

# 1. SITE LAYOUT PLAN DEVELOPMENT

The objective of the screening process is to ensure that an environmentally sustainable site layout plan (SLP) is taken forward for impact assessment. As such, the SLP presented in the DEIR is the product of a screening process that has been informed by a large multi-disciplinary team of environmental specialists, the EAP, the project sponsor and project developer.

This document provides a summary of the screening process that took place during the pre-application & scoping phase, and the role it played in defining the SLP. This process is described under the following steps:

1. National Web-Based Environmental Screening Tool;
2. Site sensitivity verification;
3. No-Go Mapping; and
4. SLP Development.

## 1.1 NATIONAL WEB-BASED ENVIRONMENTAL SCREENING TOOL

As a first step, the National Web-Based Environmental Screening Tool (hereafter referred to as “the screening tool”) was consulted to gain a high-level understanding of the site’s sensitivity towards WEF development and determine the level of assessment required based on the environmental theme’s sensitivity rating within the development site (see Table 1.1 below).

**TABLE 1.1 SENSITIVITY RATING SUMMARIES OF THE DFFE SCREENING REPORT**

Environmental Theme/Specialist Assessment	Sensitivity Rating to the Screening Tool
Agriculture Impact Assessment	High sensitivity
Landscape/Visual Impact Assessment	Very High sensitivity
Archaeological/Visual Impact Assessment	Low sensitivity
Palaeontology	Very High sensitivity
Civil Aviation Assessment	Medium Sensitivity
Defence Assessment	Medium Sensitivity
RFI Assessment	Low sensitivity
Flicker Theme	Very High sensitivity
Noise Impact Assessment	Very High sensitivity
Animal Species Theme	High Sensitivity
Aquatic Biodiversity Theme	Very High sensitivity
Avian Theme	Low sensitivity
Bats Theme	High Sensitivity
Plant Species Theme	High Sensitivity
Terrestrial Biodiversity Theme	Very High sensitivity

## 1.2 SITE SENSITIVITY VERIFICATION

Based on the professional experience of the EIA team, as well as inputs from the screening tool, the following environmental specialists were identified and appointed to inform the screening process:

TABLE 1.2 HUGO WEF SPECIALIST TEAM

Specialist	Affiliation	Field of Study
Johann Lanz	Independent Consultant	Soil, Land Use and Agricultural Potential
John Gribble	ACO Associates cc	Heritage and Palaeontology
Mornè De Jager	Enviro Acoustic Research	Noise
Lourens du Plessis	LOGIS	Visual/ Landscape
Victor de Abreu and Reabetswe Mokomele	SMEC	Traffic
Dr Owen Davies	ERM	Biodiversity (Flora and Fauna)
Tony Barbour	Independent Consultant	Socio-Economic
Dr Rob Simmons	Birds and Bats Unlimited	Avifauna
Stephanie Dippenaar	Stephanie Dippenaar Consulting trading as EkoVler	Bats
Dr Brian Colloty	EnviroSci	Freshwater and Wetlands (Aquatics)

All specialists undertook a desktop-based screening exercise to identify provisional No-Go, high sensitive, medium-sensitive and low-sensitive areas within the site boundaries. These sensitivities were then ground-truth on site to inform their constraints and sensitivity mapping.

The following site visits were undertaken over and above the standard site sensitivity verification survey:

### **Bats:**

– **14-month monitoring campaign:** During the 14-month monitoring period, the study area was visited by EkoVler on nine occasions to install the monitoring equipment, check equipment, download data, perform seasonal driven night-time transects, ground-truth potential bat important features and decommission the monitoring equipment.

**Birds:**

- **2-day pre-feasibility or screening survey conducted in February 2023.** This included a survey for large eagle nests and other avifaunal constraints on site and within approximately six kilometres of the initial site footprint. A Verreaux Eagle Nest was located within the original development area.
- **Collision risk Model.** The applicant ran a Collision Model for the identified avifauna which further reduced the development area.
- **Four seasonally timed site visits** over a 12-month period across the study area to record all flights of Priority species.

Visits covered: summer (when summer migrants are present); winter (when raptors breed); spring (when summer migrants are arriving on site and any species start to breed; and autumn (when summer migrants are leaving and many raptors are preparing to breed).

Where applicable and depending on the seasonal and/or monitoring requirements, verified constraints were received from the various specialists at different stages of the project lifecycle, e.g. avifaunal, and aquatic inputs were considered to be central to the facility layouts and these specialists were appointed at project inception in 2022.

**Visual/Landscape:**

A visual Impact study was undertaken in the EIA phase, however due to numerous constraints and I&APS concerns, the layout had to be revised again and Visual impact study was then retaken.

For the purpose of this document, we have summarised the constraints that informed the layouts in Table 1.3, i.e. the No-Go areas.

**TABLE 1.3 SENSITIVE RECEPTORS TO BE AVOIDED AND ASSOCIATED BUFFERS (WHERE APPLICABLE)**

Discipline	Sensitive Receptors (must be avoided)	Buffer (m)	Restricted Infrastructure		
			Turbines	Roads & MV cabling	Other infrastructure
<b>Bats</b>	Open water sources	200 m	✓	✓	-
	Rivers	200 m	✓	-	✓
	Riparian shrub	200 m	✓	-	✓
	Relatively dense thicket	200 m	✓	-	✓
	Rock formations, Rocky outcrops & possible bat roost features	200 m	✓	✓	✓
	Human dwellings	500 m	✓	✓	✓
<b>Visual</b>	Shadow flicker	1000 m	✓	-	-

Discipline	Sensitive Receptors (must be avoided)	Buffer (m)	Restricted Infrastructure		
			Turbines	Roads & MV cabling	Other infrastructure
<b>Noise &amp; Shadow Flicker</b>	Identified noise receptors	500 m	✓	-	✓
<b>Aquatic</b>	Delineated Wetlands	Between 50-60 m	✓	✓	✓
	Natural watercourse	50 m	✓	✓	✓
<b>Avifauna</b>	Verreux's Eagle nest	3700 m	✓	-	✓
	VERA buffer	Varied	✓	-	✓
	Black Harrier nest	3000 m	✓	-	✓

## 2. SITE LAYOUT PLAN DEVELOPMENT

Since project inception, a number of layout iterations have been refined. While the purpose of this document is to demonstrate how the environmental and social constraints have defined the SLP presented in the Draft EIR, it is equally important to present the various technical feasibility aspects that informed the initial (preliminary) layout.

The table below demonstrates the level of avoidance and minimisation of impacts which informed the preferred site layout.

Version #	Date	Number of turbines	Informational constraints	Comments
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**Preliminary Layout**

The initial layout change/development was in respect to adherence to development principles. These include the minimum distance each turbine needed to be away from one another to minimise internal wake effect, topography and accessibility, and respecting the restrictions from a town planning perspective i.e., setbacks from roads, surrounding farms. Figure 1 below shows the initial changes.

1	Scoping Phase	38		<p>Figure 1: Preliminary layout 1</p>
2	March 2024	38	Bird, bats and terrestrial	<p>The second layer of layout changes was influenced and altered predominantly by the hard no-go sensitivities – birds, bats, aquatics and terrestrial. Further refinement to this was to minimise any impact on residual sensitivities, which wasn’t covered by the previous. This included repositioning and removing. Of turbines. Figure 2 below shows the changes.</p>

Version #	Date	Number of turbines	Information constraints	Comments
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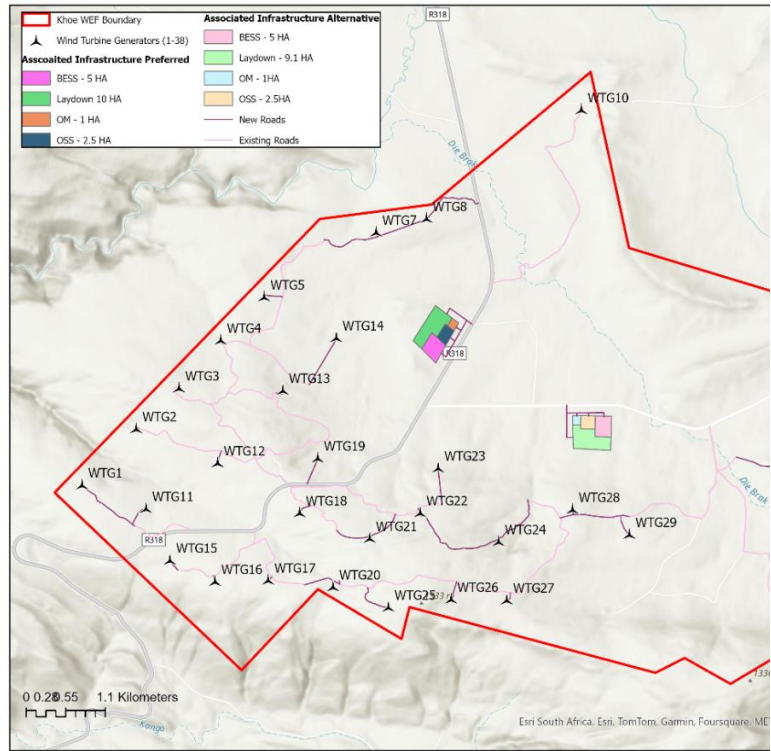
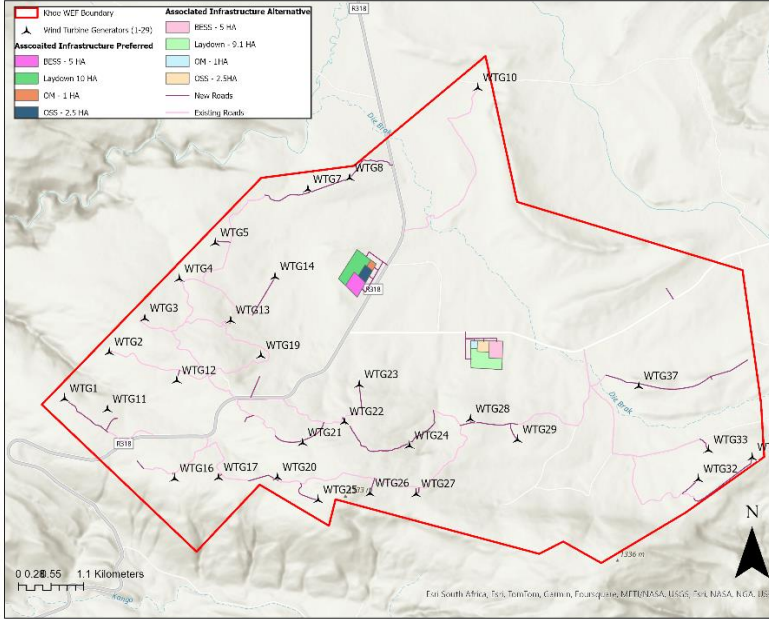


Figure 2 Preliminary Layout 2

3	May 2024	29		The layout was further revised to account for high visual sensitivities, hence WTG 11,19,20 were shifted and WTG 15, 18, 35, 36 and 38 removed.
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Version #	Date	Number of turbines	Information constraints	Comments
				 <p>Figure 3: DEIR Final Layout</p>



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