduction, reuse and recycling of solid waste.

⇒ Hazardous Waste

Hazardous wastes produced in the construction phase, i.e. paint, fuel, lubricant or other construction chemical residues and packaging or contaminated soil will be collected for disposal and an appropriate facility, where a certificate of disposal can be issued, or returned to the suppliers for disposal or reuse.

⇒ Sewage

Portable toilets will be used across the site in the construction and operations phases and sewage will be collected and transported to a sewage treatment plant. In the operational phase the project would use conservancy tanks. Sewage associated with the construction and operational phases would not be significant and would be disposed of via one of the municipal waste water facilities or via an existing commercial service provider with established agreements with the municipality. Groundwater is a critical resource in the arid karoo, and every effort must be taken to avoid contamination of the surface and groundwater resources with sewage or other contaminants.

6.3 Timeframes

It is unknown at this stage when construction would commence, as this would be dependent on REIPPPP programme, off-take agreements, grid availability and other related permit requirements for a SEF. However, it is anticipated that construction would commence within the next five years. The construction period would be an anticipated duration of 14 – 24 months. Should decommissioning occur, this would only be likely after approximately 25 years.

7. Guidelines for Decision Making

Decision making by the Beaufort West Municipality should be based, inter alia, on legislative guidelines and informants :

- Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA)
- Western Cape Land Use Planning Act 2014 (Act 3 of 2014) (LUPA)
- By-law on Municipal Land Use Planning for Beaufort West Municipality (2018)
- Beaufort West Standard Zoning Scheme By-Law (2020)

The Beaufort West Municipal Planning By-law stipulates (Section 65) that when a decision is made on an application, regard must be had to a number of criteria, amongst others, the Municipal and District Spatial Development Frameworks (SDFs) and Integrated Development Plans (IDP's), Provincial Spatial Development Framework, as well as any National policies, principles, norms and standards.

Although decision making on land use matters is a holistic and multi-disciplinary process, the above legislated criteria should form the basis for well-informed and sound decision making.

Decision making by the Beaufort West Municipality should be based, inter alia on legislative guidelines and informants :

Section 7 of SPLUMA stipulates :

The following principles apply to spatial planning, land development and land use management :

- *The principle of spatial justice*
- *The principle of spatial sustainability*
- *The principle of efficiency*
- *The principle of spatial resilience*
- *The principle of good administration*

Section 22 (1) of SPLUMA stipulates :

A Municipal Tribunal or any other authority to make a land development decision in terms of this Act or any other law relating to land development, may not make a decision which is inconsistent with a municipal spatial development framework.

Section 42 (1) of SPLUMA stipulates :

In considering and deciding an application a Municipal Planning Tribunal must –

- *be guided by the development principles set out in Chapter 2*
- *make a decision which is consistent with norms and standards, measures designed to protect and promote the sustainable use of agricultural land, national and provincial government policies and the municipal spatial development framework*
- *take into account –*
 - *the public interest*
 - *the constitutional transformation imperatives and the related duties of the State*
 - *the facts and circumstances relevant to the application*
 - *the respective rights and obligations of all those affected*
 - *the state and impact of engineering services, social infrastructure and open space requirements*
 - *any factors that may be prescribed, including timeframes for making decisions*

8. Renewable Energy in Context

Due to global concerns such as climate change, and the on-going exploitation of non-renewable resources, there is increasing international pressure on countries to increase their share of renewable energy generation. Renewable energy is recognised internationally as a major contributor in protecting the environment (including biophysical, social and economic), when compared to energy generation that relies on fossil fuels, such as coal fired power stations and the use of oil and gas. Renewable energy projects also provide a wide range of environmental, economic and social benefits that can contribute towards long-term global sustainability.

In South Africa, the national utility company, Eskom, sources up to 86.97% of its electricity needs from fossil fuels (World Atlas, 2016). Eskom recognises that it “is crucial that the private sector plays a role in addressing the future electricity needs of the country as this would reduce the funding burden on Government, relieve the borrowing requirements of Eskom and introduce generation technologies that Eskom may not consider part of its core function which may play a vital role in the future electricity supply options in the country” (Eskom, 2018).

As a result, the South African Government has developed an Integrated Resource Plan (IRP) in which a target was set to source 17.8 Gigawatts (GW) of the country's electricity supply from renewable energy sources, over a 20-year period from 2010 to 2030.

A review and update of the IRP in 2019 requires a further additional 14 400MW to be generated by wind power facilities and 6 000MW through solar (2019 to 2030).

In support of this strategic target, the Department of Energy (DoE) has to date issued a number of ministerial determinations for the procurement of renewable energy. These renewable energy targets are procured through a competitive tendering process called the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) run by the DoE in conjunction with the National Treasury and the Development Bank of Southern Africa (DBSA).

The proposed iLanga Emoyeni SEF would therefore have global significance as it would contribute to South Africa's national commitment to transition to a low carbon economy. Investments in this technology will not only benefit our generation, but many generations to come.

In South Africa, renewable energy forms an important part of our energy mix. One of the reasons for this is the substantial foreign equity and financing that has been invested in Renewable Energy Independent Power Producer projects by which amounted to R201.8 billion (R75 billion of which has been wind energy) by June 2018 (DoE, 2018b). Additionally, beyond the foreign investment, localised socio-economic benefits have also been realised through investment in socio-economic development initiatives and enterprise development programmes identified within each project's sphere of influence.

The growing demand, fuelled by increasing economic growth and social development within Southern Africa, is placing increasing pressure on South Africa's existing power generation capacity. Coupled with this, is the growing awareness of environmental impact, climate change and the need for sustainable development. Despite the worldwide concern regarding Green House Gas (GHG) emissions and climate change, South Africa continues to rely heavily on coal as its primary source of energy, while most of the countries renewable energy resources remain largely untapped. There is therefore an increasing need to establish a new source of generating power in South Africa within the next decade.

The overall need and desirability of the proposed development, in the context of developing renewable energy generation in South Africa and globally, is considered and described below.

- Creates a more sustainable economy by promoting South Africa's energy policy towards energy diversification.
- Reduces the demand on scarce resources such as water by promoting energy generating facilities which are less resource intensive.
- Assists in meeting international commitments to carbon emission targets in line with global climate change commitments.
- Reduces pollution by using 'cleaner' energy generating mechanisms and reducing the demand on carbon-based fuels.
- Promotes local economic development by creating jobs and promoting skills development.
- Enhances energy security by diversifying generation.

9. National Policy

The following National Policy Guidelines support the development of Renewable Energy Projects.

9.1 White Paper on Energy Policy (1998)

The White Paper on Energy is a policy which contains the South African government's approach to the supply and consumption of energy. The approach set out in the White Paper was aimed at building confidence, clarifying organisational roles, communicating policy effectively and integrating policy processes. Different environmental and economic pressures further necessitated a redraft.

The policy proposes that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options.

9.2 White Paper on Renewable Energy Policy (2003)

The White Paper on Renewable Energy Policy supplements the Energy Policy and contains government's vision, policy principles, strategic goals and objective for promoting and implementing renewable energy in South Africa.

The White Paper identifies that renewable energy will require a large financial injection and that the South African government has limited resources to fund such projects. Consequently, funding should be sourced internationally as provided for through the Kyoto Protocol and through various other means.

9.3 National Climate Change Response White Paper (2011)

This White Paper presents South Africa's vision for an effective climate change response and the long-term transition to a climate-resilient and lower-carbon economy and society. The country's response has two objectives :

- Manage inevitable climate change impacts through interventions that build and sustain social, economic and environmental resilience and emergency response capacity.
- Make a fair contribution to the global efforts to stabilise greenhouse gas (GHG) concentrations in the atmosphere.

9.4 National Development Plan 2030 (2012)

The National Development Plan (NDP) aims to eliminate poverty and reduce inequality by 2030, by growing the economy faster and in ways that benefit all South Africans. The overarching land development goals of the NDP include creating employment opportunities and raising income levels, creating an inclusive and integrated rural economy, improving infrastructure provision; reversing the spatial effects of apartheid, ensuring environmental sustainability, improving education, healthcare and safety of communities, and improving governance.

With regards to energy, the NDP set the objective of procuring at least 20 000MW of renewable energy by 2030 and decommissioning 11 000MW of ageing coal-fired power stations.

9.5 National Integrated Resource Plan for Electricity 2010-2030 (2019)

Electricity is identified as one of the core elements of a decent standard of living that comes from the NDP. As a point of departure, the NDP introduced the Integrated Resource Plan (IRP) to formulate its vision for the energy sector.

Specific emphasis is placed on the broadening electricity supply technologies to include gas, imports, nuclear biomass and renewable (wind, solar and hydro) in order to meet future electricity needs and to reduce South Africa's CO₂ emissions in the most cost-effective way. A Revised Balanced Scenario (RBS) which would result in the country's power supply-needs being met through a combination of renewable energy, coal powered plants, gas, hydro and nuclear, is set forward. The IRP for the period 2010-2030 proposed to secure 17 800MW of renewable energy capacity by 2030.

A review and update of the IRP in 2019 requires a further additional 14 400MW to be generated by wind power facilities and 6 000MW through solar facilities (2019 to 2030).

9.6 National Integrated Energy Plan (2016)

The National Integrated Energy Plan (IEP) proposes a diversified energy mix which reduces reliance on a single or a few primary energy sources such as coal, nuclear, natural gas, crude oil, solar, wind and biomass. Solar PV and CSP with storage, present excellent opportunities to diversify the electricity mix, to produce distributed generation and to provide off-grid electricity.

Apart from the obvious benefit of producing much needed electricity, both solar and wind technologies have great potential for job creation and skills development.

9.7 National Infrastructure Plan (2012)

The National Infrastructure Plan (NIP) was adopted in 2012 and the aim of this plan is to transform the country's economic landscape whilst simultaneously creating new jobs and strengthen the delivery of basic services. The NIP is an important component of the NDP and the New Growth Path framework, as it aims to catalyse economic development and job creation through infrastructure development.

Strategic Integrated Projects (SIPs) identified in the NIP include :

▣ SIP8 : Green energy in support of the South African economy

Support sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the IRP.

■ SIP10 : Electricity transmission and distribution for all

Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development.

9.8 Strategic Environmental Assessment for Wind & Solar PV Energy (2015)

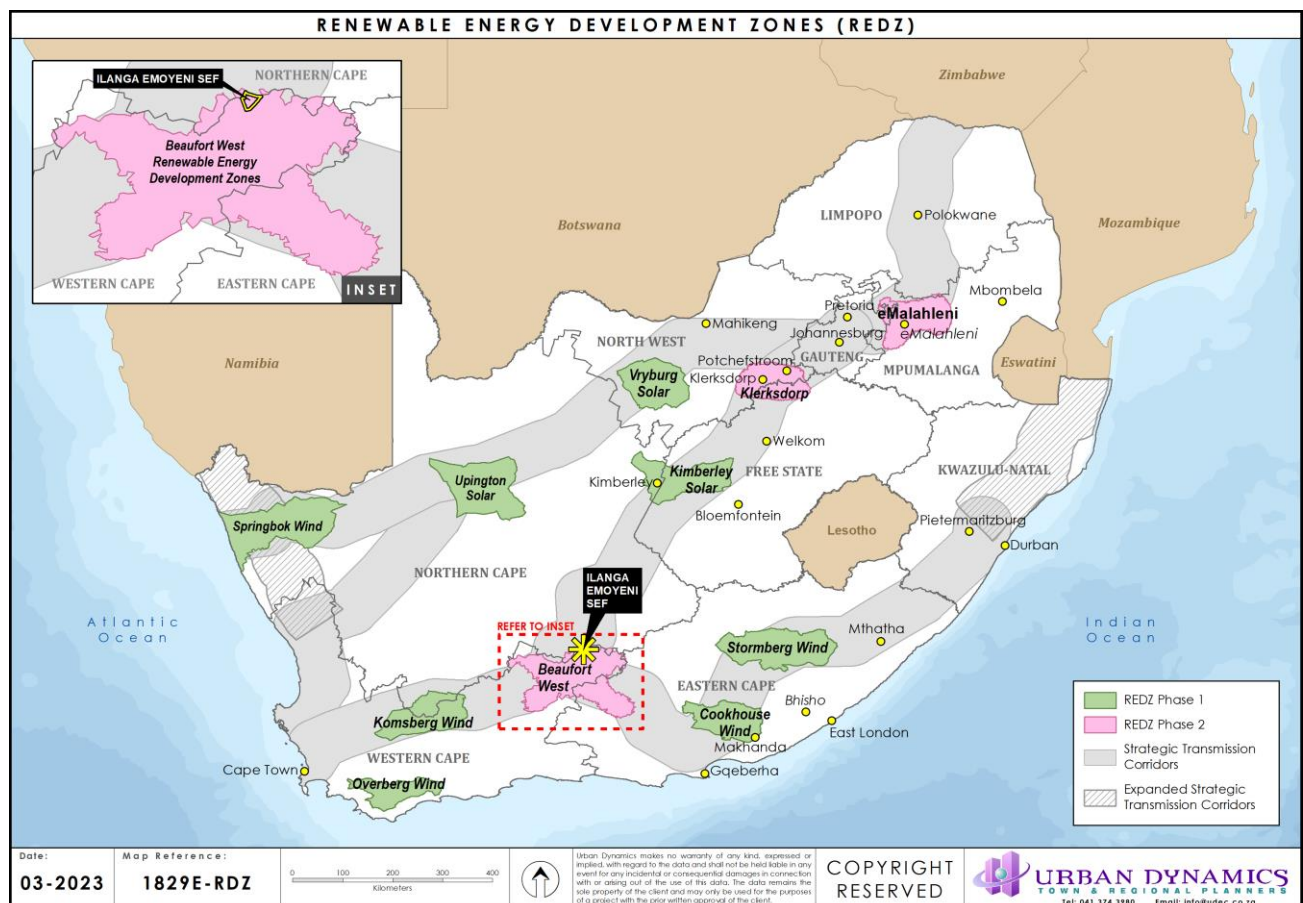
The Department of Forestry, Fisheries and the Environment (DFFE) undertook several Strategic Environmental Assessments (SEAs) to streamline future EIA applications for energy projects, thereby streamlining the implementation of the NIP.

The Wind and Solar Photovoltaic (PV) Energy SEA aims to identify geographical areas best suited for the rollout of large-scale wind and solar PV energy facilities. These areas are referred to as Renewable Energy Development Zones (REDZs). The SEA will ensure environmentally responsible development; guide decision making for all levels and ensure coordinated projects.

The iLanga Emoyeni SEF is completely within the Beaufort West Wind and Solar REDZ(11) and central strategic corridor.

The cumulative impact is affecting an agricultural environment that has been declared a Renewable Energy Development Zone (REDZ) precisely because it is an environment that can accommodate numerous renewable energy developments without exceeding acceptable levels of loss of agricultural production potential. This is primarily because of the low agricultural capability of land across the REDZ, and the fact that such land is not a scarce resource in South Africa.

It is far more preferable to incur a cumulative loss of lower potential agricultural land in a region which has been designated as a REDZ, than to lose agricultural land that has a higher potential, and that is much scarcer, to renewable energy development elsewhere in the country.



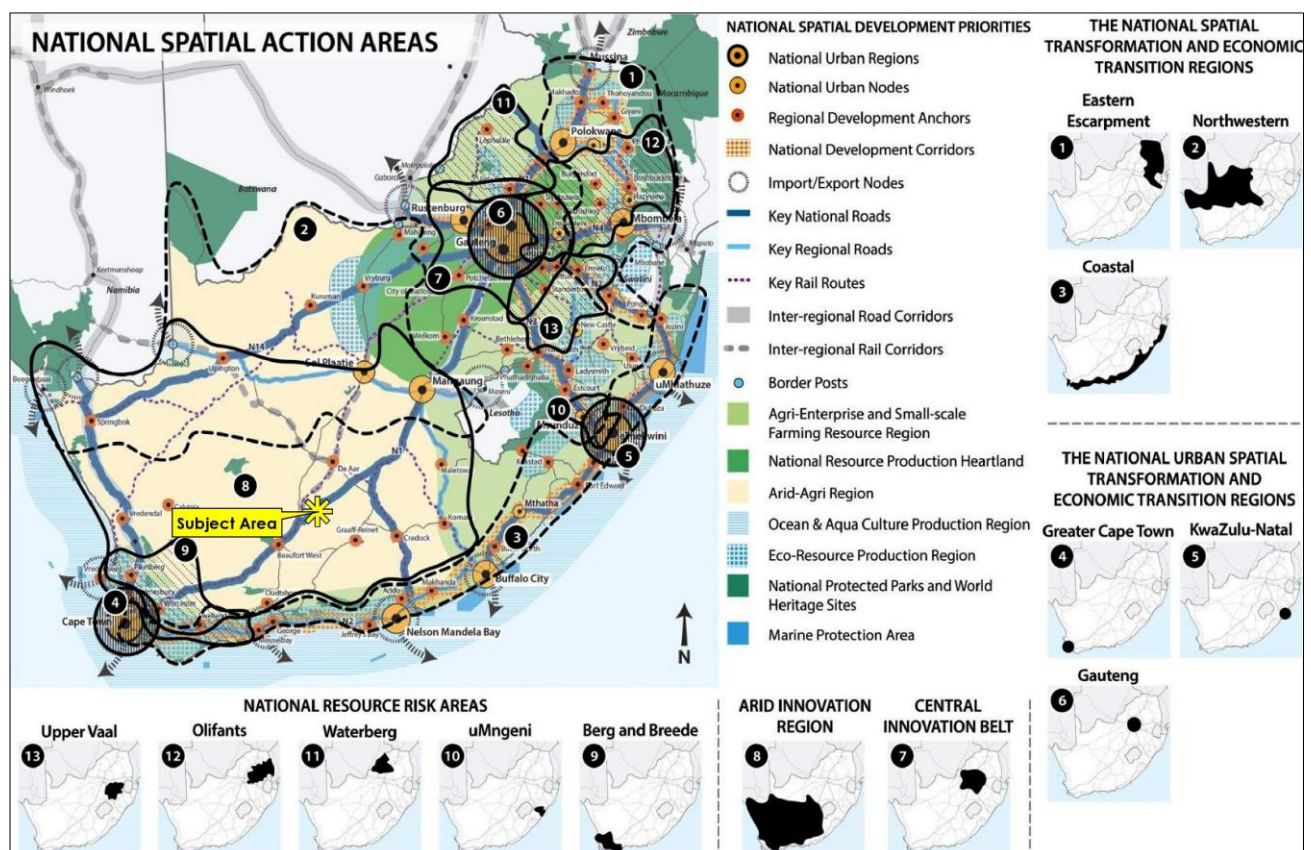
9.9 National Spatial Development Framework (2022)

The National Spatial Development Framework is guided by the Spatial Planning and Land Use Management Act (Act 16 of 2013) (SPLUMA) (Sections 5 and 13).

The NSDF is the first of its kind and the purpose is to :

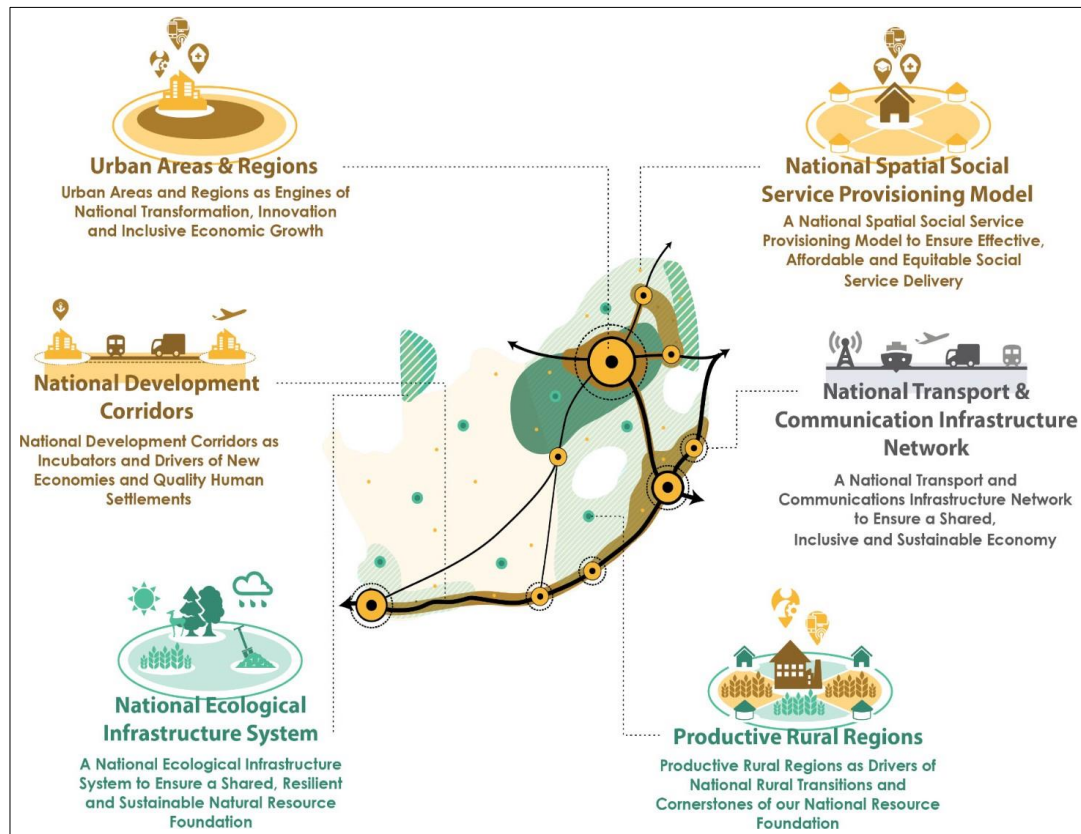
- Support the National Development Priorities (NDP);
- Provide strategic, integrating and coordinating guidance to national sector planning;
- Pave the way and prepare the ground for National Spatial Planning as an ongoing activity by bringing about change in National Spatial Governance and structures required for this function in government;
- Galvanise State Action (investment and spending) on a set of National Spatial Development Priorities;
- Introduce Sub-national Spatial Development Planning in the form of “functional development regions”.

The NDP supports a move away from coal-based energy generation in line with international trends and climate protocols. Long-term spatial and infrastructure planning must therefore take this into account.



In order to give spatial expression to the National Spatial Development Vision, and support the shifts that need to be made in accordance with the new National Spatial Development Logic, a series of ‘National Spatial Development Levers’ were developed.

Six such National Spatial Development Levers were developed.



The NSDF addresses the desired ideal spatial development pattern for South Africa in 2050, of which the pattern is divided into 4 sub-frames (outcomes) :

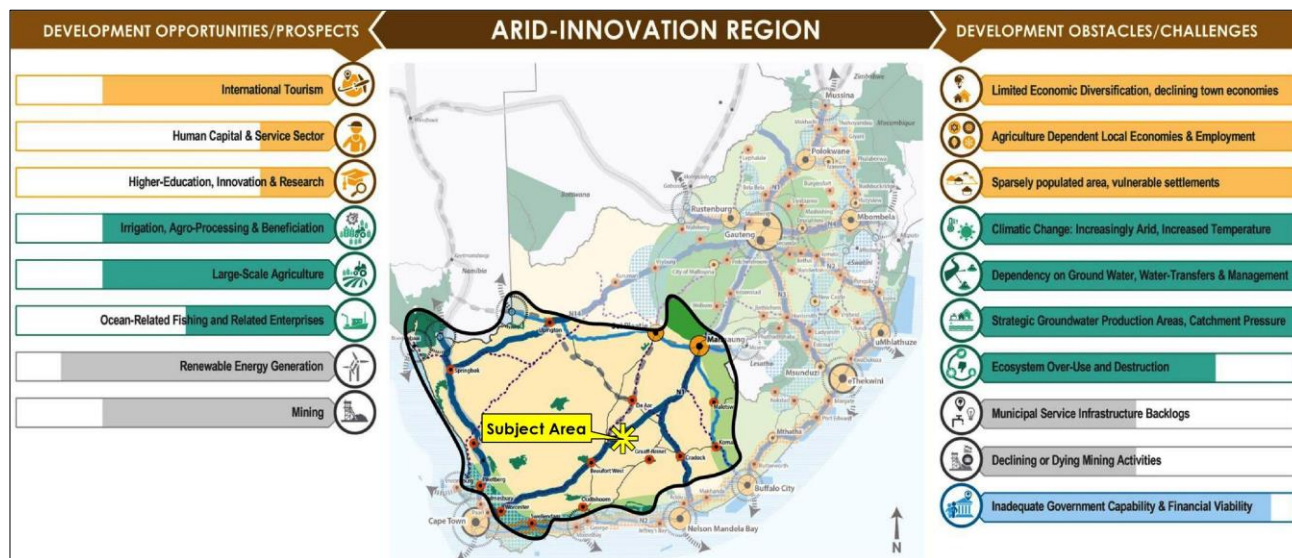
- The National System of Nodes and Corridors
- The National Resource Economy Regions
- The National Movement and Connectivity Infrastructure System
- The National Ecological Infrastructure and Natural Resource System

Following on from the ideal spatial pattern and the subsequent sub-frames, a set of five National Spatial Action Areas (NSAAs) have been developed. The NSAAs represent the most urgent strategic spatial development catalysts to bring about radical spatial transformation at scale, and manage and mitigate rising national risks, and as such, require immediate national action.

The proposed iLanga Emoyeni Solar Energy Facility (this project) is situated within the Arid Innovation Region.

The NSDF confirms the significance of the Arid-Innovation Region (AIR) as NSAA. The region offers substantial, nationally significant opportunities that require careful and considered utilisation, including:

- unique and niche agricultural activities and fisheries
- internationally recognised and sought-after tourist attractions
- large and varied mineral deposits and vast shale gas reservoirs
- enormous potential for alternative energy generation
- the Square Kilometre Array (SKA), which is already making a significant contribution to the work of the local and the international scientific community, and offers many more opportunities



9.10 Karoo Regional Spatial Development Framework (SDF) (2023)

The Karoo Regional Spatial Development Framework is an instrument to align spatial planning, government spending, government operational decisions and direct investment to support integrated regional development. The focus of the framework is spatial issues of regional interest or regional significance and provides the context for more detailed local scale planning.

The Karoo Regional SDF identified various regional drivers and shapers, including regional development pillars.

Renewable energy is identified as a priority regional development driver / shaper with a relative strength in sustaining or strengthening the base of 9 out of 10. This is significant in support of the proposed renewable energy facilities in the district.

Climate change mitigation and economic growth is further confirmed in the spatial vision :

The Karoo Region, where innovation based on unique ecosystems, natural assets, cultural heritage and traditional local knowledge is used to build a sustainable future for local communities that will stand as a global testament to human ingenuity, adaptability and resilience in arid regions.

and spatial objectives :

- Support the Karoo Vision and Identity
- Provide Regional Transformation Guidance
- Prioritise Regional Heritage and Conservation
- Enable Regional Growth, Innovation and Change
- Support Regional Collaborative Action

REGIONAL DEVELOPMENT PILLARS



The Natural
Resource Base



The Human
Resource Base



The Movement Infrastructure
& Connectivity Base

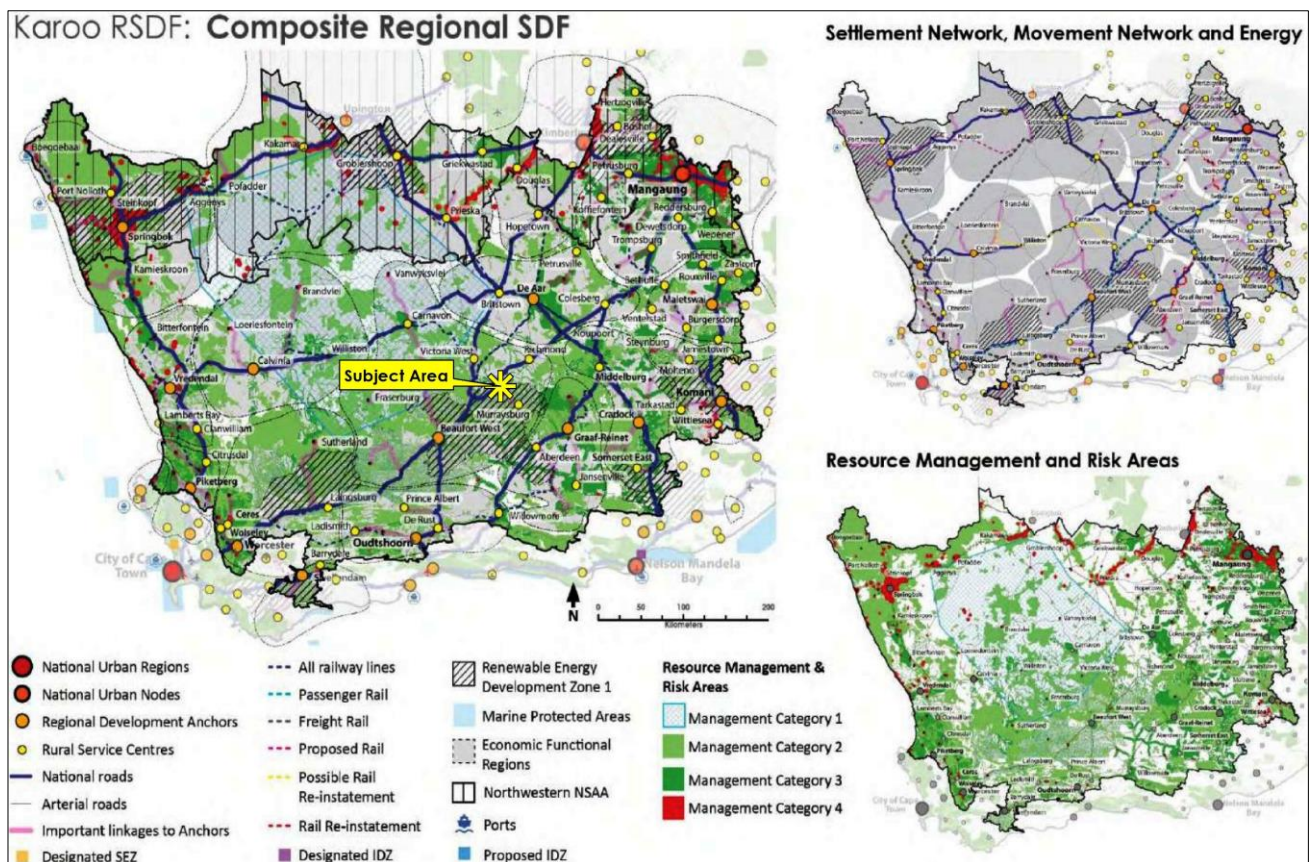


The Institutional &
Government Services Base

The SDF further notes that :

The large-scale economic infrastructure base forms the macroeconomic landscape of the Region and delivers economic growth and job opportunities at a regional scale while contributing to the national and the global economy in a number of areas. The large-scale regional economic activities are, amongst others :

- Solar and wind-energy generation
- Other business and technical services in support of large scale activities, e.g. manufacturing, maintenance and repair facilities and services for solar and wind energy generators and related infrastructure, personal, legal and financial services, trade and retail, etc.



Renewable energy is identified as Catalytic Interventions with Spatial Targeting as part of the SDF implementation framework.

It is therefore clear that the iLanga Emoyeni SEF is in support of the general principles and objectives of the Karoo Regional SDF.

10. Provincial Policy

10.1 Western Cape Spatial Development Framework (2014) (PSDF)

The PSDF sets out the basis for addressing the Western Cape's spatial agenda, it is a framework plan which allows functional regions or municipalities to formulate coherent spatial policies and integrated development plans, and which gives greater certainty over future development opportunities.

The Provincial Spatial Development Framework (PSDF) takes forward the NDP's spatial agenda and gives effect to the Provincial Strategic Objectives (PSOs), which include creating economic opportunities, focusing on education, promoting accessibility, safety, inclusiveness and resource efficiency, creating wellness, liveability, inclusiveness and ensuring rural development and governance.

In terms of the PSDF, the Western Cape Government is committed to developing 'green' economy and their goal is for the province to be the lowest carbon province in the country and the leading green economic hub of the African continent. Generating energy from renewable sources (solar, wind power, biomass) is recognised in the PSDF as one of the efforts to ensure environmental sustainability. It is further acknowledged that the province has the best wind and wave energy in the country, as well as a good solar and bio-energy potential.

The following provincial spatial policies have been identified as applicable to this proposed development :

- **Spatial Policy R4: Energy** – Independent Power Producers and sustainable energy producers (wind, solar, biomass and waste conversion initiatives) are to be supported in suitable rural locations.
- **Spatial Policy R4: Climate Change Mitigation** – Renewable energy generation should be supported at scale since it significantly mitigates climate change.
- **Spatial Policy R5: Safeguard cultural and scenic assets** – The SDF identifies priority focus areas proposed for conservation or protection including landscapes under pressure of large-scale infrastructural developments such as wind farms, solar energy facilities, transmission lines and shale gas development in the Central Karoo.

The iLanga Emoyeni SEF does not fall in any areas identified as cultural or scenic assets.

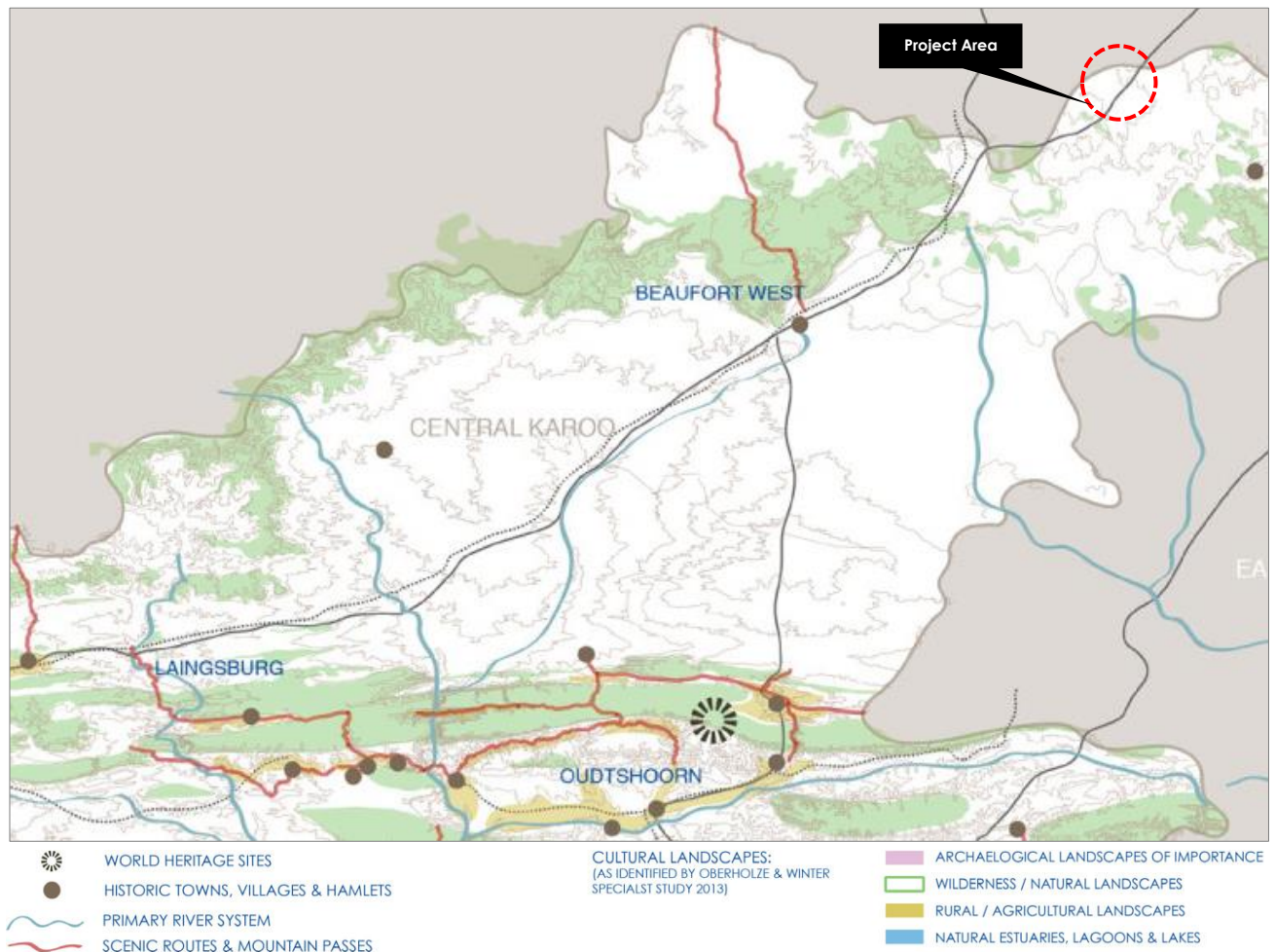
The WCPSPDF implemented 3 interrelated themes, i.e. :

- Sustainable use of spatial assets
- Opening opportunities in the space economy
- Develop implemented and sustainable settlements

As part of these themes, spatial policies support sustainable implementation of renewable energy solutions, i.e. :

- *Support emergent Independent Power Producers (IPPs) and sustainable energy producers (wind, solar, biomass and waste conversion initiatives) in suitable rural locations (as per recommendations of the Strategic Environmental Assessments for wind energy (DEADP) and renewable energy (DEA)).*
- *Encourage and support renewable energy generation at scale.*

In support of these policies, the Western Cape Infrastructure Framework (2013) promotes the development of renewable energy plants in the Province.



10.2 Western Cape Land Use Planning Guidelines for Rural Areas (2019)

The PSDF (2014) called for the review of the Draft Western Cape PSDF Rural Land Use Planning and Management Guidelines (2009) to be reviewed and updated to support and guide the implementation of the provincial agenda in rural areas. This Guideline is thus a greater refinement of the 2014 PSDF.

The objectives of the Rural Areas Guideline are to :

- Promote sustainable development in appropriate rural locations throughout the Western Cape and ensure the inclusive growth of the rural economy;
- Safeguard priority biodiversity areas and the functionality of the province's life supporting ecological infrastructure and ecosystem services (i.e. environmental goods and services);
- Maintain the integrity, authenticity and accessibility of the Western Cape's significant farming, ecological, coastal, cultural and scenic rural landscapes, and natural resources;
- Assist Western Cape municipality to plan and manage their rural areas more effectively, and to inform the principles of their zoning schemes and spatial development framework in a pro-active manner;
- Provide clarity to all role players and partners (public and private) on the type of development that is appropriate beyond the current built-up areas, suitable locations where it could take place and the desirable form and scale of such development;

- Be viewed as a gender mainstreaming tool which will move the Western Cape further along the trajectory towards the achievement of equality, particularly the youth and gender equality imperatives in rural land use planning.

▣ **Infrastructure Installations**

It is acknowledged in the guidelines that renewable energy installations will by its space extensive nature, be located outside urban areas.

The majority of the implementation guidelines have been incorporated in the new Beaufort West Standard Zoning Scheme By-Law (2020). The following is additional :

- Installations to be located on previously disturbed terrain (where possible), or land of low biodiversity or agricultural value;
- Installations should not interfere with or negatively impact on existing/planned agriculture;
- Only essential installations to be accommodated inside Agriculture;
- Avoid slopes of more than 12% and if not possible, erosion must be controlled.

▣ **Development Applications**

Guidelines are included to guide authorities with land use decisions in rural areas and to enable them to impose suitable conditions. These are summarised below :

- Consider the compatibility of the proposed land use activity given the Biodiversity and Spatial Planning Category;
- Preserve unique or high value agricultural land, and do not compromise existing farming activities;
- Ensure existing and future mineral resources are not compromised;
- Consider the impact on cultural and scenic landscapes;
- Ensure the development does not unduly expand the Municipality's reticulation networks;
- Ensure the proposal does not impact negatively on the authenticity of rural landscapes;

Location of the iLanga Emoyeni SEF supports the general principles of the Western Cape Land Use Planning Guidelines for Rural Areas (2019).

11. District & Municipal Policy

Section 42 (1) (b) of SPLUMA requires Municipalities and Planning Tribunals (MPT) to take decisions that are consistent with :

"norms and standards, measures designed to protect and promote the sustainable use of agricultural land, national and provincial government policies and the municipal spatial development framework".

The following sections specifically relate to the applicable Spatial Development Frameworks and confirm that the application is consistent with the SDF's as contemplated in Section 42 (1) (b) of SPLUMA.

11.1 Central Karoo District Municipality IDP (2022)

The Integrated Development Plan for the Central Karoo District Municipality (DMIDP) includes three category B municipalities within the district municipality, namely Beaufort West, Laingsburg and Prince Albert. Beaufort West is by far the largest town and serves as the administrative centre of the district.

Each of the three towns play a role in the regional economy with little change over time in the nature and extent of these roles. However, the introduction of renewable energy generation and the Square Kilometre Array project in the greater Karoo region, as well as possible exploration for shale gas, will add value to the GDP within certain economic sectors and by implication change the composition and character of the towns.

Wind and solar energy projects are identified as an opportunity in the district municipality. The district has favourable conditions for renewable energy generation which is seen as a strategic local resource which gives a competitive advantage to the district municipality. It is acknowledged that the Central Karoo can contribute to a decrease in emissions for the country as a whole by harnessing the ample opportunities for wind and solar projects, thereby also addressing climate change.

11.2 Central Karoo District Municipality SDF (2019)

The Beaufort West Local Municipality is situated in the Central Karoo District Municipal area. The SDFs for these areas present the spatial vision and objectives for development implementation, specifically in relation to the iLanga Emoyeni SEF.

The spatial vision for Central Karoo DM :

*Working Together in Development and Growth
in order to ensure that the Central Karoo becomes a place where economic growth, social development and sustainability is achieved whilst maintaining the rural character, as well as embracing and developing the diversity of the communities.*

▣ District wide spatial concept :

The **spatial concept for the district municipality** focusses on sustainable development, resilience and partnerships.

The four strategies of the municipal wide spatial concept are :

1. A region that **protects the environment, enhances resilience and capitalises** on and honour's the Karoo charm in support of a vibrant people and economy.
2. **Improve regional and rural accessibility and mobility** for people and goods in support of a resilient economy.
3. **Allocate government resources, infrastructure and facilities** in a manner that uplifts and skills people and focusses on maximising impact on the most possible people, while providing a basic level of service for all.
4. **Partnership-driven governance** and administration towards improved financial and non-financial sustainability and resilience.

Municipal strategy 1 (applicable to this application) :

A resilient region is one that can adapt to and mitigate against the negative effects of climate change, increasing temperatures, reduced rainfall and the host of downstream impacts on the economy and society at large. The future vibrancy of the economy and social advances will invariably be rooted in the resilience of the natural environment to a host of negative impacts.

⇒ Policies in support of this strategy (applicable to this application) :

Support and promote the renewable energy :

The Karoo region is blessed with significant solar and wind energy – the prerequisites for successful renewable energy projects. The Central Karoo should leverage these assets to encourage Independent Power Producers to locate in the region, by making and keeping the Central Karoo a well-managed and desirable place to locate.

National government has identified preferred areas or Renewable Energy Development Zones (REDZ's), as well as identified areas for electricity generation.

Policy Guidelines :

- Actively seek out green energy projects to be located in the region.
- Put in place incentives to encourage green energy operators to locate in the Central Karoo.
- Lobby the National Department of Mineral Resources and Energy to expand the Renewable Energy Development Zones extensively within the Central Karoo, in order to promote renewable energy opportunities.

The iLanga Emoyeni SEF project supports the principles as contained in the Central Karoo DM Spatial Development Framework.

11.3 Beaufort West Municipality Integrated Development Plan

The mission statement for the Beaufort West Municipality, as contained in the IDP is :

To reflect the will of the South African people as reflected in the Constitution and by Parliament:	
Service Delivery:	To provide excellent services to the residents of Beaufort West Municipality
Growing the economy:	To implement infrastructure to grow the economy and create jobs;
Staff:	To have an equipped, skilled and motivated staff establishment;
Well-run administration:	establish a sound, efficient and effective administration for the Municipality;
Financial Sustainability:	Collecting all debtors and paying creditors in time;
Sport centre:	To become the sport and recreational mecca of the Karoo, creating harmony and unity
Safe place:	To create a crime-free, safe and healthy environment
Reduce Poverty:	To reduce poverty and promote the empowerment of women, youth and people living with disabilities

The municipal strategic focus areas are the priority areas of the municipality with the following priorities:

- Basic Service Delivery and Infrastructure Development
- Economic Development
- Institutional Development and Municipal Transformation
- Financial Viability and Management
- Good Governance and Community participation

The proposed iLanga Emoyeni SEF supports the Municipality's strategic focus areas, insofar as job creation, economic development, sustainability and support for National and Provincial programmes of concern.

11.4 Beaufort West Municipality Spatial Development Framework (2014) (MDSF)

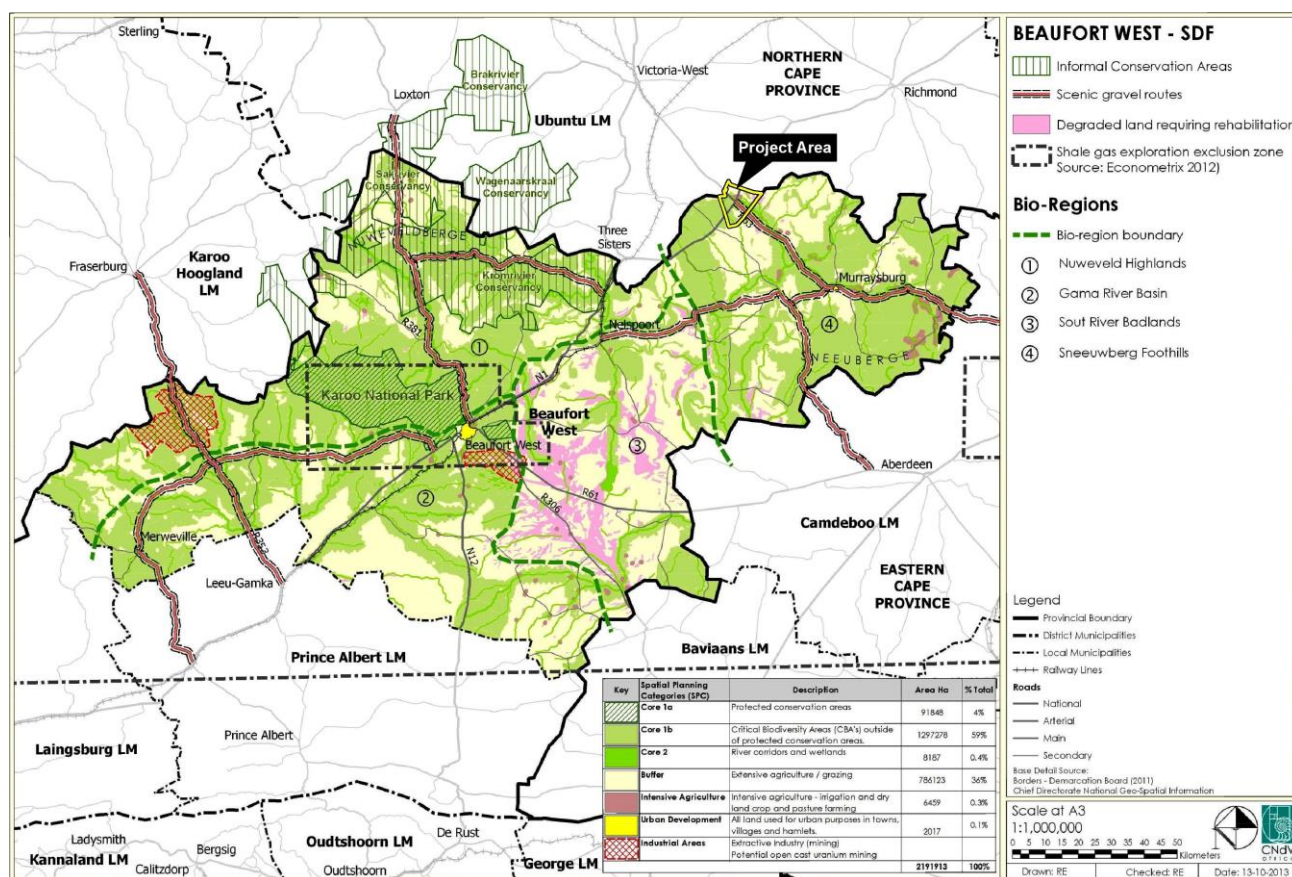
The Municipal Spatial Development Framework (MDSF) for Beaufort West links to the objectives of the IDP and becomes the spatial representation of the IDP objectives. The MDSF is linked with other spatial policies, including the PSDF and the DMSDF.

■ Bio-Regions

The SDF identified four bio-regions that can be distinguished in terms of the natural environment and economy. The bio-regions are:

- Nuweveld Highlands
- Gamka River Basin
- Sout River Badlands
- Sneeuwberg Foothills

The iLanga Emoyeni SEF falls within the Sneeuwberg Foothills area and the SDF states that the Sneeuwberg Foothills bio-region has fairly good potential for wind and solar energy projects.



- The SDF promotes major infrastructure projects such as large solar energy generation projects in general and sets out siting principles and development guidelines for solar energy generation projects.
- The SDF recommends that solar projects should be promoted in the south-west of the municipality. Renewable energy projects are not specifically excluded or prohibited in any of the other bio-regions.

- The SDF promotes solar and wind generation projects, to reduce the need for coal and the generation of greenhouse gasses, for the generation of renewable energy.
- Areas of the Central Karoo have been identified as proposed Renewable Energy Development Zones (REDZ) as part of the National Strategic Environmental Assessment for Renewable Energy. The intention of the project is to identify REDZ that will be delisted in terms of the Environmental Impact Assessment (EIA) regulations, thereby promoting renewable energy activities in specific areas across the country;

The SDF makes certain recommendations and provides guidelines for the siting of Renewable Energy Projects (especially wind) as well as provisions for the design of facilities.

The MSDF provides guidelines only. A detailed scientific site assessment process, supported by various specialist studies, has been conducted and based on this detailed assessment.

It is further noted that the Beaufort West MSDF is currently under review and it is expected that the Renewable Energy Guidelines will be revised to align with more recent siting principles.

11.5 Conclusion : Consistency with the MSDF

- The Sneeuwberg Foothills bio-region is specially identified as having fairly good potential for both wind and solar energy projects.
- The development proposal makes use of natural resources (i.e. wind) which will contribute to energy for the local and national economy, whilst taking into consideration all environmental sensitivities on the site.
- The layout and design of the facility follows the guidelines for renewable energy installations in that it will not be situated on land of high agricultural value, and it will not interfere with any agricultural activities.
- Various employment and other economic development opportunities (i.e. local workforce, local spending etc.) will be created with this project.
- The MSDF indicates that substations and powerlines within the site should preferably be buried and follow road alignments wherever possible. This is a guideline only and the EMPr will be followed to mitigate impacts as identified.
- The iLanga Emoyeni SEF development proposal supports the principles and spatial vision of the Beaufort West SDF and is deemed to be consistent with the SDF.

12. Environmental Impact Assessment

The project involves a number of 'listed activities' in terms of Section 24(5) of the National Environmental Management Act (107 of 1998) (NEMA), 'EIA Regulations' published in Government Notice (GN) No. R982, R983, R984 and R985 in the Government Gazette of 8 December 2014, as amended. Accordingly, the proposed project requires environmental authorisation before any activities can commence.

An Independent Environmental Assessment Practitioner (EAP) has been commissioned to undertake 4 separate applications for environmental authorisation :

- Basic Assessment Report : iLanga Emoyeni PV 1 Solar Energy Facility (02/03/2023)
- Basic Assessment Report : iLanga Emoyeni PV 2 Solar Energy Facility (02/03/2023)
- Basic Assessment Report : iLanga Emoyeni PV 3 Solar Energy Facility (02/03/2023)
- Basic Assessment Report : iLanga Emoyeni Grid Connection (02/03/2023)

Zutari is the responsible EAP and has relied on inputs from a selected team of highly experienced specialists and multi-disciplinary practitioners to execute the project in a professional and unbiased manner.

The Site is completely within the Beaufort West Wind and Solar Renewable Energy Development Zone (REDZ11) and the Central Electrical and Gas Infrastructure (EGI) Corridor. Consequently, these applications are required to follow the expedited Basic Assessment (BA) process as provided for in Government Notice 145 of 2021 (GN145/2021). The Department of Forestry, Fisheries and the Environment (DFFE) has been identified as the Competent Authority (CA) as Seriti intends to either bid on the project in the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) to provide power to the National Grid or pursue private offtake opportunities within the country.

12.1 Environmental Authorisation

A positive Environmental Authorisation is expected by September 2023.

12.2 Project Team

The independent EAP Project Team that were involved in the Environmental Assessment process are :

Discipline	Company
Environmental Assessment Practitioner	Zutari
Agricultural	Johann Lanz Consulting
Avifauna (birds)	CVRC
Defence	Zutari
Freshwater Ecological Assessment	EnviroSci
Geotechnical Desktop Assessment	Zutari
Heritage, Archaeology and Palaeontology	ASHA Consulting / NaturaViva
Radio Frequency Interference (RFI)	ITC Services
Socio-Economic Assessment	Urban-Econ
Terrestrial Biodiversity (Fauna and Flora)	Biodiversity Africa
Visual	Visual Resource Management Africa (VRMA)
Town Planning	Urban Dynamics EC

12.3 Impact Statement

The potential impacts associated with the proposed iLanga Emoyeni SEF have been assessed and considered in these reports and studies. With mitigation measures in place, post mitigation impacts are anticipated to be negligible to moderate negative significance. The proposed project therefore does not result in unacceptable impacts to the environment.

12.4 Impact Assessment Summary / Statement : iLanga Emoyeni PV 1, 2 & 3

Refer to Annexure 9 : Basic Assessment Report : iLanga Emoyeni PV 1 Solar Energy Facility (02/03/2023)

Refer to Annexure 10: Basic Assessment Report : iLanga Emoyeni PV 2 Solar Energy Facility (02/03/2023)

Refer to Annexure 11: Basic Assessment Report : iLanga Emoyeni PV 3 Solar Energy Facility (02/03/2023)

The Environmental Impact Assessment Report and Specialist Studies should be consulted for detailed assessments.

The Environmental Impact Assessment Extracts / Summaries for the PV 1, 2 and 3 projects are listed below.

▣ Ecology

Impact	Pre-Mitigation	Post Mitigation
Construction		
Loss of Eastern Upper Karoo	Moderate – negative	Moderate – negative
Loss of Upper Karoo Hardeveld	Moderate – negative	Moderate – negative
Loss of wash vegetation type and associated riverine rabbit habitat	Negligible Negative	Negligible Negative
Loss of Plant Species of Conservation Concern	Minor-negative	Negligible - negative
Disruption of Ecosystem Function and Process	Moderate – negative	Minor - negative
Loss of Faunal Habitat	Moderate – negative	Moderate – negative
Disturbance to faunal species	Moderate – negative	Minor - negative
Faunal mortality due to roadkill and persecution	Moderate – negative	Minor - negative
Disturbance to faunal species of conservation concern	Major – negative	Moderate – negative
Operation		
Infestation of Alien Plant Species	Moderate – negative	Negligible Negative
Faunal disturbance and potential mortality due to roadkill	Minor-negative	Minor-negative
Decommissioning Phase		
Loss of Indigenous Vegetation	Moderate – negative	Minor - negative
Faunal disturbance and mortality due to roadkill	Moderate – negative	Minor - negative

■ Aquatic

Ref:	Project phase	Impact	Without mitigation	With mitigation
			Significance	Significance
1	Construction / Decommissioning	Loss of aquatic species of special concern	Minor - negative	Negligible - negative
2	Construction / Decommissioning	Loss of riparian systems, wetlands and water courses through the placement of new crossings or infrastructure	Minor - negative	Negligible - negative
3	Construction / Decommissioning	Potential impacts on localised water quality particularly on the PV sites	Minor - negative	Negligible - negative
4	Construction / Decommissioning	Impact on groundwater resources, through abstraction via boreholes	Minor - negative	Negligible - negative
5	Operation	Impact on riparian and wetland systems through possible increase in surface water runoff on form and function during the operational phase	Minor - negative	Negligible - negative
6	Construction & Operational	Impact 6: No-go Option	Negligible - negative	N/A
7	Construction & Operational	Impact 7: Cumulative impacts for the overall project due to the high number of projects surrounding this application	Minor - negative	Negligible - negative

■ Avifauna

Project Phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction	Displacement of priority species due to disturbance	Moderate - negative	Minor - negative
Construction	Displacement of priority avifauna due to habitat transformation	Moderate - negative	Moderate - negative
Operation	Mortality of priority species due to collisions with solar panels	Minor - negative	Minor - negative
Operation	Electrocution of priority species on medium voltage powerlines.	Moderate - negative	Minor - negative

Project Phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Operation	Entrapment in perimeter fences	Minor - negative	Minor - negative
Operation	Collisions with the internal medium voltage overhead powerlines	Moderate - negative	Minor - negative
Decommissioning	Displacement of priority species due to disturbance associated with decommissioning activities.	Moderate - negative	Minor - negative

▣ Agriculture

The conclusion of this assessment is that the agricultural impact of the proposed development is acceptable because :

- It will occupy land that is of very limited land capability, which is insufficient for crop production. There is not a scarcity of such agricultural land in South Africa and its conservation for agricultural production is not therefore a priority.*
- The amount of agricultural land use by the development is within the allowable development limits prescribed by the agricultural protocol. These limits reflect the national need to conserve valuable agricultural land and therefore to steer, particularly renewable energy developments, onto land with low agricultural production potential.*
- The proposed development is within a REDZ, which is an area that has specifically been designated within South Africa for the prioritisation of renewable energy development. The designation of the REDZ has taken into account the country's need to balance renewable energy development against the conservation of land required for agricultural production and national food security.*
- The PV panels will not necessarily totally exclude agricultural production. The area can still be used to graze sheep that will, in addition, be protected against stock theft within the security area of the facility.*
- All renewable energy development in South Africa decreases the need for coal power and thereby contributes to reducing the large agricultural impact that open cast coal mining has on highly productive agricultural land throughout the coal mining areas of the country.*

From an agricultural impact point of view, it is recommended that the development be approved.

■ Heritage & Archaeology

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction	Damage to or destruction of archaeological sites	Minor - negative	Minor - negative
Construction	Alteration of the cultural landscape	Minor - negative	Minor - negative
Construction	Damage to or destruction of graves	Negligible - negative	Negligible - negative
Operation	Alteration of the cultural landscape	Moderate - negative	Moderate - negative
Decommissioning	Alteration of the cultural landscape	Minor - negative	Minor - negative

■ Palaeontology

The palaeontological compliance statement and site sensitivity verification report concludes that the combined Ilanga Emoyeni Solar Suite and EGI project area, including the footprints of all associated infrastructure is, in practice, of LOW to VERY LOW Palaeosensitivity, although the potential for unrecorded fossil sites of high scientific value here cannot be entirely discounted. The provisional Medium to Very High Palaeosensitivity mapped by the DFFE Screening Tool is accordingly contested in the report.

■ Visual Landscape

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction	Short-term landscape change from the current rural agricultural sense of place to the semi-industrial PV landscape.	Minor - negative	Minor - negative
Operation	Long-term landscape change from the current rural agricultural sense of place to the semi-industrial RE landscape.	Moderate - negative	Minor - negative
Decommissioning	Short-term landscape change from the removal of the PV structures, followed by rehabilitation of the impacted areas back to agricultural lands.	Minor - negative	Negligible - negative

■ **Socio Economic**

Project phase	Impact	Without mitigation Significance	With mitigation Significance
Construction	Temporary Increase in Production and Gross Domestic Product	Moderate - positive	Moderate - positive
Operation	Sustainable Increase in Production and Gross Domestic Product	Moderate - positive	Moderate - positive
Construction	Temporary Increase in Employment	Moderate - positive	Moderate - positive
Operation	Sustainable Increase in Employment	Moderate - positive	Moderate - positive
Construction	Temporary Increase in Household Income	Moderate - positive	Moderate - positive
Operation	Sustainable Increase in Household Income	Moderate - positive	Moderate - positive
Construction	Temporary Impact on Sense of Place	Moderate - negative	Minor - negative
Operation	Sustainable Impact on Sense of Place	Minor - negative	Minor - negative
Construction	Impact on local tourism establishments	Moderate - negative	Minor - negative
Operation	Negative impact on local tourism establishments	Minor - negative	Minor - negative
Operation	Sustainable Impact on Site Specific Agricultural Activity	Negligible - negative	Negligible - negative
Construction	Temporary Increase in Social Conflicts Associated with an Influx of Workers	Minor - negative	Minor - negative
Construction	Temporary Impact on Economic and Social Infrastructure	Moderate - negative	Minor - negative
Operation	Sustainable Increase in Electricity Supply	Moderate - positive	Moderate - positive
Operation	Impact on the Sustainable Revenue where the Solar Farm is Located	Moderate - positive	Moderate - positive
Operation	Impact on Social Development Benefits	Moderate - positive	Moderate - positive

■ **Electromagnetic Interference**

It is stated in the Electronic Communications Act that no product used or manufactured in South Africa may cause unwanted RFI or EMI, intentional or unintentional transmissions, on existing electrical equipment. Thus, to prevent the PV facility's unintentional RFI to cause unwanted interference on existing electrical equipment a clearance zone must be used.

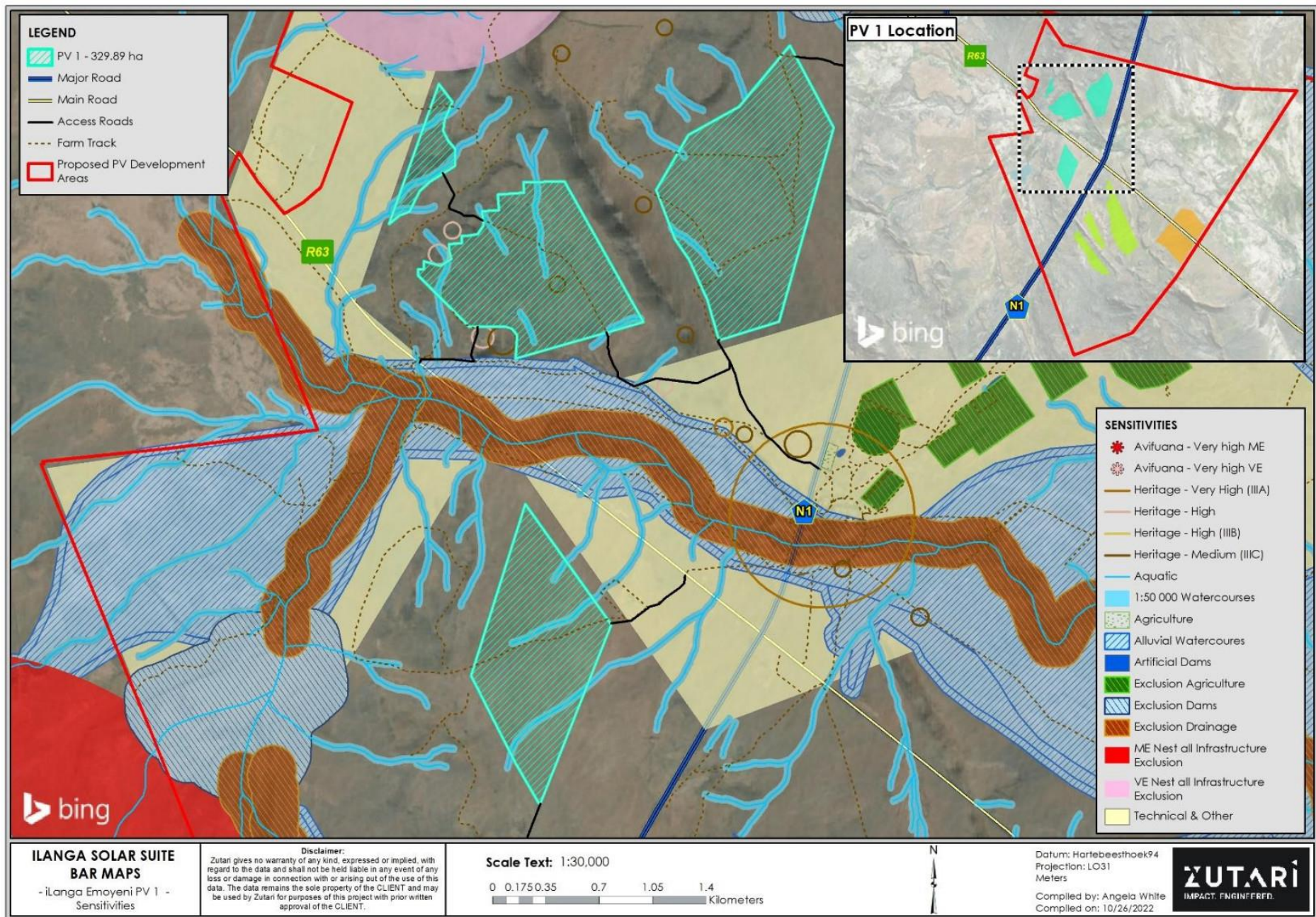
A further detailed assessment will not be required based on the findings from the Radio Mobile data as no RFI risk was identified.

▣ Defence

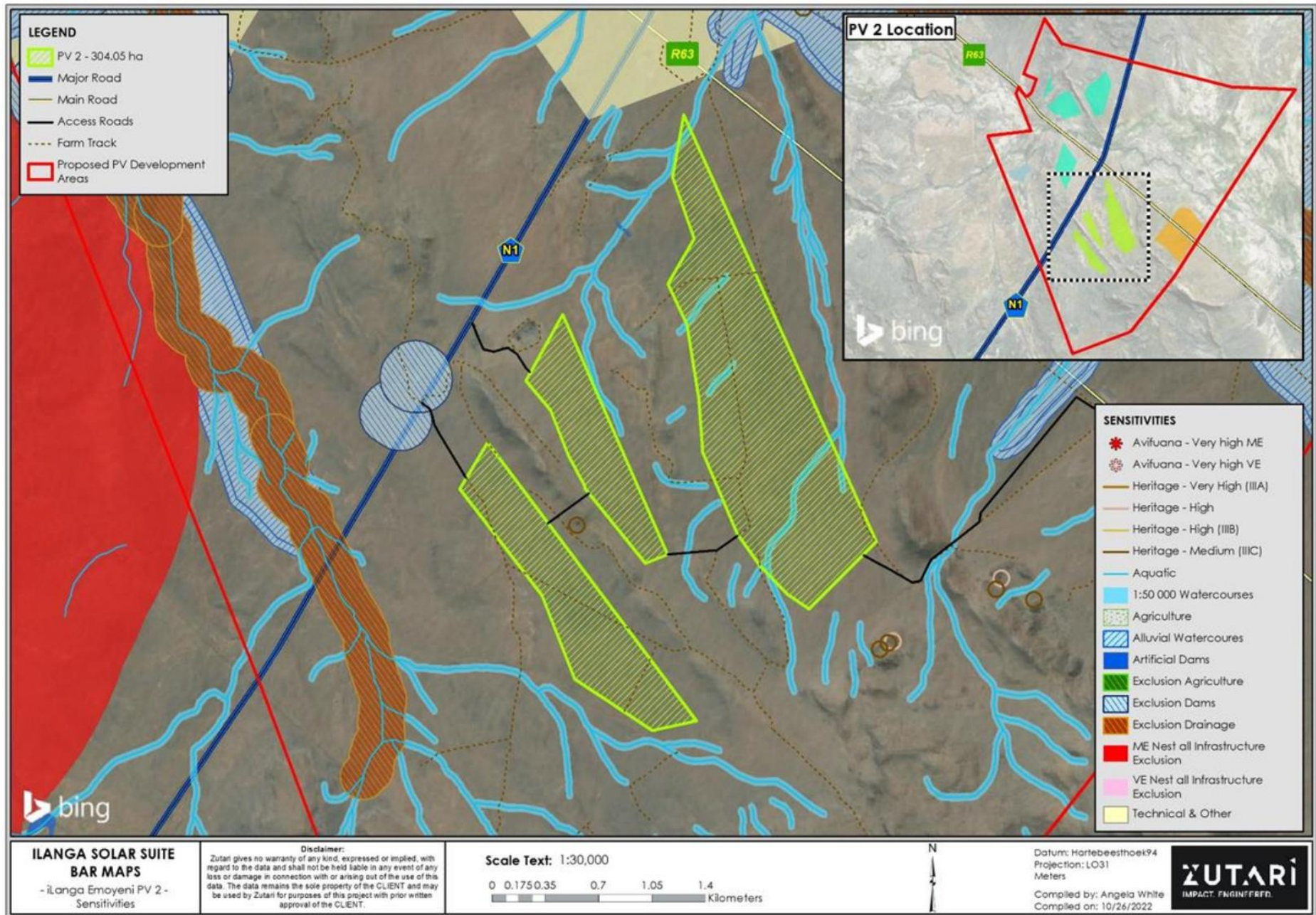
Using the DFFE Screening tool and desktop assessment the proposed project was found to occur in a low-sensitivity area concerning defence installations.

Based on the Defence protocol in GN 320, a Compliance Statement is required. This screening verification report includes the requisite information and therefore doubles as a compliance statement.

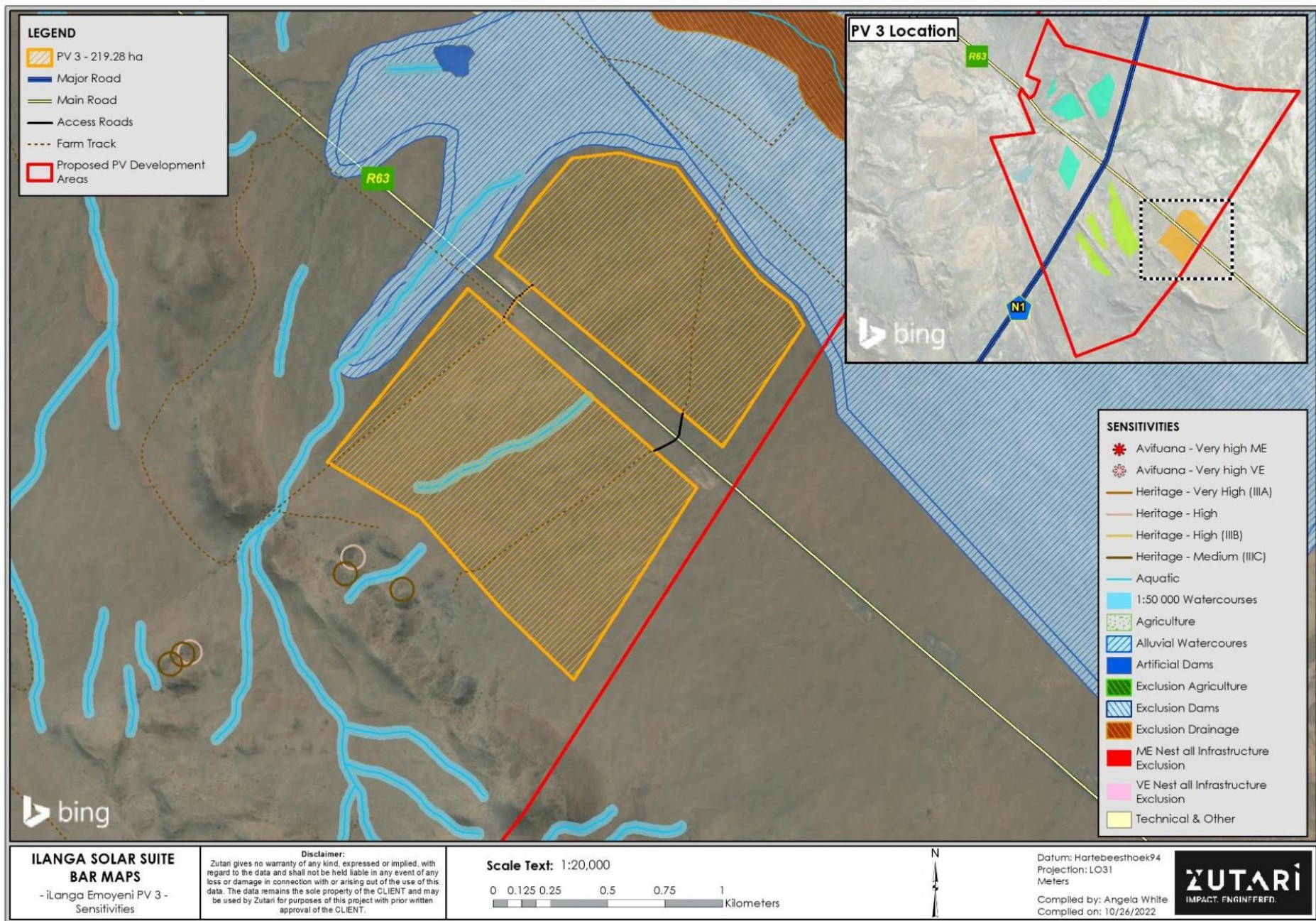
The EAP confirms the sensitivity to be low and agrees with the screening tool in that no further assessment is required.



Environmental Sensitivity Map : PV 1



Environmental Sensitivity Map : PV 2



Environmental Sensitivity Map : PV 3

12.5 Impact Assessment Summary : Grid Connection

Refer to Annexure 12 : Basic Assessment Report : iLanga Emoyeni Grid Connection (02/03/2023)

The Environmental Impact Assessment Report and Specialist Studies should be consulted for detailed assessments.

The Environmental Impact Assessment Extracts / Summaries for the Grid Connection project is listed below.

▣ Terrestrial Biodiversity

Impact	Pre-Mitigation	Post Mitigation
Construction		
Loss of Eastern Upper Karoo	Moderate – negative	Moderate – negative
Loss of Upper Karoo Hardeveld	Moderate – negative	Moderate – negative
Loss of wash vegetation type and associated riverine rabbit habitat	Negligible Negative	Negligible Negative
Loss of Plant Species of Conservation Concern	Minor-negative	Negligible - negative
Disruption of Ecosystem Function and Process	Moderate – negative	Minor - negative
Loss of Faunal Habitat	Moderate – negative	Moderate – negative
Disturbance to faunal species	Moderate – negative	Minor - negative
Faunal mortality due to roadkill and persecution	Moderate – negative	Minor - negative
Disturbance to faunal species of conservation concern	Major – negative	Moderate – negative
Operation		
Infestation of Alien Plant Species	Moderate – negative	Negligible Negative
Faunal disturbance and potential mortality due to roadkill	Minor-negative	Minor-negative
Decommissioning Phase		
Loss of Indigenous Vegetation	Moderate – negative	Minor - negative
Faunal disturbance and mortality due to roadkill	Moderate – negative	Minor - negative

▣ Aquatic Ecology

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction / Decommissioning	Loss of aquatic species of special concern	Minor - negative	Negligible - negative
Construction / Decommissioning	Loss of riparian systems, wetlands and water courses through the placement of new crossings or towers	Minor - negative	Negligible - negative
Construction / Decommissioning	Potential impacts on localised water quality particularly near the tower construction areas or substations	Minor - negative	Negligible - negative
Operation	Impact on riparian and wetland systems through possible increase in surface water runoff on form and	Minor - negative	Negligible - negative

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
	function during the operational phase		
Construction & Operational	Impact 6: No-go Option	Negligible - negative	N/A
Construction & Operational	Impact 7: Cumulative impacts for the overall project due to the high number of projects surrounding this application	Minor - negative	Negligible - negative

▣ Avifauna

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction	Displacement of priority species due to disturbance	Moderate - negative	Minor - negative
Construction	Displacement due to habitat transformation	Minor - negative	Minor - negative
Operation	Mortality of powerline sensitive species due to collisions with the 132kV OHL	Moderate - negative	Moderate - negative
Decommissioning	Displacement due to disturbance associated with the dismantling of the grid connection	Minor - negative	Minor - negative

▣ Agriculture

The proposed development will have very low agricultural impact and will therefore be acceptable in terms of its impact on the agricultural production capability of the site. The only impact of this development is the loss of up to 5.33 hectares of agricultural land on the site of the substations. This is assessed as being of very low significance because the amount of land loss is small and the production potential of the land is very limited.

The power line itself has insignificant agricultural impact because all agricultural activities that are viable in this environment, can continue completely unhindered underneath the power line and there will therefore be no loss of agricultural production potential underneath it.

The only potential source of impact from the power line is minimal disturbance to the land (erosion and topsoil loss) during construction (and decommissioning). This impact can be completely mitigated with standard, generic mitigation measures that are included in the EMP.

From an agricultural impact point of view, it is recommended that the development be approved.

The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is not subject to any conditions, other than recommended mitigation.

■ Heritage & Archaeology

Indicator	Project Response
Uncontrolled damage to fossils should be minimised as far as possible.	No fossils were found within the project footprint so this indicator has been met.
Buffers of at least 30 m should be maintained around archaeological sites as far as possible.	This has largely been done for known sites but one Grade NCW site (waypoint 2020) lies within the footprint. It does not merit mitigation. A pre-construction survey is recommended to check for any further sites.
Direct damage to archaeological sites should be avoided as far as possible and, where some damage to significant sites is unavoidable, scientific/historical data should be rescued.	This has largely been done but one Grade NCW site (waypoint 2020) lies within the servitude. This impact is acceptable considering the socio-economic benefits. A pre-construction survey is recommended to check for any further sites.
Direct impacts to graves must be avoided completely with a 30 m buffer.	This has been done, but a pre-construction survey is recommended to check for any further graves.
The Schietkuil farm complex should be avoided by at least 200 m.	This has been done.

■ Palaeontology

The palaeontological compliance statement and site sensitivity verification report concludes that the combined Ilanga Emoyeni Solar Suite and EGL project area, including the footprints of all associated infrastructure is, in practice, of LOW to VERY LOW Palaeosensitivity, although the potential for unrecorded fossil sites of high scientific value here cannot be entirely discounted. The provisional Medium to Very High Palaeosensitivity mapped by the DFFE Screening Tool is accordingly contested in the report.

■ Visual Landscape

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction	Short-term landscape change from the construction of the double powerline to the current rural agricultural sense of place	Minor - negative	Minor - negative
Operation	Long-term landscape change from the construction of the double powerline to the current rural agricultural sense of place	Moderate - negative	Minor - negative

■ **Socio Economic**

Project phase	Impact	Without mitigation	With mitigation
		Significance	Significance
Construction	Temporary Increase in Production and Gross Domestic Product	Minor - positive	Minor - positive
Operation	Sustainable Increase in Production and Gross Domestic Product	Moderate - positive	Moderate - positive
Construction	Temporary Increase in Household Income	Minor - positive	Minor - positive
Operation	Sustainable Increase in Household Income	Moderate - positive	Moderate - positive
Construction	Temporary increase in sense of place	Moderate - positive	Minor - positive
Operation	Sustainable Impact on sense of place	Moderate - positive	Minor - positive
Construction	Impact on the sustainable revenue where the development is located	Moderate - negative	Moderate - negative

■ **Electromagnetic Interference**

It is stated in the Electronic Communications Act that no product used or manufactured in South Africa may cause unwanted RFI or EMI, intentional or unintentional transmissions, on existing electrical equipment. Thus, to prevent the PV facility's unintentional RFI to cause unwanted interference on existing electrical equipment a clearance zone must be used.

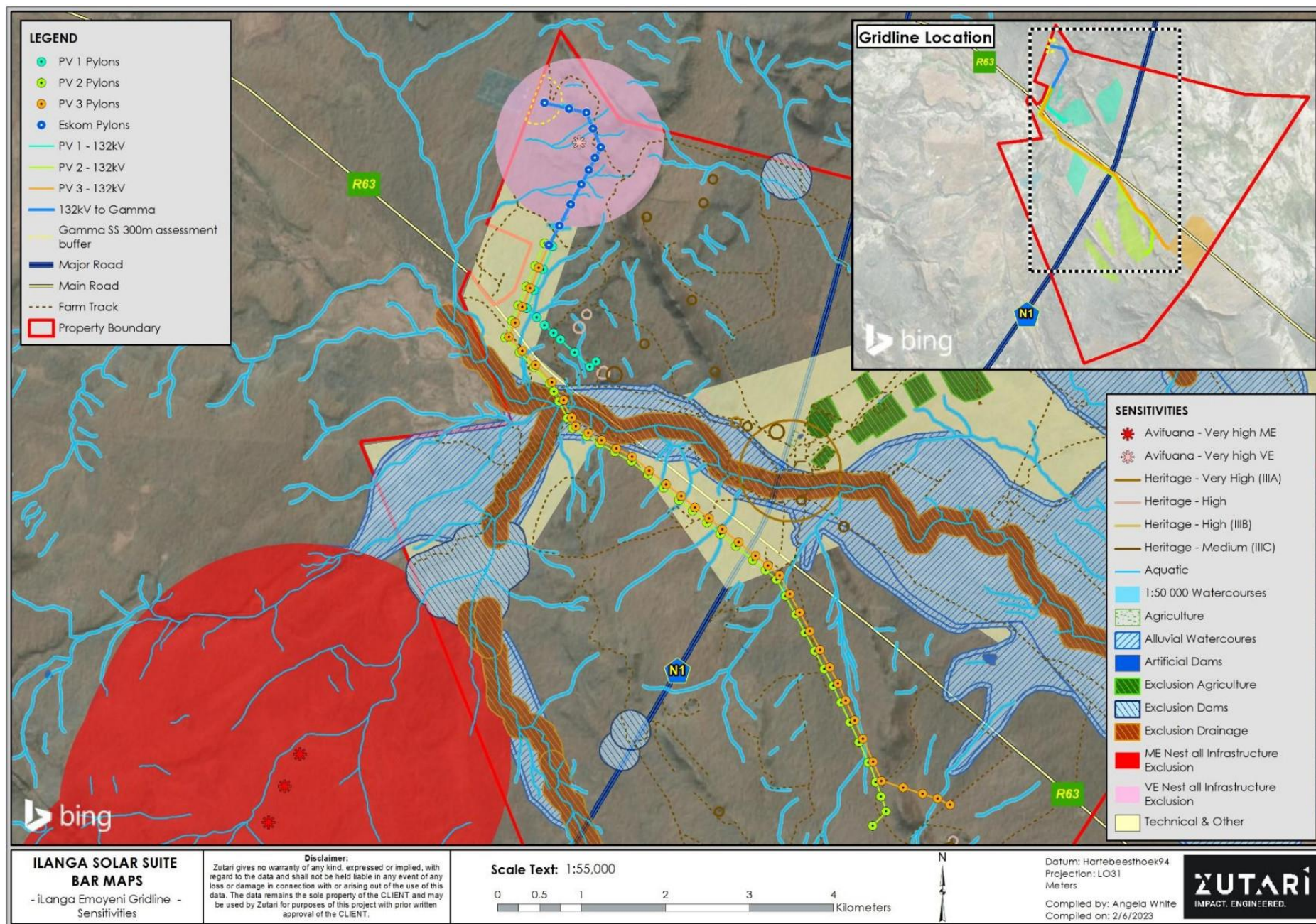
A further detailed assessment will not be required based on the findings from the Radio Mobile data as no RFI risk was identified.

■ **Defence**

Using the DFFE Screening tool and desktop assessment the proposed project was found to occur in a low-sensitivity area as far as defence installations are concerned.

Based on the Defence protocol in GN 320, a Compliance Statement is required. This screening verification report includes the requisite information and therefore doubles as a compliance statement.

The EAP confirms the sensitivity to be low and agrees with the screening tool in that no further assessment is required.



Environmental Sensitivity Map : Grid Connection

iLanga Emoyeni SEF on Remainder Farm Schietkuil No. 3 (Beaufort West Municipality)
Consent Use : Renewable Energy Structures and Permanent Departure : Height & Setback Lines (November 2023)

12.6 Proposed Specific Conditions of Authorisation

- A walkthrough of the final layout must be undertaken by a botanist and if populations of SCC will be impacted, infrastructure should be moved to avoid these areas. Where this is not feasible, a search and rescue plan will be required.
- If any SCC are to be impacted, these must be relocated to nearest appropriate habitat.
- Construction vehicles and machinery must not encroach into identified 'no-go' areas or areas outside the project footprint.
- The temporary construction camps must be located outside of the water courses (including the 50 m buffer) during the construction mobilisation process. None are presently located within any aquatic systems, but additional laydown areas may be required during the construction process, hence this recommendation.
- Rehabilitation must be planned as a staged approach to ensure an area is immediately rehabilitated once construction is completed.
- The Chance Finds Protocol which is appended to the EMPr must be implemented. Any information, artefacts or burials must be rescued before extensive damage occurs by implementing this protocol.
- The Schietkuil farm complex should be avoided by at least 200 m.
- Retain a 500 m buffer from the N1 National Highway as a No-go area for PV panels.

12.7 EAP Statement

It is the EAPs opinion that the recommended mitigation measures proposed by the specialists and contained in the EMPr, together with the Applicant's consideration of the sensitivities and no-go areas in the current design, will sufficiently reduce the negative impacts to an acceptable level.

In addition, the Applicant has shown willingness to consider further suggestions from specialists on ways to effectively reduce the remaining negative impacts.

Provided the mitigation measures included in the EMPr are implemented, the EAP recommends that the proposed envelope footprint of the project be authorised. The final layout must take the identified sensitivities into account during the detailed design phase.

12.8 Conclusions & Way Forward

Seriti is applying for EA for three SEFs and an OHPL or "gridline" to connect with the National Grid. These projects are situated within a REDZ and the strategic transmission corridor or EGI corridor and must therefore undergo an expedited BA process provided for in GN145/2021.

Since a thorough screening exercise of the Schietkuil Farm (Remainder of Farm 3) was conducted prior to the commencement of the BA process, the Applicant and EAP are confident that the proposed alternative is the preferred site for the iLanga Emoyeni Solar Suite. Further consideration of alternatives for the BA process only included the no-go alternative.

Finally, the wide range of specialist assessments determined the baseline environment and the potential impacts that the project is expected to have on the affected environment. These assessment reports also include recommended mitigation measures which have been included in the EMPr.

Based on the above information, the specialists and the EAP were able to conclude statements on whether to recommend the project for authorisation or not. All specialists and the EAP have recommended that the project be granted EA, with the proposed inclusion of specific conditions.

13. Spatial Planning & Land Use Management Act (SPLUMA) & Western Cape Land Use Planning Act (LUPA)

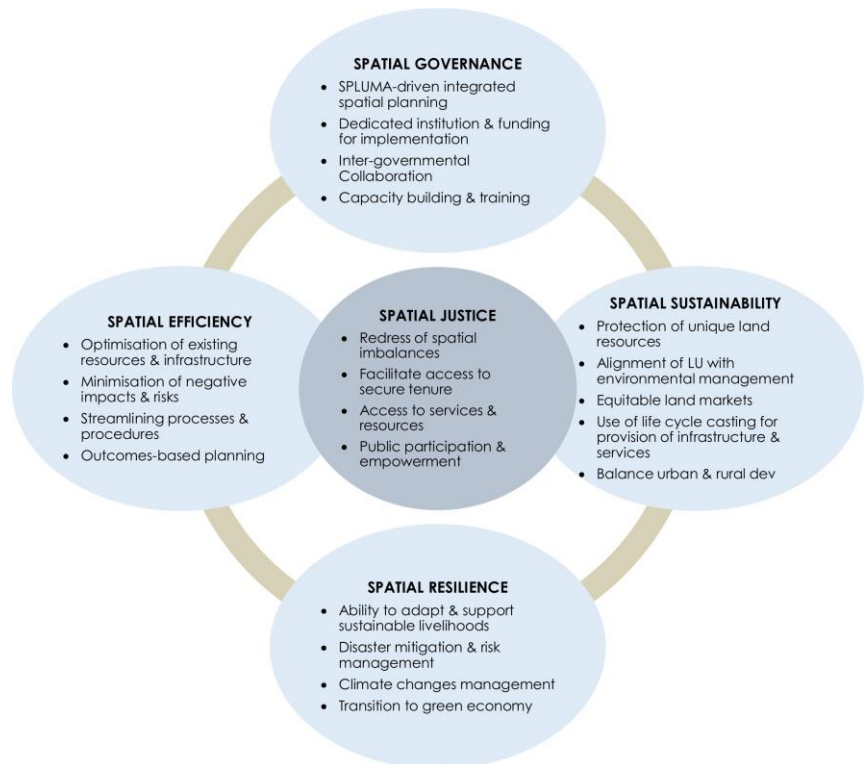
In terms of the provisions of Section 6 and Section 7 of SPLUMA, the general principles set out in Chapter 2 apply to all organs of state and other authorities responsible for the implementation of legislation regulating the use and development of land.

The Western Cape Land Use Planning Act, 2014 stipulates in Chapter VI that land use planning is guided by the following Land Use Planning Principles:

- Principle of spatial justice
- Principle of spatial sustainability
- Principle of efficiency
- Principle of spatial resilience
- Principle of good administration

The principles are aligned with and support Section 7 of the Spatial Planning and Land Use Management Act principles.

The following Development Principles are applicable to spatial planning, land development and land use management and have been addressed accordingly.



▣ The Principle of Spatial Justice

- The development is outside of any urban areas. The closest town is Murraysburg.
- The development will ensure significant financial investment in the area.
- The development would help to address unemployment in the area and drive economic development.
- Investment will ensure social upliftment and improve rural livelihoods.
- The development of SEFs and renewable energy is supported through various National, Provincial and Local policy frameworks.
- The development is consistent with the applicable Spatial Development Frameworks (Western Cape, Central Karoo DM and Beaufort West LM).

▣ **The Principle of Spatial Sustainability**

- The SEF will contribute towards the prevention of pollution and unsustainable ecological degradation through the use of non-renewable energy resources. It promotes sustainable development and use of renewable energy has a much smaller carbon footprint than coal, which is currently the dominant form of electricity generated in South Africa.
- Renewable energy can be considered as an alternative in meeting the need for increased electricity demand over other sources of generation such as fossil fuels. These reasons include :
 - Positive impact on climate change;
 - Overcoming the country's energy constraints;
 - Diversification and decentralisation of supply;
 - Reduced costs of energy; and
 - Positive economic development including job creation.
- With a view to reducing the effects of climate change, South Africa has committed to decreasing its dependence on fossil fuels, and increasing its utilization of renewable energy. The additional power produced by SEFs would supplement the national grid with a sustainable form of renewable energy, thus driving regional and national economic development, as well as providing local business opportunities, skills development and employment opportunities.
- Throughout the EIA process, Critical Biodiversity Areas (CBAs), sensitive areas and no-go areas in the proposed development site were identified through specialist input. The presented final layout avoids these areas where possible. Mitigation measures are to be implemented to assist in reducing negative impacts and enhancing positive impacts.
- Employment opportunities (direct, indirect and induced), will be created during construction.

▣ **The Principle of Efficiency**

- The development will contribute towards lower carbon emission goals to combat climate change and provide cleaner energy than coal which currently makes up the large majority of the national energy mix.
- Solar power is one of the most cost effective forms of electricity generation in the country and this project will provide cost-effective electricity to the national grid.

▣ **The Principle of Spatial Resilience**

- The iLanga Emoyeni SEF can contribute up to 568 MW of electricity to the national grid.
- The SEF has a lifespan of more than 20 years and will contribute significantly to the local economy.
- Extensive research and numerous specialist studies provided input in the design and optimisation of the SEF.
- Specialist studies included, but not limited to agriculture, ecological, avifauna, social, heritage and visual impact were conducted.
- The impact assessment process confirmed that negative impacts can be mitigated.
- The Environmental Management Programme will ensure strict implemental guidelines during construction and operation.

▣ **The Principle of Good Administration**

- Prior to implementation, all relevant legislative approval will be obtained to ensure legislative compliance.
- The application for consent use supports the principles of the relevant policies, guidelines and Spatial Development Frameworks.
- The development will be implemented, subject to a positive Environmental Authorisation and EMPr.
- Approval from all applicable legislation will be obtained prior to implementation.
- The development is consistent with the Beaufort West Spatial Development Framework.

14. Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA) : Section 53 (1)

Section 53 (1) of LUPA requires Provincial approval if land development is proposed on agricultural land that has been cultivated or irrigated during the 10 years, immediately preceding the application.

As part of the environmental impact assessment process, Site Sensitivity Verification & Agricultural Compliance Assessment was done for iLanga Emoyeni PV 1, 2 and 3 (Johann Lanz : November 2022).

Refer to Annexure 13 : Site Sensitivity Verification & Agricultural Compliance Statement : PV 1

Refer to Annexure 14 : Site Sensitivity Verification & Agricultural Compliance Statement : PV 2

Refer to Annexure 15 : Site Sensitivity Verification & Agricultural Compliance Statement : PV 3

Refer to Annexure 16 : Site Sensitivity Verification & Agricultural Compliance Statement : Grid Connection

Refer to Annexure 17 : LUPA Section 53 (1) Confirmation Statement from Johann Lanz Consulting

The studies confirmed the following :

▣ **PV 1, 2 & 3**

The site has low agricultural potential and no dryland cropping potential predominantly because of aridity constraints but also because of soil constraints. As a result of the constraints, agricultural production is limited to low density grazing. The land across the site is verified in this assessment as being of low to medium agricultural sensitivity.

Two potential mechanisms of negative agricultural impact were identified, occupation of agricultural land and land degradation. One potential mechanism of positive agricultural impact was identified as increased financial security for farming operations.

All mechanisms are likely to lead to low impact on the agricultural production potential and the agricultural impact is therefore assessed as having minor significance.

The conclusion of this assessment is that the agricultural impact of the proposed development is acceptable because :

- *It will occupy land that is of very limited land capability, which is insufficient for crop production. There is not a scarcity of such agricultural land in South Africa and its conservation for agricultural production is not therefore a priority.*
- *The amount of agricultural land use by the development is within the allowable development limits prescribed by the agricultural protocol. These limits reflect the national need to conserve valuable agricultural land and therefore to steer, particularly renewable energy developments, onto land with low agricultural production potential.*

- The proposed development is within a REDZ, which is an area that has specifically been designated within South Africa for the prioritisation of renewable energy development. The designation of the REDZ has taken into account the country's need to balance renewable energy development against the conservation of land required for agricultural production and national food security.
- The PV panels will not necessarily totally exclude agricultural production. The area can still be used to graze sheep that will, in addition, be protected against stock theft within the security area of the facility.
- All renewable energy development in South Africa decreases the need for coal power and thereby contributes to reducing the large agricultural impact that open cast coal mining has on highly productive agricultural land throughout the coal mining areas of the country.

From an agricultural impact point of view, it is recommended that the development be approved.

The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is not subject to any conditions, other than recommended mitigation.

▣ **Grid Connection**

The conclusion of this assessment is that the proposed development will have very low agricultural impact and will therefore be acceptable in terms of its impact on the agricultural production capability of the site. The only impact of this development is the loss of up to 5.33 hectares of agricultural land on the site of the substations. This is assessed as being of very low significance because the amount of land loss is small and the production potential of the land is very limited.

The power line itself has insignificant agricultural impact because all agricultural activities that are viable in this environment, can continue completely unhindered underneath the power line and there will therefore be no loss of agricultural production potential underneath it.

The only potential source of impact from the power line is minimal disturbance to the land (erosion and topsoil loss) during construction (and decommissioning). This impact can be completely mitigated with standard, generic mitigation measures that are included in the EMPr.

From an agricultural impact point of view, it is recommended that the development be approved.

The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is not subject to any conditions, other than recommended mitigation.

It is confirmed that the agricultural capacity of the site is extremely limited and no development will take place on cultivated or irrigated land as contemplated in Section 53 of LUPA and the Regulations.

Refer to Annexure 17 : LUPA Section 53 (1) Confirmation Statement from Johann Lanz Consulting

An application has been submitted to the Western Cape Government : Environmental Affairs & Development Planning for comment in terms of Section 45 of LUPA, confirming that the proposal does not constitute a provincial development application in terms of Section 53 (1) of LUPA, read together with Section 10 of the Regulations.

16. Land Claims Commissioner (LCC)

The Commission on Restitution of Land Claims confirmed no land claims are registered against the subject property.

Refer to Annexure 18 : Land Claims Commissioner (LCC) Confirmation

17. Secondary Consents

Permits, approvals and consents, as required in terms of related Provincial and Local legislation, applicable to renewable energy projects, will be obtained prior to project implementation.

18. Public Interest & Participation

Public participation with respect to an application for Consent Use is guided by Chapter 4 of the Beaufort West Spatial Planning & Land Use Management By-laws. The Municipality will manage the notification and participation process as per the relevant legislation and guidelines.

In the unlikely event of any objections received, the professional team will respond and address these objections.

19. Conclusion

The importance of development of renewable energy projects on a global basis is undisputed. Globally, the renewable energy industry is investing billions of dollars. The role of this industry as a driver of economic growth within South Africa is seen as significant.

It is clear from the unique nature and scale of the proposed iLanga Emoyeni SEF, that it will have significant benefits to the communities of the greater Central Karoo District and will contribute significantly to the provision of renewable energy in South Africa. The importance of renewable energy, as part of the electricity generating mix in South Africa, cannot be over emphasized. The construction of the iLanga Emoyeni SEF, north-west of Murraysburg in the Western Cape, demonstrates this commitment towards renewable energy and green efficiencies.

The development of iLanga Emoyeni SEF has been assessed by a team of professionals and based on the outcome of the Environmental Impact Assessment Report (EIAR) and specialist studies, a positive Environmental Authorisation by the Department of Forestry, Fisheries & the Environment is expected shortly. The following are key aspects to be highlighted from this submission:

- Renewable energy has been identified and supported through various Government Policies and Directives as priority drivers for economic development.
- The Environmental Impact Assessment process confirms the impacts are acceptable and can be mitigated.
- Implementation of the SEF will significantly contribute to local economic development and job creation possibilities.
- The principles of the Spatial Planning and Land Use Management Act and Land Use Planning Act are supported.
- Beaufort West and Central Karoo SDFs acknowledged the potential for Renewable Energy generation and promote renewable energy implementation.

- The development proposal is consistent with the applicable policy and National, Provincial, District and Local Spatial Development Frameworks, as contemplated in Section 42 of SPLUMA.
- Implementation of the project will support National Government's targets for renewable energy, including targets identified in the White Paper and supporting policy and legislation.
- The development will be subject to permitting requirements from all relevant Departments.