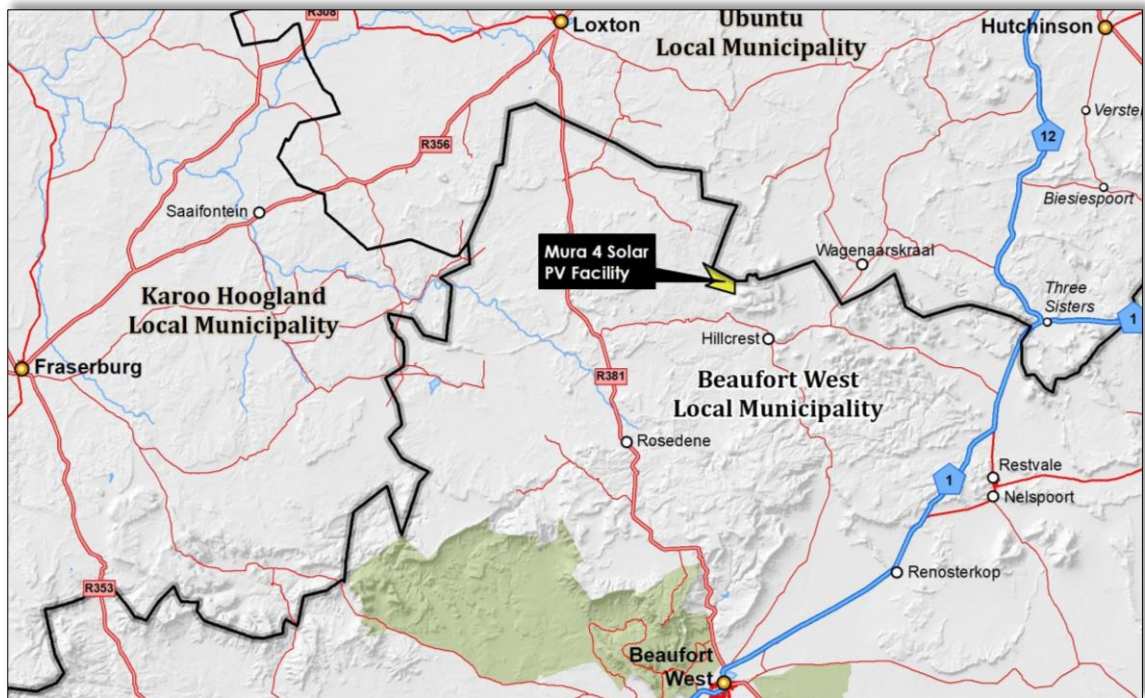


# Mura 4 Solar Photovoltaic Facility

Application for :

- Consent Use : Renewable Energy Structures
- Subdivision (for Long Term Lease purposes)
- Servitude Exemption : Access Roads & Grid Connection Powerlines
- Departure : Building Lines & Height on various farm portions



Report Number : 1816E/02

January 2024

Prepared by :

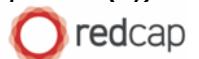
Johan van der Westhuysen



117 Cape Road, Mill Park, Port Elizabeth, 6001  
Tel: 083 321 2299 - Email: info@udec.co.za

Prepared for :

Red Cap Mura 4 (Pty) Ltd



Unit B2, Mainstream Centre, Main Road, Hout Bay, 7806  
Tel: 021 790 1392

<b>Report Title :</b>	<b>Mura 4 Solar Photovoltaic Facility :</b> Application for : <ul style="list-style-type: none"> <li>• Consent Use : Renewable Energy Structures</li> <li>• Subdivision (for Long Term Lease purposes)</li> <li>• Servitude Exemption : Access Roads &amp; Grid Connection Powerlines</li> <li>• Departure : Building Lines &amp; Height on various farm portions</li> </ul>
<b>Report Number :</b>	1816E/02
<b>Report Date :</b>	01.2024
<b>Report Status :</b>	Final
<b>Prepared By :</b>	Johan van der Westhuysen (Pr. Plan A/923/1996)
<b>Contact Number :</b>	083 321 2299
<b>Email Address :</b>	info@udec.co.za johan@udec.co.za

**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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# Content

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<b>1.</b>	<b><i>The Applicant</i></b> .....	<b>1</b>
<b>2.</b>	<b><i>The Project &amp; Location</i></b> .....	<b>1</b>
<b>3.</b>	<b><i>Affected Properties</i></b> .....	<b>5</b>
<b>4.</b>	<b><i>The Application</i></b> .....	<b>7</b>
4.1	Objective .....	7
4.2	Legislation .....	7
4.3	Application .....	10
<b>5.</b>	<b><i>Existing Zoning, Land Use &amp; Site Description</i></b> .....	<b>13</b>
5.1	Zoning .....	13
5.2	Land Use & Site Description .....	13
<b>6.</b>	<b><i>Activity Description &amp; Parameters</i></b> .....	<b>14</b>
6.1	Typical Solar PV Facility Components .....	14
6.2	Project Infrastructure .....	17
6.3	Employment .....	18
6.4	Construction Phase .....	18
6.5	Operational Phase .....	19
6.6	Decommissioning Phase .....	19
<b>7.</b>	<b><i>Renewable Energy in Context</i></b> .....	<b>20</b>
<b>8.</b>	<b><i>Guidelines for Decision Making</i></b> .....	<b>21</b>
<b>9.</b>	<b><i>Spatial Planning &amp; Land Use Management Act (SPLUMA) &amp; Western Cape Land Use Planning Act (LUPA)</i></b> .....	<b>22</b>
<b>10.</b>	<b><i>Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA) : Section 53 (1)</i></b> .....	<b>24</b>
<b>11.</b>	<b><i>National Policy</i></b> .....	<b>25</b>
11.1	White Paper on Energy Policy (1998) .....	25
11.2	White Paper on Renewable Energy Policy (2003) .....	25
11.3	National Climate Change Response White Paper (2011) .....	25
11.4	National Development Plan 2030 (2012) .....	25
11.5	National Integrated Resource Plan for Electricity 2010-2030 (2019) .....	26
11.6	National Integrated Energy Plan (2016) .....	26
11.7	National Infrastructure Plan (2012).....	26
11.8	Strategic Environmental Assessment for Wind & Solar PV Energy (2015) .....	27
11.9	National Spatial Development Framework (2022) .....	28
11.10	Karoo Regional Spatial Development Framework (SDF) (2023) .....	31
<b>12.</b>	<b><i>Provincial Policy</i></b> .....	<b>33</b>
12.1	Western Cape Spatial Development Framework (2014) (PSDF) .....	33
12.2	Western Cape Land Use Planning Guidelines for Rural Areas (2019) .....	34
<b>13.</b>	<b><i>District &amp; Municipal Policy</i></b> .....	<b>35</b>
13.1	Central Karoo District Municipality IDP (2022) .....	36
13.2	Central Karoo District Municipality SDF (2019) .....	36
13.3	Beaufort West Municipality Integrated Development Plan (2022-2027) .....	37
13.4	Beaufort West Municipality Spatial Development Framework (2014) (MDSF) .....	38
13.5	Conclusion : Consistency with the MSDF .....	40

<b>14. Environmental Impact Assessment</b>	<b>40</b>
14.1 Environmental Authorisation	41
14.2 Project Team	41
14.3 Impact Assessment Methodology	42
14.4 Impact Summary	43
14.5 Potential Impacts	45
14.6 Cumulative Impact Statement	46
<b>15. Department of Agriculture, Land Reform &amp; Rural Development (DALRRD) and Western Cape Department of Agriculture</b>	<b>46</b>
<b>16. Land Claims Commissioner (LCC)</b>	<b>47</b>
<b>17. Title Deed Conditions</b>	<b>47</b>
<b>18. Secondary Consents</b>	<b>47</b>
<b>19. Public Interest &amp; Participation</b>	<b>47</b>
<b>20. Conclusion</b>	<b>47</b>

## Maps

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1. Regional Locality
2. Property Description & Cadastral Information
3. Aerial View
4. Site Plan (including Lease Area & Servitudes)
5. Mura Solar PV Development Overview

## Annexures

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1. Pre-application Consultation Minutes, Attendance Register, T1 Pre-application Consultation Form & Proof of Payment of Application Fees
2. Application Form
3. Powers of Attorney
4. Deeds Office Enquiries
5. Title Deeds
6. Bond Holder's Consents
7. Conveyancing Certificates
8. Cadastral Diagrams
9. Final Environmental Scoping Report (April 2023) **(extract only)**
10. Land Claims Commissioner (LCC) Confirmation
11. Department of Agriculture, Land Reform & Rural Development (DALRRD) Letter of No Objection
12. Western Cape (WC) Department of Agriculture Support
13. Site Sensitivity Verification & Agricultural Compliance Statement
14. Department of Transport & Public Works (DTPW) In-principle Support
15. Heritage Western Cape (HWC) Comment & Support
16. Environmental Authorisation (14/12/16/3/3/2/2325 dated 17.10.2023)

**Note : All Environmental Assessment Reports & Specialist Studies can be made available on request**

## 1. The Applicant

Urban Dynamics Eastern Cape (UDEEC) has been commissioned by Red Cap Mura 4 Proprietary Limited, on behalf of the owners of various farms between Loxton and Beaufort West, east of the R381 (Western Cape, Beaufort West Municipality), to prepare and submit an application to obtain the necessary development rights to develop a Solar Photovoltaic (PV) Facility for the generation of renewable energy, known as the Mura 4 Solar PV Facility.

**Refer to Annexure 3 : Powers 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 Solar PV Facility project.

## 2. The Project & Location

Red Cap Energy (Pty) Ltd ('Red Cap') and their affiliate companies are proposing to develop four solar facilities, namely Mura 1 Solar PV Facility, Mura 2 Solar PV Facility, Mura 3 Solar PV Facility, and Mura 4 Solar PV Facility, and an associated grid connection, collectively known as the Mura Solar PV Development between Loxton and Beaufort West. The proposed Mura Solar PV Development is located in close proximity to the Nuweveld Wind Farm Development (approved) and the Hoogland Wind Farm Development (under LUPA assessment). The Mura Solar PV Development falls partially within the Beaufort West Renewable Energy Development Zones (REDZ). **The Mura 1 Solar PV Facility falls within the Beaufort West REDZ. Mura 2, 3 and 4 fall partially or fully outside of the REDZ.**

The solar facilities are located adjacent to each other, east of the R381, which runs between Beaufort West and Loxton. The Mura 1, 2 and 4 Solar PV Facilities fall within the Beaufort West Municipality (Western Cape Province), whereas the Mura 3 Solar PV Facility falls within the Ubuntu Municipality (Northern Cape Province).

Each of the solar facilities in the Mura Solar PV Development will be developed by separate entities. This will necessitate 4 separate applications either in terms of the Beaufort West Local Municipality By-laws on Municipal Land Use Planning (2019) or the Ubuntu Municipality Land Use Scheme (2022).

**This report comprises of the land development application for the Mura 4 Solar PV Facility.**

The Mura 4 Solar PV Facility is situated  $\pm 35$  km north of Beaufort West and  $\pm 50$  km south of Loxton, east of the R381. The facility comprises of a footprint of approximately 425 ha for the PV facility and support infrastructure (on-site substations, switching stations, Battery Energy Storage System (BESS), BESS substation, underground cables, internal gravel roads, fencing, construction site camps and operation & maintenance facilities) on 2 farm portions of  $\pm 2\,761$  ha. The facility will have an export capacity of up to 360 MW and electricity will be evacuated to the Eskom Grid.

**Refer to Map 1 : Regional Locality**

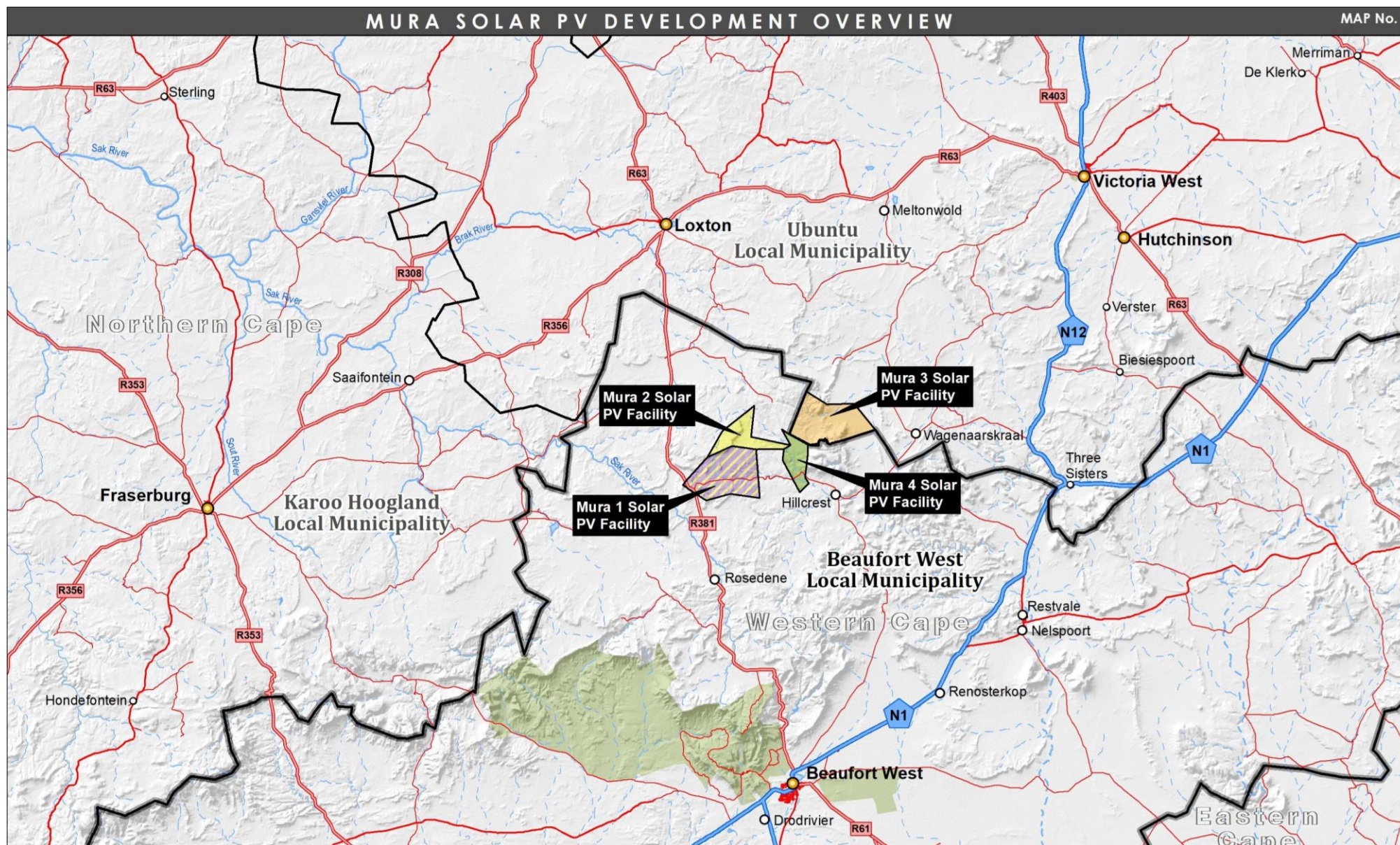
**Refer to Map 2 : Property Description & Cadastral Information**

**Refer to Map 3 : Aerial View**

**Refer to Map 5 : Mura Solar PV Development Overview**

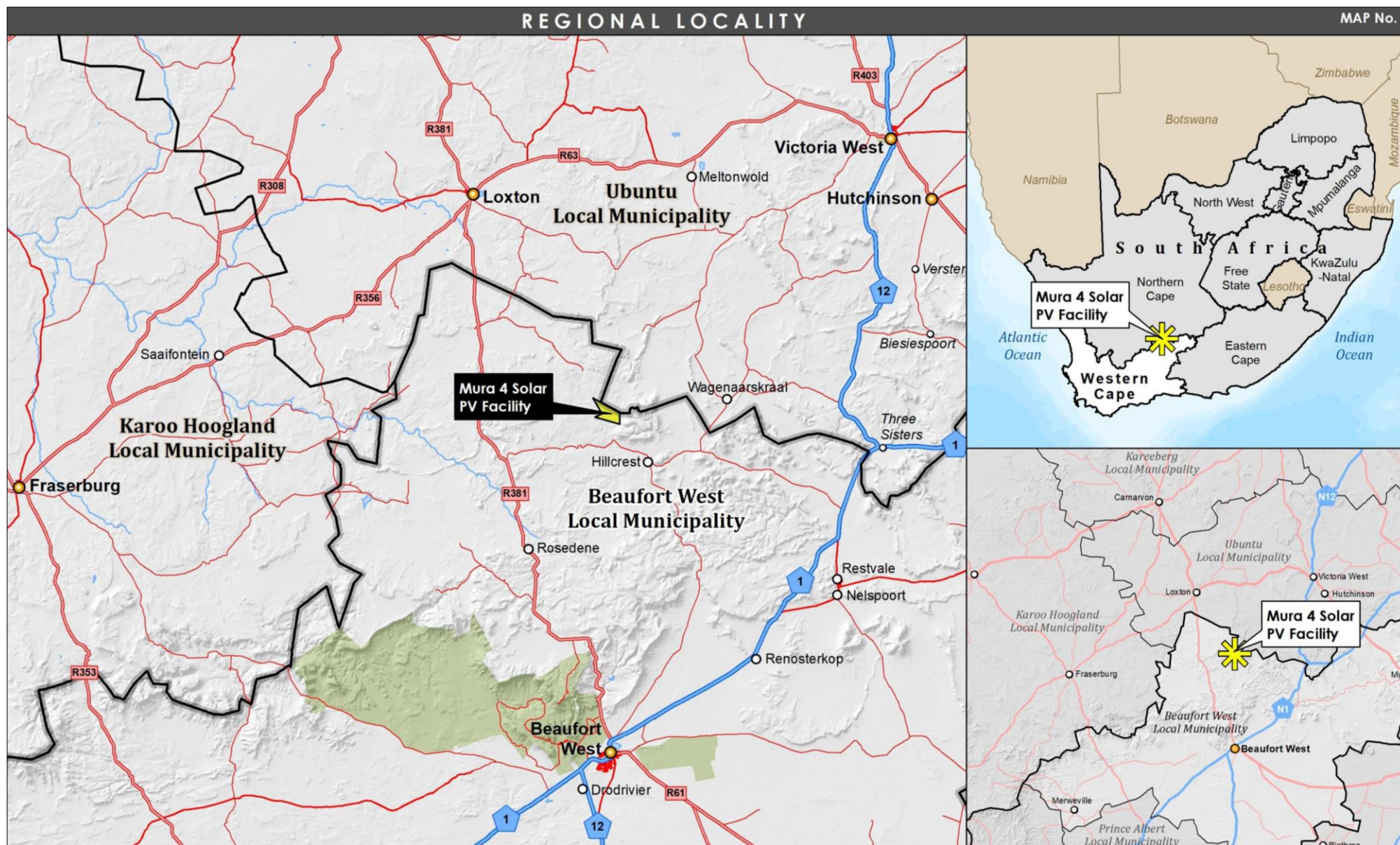
The sketch below indicates the location of the 4 Mura Solar PV Facilities. Note that the sketch indicates the cadastral boundaries for the farms and the PV facilities only occupy portions of the farms as indicated above.





**Map 5 : Mura Solar PV Development Overview**





Map 1 : Mura 4 Solar PV Facility : Regional Locality

### 3. Affected Properties

#### ***Refer to Map 2 : Property Description & Cadastral Information***

Table 1 lists the properties that accommodate solar panels, supporting infrastructure and access roads. 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
Farm Adj Abrams Kraal No. 11	8 Mile Inv 434 Pty Ltd	T15817/2017	908.0467	No	Yes
Farm Sneeuw Kraal No. 46	Booiskraal Trust	T111630/1997	1852.6787	No	Yes

**Table 1 : Properties to Accommodate the Mura 4 Solar PV Facility**

Bonds are registered against the deeds of the following properties :

Property Description	Title Deed No.	Bond No.
Farm Adj Abrams Kraal No. 11	T15817/2017	B7425/2017
Farm Sneeuw Kraal No. 46	T111630/1997	B16300/2003 B66093/2006 B39998/2008

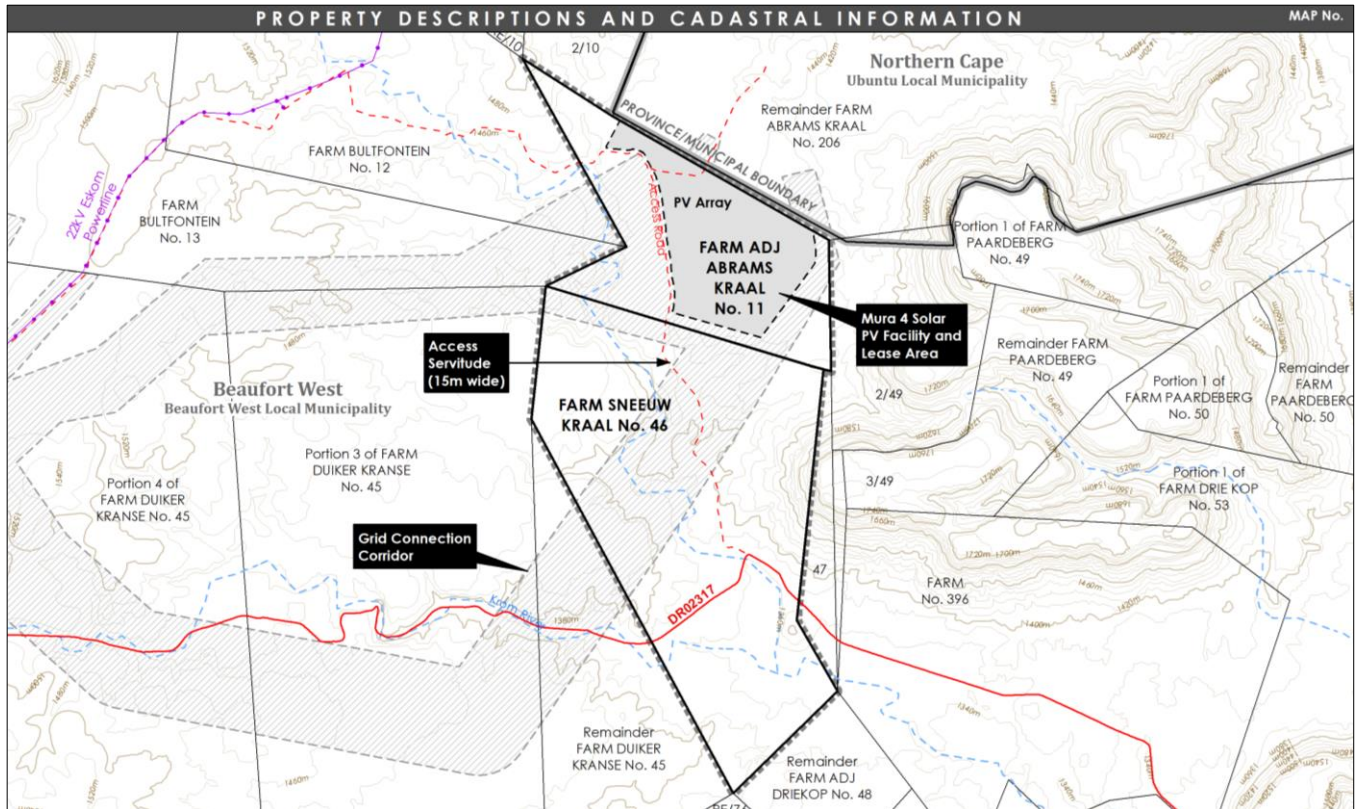
#### ***Refer to Annexure 4 : Deeds Office Enquiries***

#### ***Refer to Annexure 5 : Title Deeds***

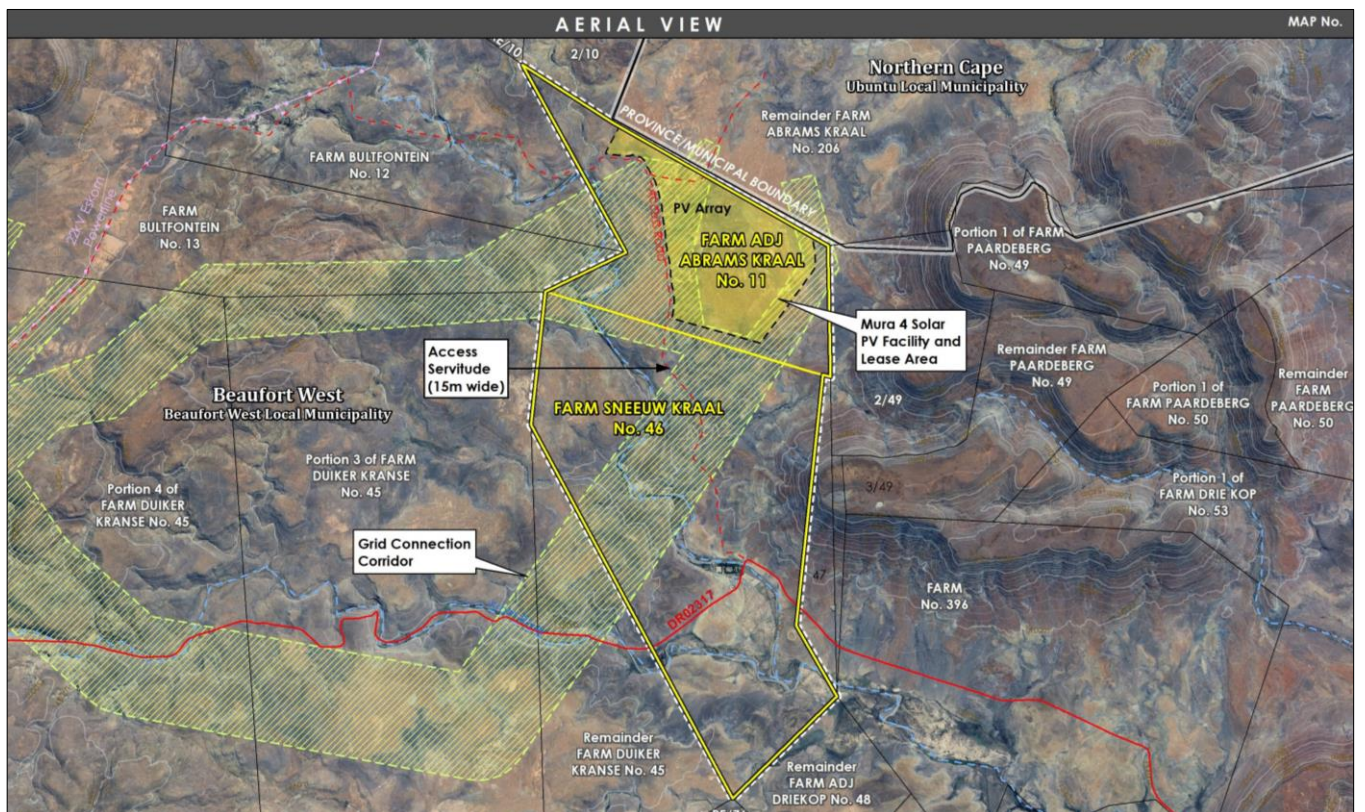
#### ***Refer to Annexure 6 : Bond Holder's Consents***

#### ***Refer to Annexure 7 : Conveyancing Certificates***





Map 2 : Mura 4 Solar PV Facility : Property Description & Cadastral Information



Map 3 : Mura 4 Solar PV Facility : Aerial View

## 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 PV Facility and associated infrastructure on the subject land portions.

The location of the Solar PV Facility site has been identified through a detailed assessment and Environmental Impact Assessment (EIA) process. The layout and siting of the solar PV facility 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 Mura 4 Solar PV Facility, development approval is required for the following :

#### ▣ **Permanent Consent Use : Renewable Energy Structure**

A Solar PV Facility, by its nature and location in the rural area, functions in harmony with the surrounding agriculture land uses. The agricultural and renewable energy facilities are therefore compatible land uses, in support of each other.

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 projects :

- **Height :**
  - Renewable Energy Structure : Technology dependant
  - Buildings : may not exceed 8.5 m
- **Building Line on Agricultural Land :**
  - 30 m

The Mura 4 Solar PV Facility will include the following appurtenant structures : Substations, Switching Stations, BESS, BESS substation, Operation & Maintenance / Control Centre, Offices, Warehouse / Workshop, Ablution Facilities, Site Camps, Access Roads and Electrical Cabling (refer to Paragraph 4.3 and development parameters for detail).

▣ **Long Term Leases for PV Array Area & Appurtenant Structures (Subdivision for Long Term Lease Purposes only)**

The developer or Solar PV Facility operator will lease the PV array area, including supporting infrastructure footprints from the relevant land owners.

The Surveyor General requires approval of long term lease areas by the Municipality. The application therefore includes Subdivision, but for Long Term Lease purposes, as provided for in Section 15 (2) (d) of the Beaufort West Land Use Planning By-law. Long term lease agreements in favour of the developer, will be registered for the footprint areas, aligned with the consent use areas.

The Solar PV array area, as indicated on the Site Plan, includes the appurtenant structures.

Approval in terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) (SALA), for long term leases, will be obtained. A SALA letter of no objection has been obtained for the four Mura PV Facilities.



## ■ **Permanent Departure : Building Lines & Height**

The Beaufort West Standard Zoning Scheme By-Law contains height restrictions of 8.5 m for buildings in a Renewable Energy Facility and imposes setback conditions / thresholds for wind turbines only, not Solar PV.

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.

The definition for "Renewable Energy Structure" (under Schedule 2 of the Beaufort West Standard Zoning Scheme By-Law) indicates :

*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.*

The building lines required along the northern boundary of Farm Adj Abrams Kraal No. 11 is 0 m. The following should be noted :

- The Beaufort West Land Use Scheme does not specifically specify building lines for Solar PV Facilities (Consent Use).
- However, to ensure the development rights are in place, this application seeks consent for a 0 m building / setback line along the affected boundary.
- The adjacent farm portion (Remainder Farm Abrams Kraal No. 206) will accommodate the Mura 3 Solar PV Facility.
- A similar application (building line departure to 0 m) will also be part of the Mura 3 Solar PV Facility application.
- The efficiencies for design and environmental impact necessitates that this area be developed up to the cadastral boundary.
- Continuous construction up to 0 m of the cadastral boundary will ensure economic sustainability and integrated operation of the facility.
- The EIA process recommends the location and extent of the solar PV array footprints to minimise impact.
- The adjoining land uses will be solar PV and the building line relaxation will not have a negative impact on the adjacent land use or activity.
- The design height for the Substations, Switching Stations and BESS is approximately 12 m, therefore the Departure application from 8.5 m to 12 m.

## ■ **Exemption of Servitudes (Grid Connection Powerlines & Access Roads)**

Servitudes for electricity transmission lines and access roads are exempt in terms of Section 24 of the Beaufort West Land Use Planning By-law. Proposed grid connection corridors and access roads are indicated on the Site Plan (1816E-SP-2 dated 06/2023).

## ■ Approval of Final Site Plan

The Beaufort West Standard Zoning Scheme By-Law requires :

- An applicant must submit a site development plan to the Municipality if it is required in terms of this zoning scheme before any development on the relevant land unit may commence.
- 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.

The relevant Environmental Guidelines, Environmental Authorisation, final IPP Agreements and Government Departments might require final micro-siting and placement of Solar PV array, roads, infrastructure, operations & maintenance infrastructure, substations and servitudes. It is anticipated that minor amendments will be made to the Site Development Plan, prior to construction and this will again be submitted to the Municipality for approval, as required in terms of Section 23 (5) of the Beaufort West Standard Zoning Scheme By-Law.

**Refer to Map 4 : Site Plan (1816E-SP-2 dated 06/2023)**

## 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 a Solar PV Facility, including Substations, Switching Stations, BESS, BESS substation, Operation & Maintenance / Control Centre, Offices, Warehouse / Workshop, Ablution Facilities, Site Camps, Access Roads and Electrical Cabling, on the following properties, as indicated on the Site Plan (1816E-SP-2 dated 06/2023) and the Development Parameters, as indicated in Table 2 below :
  - Farm Adj Abrams Kraal No. 11
  - Farm Sneeuw Kraal No. 46
2. **Subdivision for Long Term Lease purposes**, in terms of Section 15 (2) (d) of the Beaufort West Land Use Planning By-law, of the PV footprint (including appurtenant structures and supporting infrastructure) as referred to in Paragraph 1 above, and as indicated on the Site Plan (1816E-SP-2 dated 06/2023)
3. **Permanent Departure**, in terms of Section 15 (2) (b) of the Beaufort West Land Use Planning By-law, of Building Lines along the northern boundary of Farm Adj Abrams Kraal No. 11 to 0 m, as indicated on the Site Plan (1816E-SP-2 dated 06/2023) and of height to 12 m, as indicated in Table 2 below
4. **Servitude Exemption**, in terms of Section 24 (1) (f) of the Beaufort West Land Use Planning By-law, to accommodate 15 m wide access roads and grid connection powerlines, as indicated on the Site Plan (1816E-SP-2 dated 06/2023)
5. **Approval of Final Site Plan** (1816E-SP-2 dated 06/2023)

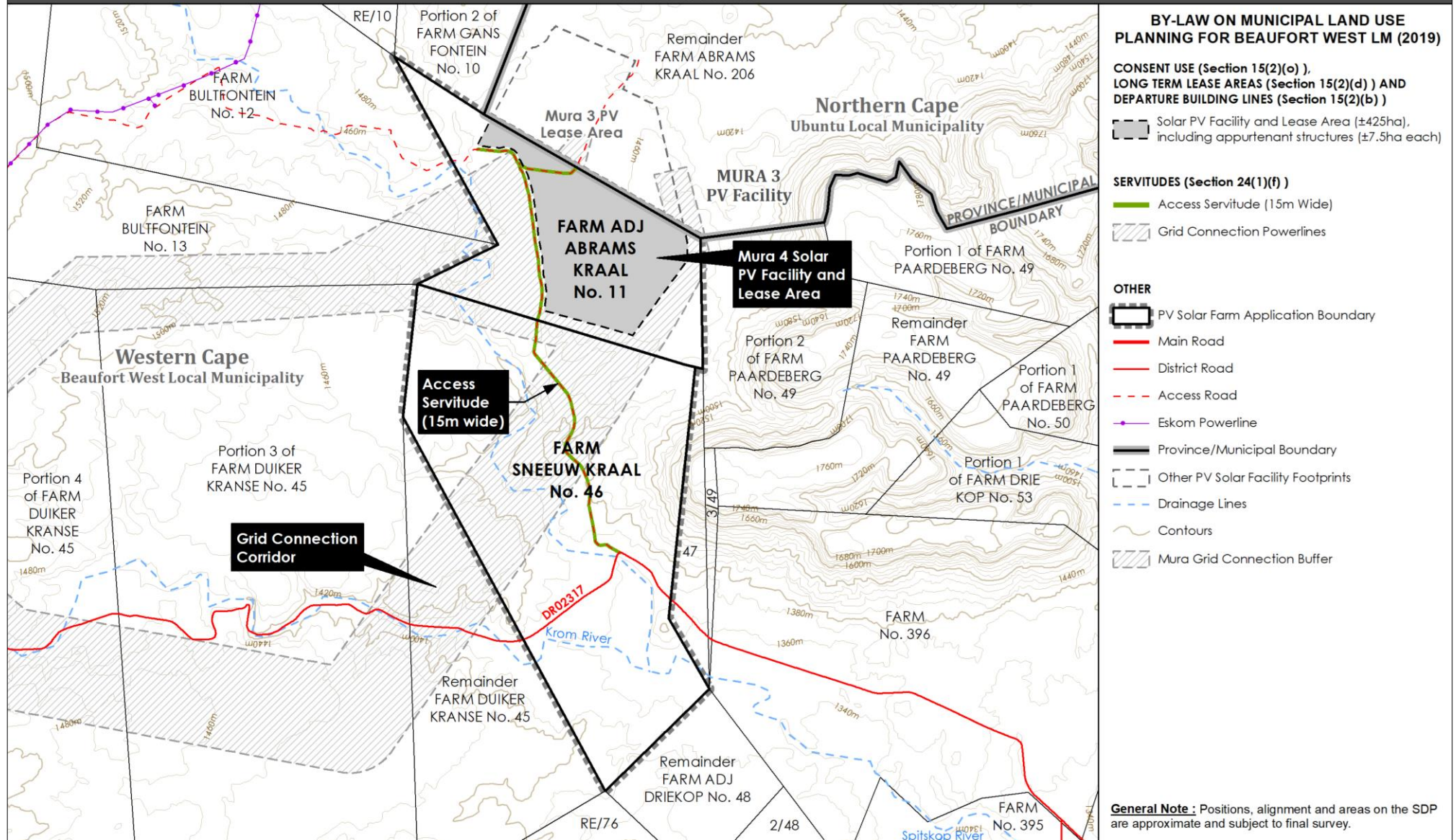
## Development Parameters

<b>Consent Use</b>	<b>Renewable Energy Structure</b>
<b>Definitions</b>	<p><b>Renewable Energy Structure</b> 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><b>Appurtenant Structures</b> 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>
<b>Total Farm Area</b>	± 2 761 ha
<b>Export Capacity</b>	Up to and approximately 360 MW
<b>Development Footprint</b>	Up to and approximately 425 ha
<b>Support Facilities &amp; Appurtenant Structures ± 7.5 ha (included in Development Footprint)</b>	<ul style="list-style-type: none"> <li>• Substations</li> <li>• Switching Stations</li> <li>• Battery Energy Storage System (BESS)</li> <li>• BESS substation</li> <li>• Operation &amp; Maintenance / Control Centre</li> <li>• Offices</li> <li>• Warehouse / Workshop</li> <li>• Ablution Facilities</li> <li>• Site Camps</li> <li>• Internal Access Roads</li> <li>• Electrical Cabling</li> </ul>
<b>Access Roads</b>	<ul style="list-style-type: none"> <li>• 12 m during construction</li> <li>• 15 m servitudes</li> </ul>
<b>Building Lines</b>	0 m, as indicated on the Site Plan, along the northern boundary and adjacent to Farm Abrams Kraal No. 206
<b>Height : BESS, Substations &amp; Switching Station</b>	12 m
<b>Height : Appurtenant Structures (Operation &amp; Maintenance / Control Centre, Offices, Warehouse / Workshop, Ablution Facilities, Site Camps)</b>	8.5 m

**Table 2 : Development Parameters**

# SITE PLAN

MAP No.



## 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
<b>Primary Use</b>	Agriculture
<b>Definition</b>	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.
<b>Building Lines</b>	30 m

### 5.2 Land Use & Site Description

The following extracts from the Final Environmental Scoping Report (April 2023) describes the study area.

#### ▣ Climate

*The proposed Project falls within the arid, desert, cold climate zone. The area experiences warm to hot summers and cool, dry winters. The near-historical (since 1980) Mean annual temperature is  $15.2 \pm 0.6^{\circ}\text{C}$ . Mean maximum temperatures range from around  $27^{\circ}\text{C}$  in summer (January and February) to  $12^{\circ}\text{C}$  in winter (June and July). Temperatures occasionally exceed  $35^{\circ}\text{C}$  but rarely beyond  $40^{\circ}\text{C}$  in summer.*

*Mean annual rainfall is  $274 \pm 80$  mm/year. Rainfall peaks in March with a mean of 35 mm and there is less than 15 mm of rainfall per month from July to September. Extreme rainfall days ( $> 20$  mm) are rare with 1.7 days. yr-1 since 1980.*

*Mean wind speed is approximately 6.5 km/h peaking in spring (October and November) and lowest in autumn (March and April). Mean wind speed has been relatively constant over the last four decades. The vast majority of wind is from north-westerly direction.*

#### ▣ Vegetation

*The Mura 4 Solar footprint falls entirely within the Eastern Upper Karoo vegetation type. Eastern Upper Karoo has an extent of 49 821 km<sup>2</sup> and is the most extensive vegetation type in South Africa and forms a large proportion of the central and eastern Nama Karoo Biome. This vegetation type is classified as Least Threatened, and about 2% of the original extent has been transformed largely for intensive agriculture. Eastern Upper Karoo is however poorly protected and less than 1% of the 21% target has been formally conserved. Mucina & Rutherford (2006) list eight endemic species for this vegetation type, which considering that it is the most extensive unit in the country, is not very high. As a result, this is not considered to represent a sensitive vegetation type. Within the study area, the vegetation is relatively homogenous, although there is some variation in which species are dominant depending on soil depth and the degree of rockiness.*

#### ▣ Geology

*The project area is situated in the west-central sector of the Main Karoo Basin of the RSA and is largely underlain at depth by continental (fluvial / lacustrine) sediments of the Lower Beaufort Group / Adelaide Subgroup (Karoo Supergroup) of latest Middle to earliest Late Permian age.*



## ▣ **Land Use**

There are a few scattered farmsteads in the surroundings, within the viewshed, which form green oases in the semi-arid landscape. The farmsteads are on average 5 to 10km+ apart, linked by narrow gravel roads. The farms are generally extensive in area and support mainly sheep farming and game.

## ▣ **Agricultural Potential**

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 agricultural sensitivity.

**Refer to Annexure 11 : Department of Agriculture, Land Reform & Rural Development (DALRRD) Letter of No Objection**

**Refer to Annexure 12 : Western Cape (WC) Department of Agriculture Support**

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

# **6. Activity Description & Parameters**

## **6.1 Typical Solar PV Facility Components**

South Africa experiences some of the highest levels of solar radiation in the world between 4.5 and 6.5 kWh/m<sup>2</sup>/day) and therefore, possesses considerable solar resource potential for solar power generation.

In terms of large-scale grid connected applications the most commonly used technology utilised in South Africa is PV installations and is described in some detail in the following section.

It must be noted that this project is specific to solar power generation through the use of solar PV technology only.

## ▣ **PV & Mounting System**

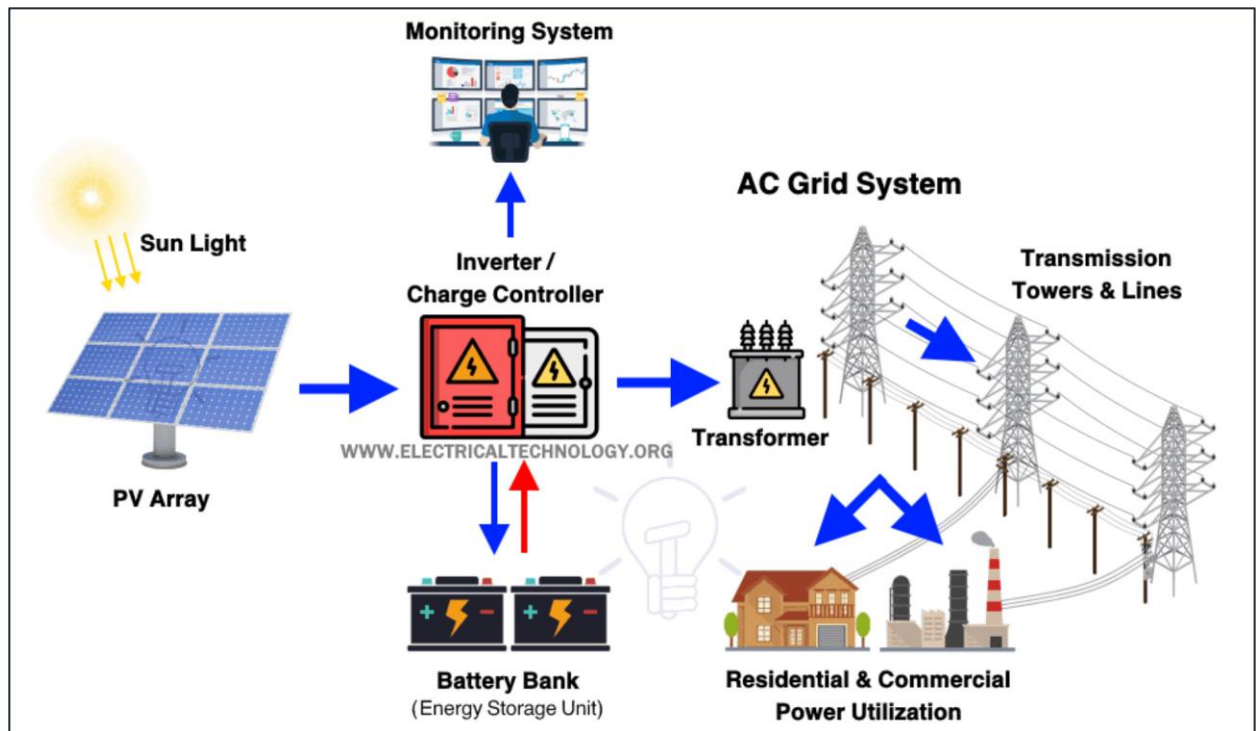
Internationally, solar PV is the fastest-growing power generation technology. Approximately 139 GW was added to the installed capacity globally in 2020, increasing the installed capacity by 18% from the previous year. The total capacity from PVs was 760 GW globally, producing approximately 3% of the world's electricity. In South Africa the solar PV installed capacity in 2020 grew by 37% compared to the previous year's value. As much as 3.6 GW of PV is planned to be installed by 2026, with approximately 1.48 GW already installed as recorded in 2019.

Large-scale or utility-scale PV systems are designed for the supply of commercial power into the electricity grid. Large-scale PV plants differ from the smaller units and other decentralised solar power applications because they supply power at the utility level, rather than to local users.

PV cells are made from semi-conductor materials that are able to release electrons when exposed to solar radiation. This is called the photo-electric effect. Several PV cells are grouped together through conductors to make up one module. Modules can be connected together to produce power in large quantities. In PV technology, the power conversion source is via PV modules that convert light directly to electricity.

Solar panels produce direct current (DC) electricity; therefore, PV systems require conversion equipment to convert this power to alternating current (AC), that can be fed into the electricity grid. This conversion is done by inverters.

The solar PV panels can be mounted in various ways to ensure the maximum exposure to sunlight. The two main mounting systems that form part of a PV facility are either single axis tracking or fixed axis mounting structures. In the fixed axis mounting structures, the panels are installed and set to face north and does not move to follow the sun. With tracking systems, the panels track the sun and thereby ensure maximum exposure to the sunlight. Both mounting systems are considered for this project.



**Main components of a Solar PV Plant**

#### ■ **Battery Energy Storage System (BESS)**

The Mura Solar facility proposal includes the development of a Battery Energy Storage System (BESS). There is a growing need for renewable energy technologies, such as solar and wind, to be able to supply a reliable source of electricity to the grid. Since solar and wind technology depend on whether the sun is shining or the wind is blowing, respectively, these technologies are only efficient when these sources are available. Battery storage systems allow for fluctuating renewable energy sources to be as stable as conventional systems and also provide a means to decouple generation of electricity from its use (i.e. provide electricity to the grid during peak demand) and therefore minimising supply and demand related issues.

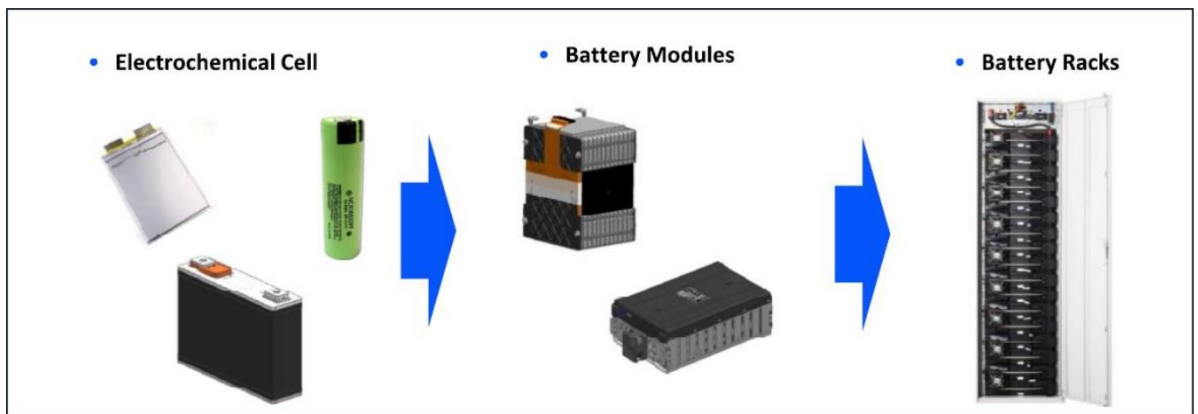
Given the ongoing improvement in battery storage technology and the significant advantages of combining battery storage with wind farms, it makes sense to include a battery facility with the solar facility. The BESS is proposed adjacent or slightly removed from the solar facility's substations, within the solar facility's development envelope.

⇒ Battery Type

The BESS will be made up of Lithium-Ion batteries or similar solid-state technology due to them being a mature and safe technology with regard to potential impacts on the environment in a solar facility, modular and easy to install and due to their technical characteristics, will work well as energy storage systems for solar facilities, as well as supporting grid stability.

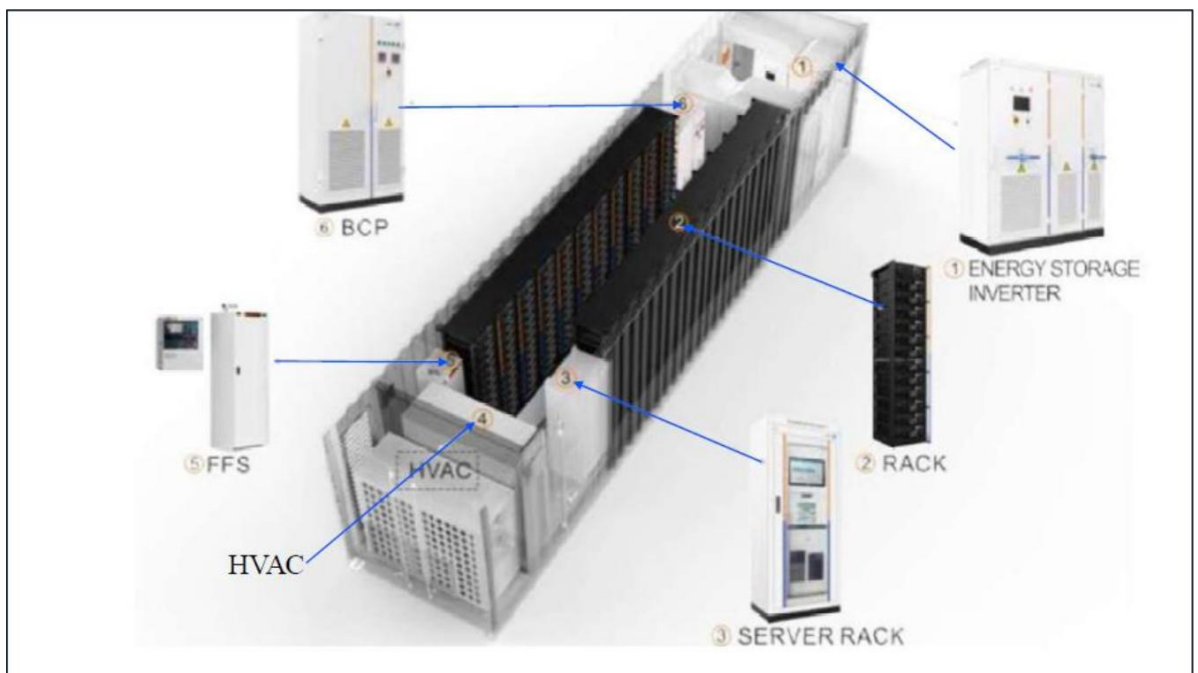
⇒ Physical Design of the Battery Facility

The battery's smallest component is the "battery cell" which is similar to the batteries that we all use in our appliances. These cells have only a very small proportion of their mass made up by liquid, which is the electrolyte and accounts for no more than about 6% of the total mass of the batteries. These cells are completely sealed in the factories when they are manufactured, and no electrolytic liquids are thus handled on site.



**Basics of utility scale batteries**

Each container will therefore contain many battery racks, an automated Heating, Ventilation and Air Conditioning system, a fire detection and suppression system, battery management system and other electrical components required to manage the batteries. The containers are standard size shipping containers of 12m long x2.5m wide x2.7m high.



**Indicative layout of battery**

The size of the battery facility will be a 240 MWac system and will be located in a 4 ha area within the solar facility's development envelope.

The battery facilities will be located in close proximity to the solar facility's substations and will be linked to the substation via up to 132kV (or less) underground cables and will not have any additional office/ operation/ maintenance infrastructure as those of the substation. In effect, the battery facilities are extensions of the substation infrastructure and, as per the substations, will be contained within a security fence.

## **6.2 Project Infrastructure**

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The following are proposed as part of the project. The total project area is 425 ha and should be assumed to be wholly transformed. The project footprint will contain the following :

- Solar Field or Array;
- Solar Farm Substations;
- BESS and BESS substation;
- Building Infrastructure;
- Other Infrastructure located within the solar area footprint; and
- Associated Infrastructure (outside the solar area footprint).

These items are discussed in more detail below.

### **▣ Solar Field**

The total development envelope for project installation is approximately 425 ha to allow for the construction of a PV facility with capacity up to 360 MW. Solar PV modules which convert solar radiation directly into electricity, will have a maximum height of 6m. The solar PV modules will be elevated above the ground and will be located on either single axis tracking structures or fixed tilt mounting structures or similar.

### **▣ Solar Farm Substations**

Each solar facility will connect to the Eskom grid via new 132 kV overhead lines (assessed in separate processes to the PV facilities) connecting the up to two on-site solar substations via an adjacent Eskom switching stations to the approved Nuweveld Collector substation.

The substations will have a maximum height of 12m and will include a high voltage gantry within a 150 m x 75 m substation yard.

### **▣ BESS & BESS Substation**

Each solar farm will have an area up to 4 ha for a 240 MWac BESS. The BESS will be Lithium-ion or similar solid-state technology. The BESS will have a substation with the same specifications as the Solar Farm substations. The BESS will be connected to the solar farm sub/switching stations via an underground high voltage cable.

### **▣ Building Infrastructure**

Building infrastructure of up to a maximum height of 8m will be located within the project area. The infrastructure includes :

- Offices;
- Operational and maintenance (O&M)/ control centre;
- Warehouse/workshop;

- Ablution facilities; and
- Converter/inverter stations.

#### ▣ **Other Infrastructure**

Other Infrastructure located within the solar area footprint includes :

- Internal underground cables of up to 132 kV;
- Internal gravel roads;
- Fencing (between 2 – 3 m high) around the PV Facility;
- Panel maintenance and cleaning area;
- Storm water management system; and
- Site camps.

#### ▣ **Associated Infrastructure**

There will be additional associated Infrastructure outside the solar area footprint but part of the solar project. This includes :

- Internal access gravel roads with a footprint of 17 ha:
  - Up to 4 m wide driving surface and may require side drains on one or both sides.
  - During construction the roads may be up to 12 m wide, but this will be a temporary impact and rehabilitated following the construction phase.
- Site camps:
  - Up to two 2.2 ha site camps within the access road corridor.

### **6.3 Employment**

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During the construction phase of the project, a number of temporary job opportunities will be created. These include highly-, medium- and low-skilled positions. To meet the Renewable Energy Independent Power Producer Procurement Program (REIPPPP) objectives or requirements many of these jobs will be reserved for individuals from the local community, where the skills are available. The Solar PV Facility will also generate permanent job opportunities throughout operation. It is intended that preference will be given, as far as possible, to those people living in the area.

### **6.4 Construction Phase**

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The construction process will follow industry standard methods and techniques. Key activities associated with the construction phase are described below.

#### ▣ **Establishment of Access & Internal Roads**

Access to the proposed Mura 4 Solar PV facility will be via the R381, DR02317 and existing access roads. Internal gravel roads will be developed. The roads will be up to 4 m wide, but during construction the roads may be up to 12 m wide, however this will be a temporary impact and rehabilitated following the construction phase.

#### ▣ **Site Preparation & Establishment**

Site establishment will include clearing of vegetation and any bulk earthworks that may be required.



#### ▣ **Transport of Components & Equipment to Site**

All construction material (i.e. PV support structure materials), machinery and equipment (i.e. graders, excavators, trucks, cement mixers etc.) will be transported to site utilising the national, regional and local road network. Large components (such as substation transformers) may be defined as abnormal loads in terms of the Road Traffic Act (No. 29 of 1989). In such cases a permit may be required for the transportation of these loads on public roads.

#### ▣ **Establishment of a Laydown Area on Site**

Construction materials, machinery and equipment will be kept at relevant laydown and/or storage areas. Laydown areas (site camps) of approximately up to 2.2ha each have been proposed for this project. The laydown areas will also be utilised for the assembly of the PV panels. The laydown area will limit potential environmental impacts associated with the construction phase by limiting the extent of the activities to one designated area.

#### ▣ **Erection of PV Panels**

The PV panels will be arranged in arrays. The frames will be fixed onto vertical posts that will be driven into the ground utilising the relevant foundation method identified during the geotechnical studies, including potentially employing concrete foundations for the panel frames. PV panels will have a maximum height of 6m.

#### ▣ **Construction of Substation & Inverters**

The facility output voltage will be stepped up from medium voltage to high voltage in the transformer. The medium voltage cables will be run underground within the facility to a common point before being fed to the onsite substation.

#### ▣ **Establishment of Ancillary Infrastructure**

Ancillary infrastructure will include a workshop, storage areas, office, and a temporary laydown area for contractor's equipment.

#### ▣ **Rehabilitation**

Once all construction is completed on site and all equipment and machinery has been removed from the site, the site will be rehabilitated.

### **6.5      *Operational Phase***

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During operation the key activities will include inspection and maintenance of the solar panels, substations, BESS, and other associated infrastructure.

### **6.6      *Decommissioning Phase***

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The decommissioning phase will include activities similar to that of the construction phase.

## 7. 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 Mura Solar PV Development, including Mura 4 Solar PV Facility 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 use of renewable energy technologies, as one of a mix of technologies needed to meet future energy consumption requirements. It must be remembered that wind energy is plentiful, renewable, widely distributed, clean and reduces GHG emissions when it displaces fossil-fuel derived from electricity. In this light, renewable wind energy can be seen as desirable.

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. In summary wind energy is desirable as it :

- 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.

## 8. 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)
- 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 (IDPs), 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*

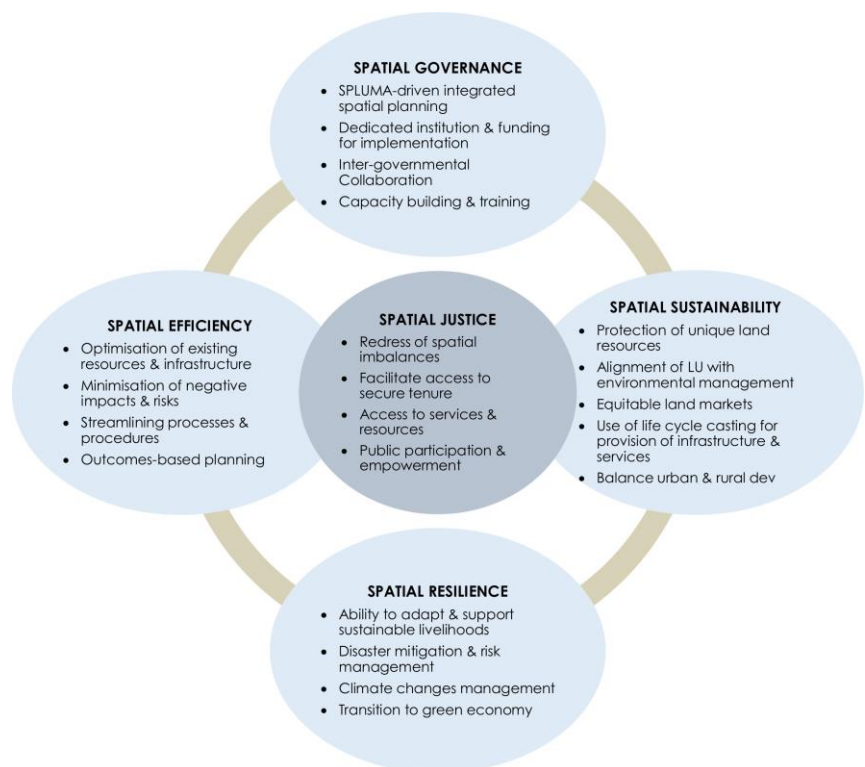
## 9. Spatial Planning & Land Use Management Act (SPLUMA) & Western Cape Land Use Planning Act (LUPA)

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 towns are Loxton and Beaufort West.
- 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 Solar PV Facilities 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 Solar PV Facility 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 Solar PV Facilities 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.
- Conventional coal fired power stations use large quantities of water during their cooling processes. Solar PV Facilities require limited amounts of water during construction and a minimal amount of water during operation.
- 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, and if not possible due to solar facility viability, 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 form of electricity generation in the country and this project would make use of the area's solar resources to provide cost-effective electricity to the national grid.

#### ▣ **The Principle of Spatial Resilience**

- The Mura 4 Solar PV Facility can contribute up to 360 MW of electricity to the national grid.
- The Solar PV Facility 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 Solar PV Facility.
- 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 and departure 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 Department of Agriculture, Land Reform & Rural Development supported the development.

## **10. 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, a Land Use, Soil and Agricultural Impact Assessment was conducted by Johann Lanz (April 2023).

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 12 : Western Cape (WC) Department of Agriculture Support***

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

The Western Cape Government : Environmental Affairs & Development Planning confirmed 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.

## **11. National Policy**

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

### **11.1 White Paper on Energy Policy (1998)**

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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.

### **11.2 White Paper on Renewable Energy Policy (2003)**

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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.

### **11.3 National Climate Change Response White Paper (2011)**

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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.

### **11.4 National Development Plan 2030 (2012)**

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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.

## **11.5 National Integrated Resource Plan for Electricity 2010-2030 (2019)**

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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 CO<sub>2</sub> 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).

## **11.6 National Integrated Energy Plan (2016)**

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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.

## **11.7 National Infrastructure Plan (2012)**

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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 basis 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.

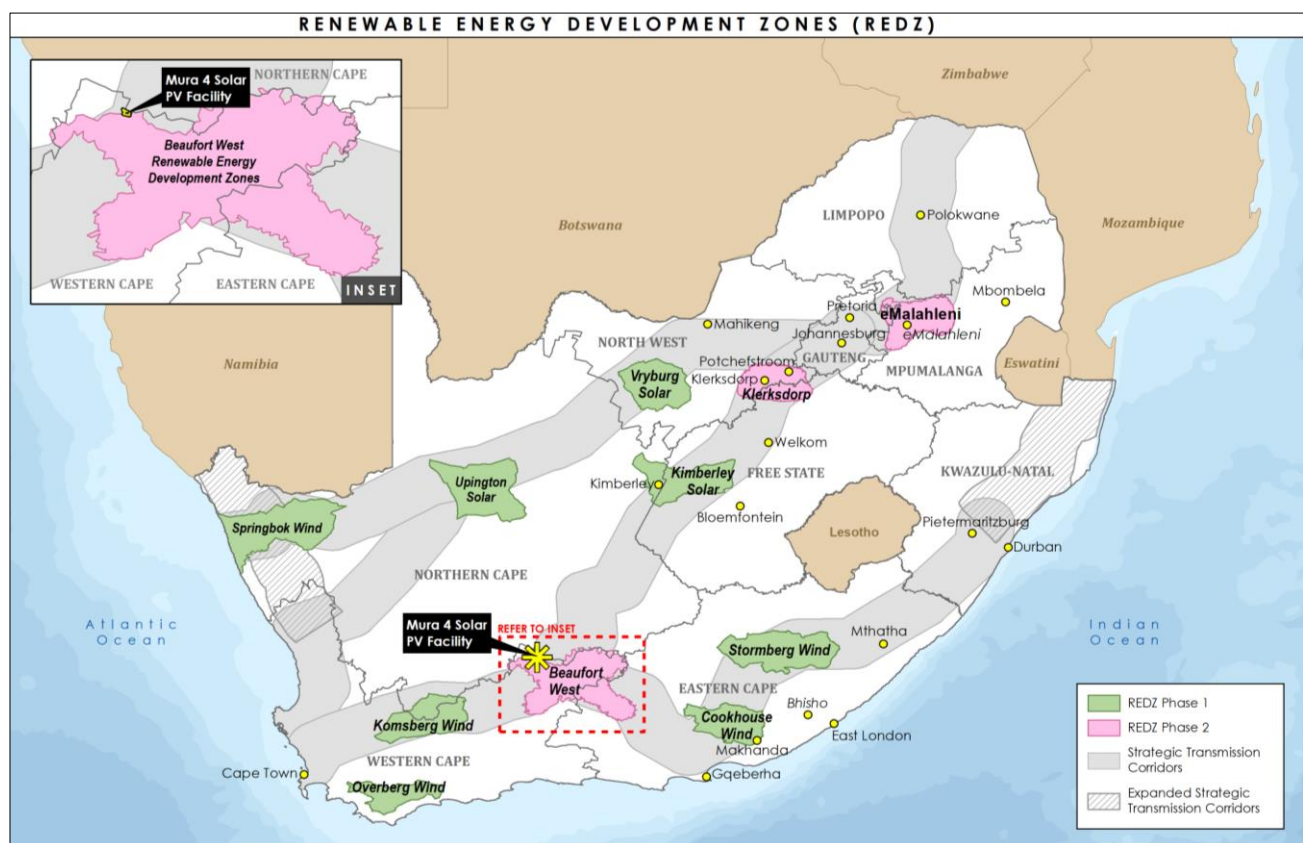
## 11.8 Strategic Environmental Assessment for Wind & Solar PV Energy (2015)

The Department of Forestry, Fisheries and the Environment (DFFE) undertook several Strategic Environmental Assessments (SEAs) to streamline future EA 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 environmental responsible development; guide decision making for all levels and ensure coordinated projects.

The figure shows an illustration of the Mura Solar PV Development site in relation to the identified REDZs and Powerline Corridors. The Mura 4 Solar PV facility falls outside, but adjacent to the Beaufort West REDZ and within to the Central CST Corridor.

The SEA does not exclude renewable energy development projects which are located outside the identified REDZs. Such projects must be considered on a project-by-project basis.



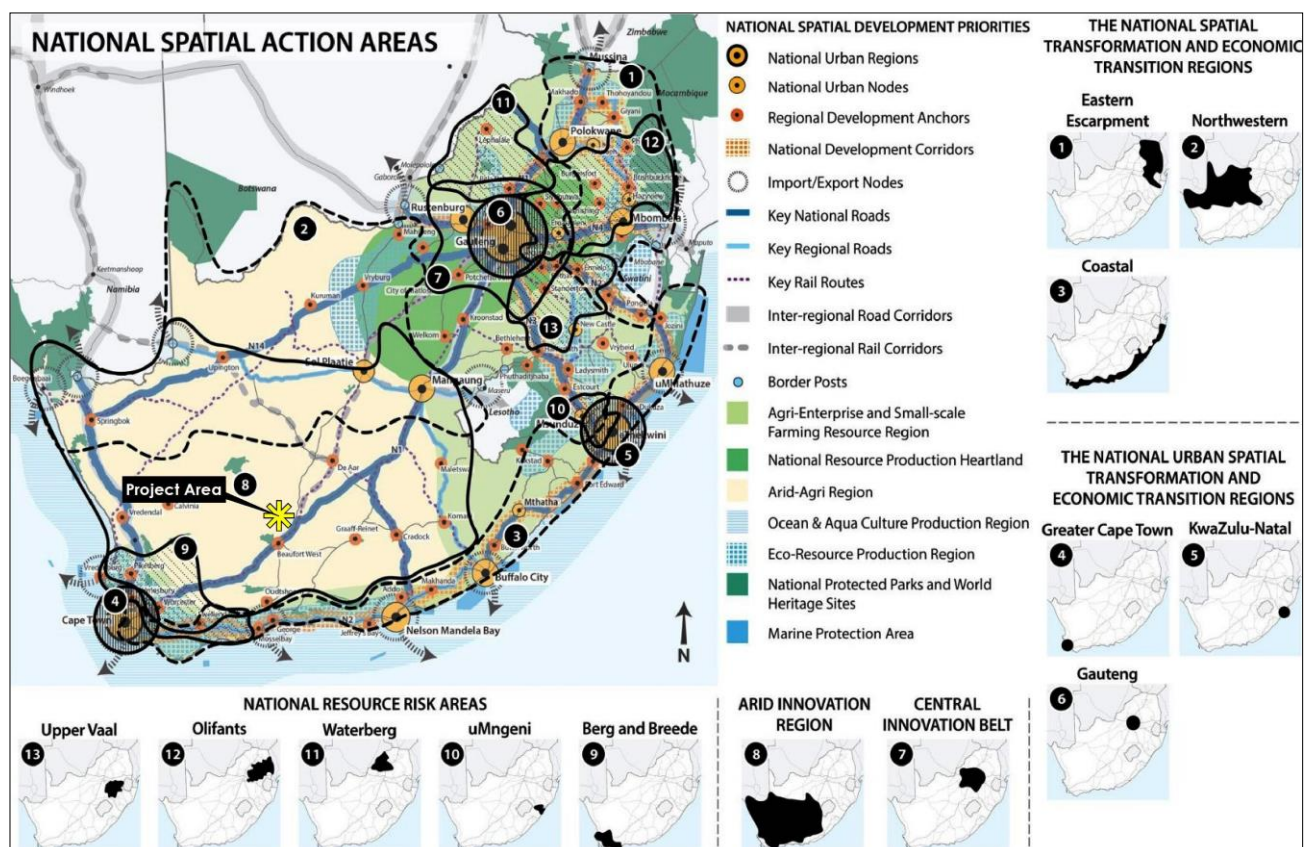
## 11.9 National Spatial Development Framework (2022)

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”.

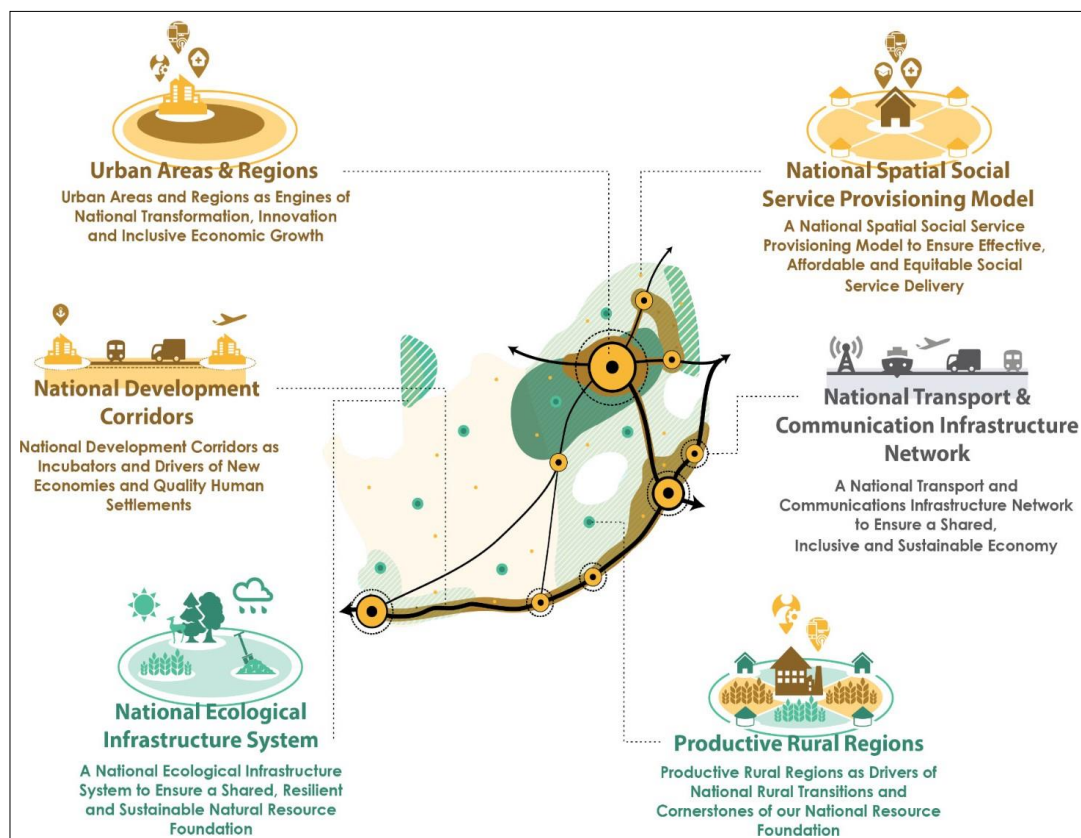
The NDP supports a move away from coal-based energy generation in line with international trends and climate protocols. Long-term spatial and infrastructure planning must therefore take this into account.



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.

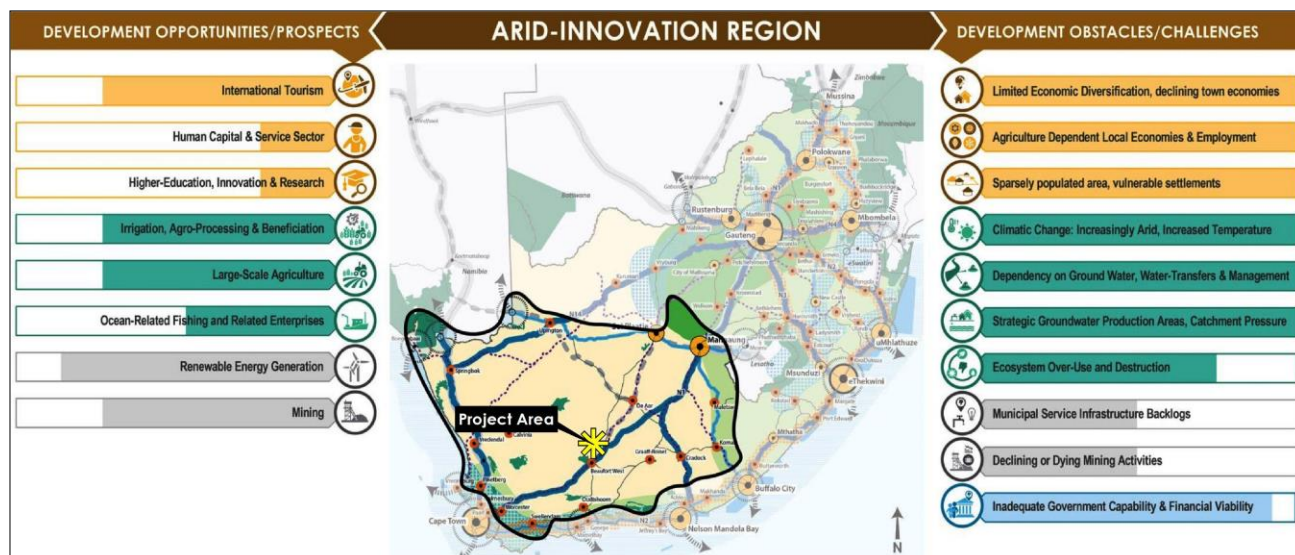
The proposed Mura 4 Solar PV Facility (this project) is situated within the Arid Innovation Region.

National Spatial Action Area	Relevant NSDF Sub-Frames			
	National System of Nodes & Corridors	National Resource Economy Regions	National Movement & Connectivity Infrastructure System	National Ecological Infrastructure Network
<b>Arid-Innovation Region</b>	Strengthening regional development anchors as connecting, catalytic and interface points.	Supporting intensive, high-value agriculture by innovative means.  Strengthening and expanding alternative energy generation.	Supporting connections between national urban nodes and regional development anchors.	Ensuring sustainable aquaculture activities that assist with ensuring regional and national food security.  Managing land and settlement development and economic activities, to ensure the protection of critical natural resources.

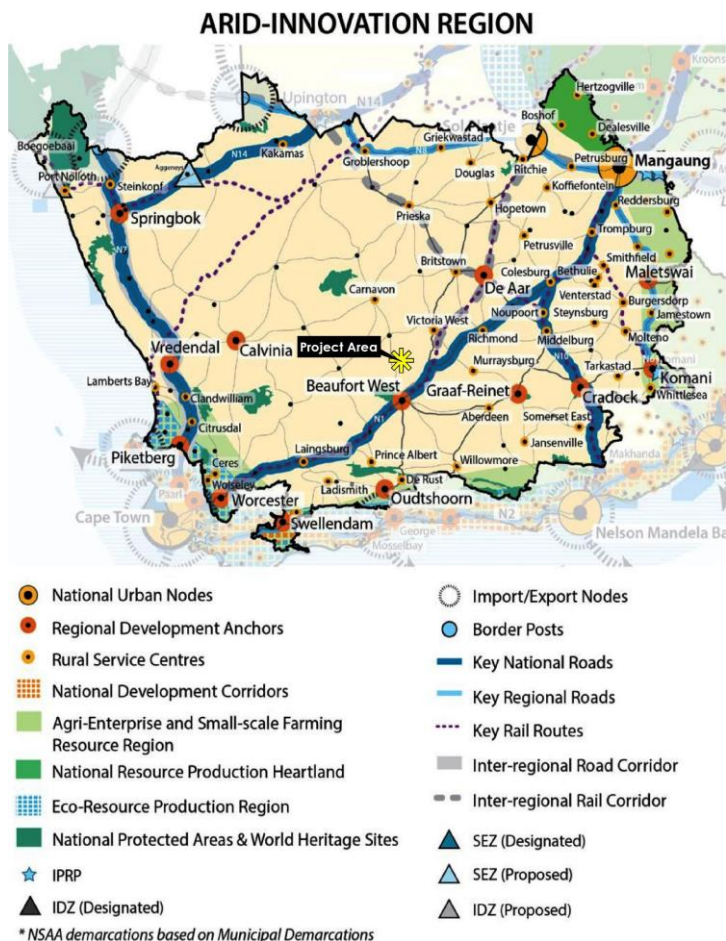


The NSDF confirms the significance of the Arid-Innovation Region (AIR) as NSAA. The region offers substantial, nationally significant opportunities that require careful and considered utilisation, including:

- 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



Renewable energy is therefore one of the catalyst interventions proposed for the area through the NSDF. The Mura 4 Solar PV Facility project supports the principles of the NSDF.



## 11.10 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.

### REGIONAL DEVELOPMENT PILLARS



The Natural  
Resource Base



The Human  
Resource Base



The Movement Infrastructure  
& Connectivity Base



The Institutional &  
Government Services Base

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 :

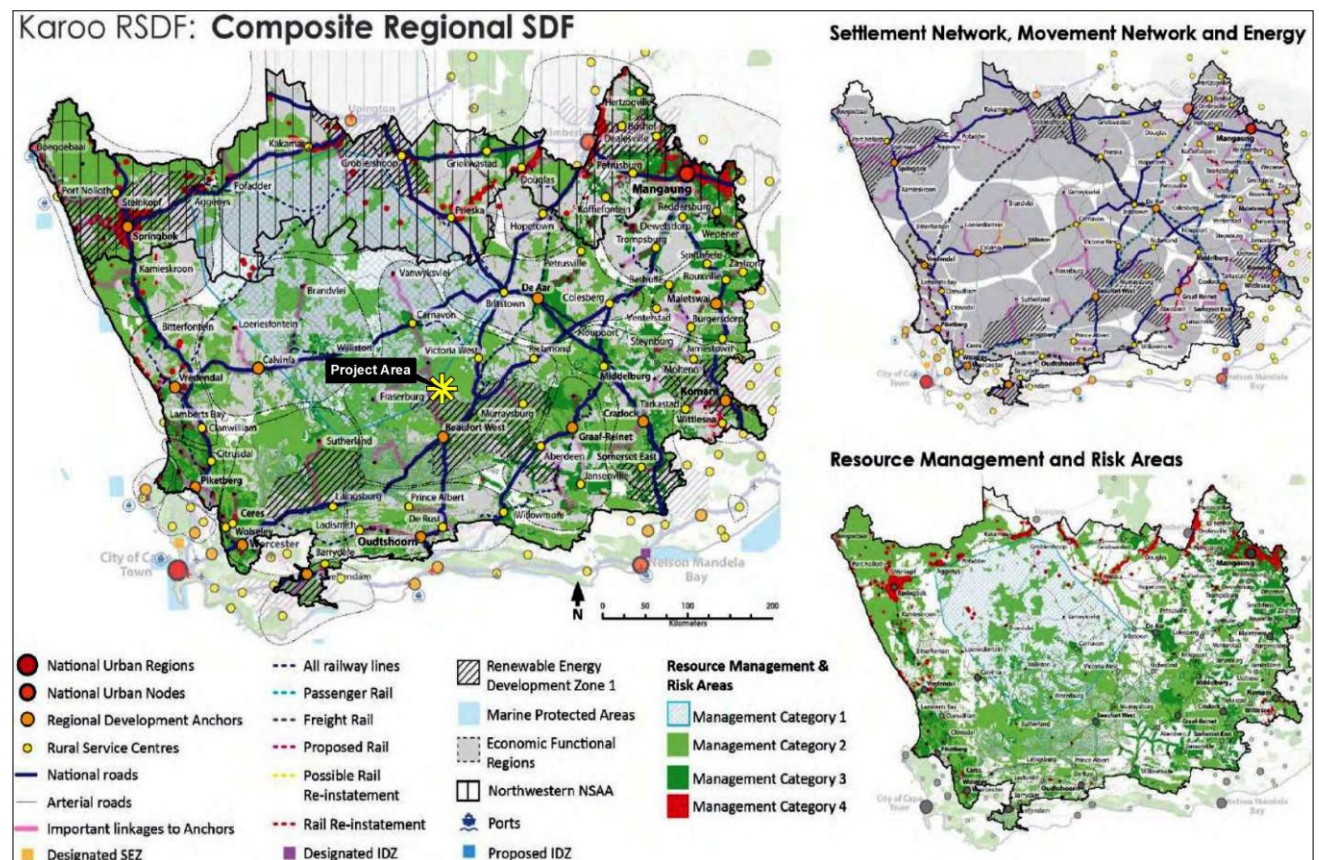
- Support the Karoo Vision and Identity
- Provide Regional Transformation Guidance
- Prioritise Regional Heritage and Conservation
- Enable Regional Growth, Innovation and Change
- Support Regional Collaborative Action



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 Mura 4 Solar PV Facility is in support of the general principles and objectives of the Karoo Regional SDF.

## 12. Provincial Policy

### 12.1 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 as well as give effect to the Provincial Strategic Objectives (SPOs), 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.

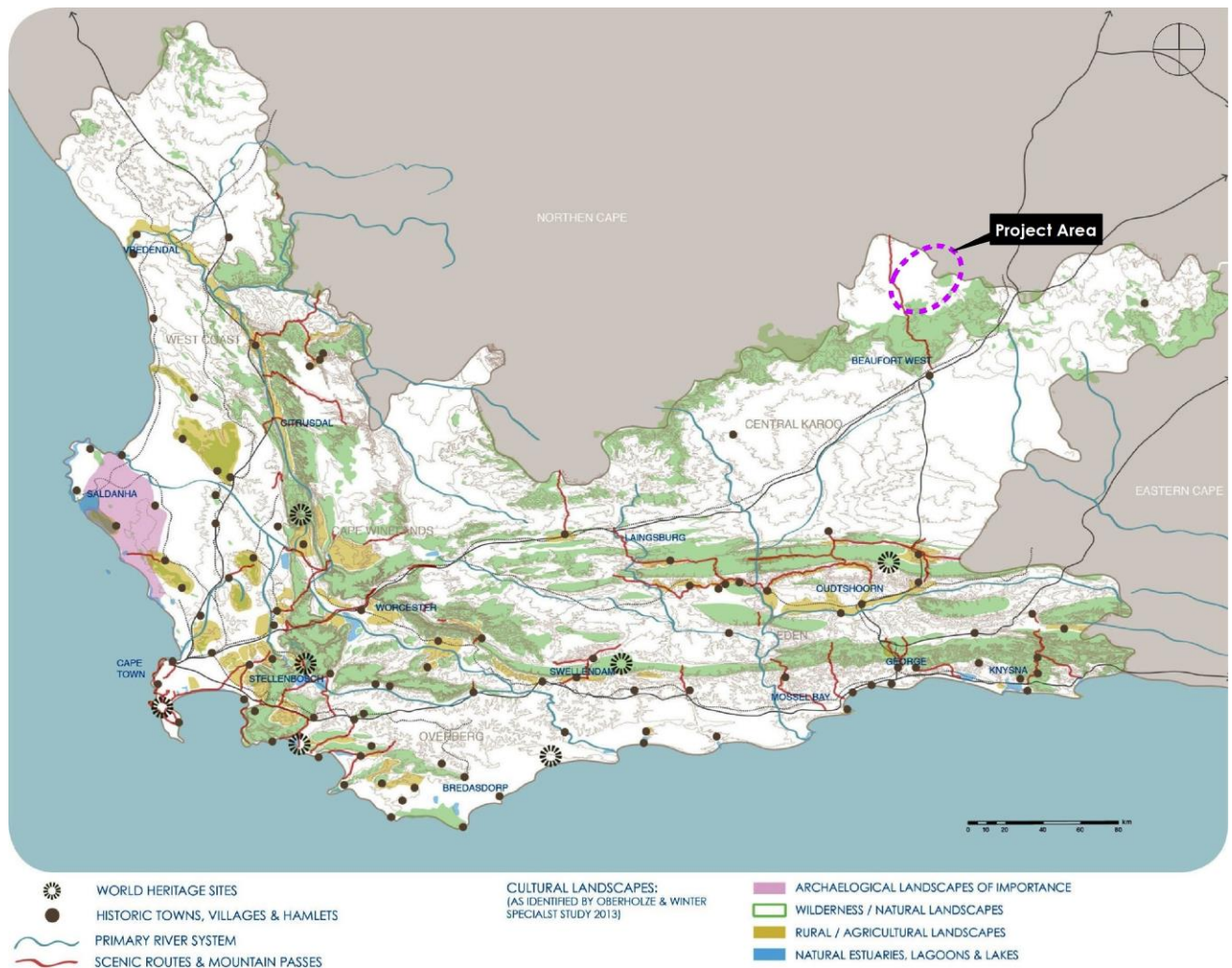
In terms of the PSDF, the Western Cape Government is committed to developing 'green' economy and their goal is for the province to be the lowest carbon province in the country and the leading green economic hub of the African continent. Generating energy from renewable sources (solar, wind power, biomass) 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 include landscape 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 Karoo National Park north of Beaufort West is a protected landscape, and the mountain passes and 'poorts' are of scenic and heritage significance. The PSDF specifically highlights the importance of amongst others the Molteno pass (R381) in the Nuweveld mountain range.

These cultural and scenic assets are illustrated in the PSDF (refer to the figure below). According to this illustration the following should be noted in terms of the development proposals :

- The R381 is indicated as a scenic route, and this should be taken into consideration in the visual impact assessment;
- Other than the scenic route, the EIA Application Area itself does not fall into an area identified as a sensitive wilderness area, natural landscape, rural or agricultural landscape or important archaeological landscape;
- The Mura Solar PV Development is more than 10 km away from the Karoo National Park and outside its Protected Area Expansion Area and Buffer Zone. SANParks, the custodian of the Karoo National Park, gave input during the EIA process and the final solar facility layout was adjusted based on their input.



## 12.2 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 Mura 4 Solar PV Facility supports the general principles of the Western Cape Land Use Planning Guidelines for Rural Areas (2019).

## **13. 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.



### 13.1 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.

### 13.2 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 Mura 4 Solar PV Facility.

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. Notwithstanding this, there are vast areas of the Central Karoo outside of these REDZ's that hold potential to generate renewable energy. These areas should not be completely ignored in supporting the future energy resilience of the province and country.

#### **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 Mura 4 Solar PV Facility project supports the principles as contained in the Central Karoo DM Spatial Development Framework.

### **13.3 Beaufort West Municipality Integrated Development Plan (2022-2027)**

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The vision and mission statements for the Beaufort West Municipality are :

#### **Vision Statement**

*Beaufort West in the Central Karoo, the economic gateway to the Western Cape, where people are developed and living together in harmony.*

## Mission Statement

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

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

- Provide, maintain and expand basic services to all people in the municipal area
- Sustainable, safe and healthy environment
- Promote broad-based growth and development
- Maintain an ethical, accountable and transparent administration
- Enabling a diverse and capacitated workforce
- Uphold sound financial management principles and practices

The proposed Mura 4 Solar PV Facility supports the Municipality's strategic focus areas, insofar as job creation, economic development, sustainability and support for National and Provincial programmes of concern.

### 13.4 Beaufort West Municipality Spatial Development Framework (2014) (MSDF)

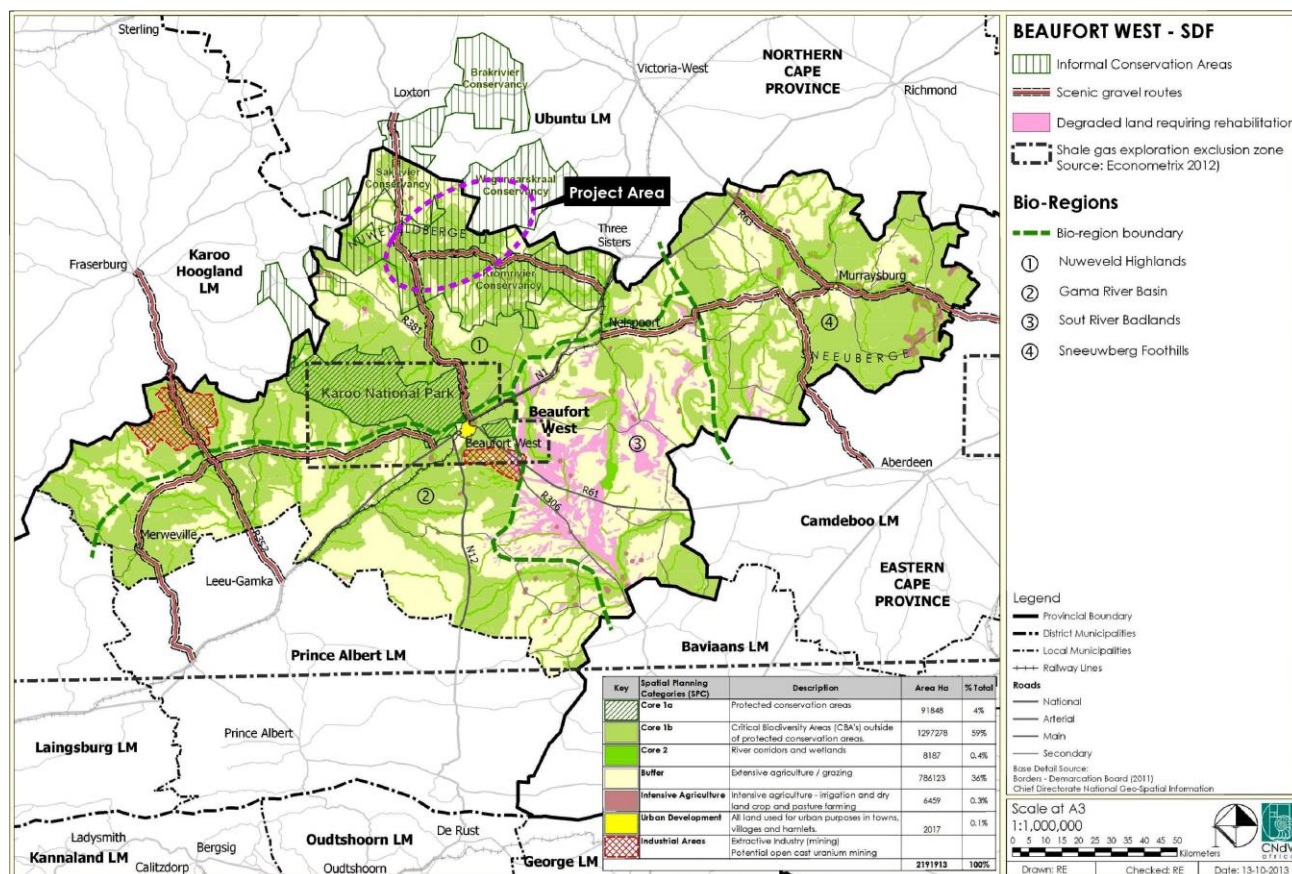
The Municipal Spatial Development Framework (MSDF) for Beaufort West links to the objectives of the IDP and becomes the spatial representation of the IDP objectives. The MSDF is linked with other spatial policies, including the PSDF and the DMSDF.

#### ▣ 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 SDF states that the Nuweveld Highlands bio-region has fairly good potential for wind and solar energy projects.



The SDF promotes major infrastructure projects such as large wind energy generation projects in general and sets out siting principles and development guidelines.

The SDF makes certain recommendations and provides guidelines for the siting of Renewable Energy Projects as well as provisions for the design of facilities, which are summarised below. These recommendations should be considered as guidelines when applications are considered.

The guidelines refer to :

- Slope
- Geology
- Soils
- Rainfall
- Surface Hydrology & Groundwater
- Vegetation
- Terrain Study

The extensive Environmental Report process and support specialist studies address the issues and guidelines adequately. The implementation of the Mura 4 Solar PV Facility will be in accordance with the Environmental Management Programme (EMPr) and Environmental Authorisation (EA).

### 13.5 Conclusion : Consistency with the MSDF

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- The SDF makes certain recommendations and provides guidelines for the siting of Renewable Energy Projects 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.
- The development proposal makes use of natural resources 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 Mura 4 Solar PV Facility development proposal supports the principles and spatial vision of the Beaufort West SDF and is deemed to be consistent with the SDF.
- 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.

## 14. 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 a detailed assessment.

WSP Group Africa (Pty) Ltd 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.

In accordance with Regulation 2 of the EIA Regulations, 2014 (as amended), the assessment of potential environmental and social impacts and benefits associated with any proposed activity that requires EA dictates that specialist, where relevant, depending on the nature and scale of the activity be appointed. As a result, several specialists have been appointed to adequately identify and assess the potential impacts and benefits associated with the Proposed Project.

## 14.1 Environmental Authorisation

The Department of Forestry, Fisheries & the Environment granted Environmental Authorisation for the Mura 4 Solar PV Facility and Associated Infrastructure, on 17 October 2023.

### **Refer to Annexure 16 : Environmental Authorisation (14/12/16/3/3/2/2325 dated 17.10.2023)**

The Environmental Authorisation (EA) includes conditions to manage implementation and operation of the Mura 4 Solar PV Facility. Amongst others, the EA includes :

- Scope of authorisation
- Commencement of the activity
- Management of the activity
- Frequency and process of updating the EMP
- Monitoring
- Recording and reporting to the Department
- Notification to authorities
- Operation of the activity
- Site closure and decommissioning

## 14.2 Project Team

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

Discipline	Company
Environmental Assessment Practitioner	WSP Group Africa (Pty) Ltd
Climate Change Assessment	Promethium Carbon
Agriculture Compliance Statement	Johann Lanz Consulting
Terrestrial Biodiversity Compliance Statement	3Foxes Biodiversity Solutions
Aquatic Biodiversity Impact Assessment	BlueScience (Pty) Ltd
Plant Species Compliance Statement	3Foxes Biodiversity Solutions
Animal Species Compliance Statement	3Foxes Biodiversity Solutions
Avifauna Impact Assessment	WildSkies Ecological Services (Pty) Ltd
Archaeological and Cultural Heritage Impact Assessment	Asha Consulting
Palaeontology Impact Assessment	Natura Viva cc
Traffic Assessment	Athol Schwarz
Visual Impact Assessment	Quinton Lawson / Bernard Oberholzer
Social Impact Assessment	Independent Economic Researchers
Geohydrological Assessment	GEOSS South Africa (Pty) Ltd
Town Planning	Urban Dynamics EC



### **14.3      *Impact Assessment Methodology***

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The assessment of impacts and mitigation evaluates the likely extent and significance of the potential impacts on identified receptors and resources against defined assessment criteria, to develop and describe measures that will be taken to avoid, minimise or compensate for any adverse environmental impacts, to enhance positive impacts, and to report the significance of residual impacts that occur following mitigation.

The key objectives of the risk assessment methodology are to identify any additional potential environmental issues and associated impacts likely to arise from the proposed project, and to propose a significance ranking. Issues / aspects will be reviewed and ranked against a series of significance criteria to identify and record interactions between activities and aspects, and resources and receptors to provide a detailed discussion of impacts. The assessment considers direct, indirect, secondary as well as cumulative impacts.

A standard risk assessment methodology is used for the ranking of the identified environmental impacts pre-and post-mitigation (i.e. residual impact). The significance of environmental aspects is determined and ranked by considering the criteria.

## 14.4 Impact Summary

A summary of the identified impacts and corresponding significance ratings for the proposed Mura 4 Solar PV Facility is provided in the table below. With the implementation of the mitigation measures prescribed by the specialists, the impacts are rated as Moderate to Very Low.

### Significance of potential construction phase impacts

Aspect	Impact	Nature	Probability	Consequence	Significance (Before Mitigation)
Agricultural Potential	Occupation of land	Negative	2	4	Medium
	Soil erosion and degradation	Negative	3	1	Low
Avifauna	Habitat destruction	Negative	4	1	Medium
	Disturbance of birds & displacement effects	Negative	3	1	Low
Palaeontology	Loss of fossils	Negative	1	4	Medium
Traffic	Increased Road Incidents	Negative	3	2	Medium
	Road Degradation	Negative	3	2	Medium
	Dust	Negative	3	2	Medium
	Intersection Safety	Negative	3	3	Medium
Visual	Visual effect of construction activities on scenic resources and sensitive receptors	Negative	3	2	Medium
Aquatic Biodiversity	Decrease in habitat integrity	Negative	2	2	Low
	Decrease in aquatic ecosystem integrity	Negative	2	2	Low
	Stress on water resources	Negative	2	2	Low
	Flow Modification	Negative	2	1	Very Low
	Decrease in aquatic ecosystem integrity	Negative	2	1	Very Low
	Water quality impacts	Negative	1	2	Very Low
Heritage	Impacts to archaeological resources	Negative	4	3	High
	Impacts to graves	Negative	1	1	Very Low
	Impacts to the cultural landscape	Negative	4	1	Medium
Social	Impacts on regional employment and incomes associated with project activities and expenditure	Positive	4	1	Medium

Aspect	Impact	Nature	Probability	Consequence	Significance (Before Mitigation)
	Impacts associated primarily with the influx of people	Negative	3	2	Medium
	Impacts on tourism	Negative	3	1	Medium
	Impacts on surrounding landowners and communities	Negative	4	3	Medium

### Significance of potential operational phase impacts

Aspect	Impact	Nature	Probability	Consequence	Significance (Before Mitigation)
Agricultural Potential	Soil erosion and degradation	Negative	3	1	Low
	Increased financial security for farming operations	Positive	2	2	Low
Avifauna	Bird fatality at PV facility	Negative	2	3	Medium
Traffic	Increased Road Incidents	Negative	2	3	Medium
Visual	Visual intrusion on scenic resources and sensitive receptors	Negative	3	3	Medium
Aquatic Biodiversity	Aquatic ecosystem integrity	Negative	3	1	Low
	Aquatic ecosystem integrity	Negative	3	1	Low
	Stress on water resource	Negative	2	1	Very Low
	Flow/hydraulic modification	Negative	2	2	Low
Heritage	Impacts to the cultural landscape	Negative	4	1	Medium
Social	Impacts on regional employment and incomes associated with project activities and expenditure	Positive	4	1	Medium
	Impacts associated with the funding of local socio-economic development, enterprise development and shareholding	Positive	4	1	Medium
	Impacts associated primarily with the influx of people	Negative	3	2	Medium

Aspect	Impact	Nature	Probability	Consequence	Significance (Before Mitigation)
	Impacts on tourism	Negative	3	1	Medium
	Impacts on surrounding landowners and communities	Negative	4	3	Medium

#### Significance of potential decommissioning phase impacts

Aspect	Impact	Nature	Probability	Consequence	Significance (Before Mitigation)
Agricultural Potential	Occupation of land	Negative	2	4	Medium
	Soil erosion and degradation	Negative	3	1	Low
Avifauna	Disturbance of birds & displacement effects	Negative	3	1	Low
Aquatic Biodiversity	Loss of aquatic habitat and biota	Negative	2	1	Very Low
	Aquatic ecosystem integrity	Negative	2	1	Very Low
Heritage	Impacts to the cultural landscape	Negative	4	1	Medium
Social	Impacts on regional employment and incomes associated with project activities and expenditure	Positive	4	1	Medium
	Impacts associated primarily with the influx of people	Negative	3	2	Medium
	Impacts on tourism	Negative	3	1	Low
	Impacts on surrounding landowners and communities	Negative	4	3	Medium

## 14.5 Potential Impacts

The scoping phase of an S&EIR process is aimed to identify potential impacts that are most likely to be significant and which need to be assessed as part of the S&EIR process. The determination of anticipated impacts associated with the proposed development is a key component to the S&EIR process. The Scoping Report identifies the anticipated environmental and social impacts associated with the proposed project.

Each significant issue identified is to be investigated further during the S&EIR process. Non-significant issues will be scoped out of the study with reasonable consideration given within the Scoping Report.

The potential environmental and social impacts of the Mura 4 Solar PV Development have been identified at a high level. These impacts and mitigation measures have been further assessed during the EIA Process and the Department of Forestry, Fisheries & the Environment issued a positive Environmental Authorisation for the Mura 4 Solar PV Facility and Associated Infrastructure, on 17 October 2023.

**Refer to Annexure 16 : Environmental Authorisation (14/12/16/3/3/2/2325 dated 17.10.2023)**

## **14.6 Cumulative Impact Statement**

A cumulative impact assessment is the process of (a) analysing the potential impacts and risks of proposed developments in the context of the potential effects of other human activities and natural environmental and social external drivers on the chosen Valued Environmental and Social Components (VECs) over time, and (b) proposing concrete measures to avoid, reduce, or mitigate such cumulative impacts and risk to the extent possible (IFC GPH).

Cumulative impacts with existing and planned facilities may occur during construction and operation of the proposed Mura 4 Solar PV Facility. While one project may not have a significant negative impact on sensitive resources or receptors, the collective impact of the projects may increase the severity of the potential impacts.

Therefore, a number of renewable energy developments within the surrounding area which have submitted applications for environmental authorisation (some of which have been approved and others still pending EA). It is important to note that the existence of an approved EA does not directly equate to actual development of the project.

Other planned or existing projects that can interact with the Project will be identified during stakeholder engagement and finalisation of the S&EIA process.

## **15. Department of Agriculture, Land Reform & Rural Development (DALRRD) and Western Cape Department of Agriculture**

The subject land portions are currently zoned for agricultural purposes and are classified as agricultural land in terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) (SALA).

DALRRD confirmed that it has no objection to the proposed change in land use for the construction and operation of the Mura 4 Solar PV Facility.

**Refer to Annexure 11 : Department of Agriculture, Land Reform & Rural Development (DALRRD) Letter of No Objection**

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

A final approval by DALRRD, in terms of SALA, for the servitudes and long term lease areas will be obtained after the Beaufort West Municipality issues the relevant LUPA approval.

The Western Cape Department of Agriculture : Land Use Management, further confirmed support for the Mura 4 Solar PV Facility project.

**Refer to Annexure 12 : Western Cape (WC) Department of Agriculture Support**



## 16. Land Claims Commissioner (LCC)

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

***Refer to Annexure 10 : Land Claims Commissioner (LCC) Confirmation***

## 17. Title Deed Conditions

The following title deeds are applicable to the farm portions :

Property Description	Title Deed No.
Farm Adj Abrams Kraal No. 11	T15817/2017
Farm Sneeuw Kraal No. 46	T111630/1997

***Refer to Annexure 5 : Title Deeds***

***Refer to Annexure 7 : Conveyancing Certificates***

A Conveyancing Certificate confirms that there are no restrictive conditions in the Title Deeds that need to be removed.

## 18. 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.

## 19. Public Interest & Participation

Public participation with respect to an application for Consent Use, Departure and Long Term Lease is guided by 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.

## 20. 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 Mura 4 Solar PV facility, that it will have benefits to the communities of the greater Central Karoo District and will contribute 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 Mura 4 Solar PV Facility, north of Beaufort West in the Western Cape, demonstrates this commitment towards renewable energy and green efficiencies.

The development of Mura 4 Solar PV Facility has been assessed by a team of professionals and based on the outcome of the Environmental Assessment and specialist studies. A positive Environmental Authorisation has been issued by the Department of Forestry, Fisheries & the Environment.

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.
- A positive Environmental Authorisation has been issued by the Department of Forestry, Fisheries & the Environment.
- The project is supported by the Department of Agriculture, Land Reform & Rural Development and the Western Cape Department of Agriculture.
- Implementation of the Solar PV Facility 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 promotes 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 Governments 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.

It is therefore recommended, from a planning point of view, that this application should be supported as it will have a positive impact on development in the area.