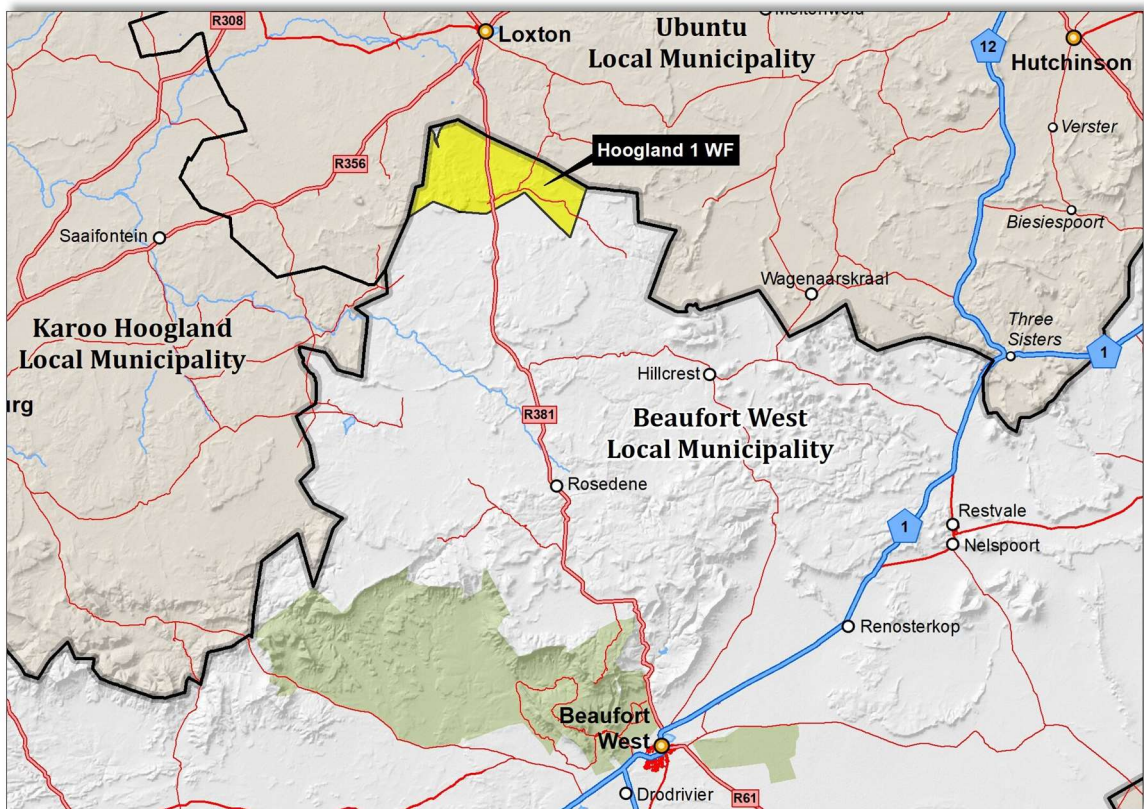


# Hoogland 1 Wind Farm

Application for :

- Consent Use : Renewable Energy Structures
  - Subdivision (for Long Term Lease purposes)
  - Registration of Servitudes
- on various farm portions



Report Number : 1805E/02

April 2023

Prepared by :

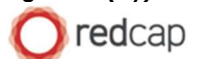
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<b>Report Title :</b>	<b>Hoogland 1 Wind Farm :</b> Application for : <ul style="list-style-type: none"> <li>• Consent Use : Renewable Energy Structures</li> <li>• Subdivision (for Long Term Lease purposes)</li> <li>• Registration of Servitudes on various farm portions</li> </ul>
<b>Report Number :</b>	1805E/02
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<b>Report Status :</b>	Final
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**Note :** The data and content contained in this report, annexures and maps are based on information as received and interpreted by Urban Dynamics Eastern Cape from secondary sources, including the Client, Land Owner and Specialist Studies. Although Urban Dynamics Eastern Cape attempts, at all times, to present accurate and reliable information, we make no warranty of any kind, expressed or implied, to the accuracy and reliability of information sourced and obtained from secondary sources.

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2. Property Description & Cadastral Information
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4. Site Plan (including Lease Area & Servitudes)
5. Hoogland Wind Farm Cluster Overview

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2. Application Form (T2)
3. Powers of Attorney
4. Deeds Office Enquiries
5. Title Deeds
6. Bond Holder's Consents
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8. Cadastral Diagrams
9. Final Environmental Impact Assessment Report (August 2022)
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11. Department of Agriculture, Land Reform & Rural Development (DALRRD) Approval
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14. Site Sensitivity Verification & Agricultural Compliance Statement
15. LUPA Section 53 (1) Confirmation Statement from Johann Lanz Consulting
16. Department of Transport & Public Works (DTPW) In-principle Support
17. Western Cape (WC) Department of Agriculture Support
18. Hoogland Northern Cluster Traffic Impact Assessment (TIA)
19. Hoogland 1 & 2 Wind Farms Heritage Impact Assessment (HIA)
20. Heritage Western Cape (HWC) Comment & Support
21. Department of Water & Sanitation (DWS) Comment & Support

**Note :** All Specialist Studies can be made available on request

## 1. The Applicant

Urban Dynamics Eastern Cape (UDEEC) has been commissioned by Red Cap Hoogland 1 Proprietary Limited, on behalf of the owners of various farms north-west of Beaufort West, along the R381 (Western Cape, Beaufort West Municipality), to prepare and submit an application to obtain the necessary development rights to develop a wind farm for the generation of renewable energy, known as the Hoogland 1 Wind Farm (WF).

***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 WF project.

## 2. The Project & Location

Red Cap Energy (Pty) Ltd ('Red Cap') and their affiliate companies are proposing to develop four Wind Farms and associated grid connections in an area located between Loxton and Beaufort West in the Western Cape Province. Hoogland 1 Wind Farm and Hoogland 2 Wind Farm are located to the north, closer to Loxton and form the Northern Cluster of Wind Farms that will share a grid connection named the Hoogland Northern Grid Connection. Hoogland 3 and 4 Wind Farms are located closer to Beaufort West and comprise the Southern Cluster, which will similarly share a separate grid connection, named the Southern Grid Connection.

The Wind Farms are located west and east of the R381, which runs between Beaufort West and Loxton.

Each of the wind farms in the Hoogland Northern and Southern Clusters will be developed by separate entities. This will necessitate 4 separate applications in terms of the Beaufort West Local Municipality By-laws on Municipal Land Use Planning (2019).

**This report comprises of the land development application for the Hoogland 1 WF.**

The Hoogland 1 WF is situated  $\pm 70$  km north of Beaufort West and  $\pm 20$  km south of Loxton, along the R381. The facility comprises of  $\pm 18\,635$  ha, including 9 farm portions with 87 wind turbines, access roads, power lines, permanent and temporary supporting infrastructure, buildings, switching stations and substations. The facility will have an export capacity of up to 420 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 : Property Description & Cadastral Information : Aerial***

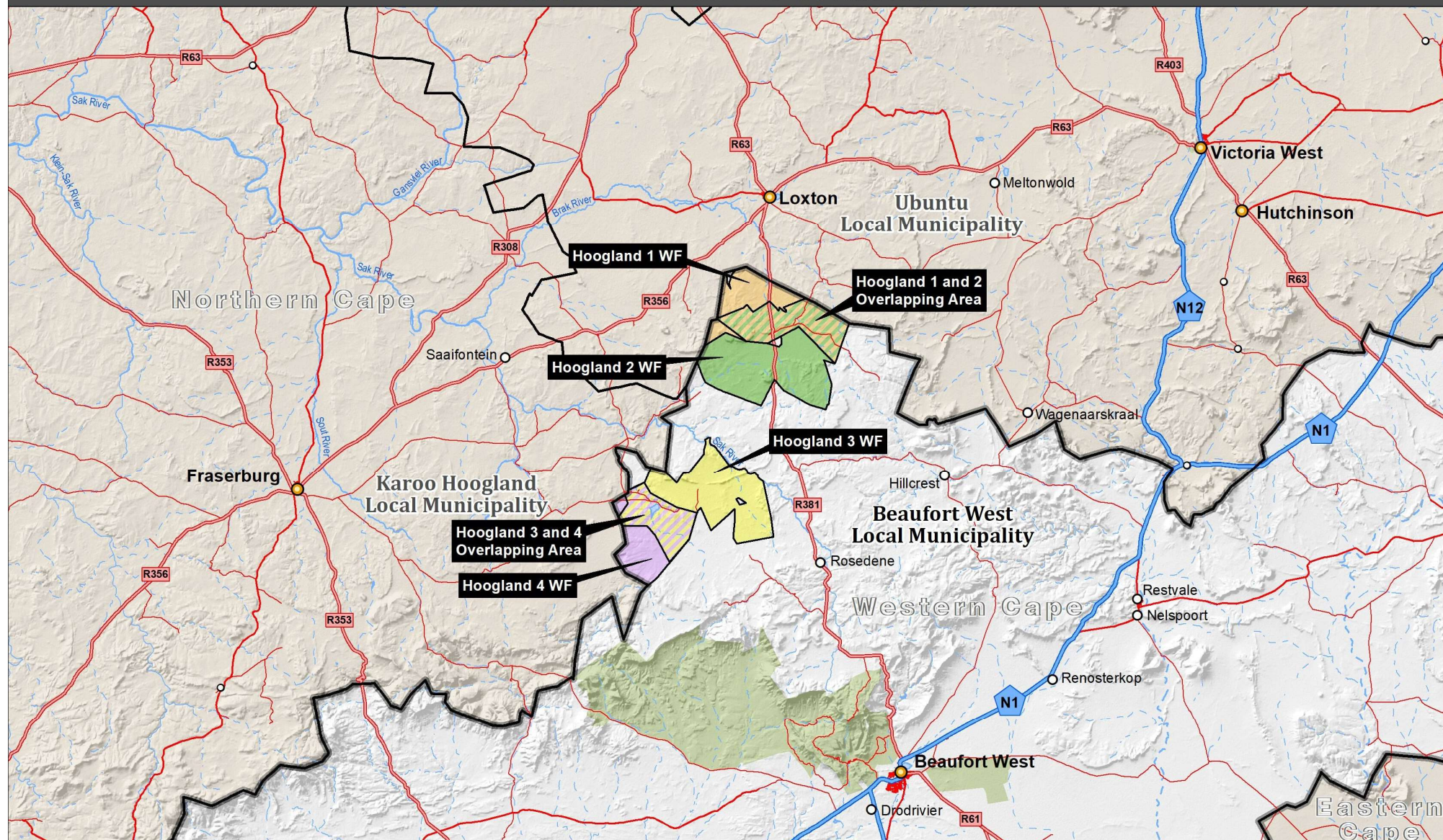
***Refer to Map 5 : Hoogland WF Cluster Overview***

The sketch below indicates the location of the 4 Hoogland WF's.



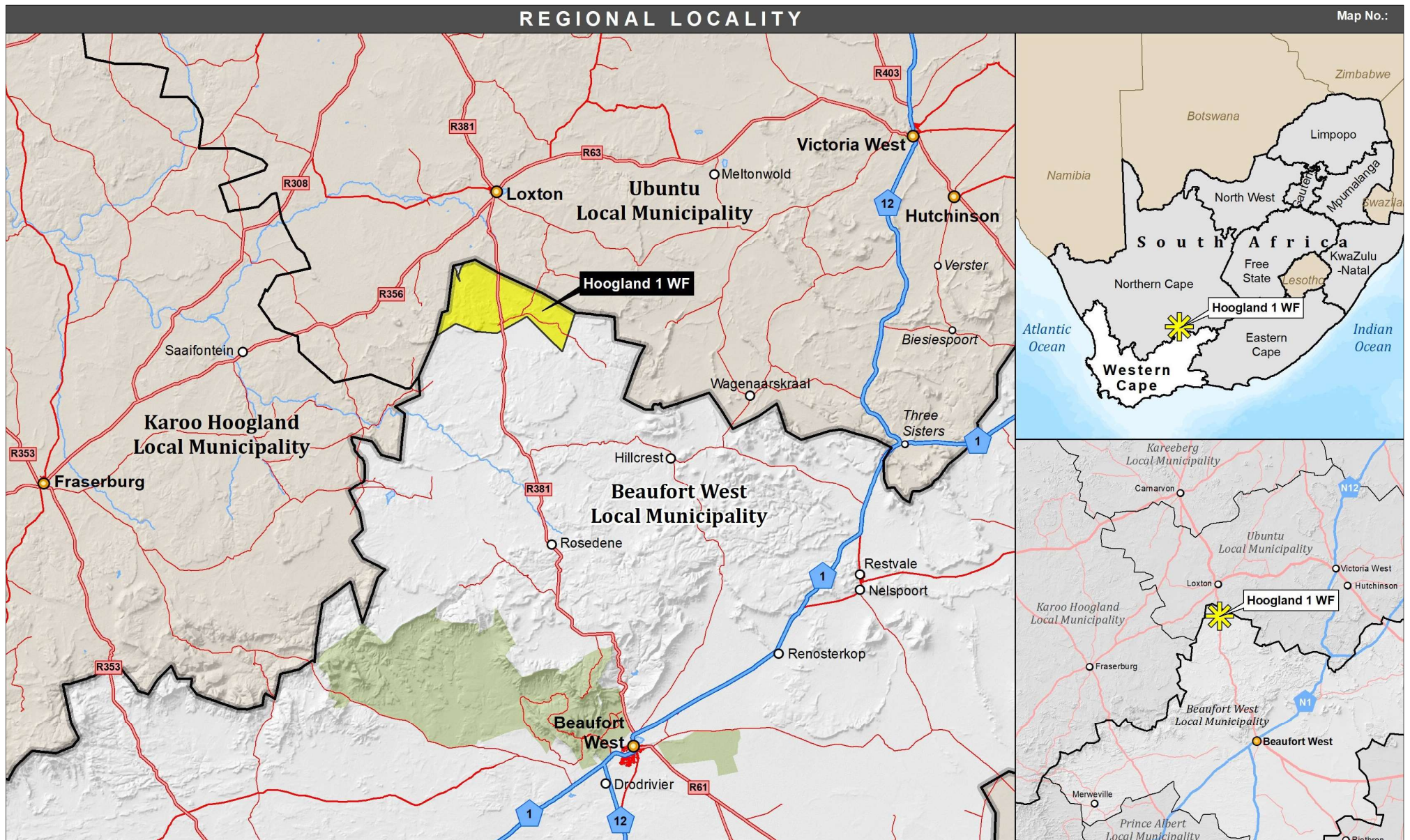
# HOOGLAND WF CLUSTER OVERVIEW

Map No.:



**Map 5 : Hoogland WF Cluster Overview**





**Map 1 : Regional Locality**

### 3. Affected Properties

The Hoogland 1 WF comprises of 9 farm portions. These farms will accommodate wind turbines, supporting infrastructure, access roads, powerlines. Maps 2 and 3 indicate the various farms and cadastral entities.

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

Table 1 lists the properties that accommodate wind turbines, supporting infrastructure, access roads and powerlines. The table further confirms ownership, title deed number, area, restrictive title conditions and registered bonds.

Property Description	Owner	Title Deed No.	Area (ha)	Restrictive Conditions	Bonds
Remainder Portion 1 of Farm Slange Fontein No. 6	Rocklands Trust	T54840/1998	2209.1002	No	No
Farm Bastards Poort No. 2	Johannes Nicolaas Scholtz	T56031/1995	1065.2617	No	No
Remainder Farm Slange Fontein No. 6	JJ Minnaar Trust	T24017/1996	5851.0312	No	No
Portion 2 of Farm Duikerfontein No. 5	JJ Minnaar Trust	T24017/1996	1858.5894	No	No
Remainder Portion 1 of Farm Duikerfontein No. 5	JJ Minnaar Trust	T24017/1996	539.8272	No	No
Portion 2 of Farm Droog Fontein No. 1	Duikerfontein Trust	T93234/2001	1895.5053	No	Yes
Remainder Farm Duikerfontein No. 5	Duikerfontein Trust	T93234/2001	4654.2341	No	No
Portion 3 of Farm Duikerfontein No. 5	Duikerfontein Trust	T93234/2001	529.5157	No	No
Portion 7 of Farm Slange Fontein No. 6	Duikerfontein Trust	T93234/2001	32.5927	No	No

**Table 1 : Properties to Accommodate the Hoogland 1 WF**

Bonds are registered against the deeds of the following property :

Property Description	Title Deed No.	Bond No.
Portion 2 of Farm Droog Fontein No. 1	T93234/2001	B2953/2019

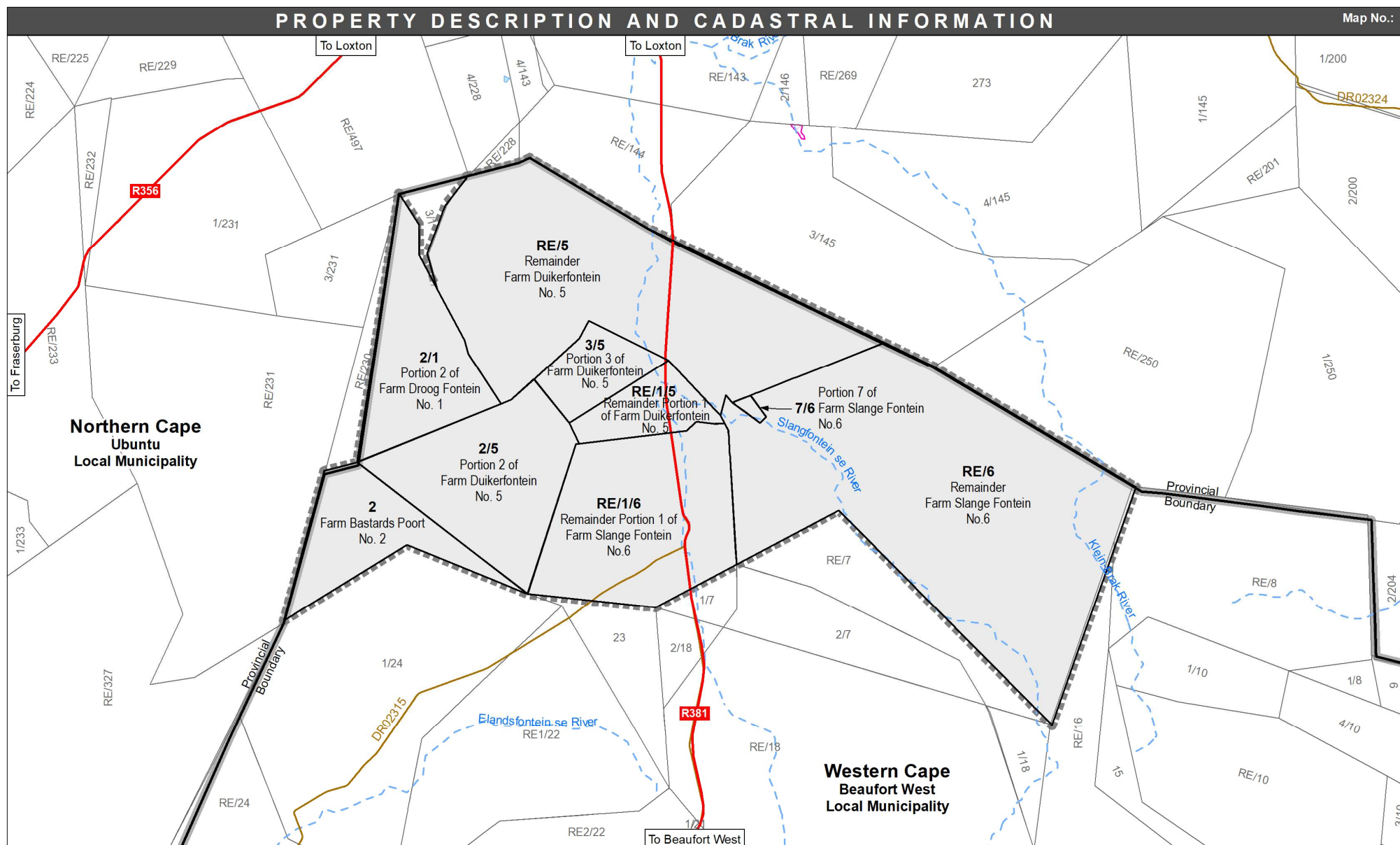
**Refer to Annexure 4 : Deeds Office Enquiries**

**Refer to Annexure 5 : Title Deeds**

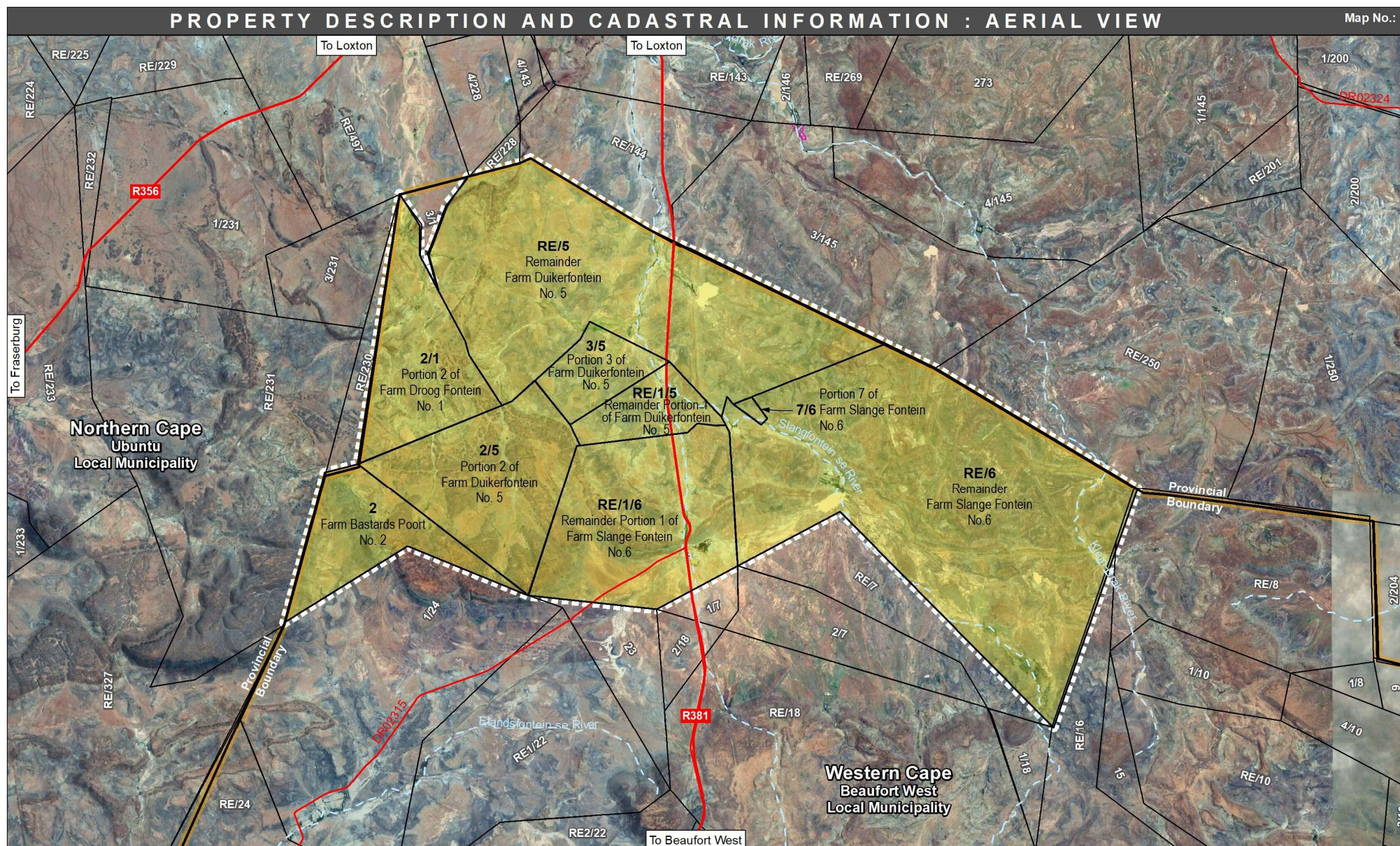
**Refer to Annexure 6 : Bond Holder's Consents**

**Refer to Annexure 7 : Conveyancing Certificates**









**Map 3 : Property Description & Cadastral Information : Aerial**



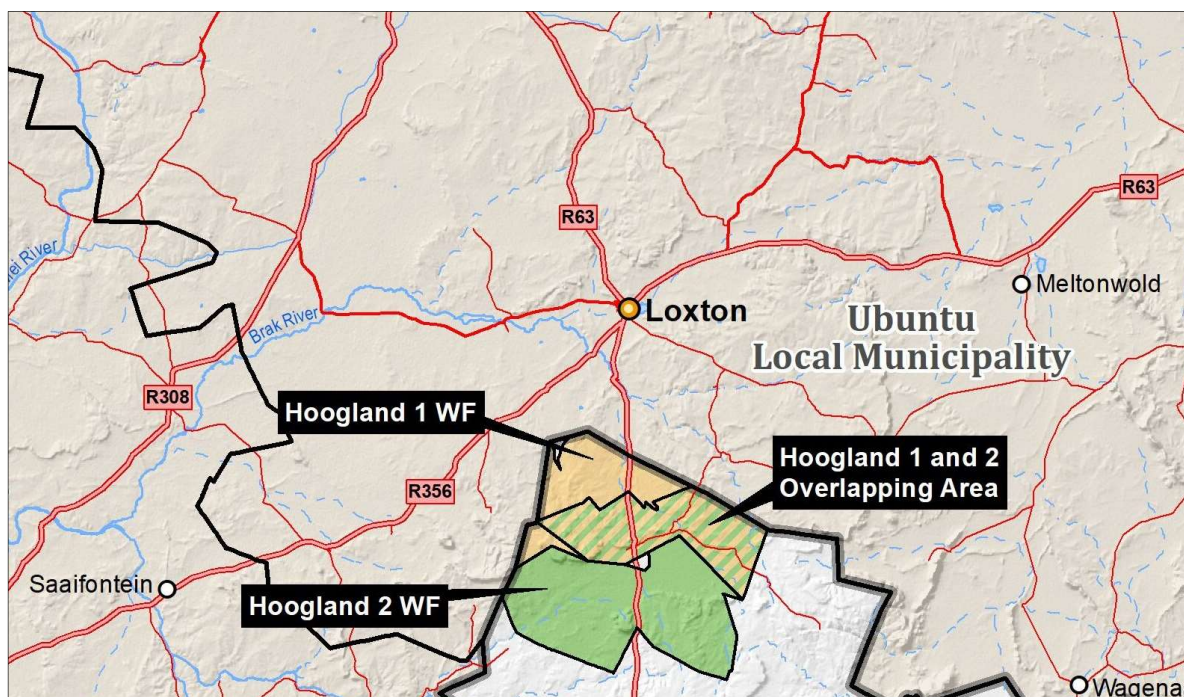
### 3.1 Properties accommodating 2 Wind Energy Facilities

#### Refer to Map 5 : Hoogland WF Northern Cluster Overview

Operational considerations, environmental considerations and terrain restrictions guided siting of wind turbines, supporting infrastructure and access. This resulted in single properties (farms) accommodating turbines and supporting infrastructure from both Hoogland 1 WF and Hoogland 2 WF, as indicated in the diagram below.

The following properties will accommodate supporting infrastructure and wind turbines for both Hoogland 1 and 2 WFs :

- Portion 2 of Farm Duikerfontein No. 5
- Remainder Portion 1 of Farm Duikerfontein No. 5
- Remainder Portion 1 of Farm Slange Fontein No. 6
- Remainder Farm Slange Fontein No. 6



## 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 wind energy facility and associated infrastructure on the subject land portions.

The location of the WF site has been identified through a detailed wind data capturing and assessment process, which indicates that the site has a favourable wind regime. The layout and siting of wind turbines was 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 Hoogland 1 Wind Farm, development approval is required for the following :

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

A wind energy 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.

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

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

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

“**Appurtenant structures**” means :

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

The Beaufort West Standard Zoning Scheme By-Law further outlines development parameters for wind farms :

- **Height :**
  - Renewable Energy Structure : Technology dependant
  - Buildings : may not exceed 8.5 m
- **Setback (wind turbines) :**
  - 1.5 times the overall blade tip height of the turbine, from the nearest residential, commercial or critical agricultural structures
  - 100 m from the cadastral boundary of the land unit, unless the renewable energy structure straddles two or more cadastral boundaries, in which case no setback applies
  - 100 m from any public road or private or public right of way
  - 100 m from any electrical infrastructure
  - 1 000 m from towns, settlements or urban areas
- **Building Line (appurtenant structures) :**
  - 30 m

**The Hoogland 1 WF will adhere to the development parameters and setbacks as per the Beaufort West Standard Zoning Scheme By-Law.**

The Hoogland 1 WF will include the following appurtenant structures : Substations, Switching Stations, Operation & Maintenance Area / Building, Battery Energy Storage Systems (BESS), Security Areas & Access Control, General Laydown Areas, Site Camp, Batching Plants, Access Roads, Cabling and Powerlines (refer to Paragraph 4.3 and development parameters for detail).

▣ **Long Term Leases for Individual Wind Turbine Footprints & Supporting Facilities (Subdivision for Long Term Lease Purposes only)**

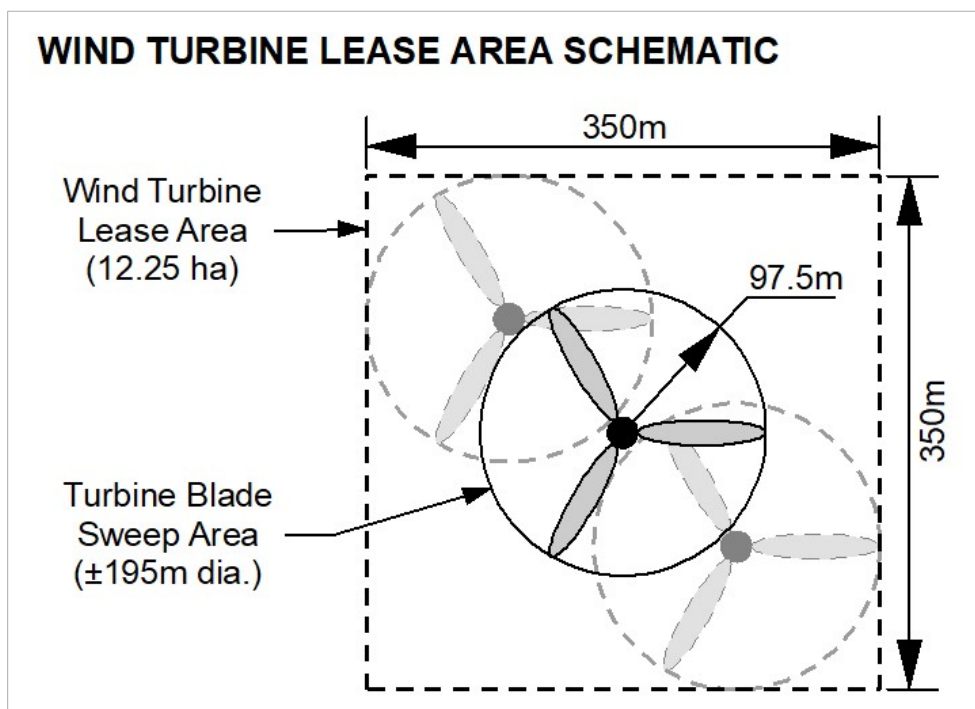
The developer or WF operator will lease wind turbine footprints and supporting infrastructure footprints from the relevant land owners.

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 individual footprint areas, aligned with the consent use areas.

The wind turbines will each be positioned within a lease area measuring 350m x 350m. Although the lease areas may cross cadastral boundaries (to allow for sufficient space during construction for laydown and crane positioning) turbines (including blades) will not cross cadastral boundaries or the lease area boundary. The turbines are most likely to be positioned close to the centre of these lease areas, but if during construction issues are encountered on site, the turbines may be moved within the lease area to avoid the on-site issues.

Final placement of the turbines on site is informed by a large number of environmental constraints. The additional space within the lease area allows  $\pm 80 - 110\text{m}$  (depending on the final blade length) either way for positioning of the turbine tower if unforeseen site conditions arise.

Approval in terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) (SALA) for long term leases will be obtained.



#### ■ Endorsement of Servitudes (Access Roads & Powerlines)

Given the nature and operation of a large-scale WF, servitudes are registered in favour of the WF operator to access individual wind turbines and associated infrastructure (roads, power lines, cabling, access). 15 m wide servitudes will be registered in favour of the developer, as indicated on the Site Plan (1805/H1/SDP dated 11/2022).

#### ■ Endorsement of Servitudes (Grid Connection Powerlines)

Servitudes for electricity transmission lines are exempt in terms of Section 24 of the Beaufort West Land Use Planning By-law. Internal electricity distribution servitudes (not running along internal access roads) are indicated on the Site Plan (1805/H1/SDP dated 11/2022).

Servitudes will be registered in favour of ESKOM for the grid connection power lines. A separate request in terms of Section 24 for registering a servitude over various farm portions for the grid connection lines will be submitted to the Beaufort West Municipality, prior to registration and construction.

#### ■ 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 turbines, roads, infrastructure 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 (1805/H1/SDP dated 11/2022)**

### 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 87 Turbine Footprints (12.25 ha per footprint), 2x Substations including Operation & Maintenance Areas (1.125 ha each), 2x Battery Energy Storage Systems (3.5 ha each), Site Camp & Batching Plant (2.4 ha), General Laydown Area (3.6 ha), 2 x Switching Stations (1.125 ha each) and Security Gates & Access Control (4 x 20 m<sup>2</sup>), on the following properties, as indicated on the Site Plan (1805/H1/SDP dated 11/2022) and the Development Parameters, as indicated in Table 2 below :
  - Remainder Portion 1 of Farm Slange Fontein No. 6
  - Farm Bastards Poort No. 2
  - Remainder Farm Slange Fontein No. 6
  - Portion 2 of Farm Duikerfontein No. 5
  - Remainder Portion 1 of Farm Duikerfontein No. 5
  - Portion 2 of Farm Droog Fontein No. 1
  - Remainder Farm Duikerfontein No. 5
  - Portion 3 of Farm Duikerfontein No. 5
  - Portion 7 of Farm Slange Fontein No. 6
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 turbine and supporting infrastructure footprint areas as referred to in Paragraph 1 above, and as indicated on the Site Plan (1805/H1/SDP dated 11/2022)
3. **Registration of Servitudes**, in terms of Section 15 (2) (d) of the Beaufort West Land Use Planning By-law, to accommodate access roads and power lines, as indicated on the Site Plan (1805/H1/SDP dated 11/2022)
4. **Exemption of Servitudes (Powerlines)**, in terms of Section 24 (1) (f) of the Beaufort West Land Use Planning By-law, to accommodate powerlines (not running along internal access roads), as indicated on the Site Plan (1805/H1/SDP dated 11/2022)
5. **Approval of Site Plan** (1805/H1/SDP dated 11/2022)

## 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>	± 18 635 ha
<b>Turbines</b>	87
<b>Turbine Footprint (Consent Use &amp; Long Term Lease Areas)</b>	<ul style="list-style-type: none"> <li>Approximately 350 x 350 m (87 x 12.25 ha)</li> </ul>
<b>Supporting Facilities : Appurtenant Structures (Consent Use &amp; Long Term Lease Areas)</b>	<ul style="list-style-type: none"> <li>Battery Energy Storage System (2 x 3.5 ha)</li> <li>Substation and Operations &amp; Maintenance (2 x 1.125 ha)</li> <li>General Laydown Area (3.63 ha)</li> <li>Site Camp &amp; Batching Plant (2.4 ha)</li> <li>Switching Station (2 x 1.125 ha)</li> <li>Security Gate and Access Control (4 x 20 m<sup>2</sup>)</li> </ul>
<b>Wind Turbine Specifications</b>	<ul style="list-style-type: none"> <li>Rotor diameter : 100 m to 195 m</li> <li>Hub height : 80 m to 150 m</li> <li>Rotor top tip height : 130 m to 247.5 m</li> <li>Rotor bottom tip height : minimum of 20 m</li> </ul>
<b>Site Access</b>	R381
<b>Servitudes : Access &amp; Electricity Distribution</b>	<ul style="list-style-type: none"> <li>Internal roads 15 m wide during construction and 8 m during operation</li> <li>Servitudes in favour of WF</li> <li>15 m wide right of way and cable servitudes to be registered</li> <li>15 m wide internal electrical servitudes (not running along access roads)</li> </ul>
<b>Grid Connection</b>	<ul style="list-style-type: none"> <li>Electricity to be evacuated via a 132 kV line to the approved Nuweveld Collector Substation</li> <li>Servitude exemption in terms of Section 24 (1) (f) of the By-law on Municipal Land Use Planning for Beaufort West Municipality</li> </ul>
<b>Setbacks (Wind Turbines)</b>	<ul style="list-style-type: none"> <li>1.5 times the overall blade tip height of the turbine, from the nearest residential, commercial or critical agricultural structures</li> <li>100 m from the cadastral boundary of the land unit, unless the renewable energy structure straddles two or more cadastral boundaries, in which case no setback applies</li> <li>100 m from any public road or private or public right of way</li> <li>100 m from any electrical infrastructure</li> <li>1 000 m from towns, settlements or urban areas</li> </ul>
<b>Building Lines (Appurtenant Structures)</b>	30 m

**Table 2 : Development Parameters**

**Refer to Map 4 : Site Plan (1805/H1/SDP dated 11/2022)**







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

### 5.2 Land Use & Site Description

The following extracts from the Final Basic Assessment Report (September 2022) describes the study area.

#### ▣ Study Site Description

The Hoogland Northern Wind Farm Cluster comprising Hoogland 1 Wind Farm and Hoogland 2 Wind Farm is proposed for development in the Nuweveld hinterland within the Central Karoo District Municipality. These two Wind Farms share a Grid Connection, named the Hoogland Northern Grid Connection. The Hoogland Wind Farms are more than 10 km away from the Karoo National Park (KNP) and outside its Protected Area Expansion Area and Buffer Zone. The Hoogland Northern Cluster is not within the Beaufort West Renewable Energy Development Zone (REDZ).

The proposed Hoogland Northern Wind Farms (HL01 and HL02) are located on the Nuweveld plateau in the Great Karoo. The site is located on, and surrounded by, active agricultural properties with low-density livestock grazing being the main land use. An arid climate with poor soil development and low moisture precludes most cropping.



The landscape is characterised by horizontal sills of erosion-resistant dolerite forming steep cliffs in places, boulder-strewn mesas or plateaus and flat-topped koppies while the gentler, lower hillslopes and plains consist of more easily weathered mudstone, with occasional narrow ledges of harder sandstone. Of key interest to wind energy development are the high lying areas where the wind resources are at their best.



#### ▣ **Topography & Drainage**

Hoogland 1 Wind Farm and Hoogland 2 Wind Farm are in areas characterised by generally undulating topography with local ridges and scattered koppies, both formed due to the presence of rocks resistant to erosion. Shallow sloping ground is present between the ridges and koppies with the slope of the ground steepening near and at the positive topographic features.

Northward draining ephemeral streams occur in several areas in Hoogland 1 Wind Farm and these are commonly fed during periods of rainfall from a local dendritic array of streamlets, but local trellis-type drainage patterns are also present.

#### ▣ **Climate**

Rainfall is mostly in autumn and summer, peaking in March, with annual averages of 180mm – 200mm. Snowfall can occur in winter months and mean maximum and minimum temperature ranges from -8°C to 37°C.



## ▣ **Geology**

*The area is situated towards the northern margin of the Main Karoo Basin of South Africa. It is underlain by continental (fluvial, lacustrine) sediments of the Beaufort Group (Karoo Supergroup) of late Middle Permian to early Late Permian age (c. 262-257 Ma). The Beaufort Group in the project area is represented by the Adelaide Subgroup which is sub divided at Hoogland 1 and 2 into the Hoedemaker and Poortjie Members of the Teekloof Formation and by the older Abrahamskraal Formation.*

## ▣ **Land Use**

*The main land use of the Wind Farm sites, and surrounding properties is low-density livestock farming (grazing).*

*The site is located on, and surrounded by, active agricultural properties with low-density livestock grazing being the main land use. An arid climate with poor soil development and low moisture precludes most cropping. The landscape is characterised by horizontal sills of erosion-resistant dolerite forming steep cliffs in places, boulder-strewn mesas or plateaus and flat-topped koppies while the gentler, lower hillslopes and plains consist of more easily weathered mudstone, with occasional narrow ledges of harder sandstone.*

*Grazing of both sheep and game is the dominant agricultural land use in the area. Grazing capacity of the site is fairly low at 26 to 28 hectares per large stock unit. There is almost no cultivation in the area and what there is, is confined to small, isolated patches of pasture or fodder crops around farmsteads.*

## 6. Activity Description & Parameters

The following table outlines the development parameters of the Hoogland 1 WF.

### 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>	± 18 635 ha
<b>Turbines</b>	87
<b>Turbine Footprint (Consent Use &amp; Long Term Lease Areas)</b>	<ul style="list-style-type: none"> <li>Approximately 350 x 350 m (87 x 12.25 ha)</li> </ul>
<b>Supporting Facilities : Appurtenant Structures (Consent Use &amp; Long Term Lease Areas)</b>	<ul style="list-style-type: none"> <li>Battery Energy Storage System (2 x 3.5 ha)</li> <li>Substation and Operations &amp; Maintenance (2 x 1.125 ha)</li> <li>General Laydown Area (3.63 ha)</li> <li>Site Camp &amp; Batching Plant (2.4 ha)</li> <li>Switching Station (2 x 1.125 ha)</li> <li>Security Gate and Access Control (4 x 20 m<sup>2</sup>)</li> </ul>
<b>Wind Turbine Specifications</b>	<ul style="list-style-type: none"> <li>Rotor diameter : 100 m to 195 m</li> <li>Hub height : 80 m to 150 m</li> <li>Rotor top tip height : 130 m to 247.5 m</li> <li>Rotor bottom tip height : minimum of 20 m</li> </ul>
<b>Site Access</b>	R381
<b>Servitudes : Access &amp; Electricity Distribution</b>	<ul style="list-style-type: none"> <li>Internal roads 15 m wide during construction and 8 m during operation</li> <li>Servitudes in favour of WF</li> <li>15 m wide right of way and cable servitudes to be registered</li> <li>15 m wide internal electrical servitudes (not running along access roads)</li> </ul>
<b>Grid Connection</b>	<ul style="list-style-type: none"> <li>Electricity to be evacuated via a 132 kV line to the approved Nuweveld Collector Substation</li> <li>Servitude exemption in terms of Section 24 (1) (f) of the By-law on Municipal Land Use Planning for Beaufort West Municipality</li> </ul>
<b>Setbacks (Wind Turbines)</b>	<ul style="list-style-type: none"> <li>1.5 times the overall blade tip height of the turbine, from the nearest residential, commercial or critical agricultural structures</li> <li>100 m from the cadastral boundary of the land unit, unless the renewable energy structure straddles two or more cadastral boundaries, in which case no setback applies</li> <li>100 m from any public road or private or public right of way</li> <li>100 m from any electrical infrastructure</li> <li>1 000 m from towns, settlements or urban areas</li> </ul>
<b>Building Lines (Appurtenant Structures)</b>	<ul style="list-style-type: none"> <li>30 m</li> </ul>

**Table 2 : Development Parameters**

## 6.1 Typical WF Components

Each Wind Farm requires several key components to facilitate the generation of electricity at a large scale. This includes :

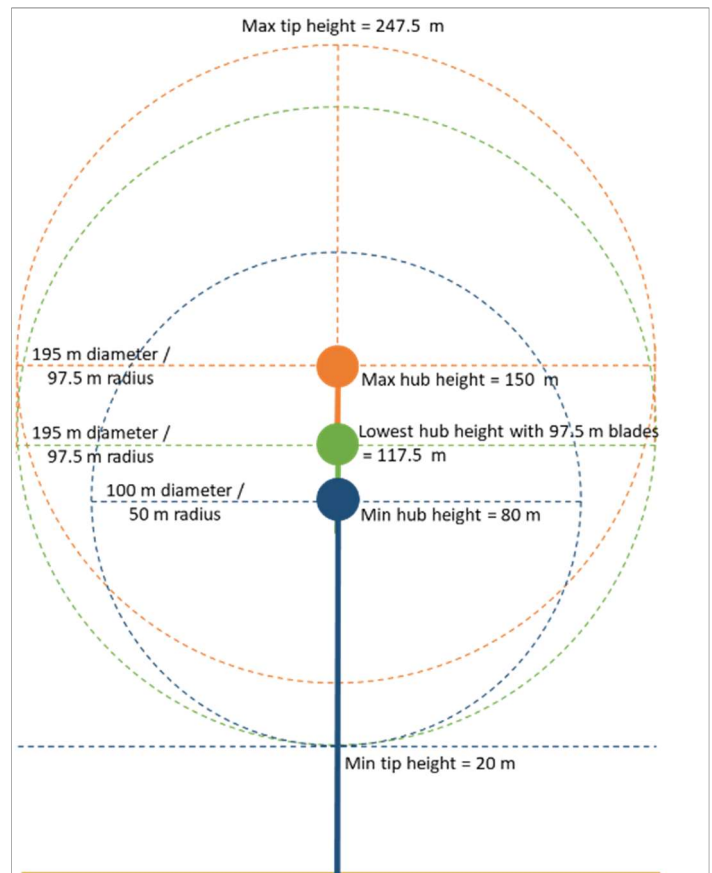
- Wind turbines
- Roads
- Underground cables and overhead high voltage power lines (up to 66 kV)
- Substations (including and operations and maintenance area for control, operation, workshop, storage buildings / areas)
- A battery storage facility in the vicinity of each Substation

The various Wind Farm components are described with illustrative figures.

### ▣ Wind Turbines

A wind turbine is a rotary device that extracts energy from the wind. The mechanical energy generated is converted to electricity. Wind turbines can rotate either on a horizontal or vertical axis. Larger capacity turbines used in large scale Wind Farms for the commercial production of electricity are typically horizontal axis wind turbines (HAWT), which are three-bladed and mechanically pointed into the wind by computer-controlled motors, as is proposed for this project. These have high blade tip speeds of up to about 325 km/hour, high efficiency, and low torque ripple, which contribute to good reliability. The figure illustrates the external and internal components that make up a typical wind turbine and also key aspects associated with the turbine erection process.

Since the turbine technology is continually evolving it is not possible at this early stage in the development process to specify the exact turbine model and specification (or even what would be available in the marketplace). Assumptions have been made as to the maximum possible area of impact by the potential turbine blades based on a range of turbine sizes.



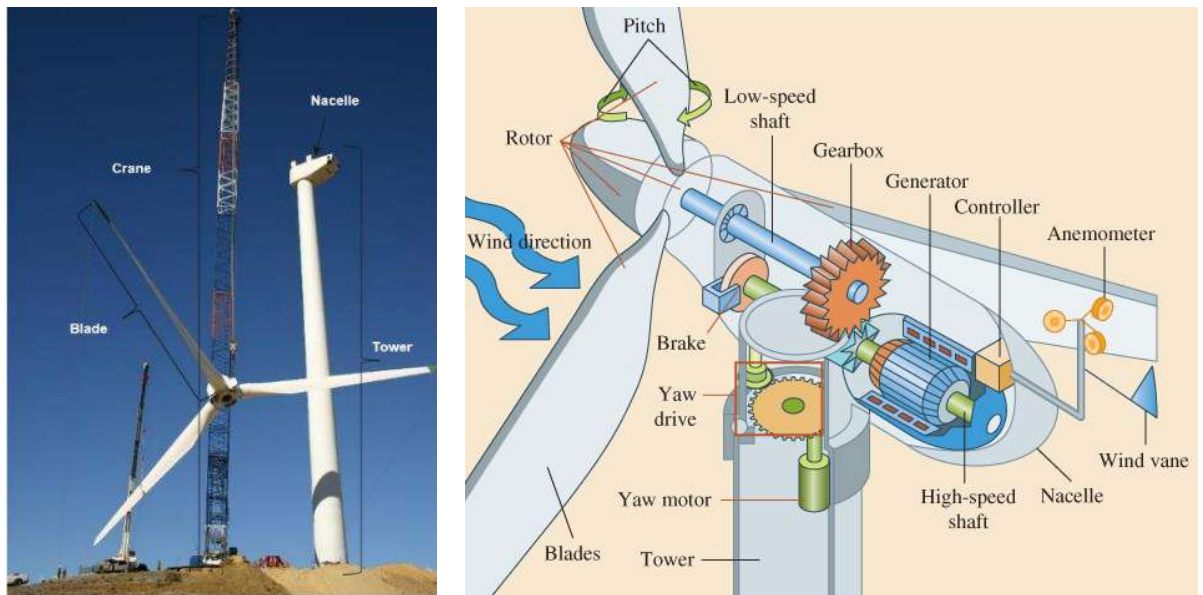
For the Hoogland Wind Farms the following wind turbine envelope is proposed :

- Rotor diameter: 100 m to 195 m (50 m to 97.5 m blade / radius)
- Hub height: 80 m to 150 m
- Rotor top tip height: 130 m to 247.5 m (maximum based on 150 m hub + 97.5 m blade = 247.5 m)
- Rotor bottom tip height: minimum of 20 m (and not lower).

The nameplate capacity of each Wind Farm will be up to a maximum of 420 MW.

### ⇒ Rotor & Blades

The rotor has three blades that are usually coloured white or light grey for aviation safety and thermal reflectivity.



### ⇒ Nacelle

Larger wind turbines are actively controlled to face the oncoming wind direction, which is measured by a wind vane situated on the back of the nacelle. By reducing the misalignment between wind and turbine pointing direction (yaw angle), the power output can be maximised, and non-symmetrical loads minimised. The nacelle turns the turbine to face into the wind ('yaw control'). The nacelle also contains the generator, control equipment, gearbox and wind speed instrument (anemometer) to monitor the wind speed and direction.

The turbine controls the angle of the blades ('pitch control') to make optimal use of the available wind and avoid damage at high wind speeds. By turning the blades sideways into the wind, i.e., away from the direction of the wind ('furling'), the turbine ceases its rotation, accompanied by both electromagnetic and mechanical brakes. This would typically occur at very high wind speeds, typically over 72 km/h (20 m/s), depending on the characteristics of the specific turbine. The wind speed at which shut down occurs is called the cut-out speed. The cut-out speed is a safety feature which protects the wind turbine from damage. Normal wind turbine operation usually resumes when the wind drops back to a safe level.

### ⇒ Generator & Transformer

The generator converts the mechanical turning motion of the blades into electricity. A gear box is commonly used for stepping up the speed of the generator. Inside the generator, wire coils rotate in a magnetic field to produce electricity. Each turbine has a transformer that steps up the voltage to match the power line frequency and voltage for transmission to the Wind Farm Substation. The transformer may be located inside the turbine tower, or within a small housing at the base of the tower depending on the make and model.

⇒ Tower

The tower is constructed from tubular steel or steel reinforced concrete and supports the rotor and nacelle. Towers can vary in height and are dependent on the turbine make and model. The nacelle is attached to the top of the tower and the point or axis where the rotor attaches to the nacelle is referred to as “*hub height*.” Wind velocity and consistency generally increases with altitude, therefore increasing the height of a turbine places the rotor into the higher velocity laminar winds that are good for power generation. For this, and other reasons, there has been steady increase in turbine size as the industry and technology have developed.

⇒ Hardstand & Foundation

Development of each turbine would require a permanent and temporary disturbance footprint to allow for their construction and maintenance. This area includes the permanent turbine gravity foundation as well as the compacted construction area (hardstand) required to support the heavy-duty equipment (most notably the cranes), machinery and components (e.g. blades) during the construction and maintenance phases. Additional areas will be temporarily required in the construction phase for the staging, assembly and erection of the crane and turbine blades. These areas may also be used for temporary stockpiling of excavated materials and topsoil.

Gravity foundations (footings) are designed to withstand both the weight (static vertical load) and lateral loads exerted by wind pressure and rotor movements (dynamic horizontal loads). Considerable attention is given to the design the footings to ensure that the turbines are adequately grounded and able to operate safely and efficiently. Due to the high loads, large and heavy steel-reinforced concrete gravity foundations are required to keep the turbines upright. The figure provides a view of a gravity foundation under construction. In terms of the footprint, a circular foundation with a diameter up to 35 m is proposed.



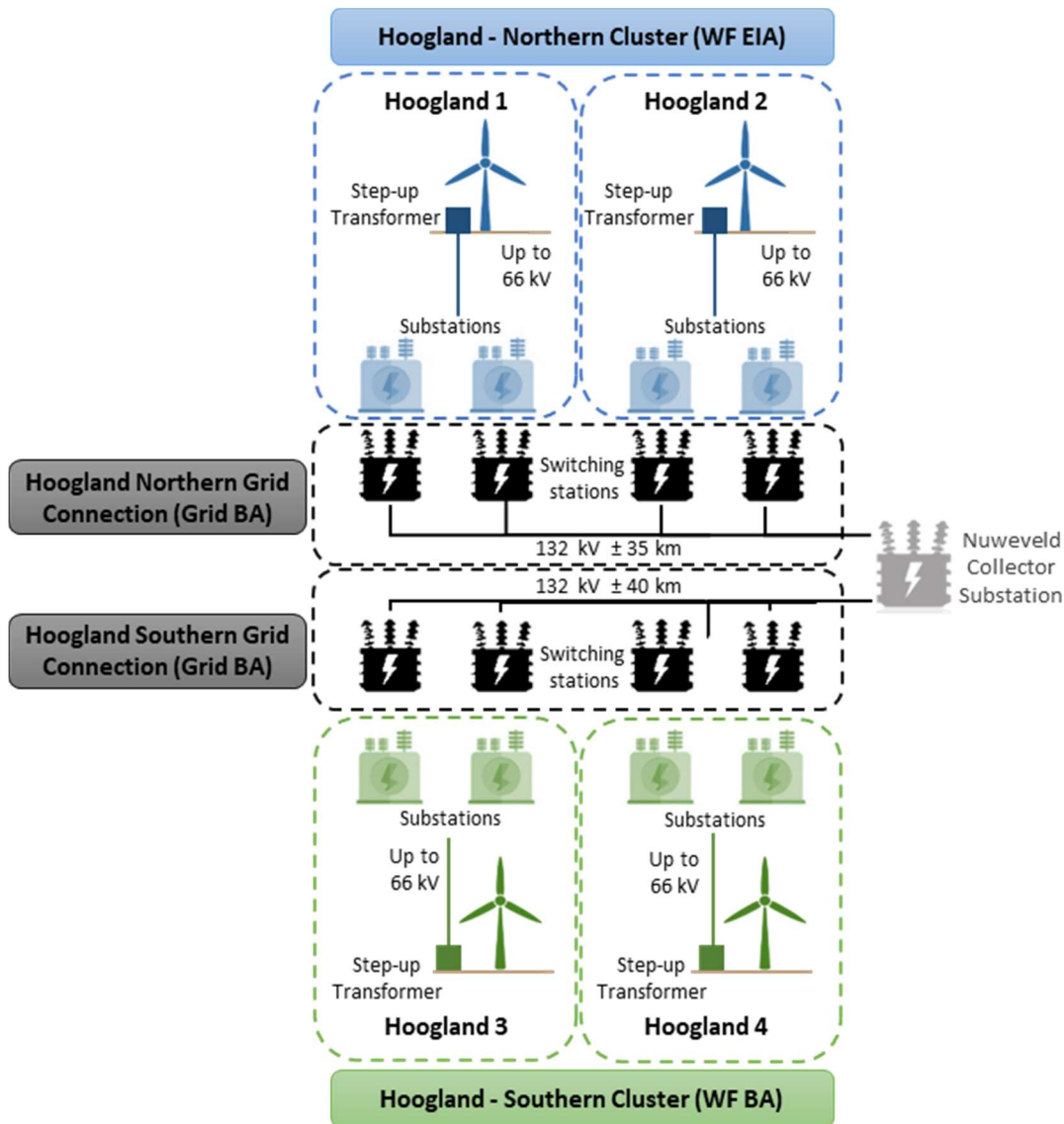
The layout and orientation of the foundation, hardstand and laydown areas and access roads will vary from location to location based on slope, terrain and other constraints that characterise each site.

Hardstand Component	Description	Footprint (Estimated)	Temporary / Permanent
Turbine Foundation	Concrete turbine foundation	± 1 400 m <sup>2</sup> (35 x 40 m)	Permanent
Crane Pad	Area where construction crane would be placed	± 3 200 m <sup>2</sup> (80 x 40 m)	Permanent
Additional temporary hardstand area near Crane Pad	Additional temporary hardstand area near Crane Pad	± 800 m <sup>2</sup> (20 x 40 m)	Temporary
Blade Laydown Area	Area where blades would be stored prior to installation (with potential additional embankment area if on slope)	± 2 600 m <sup>2</sup> (25 x 104 m)	Temporary
Crane Boom Assembly Area	Area where the crane boom would be assembled	± 1 800 m <sup>2</sup> (120 x 15 m)	Temporary

## ■ Power Transmissions

The electricity generated by the turbines on each Wind Farm needs to be collected, transformed and then evacuated to the national grid. To allow efficient transmission, the electricity undergoes a voltage "step-up" process that occurs at each wind turbine where power is stepped up to a maximum of 66 kV (either in the turbine or in a transformer container next to the turbine), and again at one of the Wind Farm Substations where power is stepped up to 132 kV. The power is then transferred through a Switching Station next to the Substation along a 132 kV line to the proposed Nuweveld Collector Substation. The Wind Farm Grid Connection infrastructure, which consists of a Switching Station next to each Wind Farm Substation and the 132 kV power line to the Nuweveld Collector Substation, is the subject of a separate applications (LUPA and NEMA) as once constructed it will be handed over to Eskom who will own and manage it as part of the national grid. The Wind Farm Substation and all the up to 66 kV internal lines are part of each respective Wind Farm application.





#### ⇒ Cabling

At each turbine, power is stepped up to a maximum of 66 kV (either in the turbine or in a transformer container next to the turbine). Each turbine will be connected to their respective Wind Farm Substation via high voltage power lines (~66 kV lines). For the most part cables will be laid underground in trenches (~1 m deep), generally running alongside new or proposed internal roads, but sometimes deviating from these. In limited instances, where burying of cables is not possible due to technical, geological, environmental or topographical constraints, then short overhead power lines will be erected to traverse these constrained areas.

Internal overhead power lines will be spanned using short 132 kV type monopoles or custom made wooden structures of not more than approximately 22 m in height. In some sections, two parallel rows of lines and pylons could be required. These more expensive shorter 132 kV monopoles have been selected rather than the standard 33 or 66 kV structures as they significantly reduce the risk of bird electrocutions and are therefore preferred by the bird specialist.

There is the potential that each BESS may require its own Substation and would be connected directly to the respective Eskom Switching Station via a short 132 kV overhead line which would be supported in monopoles up to 32 m in height. This is the only section of 132 kV overhead line included in each Wind Farm application.

⇒ On-site Substations

Two substations have been provided for each wind farm. Once the high voltage (~66 kV) electricity reaches each on-site Wind Farm Substation (with transformer), it will be stepped-up to 132 kV. The Substation yard will house Operation and Maintenance (O&M) buildings, Substation building and a High Voltage Gantry, and will be approximately 11,250 m<sup>2</sup> in extent (150 m x 75 m). The Substation would typically include an area with a subterranean earthing mat onto which a number of concrete plinths are constructed. This, together with several earthing rods, will provide an earth for lightning and possible short circuit currents. Switching gear, step-up transformers and protection equipment are also mounted on concrete plinths as part of the Substation.

Once stepped-up to 132 kV the electricity would pass to a ringfenced Eskom Switching Station abutting each Substation (the Switching Station is part of the separate Grid Connection application). The adjoining Eskom Switching Station would be of a similar size to that of the Wind Farm Substation and include metal gantries where the Eskom power lines are connected in a "busbar" arrangement so that multiple lines can be joined together and where specialised equipment is used to switch these lines on and off.

Information relating to the Grid Connection (132 kV power line and Switching Stations) is provided below for information purposes, but the reader should note the Grid Connection is the subject of a separate application and should refer to that application for details.

⇒ Grid Connection

Red Cap is proposing to develop the Nuweveld Collector Substation for Eskom (which has received environmental authorisation and if developed will be considered part of the Eskom national power line network). The Hoogland Projects will therefore connect to the national Grid via the Nuweveld Collector Substation.

The proposed Hoogland Northern Grid Connection is the 132 kV overhead power line required to connect the Hoogland Northern Wind Farm Cluster (Hoogland 1 Wind Farm and Hoogland 2 Wind Farm) to the Nuweveld Collector Substation as part of the grid. Similarly, the Hoogland Southern Grid Connection is required to connect the Hoogland Southern Wind Farm Cluster (Hoogland 3 Wind Farm and Hoogland 4 Wind Farm) to the Nuweveld Collector Substation as part of the grid. These are two separate applications for Environmental Authorisation which have been formally submitted to the DFFE and include the Switching Stations next to each respective Wind Farm Substation as well as the 132 kV overhead lines connecting into the Nuweveld Collector Substation. The EAs for both of these grid connections have been granted in December 2022 by DFFE.

These would be developed by Red Cap but handed over to Eskom once constructed for Eskom to own and operate and thus to become part of the national grid network.



⇒ Switching Station

Each Wind Farm will interface with its respective Grid Connection via the Eskom Switching Station adjacent to each of the two Wind Farm Substations. The Eskom Switching Station abutting each Substation would be ringfenced and of a similar size to that of the Wind Farm Substation (11,250 m<sup>2</sup> in extent, 150m x 75 m). It will include metal gantries where the Eskom power lines are connected in a “busbar” arrangement so that multiple lines can be joined together and where specialised equipment is used to switch these lines on and off.

⇒ Overhead Powerlines

The Switching Stations will then connect to the Nuweveld Collector Substation via two overhead 132 kV high voltage power lines; one serving Hoogland 1 and 2 Wind Farms in the Northern Cluster; and another serving Hoogland 3 and 4 Wind Farms in the Southern Cluster. The overhead lines will largely be supported by monopole style pylons and these specifications are described in the respective Grid Connection Basic Assessment report/s.

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

Each Wind Farm proposal includes the possibility for the development of a battery energy storage system (BESS). This will allow for a more continuous source of electricity to the grid as battery facilities can help to smooth out the fluctuations in energy generation from the renewable energy sources and allow them to be closer to conventional generation systems in this regard.

A BESS will be located in close proximity to each respective Wind Farm Substation and therefore there will be two BESS per wind farm. Each BESS will be fenced off and will be linked to the Substation via up to 66 kV cables and will not have any additional office / operation / maintenance infrastructure as those of the Substation. However, each BESS may require its own substation, and if this is the case this substation would include typical substation components and be located within the BESS footprint. If the BESS does have its own substation, then it will not have an up to 66 kV cable connection to the Wind Farm Substation but would rather have a short 132 kV connection from the BESS substation to the Eskom Switching Station (which is situated next to the Wind Farm Substation), and this would use monopole pylons up to 32 m in height.

The battery facilities will either be Lithium Ion or Redox Flow and both technologies will be assessed as it is unknown which technology will be selected. Each BESS will be compliant with all local laws and regulations and health and safety requirements governing battery facilities. The physical footprint of each BESS, regardless of technology and grid connection will be approximately 3.5 ha with a peak discharge value of 140 MWac.



## ■ **Additional Infrastructure**

### ⇒ Access, Service Roads & Sidings

The site can be accessed via the well-established existing road network in the area. For commuter traffic and some small loads, access from the south would be via Beaufort West using the N1 and R381 travelling between Beaufort West and Loxton. Due to restrictions in this route, the abnormal loads (including the large turbine components like blades, towers and nacelle etc) will be delivered from the north. The Northern Cluster (Hoogland 1 and 2 Wind Farms) will primarily use the R381 (south of Loxton) for the delivery of abnormal loads, whilst the Southern Cluster (Hoogland 3 and 4 Wind Farms) will primarily use the DR02314 and DR02312 (off the R356).

On site access and service roads will be required to access each turbine site and related Wind Farm infrastructure.

The internal gravel roads will have an approximate 6 m wide surface and there will be up to 15 m wide impacted during the construction phase, with additional space required for cut and fill, side drains and other stormwater control measures, turning areas and vertical and horizontal turning radii to ensure safe delivery of the turbine components. Where possible, existing roads have been proposed to be upgraded to avoid additional clearance of vegetation. New roads will be established where needed and aim to avoid sensitive areas and features, bar specific allowances and exceptions provided for by the specialists. In exceptional circumstances short sections of the roads may be surfaced with bitumen or concrete on steeper areas to provide necessary traction and limit erosion.

### ⇒ Shared Infrastructure

The total road network required for each respective wind farm also includes shared road infrastructure (permanent) with the other wind farm in the respective cluster. 16.9km of shared road infrastructure will be required for the Hoogland 1 and Hoogland 2 Wind Farms respectively.

### ⇒ Security (Fencing, Gates & Access Control)

A security gate and guard house may be placed at the entrances to each Wind Farm site. This is aimed at preventing unauthorised vehicular access to the facility. No fencing will be used around individual turbines and existing fencing will remain around the perimeter of the properties. This will enable livestock and wild fauna to continue to utilise the area underneath the turbines as rangeland or a migratory corridor. Fencing will be erected around each onsite Substation and Battery Facility operations and maintenance complex for security and safety reasons during the operational phase. The temporary construction/site camp (described further below) will also be fenced and should be kept secure for the duration of the construction period. Additional construction phase fencing will be used where needed in consultation with landowners.

### ⇒ Water, Sanitation, Electricity & Communications

A preliminary approximation of the water requirements for the construction phase of the proposed Wind Farm are as follows :

- During the construction period (18 - 24 months) water will largely be used for road construction; hardstand compaction; concrete foundations; cleaning equipment after concrete pours and dust suppression on roads. It is anticipated that 90,000 m<sup>3</sup> per year during construction phase would be required.

- During the 20-year operational phase water would be required for staff ablutions. It is anticipated that water consumption would be approximately 2,500 m<sup>3</sup> per annum.

Several water header tanks will likely be used to provide potable water and the water will be sourced from licensed boreholes and treated to potable quality where required.

Basic sanitation will be provided on site during the construction and operational phases in the form of portable/chemical toilets and conservancy tanks. Wastewater will be collected at regular intervals and transported to a Municipal Wastewater Treatment Works with sufficient capacity. Sections 22 and 40 of the National Water Act (36 of 1998) must be complied with when disposing sewage.

Electricity for construction could be obtained from Eskom through the existing 22 kV network in the area, alternatively temporary diesel generators and/or possibly small scale mobile photovoltaic units will be used to provide power.

Communication on site will be "wired" / fibre. The project is located on the eastern boundary the Karoo Central Astronomy Advantage Area 1, an area set aside for the purposes of radio Astronomy in 100 MHz to 2,170 MHz range and related scientific endeavours. The advantage area does not extend across the provincial boundary into the Western Cape. However, in keeping with the protection of this area against Electromagnetic interference (EMI), or radio-frequency interference (RFI), and through consultation with the Square Kilometre Array (SKA) radio telescope, it has been agreed the turbine communication systems will be hardwired as opposed to telemetric (wireless communications).

#### ■ **Temporary Infrastructure for Construction**

All temporary areas required for construction of the plant will be restored to near pre-impact condition wherever possible. During construction, temporarily impacted areas will be stripped of topsoil to allow for the works to occur, and the topsoil reinstated on completion. Revegetation will be implemented to reduce further risk of erosion and to restore ecological function as far as possible. This will apply to all temporary disturbance areas.

##### ⇒ Site Camp (yards, offices laydowns & staff areas)

During the construction phase of each Wind Farm, the Contractor/s would require space for equipment and operations i.e., site camps. The areas identified for the site camps will have a total combined area of 2 ha on each Wind Farm. The area would be stripped of topsoil and vegetation, grubbed of rocks and debris, levelled where necessary for the duration of the disturbance and reinstated on completion.

Contractors would likely establish a series of temporary or mobile structures for offices, staff areas, storage areas, and workshops. Portable/chemical toilets and wash facilities will be provided for staff.

The remainder of the area would serve as a yard for the parking of equipment and vehicles, stockpiling of key construction materials and supplies, and spoil and waste items.

##### ⇒ Laydown Area

Each Wind Farm proposal includes an additional temporary laydown area on the site of ± 3.6 ha which could get used for turbine component storage or storage of other large components required for construction.

⇒ Waste Management

During the construction phase solid domestic waste would need to be collected in rubbish bins placed in the contractor yards and at various work areas across the site. Rubbish bins will be emptied at regular intervals and the waste collected at a weather shielded central waste area located in the contractor's yard. Waste will be separated wherever possible. Once sufficient volume of waste has been collected, the Contractor would remove the wastes for disposal at a registered waste disposal facility, which would likely be the municipal facilities located in Beaufort West (namely the Vaalkoppies waste disposal facility), or other registered facilities in neighbouring towns.

⇒ Fuel & Lubricants Storage

Due to the remoteness of site, the Contractor would establish a temporary fuel and lubricants storage area on the site to ensure that they can fuel and maintain the various items of equipment and plant machinery. In addition, as is standard practise, transformers in Substations are located within a bunded area. The combined storage capacity of all of the above facilities/infrastructure will fall above 80 m<sup>3</sup> but below 500 m<sup>3</sup>. As these qualify as dangerous goods, they would need to be stored in bespoke area with necessary protections including spill protection measures, secondary containment, oil separator/s, adequate weather proofing, firefighting equipment and added security (i.e., fencing and lockable access points, etc. to ensure that untrained or unauthorised persons cannot gain access). The site would need to carry the necessary hazard warning signage typical for such facility. The facility may have to be outfitted with a forecourt and dispensing equipment to allow vehicles to fill up at the facility or otherwise decant into mobile bowsers that would transport fuel out to the site works areas.

⇒ Concrete Batching Plant

Due to the distance from large towns and the remoteness of the area, concrete (e.g., for the turbine gravity foundations, road stabilisation and stormwater structures where needed, potential concrete turbine towers etc) would need to be batched on each Wind Farm site to ensure timeous delivery. Concrete materials (cement, sand, aggregate and water – plus any additives) would be brought to and stored at a batching plant. Batches of concrete would then be made and dispatched via truck to the work site. Since cement powder can be dangerous to handle, harmful to the environment and reactive with water, this will need to be stored in weather (wind and rain) proof areas to ensure it is contained and remains suitable to use. The batching facility would also need to have necessary provisions to container and prevent pollution of the environment by cement powder and concrete wash and spoil.

Each batching plant will be included in the respective site camp and comprise an area of 0.2 ha.

## **6.2 Materials, Resources & Haulage**

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There will be the movement of materials, resources and waste onto and off the site for the duration of the construction period. This will include turbine components that require abnormal load transportation.

It must be noted that the final haulage route/s will be confirmed pre-construction by the appointed logistics company/contractor in line with the requirements of the traffic impact study and all relevant outstanding transport permits will be obtained.

During construction, internal roads are needed to accommodate low bed trucks delivering turbine components and large electrical equipment as well as the mobile high lift cranes where needed to erect the turbines themselves, amongst other heavy construction vehicles. Typical heavy loads are illustrated in the figure. Existing farm roads and tracks will be used and upgraded as far as practical as part of this road network, to reduce the disturbance footprint. In rough terrain, additional measures will be required for the reinforcement of the site roads whereby they may require hard surfacing on steeper areas to support the traffic and avoid erosion.



### **6.3      *Employment***

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.

It is estimated that the construction phase of each individual Wind Farm would result in an estimated 160-200 direct jobs (27-33 highly-skilled, 62-78 medium-skilled and 71-89 low-skilled jobs). Most of low-skilled jobs (60%) will likely come from the local municipal area.

Similarly, each Wind Farm 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.

The operational life of a Wind Farm is typically around 20 years where after it could be refurbished / upgraded, or decommissioned depending on the situation at the time, and all subject to the relevant environmental processes and authorisations.

## 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 Hoogland WF's, including Hoogland 1 WF 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 (IDP's), Provincial Spatial Development Framework, as well as any National policies, principles, norms and standards.

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

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

**Section 7** of SPLUMA stipulates :

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

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

**Section 22 (1)** of SPLUMA stipulates :

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

**Section 42 (1)** of SPLUMA stipulates :

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

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

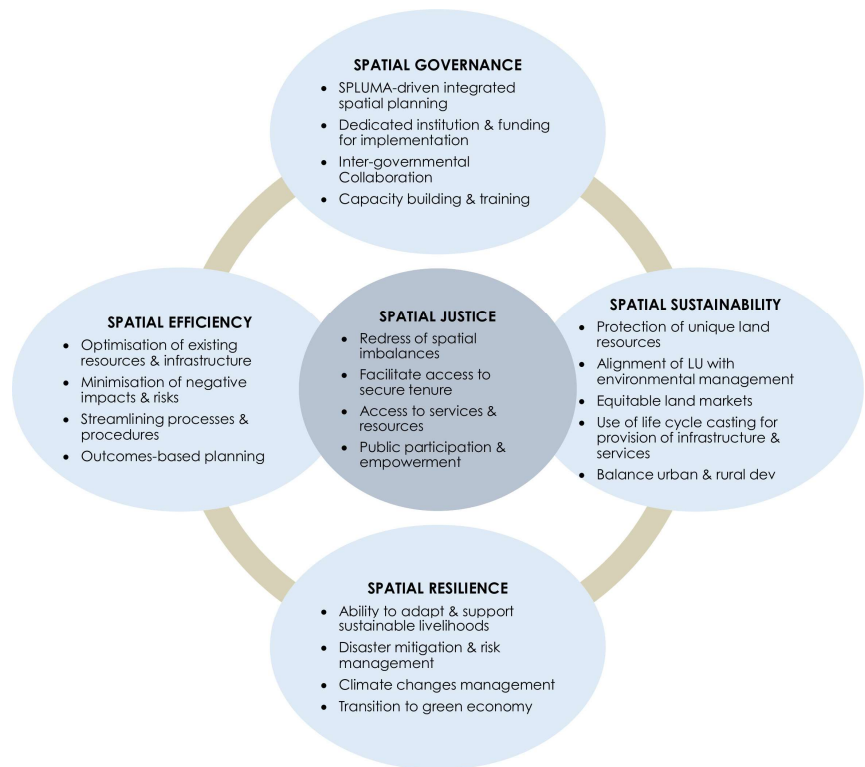


## 9. Spatial Planning & Land Use Management Act (SPLUMA) & Western Cape Land Use Planning Act (LUPA)

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 town is Loxton.
- 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 WF's 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 WF 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 WFs 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. WFs 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 wind farm 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.
- Wind power is the most cost effective form of electricity generation in the country and this project would make use of the area's wind resources to provide cost-effective electricity to the national grid.
- The footprint of the proposed infrastructure would equate to a small percentage of the total land area.

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

- The Hoogland 1 WF can contribute up to 420 MW of electricity to the national grid.
- The WF 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 WF.
- 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 rezoning 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.

## **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 (July, 2022)

#### ***Refer to Annexure 14 : Site Sensitivity Verification & Agricultural Compliance***

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 15 : LUPA Section 53 (1) Confirmation Statement from Johann Lanz Consulting***

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

## **11. National Policy**

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

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

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

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

## **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)**

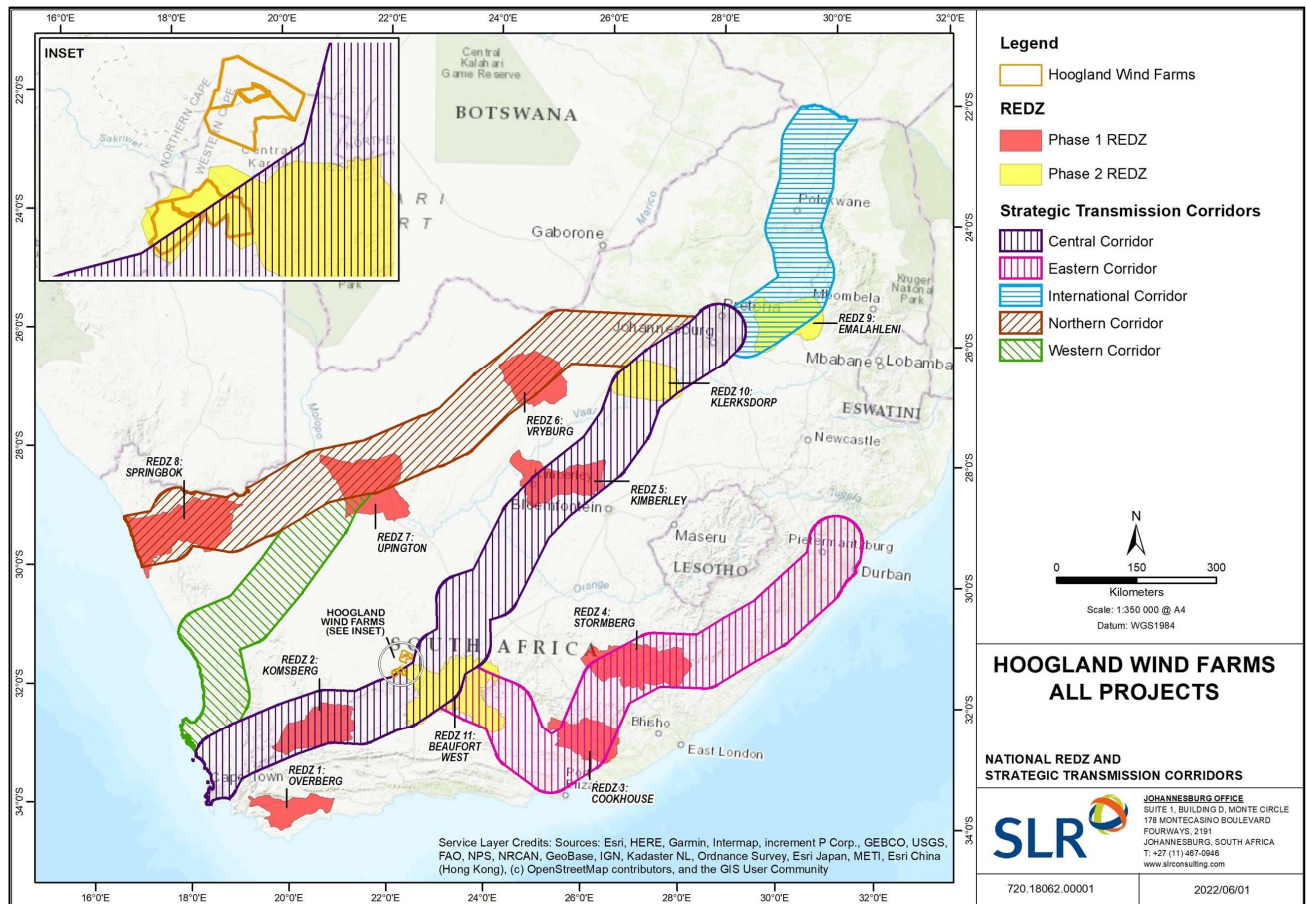
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The Department of Forestry, Fisheries and the Environment (DFFE) undertook several Strategic Environmental Assessments (SEAs) to streamline future EIA applications for energy projects, thereby streamlining the implementation of the NIP.

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

The figure shows an illustration of the Hoogland Norther Cluster site in relation to the identified REDZs and Powerline Corridors. The Hoogland Northern Cluster is not within the Beaufort West Renewable Energy Development Zone (REDZ) (GN R 786 of 2020) and thus has to follow a Scoping and EIA process.

The SEA does not exclude renewable energy development projects which are located outside the identified REDZs.



## 11.9 National Spatial Development Framework (2019)

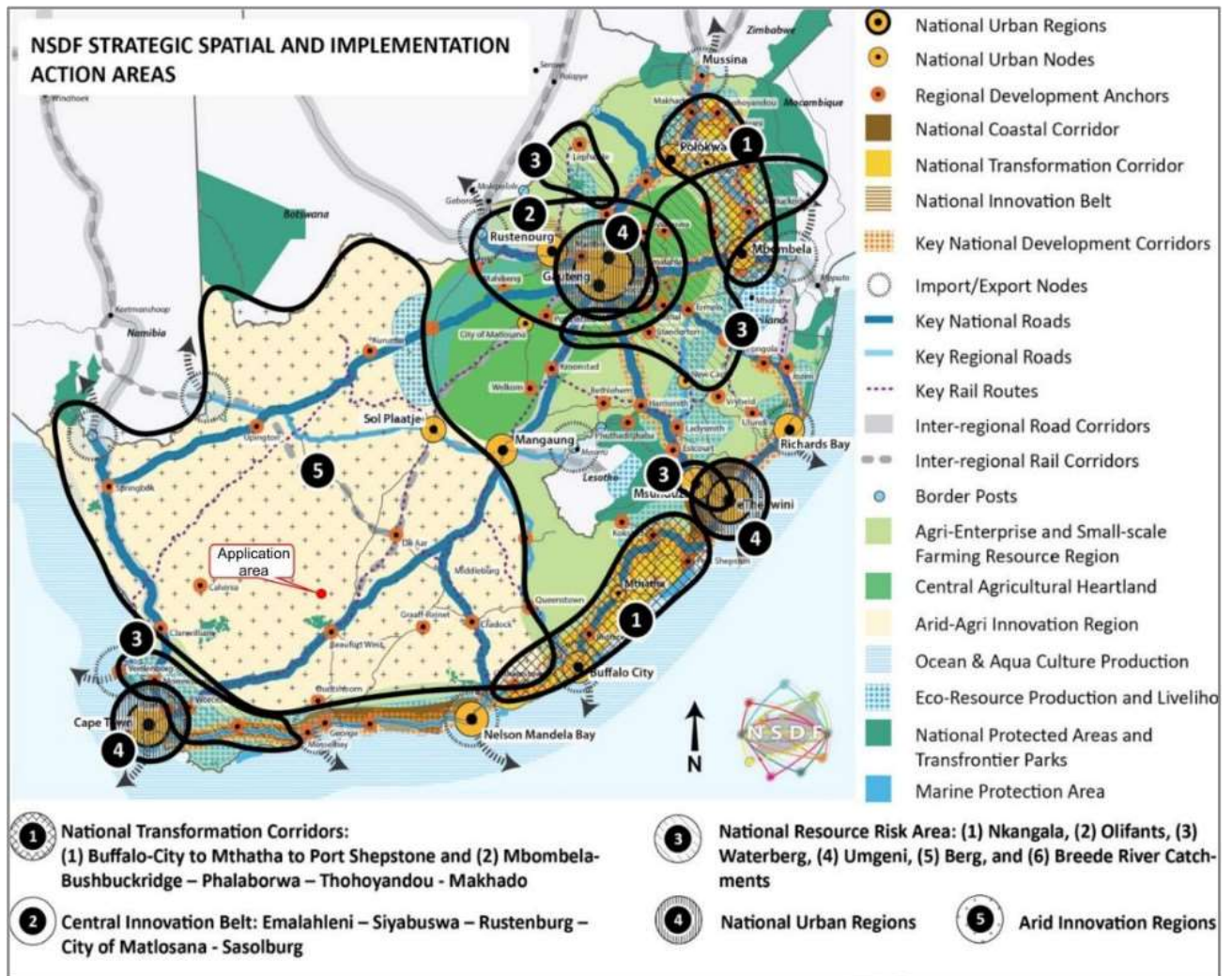
The draft National Spatial Development Framework is guided by the Spatial Planning and Land Use Management Act (Act 16 of 2013) (SPLUMA) (Sections 5 and 13).

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 vision of the NSDF and to support the shifts that need to be made in accordance with the logic of the NSDF, a series of National Spatial Development Levers were developed.

“Lever 6” includes (amongst others) more investment in the enabling and catalytic infrastructure required for renewable energy generation, storage and distribution.

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

- One: Inter-Regional Connectivity
- Two: The National System of Nodes and Corridors
- Three: The National Resource Economy Regions
- Four: The National Movement and Connectivity Infrastructure System
- Five: 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.

In terms of the NSDF, five Implementation Action Areas are identified. The proposed wind farm facilities (this project) are situated within the Arid Innovation Region.

The NSDF notes that there are four inter-regional spatial networks of particular importance in South Africa: energy supply, transport and logistics services, shared water resources, and ecological infrastructure. Renewable energy has emerged as a rapidly growing source that can add vastly to the energy mix and strengthening and expanding alternative energy generation is supported within the Arid-Innovation Region.

The NSDF proposals relevant to this application are :

- Strengthening and expanding alternative energy generation
- Managing land development and economic activities, to ensure the protection of critical natural resources
- Utilised existing regional planning/Regional Spatial Development Framework processes to focus on green energy generation

Renewable energy is therefore one of the catalyst interventions proposed for the area through the NSDF. The Hoogland 1 WF project support the principles of the NSDF.

## **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.

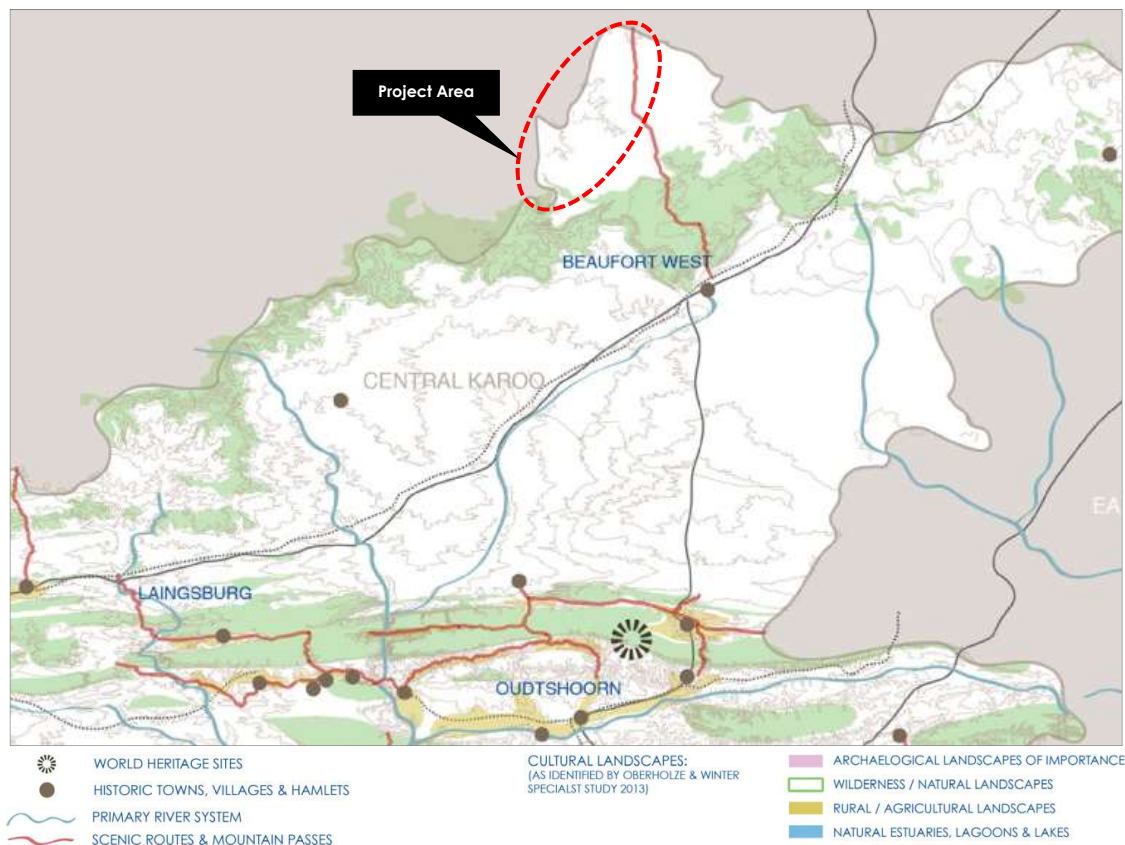
In terms of the PSDF, the Western Cape Government is committed to developing 'green' economy and their goal is for the province to be the lowest carbon province in the country and the leading green economic hub of the African continent. Generating energy from renewable sources (solar, wind power, biomass) 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 Hoogland Wind Farms are 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 wind farm layout was adjusted based on their input.



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

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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. There 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 Hoogland 1 WF 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 Hoogland 1 WF.

*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 Hoogland 1 WF project supports the principles as contained in the Central Karoo DM Spatial Development Framework.

### 13.3 Beaufort West Municipality Integrated Development Plan (2017-2022)

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

To reflect the will of the South African people as reflected in the Constitution and by Parliament:	
<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 focus areas are the priority areas of the municipality with the following priorities:

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

The proposed Hoogland 1 WF 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)

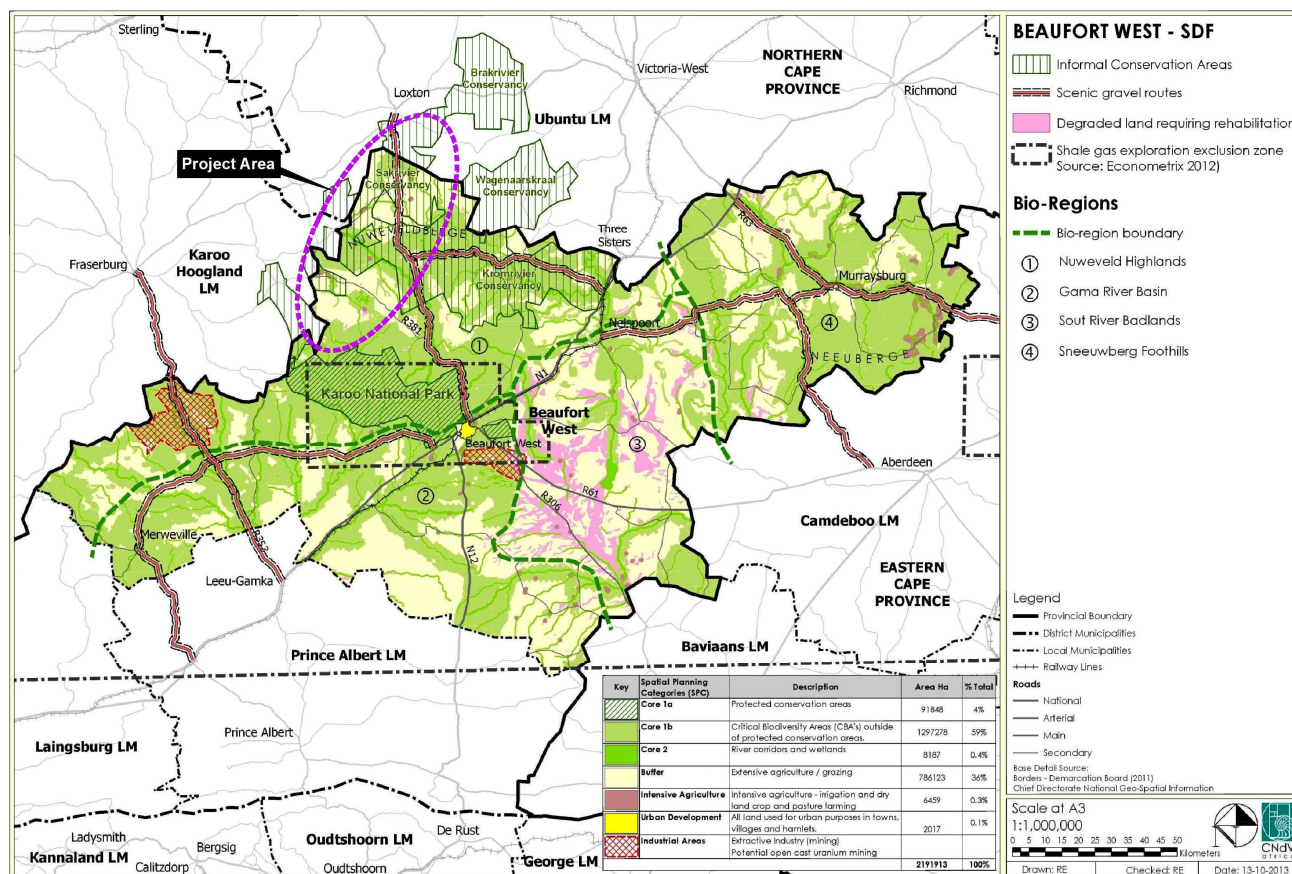
The Municipal Spatial Development Framework (MSDF) for Beaufort West links to the objectives of the IDP and becomes the spatial representation of the IDP objectives. The MSDF is linked with other spatial policies, including the PSDF and the DMSDF.

#### ▣ 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 for wind energy generation projects.
- The SDF recommends that solar and wind projects should be promoted in the south-west of the municipality. Renewable energy projects are not specifically excluded or prohibited in any of the other bio-regions.

The SDF 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 and is quite different from the Zoning Scheme regulations (which must either be complied with or departed from).

#### ▣ Siting Principles in the SDF

- Slopes affect wind potential, visibility, road layout design and access, soil erosion and stability, tower foundation design and potential for re-vegetation. All of these need to be considered when selecting a site.
- Geological stability is required to carry the large loads the turbines impose on foundations.
- Soil and rainfall both need to be taken into consideration to avoid soil erosion and enable re-vegetation.
- Hydrology and groundwater issues which may influence siting include river systems and wetlands.
- Vegetation Assessment, including disturbed or alien vegetation, indigenous, endemic and rare species, and if the site is affected by CBA's.

#### ▣ **Wind Farm Design Guidelines**

- Wind turbine layout: minimum placement distance between turbines should be twice the tower height plus half the rotor diameter) with a similar hub height and a regular spacing;
- Internal Roads: minimum overall road lengths and minimum road widths will depend on the turbine specifications. Align roads on gentle gradients to reduce rainwater run-off velocity, avoid crossing steep areas (i.e. Slopes >40% hard surfacing to be avoided);
- Substations and powerlines within the site should preferably be buried and follow road alignments wherever possible.

#### ▣ **Beaufort West Zoning Scheme Regulations**

- The Beaufort West Zoning Scheme Regulations provide parameters for implementation of the Renewable Energy Projects, which is slightly different from the MSDF guidelines.
- The Hoogland 1 Wind Farm project will adhere to the provisions of the Beaufort West Zoning Scheme Regulations.

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 Department of Forestry, Fisheries & the Environment issued a positive Environmental Authorisation for the project.

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.

### **13.5 Conclusion : Consistency with the MSDF**

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- The Nuweveld Highlands bio-region is specially identified as having fairly good potential for both wind and solar energy projects.
- The development proposal makes use of natural resources (i.e. wind) which will contribute to energy for the local and national economy, whilst taking into consideration all environmental sensitivities on the site.
- The site was selected based on it being setback sufficiently from the Karoo National Park (and its expansion plan).
- 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.
- A Visual Impact Assessment considered the impact of the large infrastructure on the identified scenic resources and sensitive receptors including the scenic routes and poorts and finds that although there will be a visual impact, the layout has avoided most of the scenic resources and sensitive visual receptors of the area and confirms that the visual no-go areas have been avoided.
- In terms of heritage, ASHA (2022) has identified the heritage resources / sites that will be impacted and has recommended suitable mitigation measures (drawing on Almond (2022) for palaeontological resources); and their Heritage Impact Assessment report and identified recommendations has been endorsed by Heritage Western Cape (HWC) in their final comment dated 31 August 2022. .
- Various employment and other economic development opportunities (i.e. local workforce, local spending etc.) will be created with this project.

- 3 Foxes (2022) confirmed there are several relatively restricted areas of CBA located within the Hoogland 1 site. These include the largest contiguous area of CBA along the boundary with Hoogland North 2 in the south-east of the site; the CBA along the Klein-Brak River and the CBA in the north of the site which occupies a low-lying area along the Slangfontein se Rivier. There are no turbines within any of the CBAs within the site, although there is an access road that traverses the Klein-Brak River as well as some underground cable sections through some of the other smaller CBAs. The affected CBAs are not considered to have high irreplaceability value and it is likely that the same ecosystem targets can be met with minimal additional cost elsewhere. Furthermore, the actual features of significance that are present within the study area would be protected from impact through the detailed sensitivity mapping conducted as part of the environmental impact assessment. The footprint within CBAs is low and the current layout is suitable in this regard.
- Furthermore CapeNature have reviewed the layouts and commented on the terrestrial ecology reports, noting that *"The proposed wind turbines are positioned outside natural CBAs, thereby avoiding compromising the biodiversity objectives and ecological functioning of CBAs. CapeNature reminds the applicant that roads must be constructed outside CBAs and existing roads must be used as far possible."*
- The MSDF indicates that substations and powerlines within the site should preferably be buried and follow road alignments wherever possible.
- Powerlines between turbines follow existing roads and will be buried (as cables) except in instances where crossing natural features such as rivers and other environmental considerations make it impossible to bury the lines. The Operations & Maintenance Building, Substations and Switching Stations will be clustered with the BESS and has been positioned in a manner which reduces the visual impact. Burying these facilities and buildings will have a much greater adverse impact on the environment and will have long-term maintenance cost implications for the project.

## 14. Environmental Impact Assessment

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations (4 December 2014, Government Notice (GN) R982, R983, R984 and R985, as amended), various aspects of the proposed development may have an impact on the environment and are considered to be listed activities. These activities require authorisation from the National Competent Authority (CA), namely the DFFE, prior to the commencement thereof.

Red Cap appointed SLR Consulting (South Africa) (Pty) Ltd as the Independent Environmental Assessment Practitioner (EAP) to undertake the required Scoping and EIA (SEIA) and Basic Assessment (BA) processes for the proposed Hoogland Wind Farms and Grid Connection Projects in terms of the EIA Regulation 2014 (as amended) promulgated under the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA). The Northern Wind Farm Cluster is subject to a Scoping and EIA process.

The Applicant for these Wind Farms is Red Cap Hoogland 1 (Pty) Ltd, and Red Cap Hoogland 2 (Pty) Ltd respectively. Even though these are two separate applications (14/12/16/3/3/2/2147 & 14/12/16/3/3/2/2146), they were considered in the same Scoping and EIA Reports. The Department of Forestry, Fisheries and the Environment (DFFE) has granted Red Cap permission to combine the two Wind Farms into one Environmental Authorisation (EA) Application processes under Regulation 11 (1) of GN R. 982.

**Refer to Annexure 9 : Final Environmental Impact Assessment Report (August 2022)**



## 14.1 Environmental Authorisation

The Department of Forestry, Fisheries & the Environment granted Environmental Authorisation for the 420 MW Hoogland 1 Wind Farm and Associated Infrastructure, on 6 February 2023.

### **Refer to Annexure 10 : Environmental Authorisation (14/12/16/3/3/2/2147 dated 06.02.2023)**

The Environmental Authorisation (EA) includes conditions to manage implementation and operation of the Hoogland 1 Wind Farm. Amongst others, the EA includes :

- Component and technical details of the facility
- Scope of Environmental Authorisation
- Commencement of the activity
- Management of the activity
- Frequency and process of updating the EMPr
- 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 :

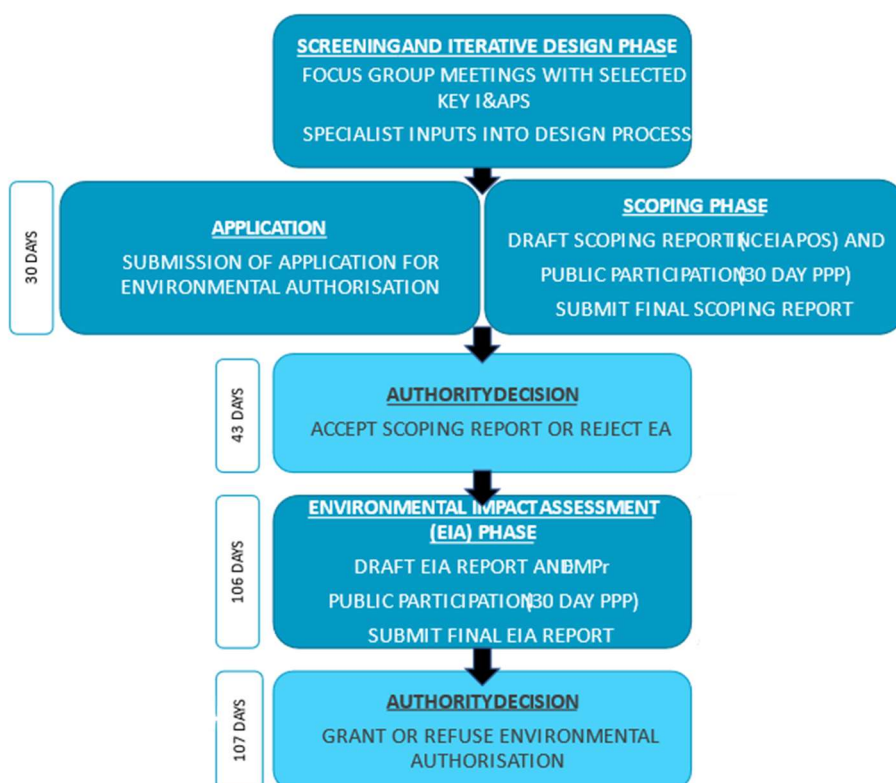
Discipline	Company
Environmental Assessment Practitioner	SLR Consulting (South Africa) (Pty) Ltd
Climate Change	Promethium Carbon
Geotechnical	R.A. Bradshaw & Associates cc
Agriculture	Johann Lanz Consulting
Terrestrial Ecology (including Flora and Riverine Rabbits)	3Foxes Biodiversity Solutions
Herpetology (specifically Karoo Dwarf Tortoise)	Sungazer Faunal Surveys
Bats	Animalia Consultants
Avifauna	Wildskies Ecological Services
Aquatic Ecology	EnviroSci (Pty) Ltd
Geohydrology	GEOSS
Visual	Bernard Oberholzer Landscape Architects (BOLA) and qARC
Archaeology	ASHA Consulting
Palaeontology	Natura Viva
Palaeontology (Northern Cape watercourse crossings only)	Banzai Environmental
Noise	Enviro-Acoustic Research
Shadow Flicker	Arcus
Traffic	Athol Schwarz
Socio-economic / tourism	Independent Economic Researchers
Town Planning	Urban Dynamics EC

## 14.3 Scoping and Environmental Impact Assessment Approach & Process

As the EA process ascribes stringent timeframes once the Application for Environmental Authorisation has been submitted, the approach has been to allow for as much detailed investigation and participation of I&APs upfront as possible. Therefore, a lengthy and detailed Screening and Iterative Design Phase has been provided for in the process.

The detailed screening process for the Hoogland Wind Farms was specifically based on identification and mapping of No-Go areas of the site in order to avoid all

environmental, socio-economic and technical sensitive areas, and considered both impacts from turbines and other infrastructure (internal overhead power lines, roads and underground cables and buildings) as separate No-Go layers. This allowed all suitable areas for turbine locations, and associated infrastructure within the site to be identified. Through this process the most environmentally and socio-economically favourable site layout was thus identified for assessment in the environmental assessment process.



## 14.4 Summary of Impact Assessment

The table provides a summary of the potential environmental impacts that have been identified and assessed for the Hoogland 1 Wind Farm.

Field	Phase	Potential Impact	Significance	
			Pre-Mitigation	Post-Mitigation
Climate Change	All Phases	Climate change impacts (GHG emissions)	Very High +	N/A
	No-go alternative	The impact of the status quo prevailing	Neutral	Neutral
Geotechnical	Construction	Ground disturbance during construction	High -	Medium -
	Construction	Soil erosion during construction	Medium -	Low -
	Operational	Soil erosion during operational phase	Medium -	Low -
	Decommissioning	Ground disturbance during decommissioning	High -	Medium -
	Decommissioning	Soil erosion during decommissioning stage	Medium -	Low -
	No-go alternative	The impact of the status quo prevailing	Neutral	Neutral
Agriculture	Construction	Loss of agricultural potential by occupation of land, soil degradation and dust	Very Low -	Very Low -
	Operational	Increased financial security for farming operations	Very Low +	Very Low +
	Decommissioning	Loss of agricultural potential by soil degradation	Very Low -	Very Low -
	No-Go Alternative	The impact of the status quo prevailing	Very Low -	Very Low -

Field	Phase	Potential Impact	Significance	
			Pre-Mitigation	Post-Mitigation
<b>Terrestrial ecology</b>	<i>Construction</i>	Impact on the Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs) and general ecological processes	Medium -	Low -
	<i>Construction</i>	Impact on the Riverine Rabbit	Medium -	Low -
	<i>Construction</i>	Habitat loss and degradation impact on the Karoo Dwarf Tortoise	High -	Low -
	<i>Construction</i>	Karoo Dwarf Tortoise mortalities due to earthworks and roadkill	Medium -	Low -
	<i>Operational</i>	Impacts on Critical Biodiversity Areas (CBAs), Ecological Support Areas (ESAs) and general ecological processes	Medium -	Low -
	<i>Operational</i>	Impact on the Riverine Rabbit	Medium -	Low -
	<i>Operational</i>	Karoo Dwarf Tortoise mortalities due to roadkill	High -	Low -
	<i>Operational</i>	Karoo Dwarf Tortoise mortalities due to predation by corvids	High -	Low -
	<i>Decommissioning</i>	Impact on the Riverine Rabbit	Medium -	Low -
	<i>No-go alternative</i>	The impact of the status quo prevailing	Low -	Low -
<b>Bats</b>	<i>Construction</i>	Loss of foraging habitat by clearing of vegetation	Low -	Very Low -
	<i>Construction</i>	Roost destruction during earthworks	Low -	Insignificant ↑
	<i>Operation</i>	Bat mortalities during foraging	High -	Low -
	<i>Operation</i>	Bat mortalities during migration	Medium -	Low -
	<i>Operation</i>	Increased bat mortalities due to light attraction and habitat creation	High -	Low -
	<i>No-go alternative</i>	The impact of the status quo prevailing	Neutral	Neutral
<b>Avifauna</b>	<i>Construction</i>	Habitat destruction	Medium -	Medium -
	<i>Construction</i>	Disturbance of birds	Low -	Low -
	<i>Operational</i>	Disturbance of birds	Low -	Low -
	<i>Operational</i>	Displacement of birds	Low -	Low -
	<i>Operational</i>	Collision of birds with turbines	High -	Medium -
	<i>Operation</i>	Collision & electrocution of birds on overhead power lines	High -	Low -
	<i>Decommissioning</i>	Disturbance of birds	Low -	Low -
	<i>No-go alternative</i>	The impact of the status quo prevailing	Neutral	Neutral

Field	Phase	Potential Impact	Significance	
			Pre-Mitigation	Post-Mitigation
Aquatic	Construction	Damage or loss of riparian systems and disturbance of waterbodies	Medium -	Very Low -
	Construction	Impact on riparian and wetland systems through the possible increase in surface water runoff on form and function	Medium -	Very Low -
	Construction	Changes to hydrological regimes that could also lead to sedimentation and erosion	Medium -	Very Low -
	Construction	Potential impacts on localised surface water quality	Medium -	Very Low -
	Construction	Groundwater abstraction	Medium -	Very Low -
	Operational	Impact on riparian and wetland systems through the possible increase in surface water runoff on form and function	Medium -	Very Low -
	Operational	Changes to hydrological regimes that could also lead to sedimentation and erosion	Medium -	Very Low -
	Operational	Groundwater abstraction	Medium -	Very Low -
	Decommissioning	Damage or loss of riparian systems and disturbance of waterbodies	Medium -	Very Low -
	Decommissioning	Impact on riparian and wetland systems through the possible increase in surface water runoff on form and function	Medium -	Very Low -
	Decommissioning	Potential impacts on localised surface water quality	Medium -	Very Low -
	No-Go Alternative	The impact of the status quo prevailing	Very Low -	Very Low -
Visual	Construction	Visual intrusion of construction activities on the Karoo landscape.	Medium -	Medium -
	Operational	Visual intrusion of wind turbines on the Karoo landscape.	High -	High -
	Operational	Visual intrusion of infrastructure on the Karoo landscape.	Medium -	Medium -
	Operational	Visual intrusion of lighting at night.	Medium -	Medium -
	Operational	Visual impact of the N1 Bypass road on the Karoo National Park, Beaufort West town and the gold course	High -	Medium -
	Decommissioning	Visual intrusion of activities to remove infrastructure.	Medium -	Medium -
	No-Go alternative	The impact of the status quo prevailing	Neutral	Neutral
Heritage	Construction	Impacts to archaeological resources	High -	Very Low -
	Construction	Damage to or destruction of built heritage resources	Insignificant	Insignificant ↑
	Construction	Impacts to the cultural landscape	Medium -	Medium -
	Operation	Impacts to the cultural landscape	Medium -	Medium -
	Decommissioning	Impacts to the cultural landscape	Medium -	Medium -
	No-Go alternative	The impact of the status quo prevailing	Neutral	Neutral.
Palaeontology	Construction	Loss or degradation of local palaeontological heritage resources of scientific and/or conservation value within the Hoogland Northern Wind Farm sites in the Western Cape	Low -	Very Low -
	Construction	Loss or degradation of local palaeontological heritage resources of scientific and/or conservation value of the Northern Cape watercourse crossing road upgrades	High -	Medium -
	No-Go alternative	The impact of the status quo prevailing	Neutral	Neutral



Field	Phase	Potential Impact	Significance	
			Pre-Mitigation	Post-Mitigation
Noise	Construction	Daytime Wind Turbine construction activities	Insignificant	Insignificant ↑
	Construction	Night-time Wind Turbine construction activities (NSR 18, 19 and 23)	Low -	Very Low -
	Construction	Daytime road construction activities	Insignificant	Insignificant ↑
	Construction	Daytime road traffic from construction vehicles	Insignificant	Insignificant ↑
	Operation	Daytime Wind Turbine operation raising ambient sound levels	Very Low -	Very Low -
	Operation	Night time Wind Turbine operation raising ambient sound levels	Low -	Low -
	No-Go alternative	The impact of the status quo prevailing	Neutral	Neutral
Shadow flicker	Operation	Shadow Flicker effects on identified receptors	Medium -	Insignificant ↑
	No-Go alternative	The impact of the status quo prevailing	Insignificant	Insignificant ↑
Traffic	Construction	Increased Road Incidents	Medium -	Low -
	Construction	Road Degradation	Medium -	Low -
	Construction	Dust	Medium -	Low -
	Construction	Intersection Safety	Medium -	Medium -
	Operation	Intersection Safety	Medium -	Medium -
	No-Go alternative	The impact of the status quo prevailing	Low -	Neutral
Socio-economic	Construction	Impacts from expenditure on the construction of the project	Medium +	Medium +
	Construction	Impacts on tourism	Low -	Low -
	Construction	Impacts associated primarily with the influx of people	Low -	Low -
	Construction	Impacts on surrounding landowners and communities	Low -	Low -
	Construction	Impacts on property value	Low -	Low -
	Operation	Impacts from expenditure on the construction of the project	Medium +	High +
	Operation	Impacts associated with the funding of socio-economic development, enterprise development and shareholding	Medium +	High +
	Operation	Impacts associated primarily with the influx of people	Low -	Low -
	Operation	Impacts on tourism	Medium -	Medium -
	Operation	Impacts on surrounding landowners and communities	Low -	Low -
	Operation	Impacts on property value	Low -	Low -
	Decommissioning	Impacts from expenditure on decommissioning of the project	Medium +	Medium +
	Decommissioning	Impacts associated primarily with the influx of people	Low -	Low -
	Decommissioning	Impacts on tourism	Low -	Low -
	Decommissioning	Impacts on surrounding landowners and communities	Low -	Low -
	Decommissioning	Impacts on property value	Low -	Low -
	No-Go alternative	The impact of the status quo prevailing	Neutral	Neutral

## 14.5 Environmental Impact Statement

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Red Cap have proactively sought to identify the best practical environmental option possible for the identified project site through a rigorous, iterative and multi-disciplinary process, that has involved detailed specialist studies. This approach aligns with the NEMA principles advocating for sustainable development through the adoption of the mitigation hierarchy as set out in section 2 of NEMA. Through application of this hierarchy, 'avoidance' of environmental impacts was then the basis for the approach to the process. The outcome has been a preferred layout for Hoogland 1 and Hoogland 2 Wind Farm respectively, which is the subject of the EIA Report.

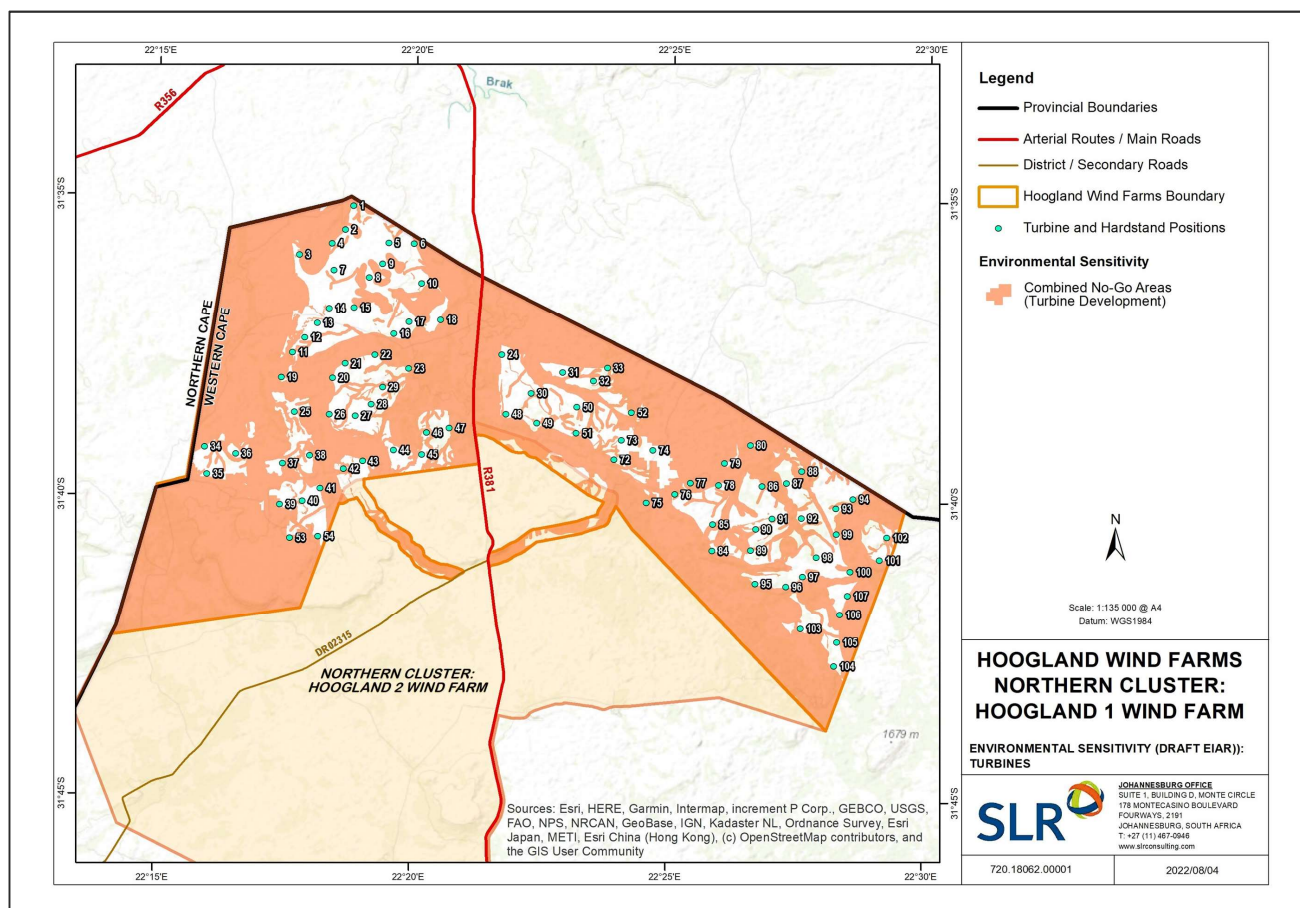
The potential impacts expected to arise from the proposed Hoogland 1 and Hoogland 2 Wind Farms and associated infrastructure are summarised in the table above. Various negative and positive impacts were identified and assessed for the construction, operational and decommissioning phases of the respective wind farm projects. The impact significance post-mitigation for the various specialist fields were assessed as ranging mainly from neutral / insignificant to medium negative significance post-mitigation, with one impact of high negative significance being the visual intrusion of wind turbines on the Karoo landscape during the operational phase as well as the high cumulative visual impact associated with this. The high impacts associated with bat, avifauna and the Karoo Dwarf tortoise mortalities can be mitigated to being of medium or low negative significance.

Several positive impacts have been identified and are mostly socio-economic, ranging between medium and very high positive post-mitigation, with one very low positive agricultural related impact (namely increased financial security for farming operations) also being identified post-mitigation. Most notable is the very high positive impact on climate change through avoided GHG emissions as well as the post-mitigation high positive impact on the economy from operational expenditure, and the high positive impacts in relation to local socio-economic development, enterprise development and shareholding.

Cumulative impacts associated with the proposed wind farms were found to be acceptable post-mitigation, with the only the high residual cumulative negative impact being the visual intrusion of wind turbines on the Karoo landscape. A number of residual medium negative impacts remain in terms of bats, avifauna, heritage, traffic and socio-economic receptors. Positive residual cumulative impacts are largely socio-economic from expenditure and SED initiatives. However, from a cumulative impact perspective, there are no fatal flaws that would prevent authorisation of either of the wind farms, provided the proposed mitigation measures are adhered to, and the wind farms are therefore considered acceptable in terms of cumulative impacts.

In summary, the specialist studies that informed the EIA Report have not found any fatal flaws or critical issues with the current layouts, with the most notable post-mitigation impacts being the high negative visual impacts in relation to the Karoo landscape, the high positive SED benefits, and very high positive climate change impacts (through avoided emissions), and have all concluded that the development of the wind farms may go ahead, if the proposed mitigation measures are adhered to.

After consideration of the findings presented in the EIA Report and based on the preferred layout presented within the BA Report, it is the reasoned opinion of the EAP that the impacts associated with the proposed Hoogland 1 Wind Farm are acceptable and Environmental Authorisation (EA) should therefore be granted.



## 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 Hoogland 1 Wind Farm.

### **Refer to Annexure 11 : Department of Agriculture, Land Reform & Rural Development (DALRRD) Approval**

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 Hoogland 1 Wind Farm project.

### **Refer to Annexure 17 : Western Cape (WC) Department of Agriculture Support**

## 16. Department of Mineral Resources & Energy (DMRE)

Approval in terms of Section 53 (1) of the Mineral & Petroleum Resources Development Act, 2002 (Act 28 of 2002) has been obtained from DMRE.

### **Refer to Annexure 12 : Department of Mineral Resources & Energy (DMRE) Approval**

## 17. Land Claims Commissioner (LCC)

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

**Refer to Annexure 13 : Land Claims Commissioner (LCC) Confirmation**

## 18. Department of Transport & Public Works (DTPW)

A Traffic Impact Assessment (TIA) (Hoogland Southern Cluster) was conducted for Hoogland 1 and Hoogland 2 Wind Farms. The TIA concludes :

*"A range of management and mitigation strategies are identified for implementation during the construction and operation phases of the development to minimise traffic impacts, reduce community disruption and the risk of traffic incidents.*

*Thus, from a traffic and transportation perspective, there are no constraints or notable impacts that would jeopardise the implementation of this development."*

Preliminary and in-principle support from the Western Cape Government : Department of Transport & Public Works has been obtained.

**Refer to Annexure 16 : Department of Transport & Public Works (DTPW) In-principle Support**

**Refer to Annexure 18 : Hoogland Northern Cluster Traffic Impact Assessment (TIA)**

## 19. Heritage Impact Assessment

A Heritage Impact Assessment (HIA) (Hoogland Northern Cluster) was conducted for Hoogland 1 and Hoogland 2 Wind Farms with recommendations.

**Refer to Annexure 19 : Hoogland 1 & 2 Wind Farms Heritage Impact Assessment (HIA)**

Heritage Western Cape endorsed the HIA report and recommendations.

**Refer to Annexure 20 : Heritage Western Cape (HWC) Comment & Support**

## 20. Department of Water & Sanitation (DWS)

The Department of Water & Sanitation confirmed availability of water supply for Hoogland 1 Wind Farm.

**Refer to annexure 21 : Department of Water & Sanitation (DWS) Comment & Support**

## 21. Civil Aviation Authority (CAA)

An application has been submitted to the Civil Aviation Authority.



## **22. Public Interest & Participation**

Public participation with respect to an application for Consent Use 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.

## **23. 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 Hoogland 1 Wind Farm, that it will have significant benefits to the communities of the greater Central Karoo District and will contribute significantly to the provision of renewable energy in South Africa. The importance of renewable energy, as part of the electricity generating mix in South Africa, cannot be over emphasized. The construction of the Hoogland 1 WF, north of Beaufort West in the Western Cape, demonstrates this commitment towards renewable energy and green efficiencies.

The development of Hoogland 1 WF has been assessed by a team of professionals and based on the outcome of the Environmental Impact Assessment Report (EIA) and specialist studies, a positive Environmental Authorisation by the Department of Forestry, Fisheries & the Environment is expected shortly.

The following are key aspects to be highlighted from this submission:

- Renewable energy has been identified and supported through various Government Policies and Directives as priority drivers for economic development.
- The Environmental Impact Assessment process confirms the impacts are acceptable and can be mitigated.
- Implementation of the WF 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.
- The development is supported by the Department of Agriculture, Land Reform & Rural Development.
- 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.