24 January 2023

Savannah Environmental (Pty) Ltd

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 BAR 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 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. 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** below).

Table 1: Sensitivity ratings from the DFFE web-based online Screening Tool

Environmental Theme/Specialist Assessment	Sensitivity Rating ito the Screening Tool
Agricultural Impact Assessment	High Sensitivity
Landscape/Visual Impact Assessment	Very High Sensitivity
Archaeological and Cultural Heritage Impact Assessment	High Sensitivity
Paleontology Impact Assessment	Very High Sensitivity
Terrestrial Biodiversity Impact Assessment	Very high Sensitivity
Aquatic Biodiversity Impact Assessment	Very high Sensitivity
Avian Impact Assessment	High Sensitivity
Civil Aviation Assessment	Low Sensitivity
Defence Assessment	Low Sensitivity
RFI Assessment	High Sensitivity
Noise Impact Assessment	Very High Sensitivity
Bats Impact Assessment	High to Medium Sensitivity
Plant Species Assessment	Medium Sensitivity
Animal Species	High Sensitivity

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 2: Aberdeen WEF specialist team

Specialist	Field of Study
3Foxes Biodiversity Solutions	Terrestrial Ecology
Brian Colloty Consulting	Aquatics
Birds and bats unlimited	Avifauna
Inkululeko wildlife services	Bats
CTS Heritage	Heritage (including archaeology and palaeontology)
LOGIS	Visual Impact Assessment
Enviro Acoustic Research	Noise
Tony Barbour	Social Impact Assessment
Terra Africa	Soils and Agricultural Potential Assessment
JG Afrika	Traffic

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-truthed 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:**
  - **12-month monitoring campaign:** During the 12-month monitoring period, the study area was visited by IWS on seven 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:**
  - **3-day initial avifaunal survey** to identify any active nests (none were identified) and/or sensitive areas that might require additional monitoring. In this case a known Black Harrier foraging area was identified as a sensitive area to be subject to additional monitoring.
  - **Four seasonally timed site visits** across the study area to record all flights of Priority species. Given the large footprint of the whole site the area was divided into northern and southern sites in which Vantage Point observations differed: In the north 18-hours of observation per VP were undertaken (due to the presence of Black Harriers), whereas 12-hours of observations were undertaken in the south.

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, ecology and aquatic inputs were considered to be central to the facility layouts and these specialists were appointed at project inception in 2020.

A final constraints layer was consolidated in October 2022.

For the purpose of this document, we have summarised the constraints that informed the layouts in Table 3, i.e. the No-Go areas.

Table 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
Bats	Major drainage lines and wetlands	500	✓		✓
	Functional farm dams and reservoirs	500	✓		✓
	Potential bat roosts	500	✓		✓
	Minor drainage lines	200	✓		✓
Archaeology	Heritage sites and artefacts	500	✓	✓*	✓
Cultural Landscapes	R61 road	1000	✓		✓
	Municipal road (unnamed)	500	✓		✓
Visual	R61 road	500	✓		✓
Noise	Identified sensitive noise receptors	500	✓		✓
Aquatic	Major drainage lines and wetlands	25	✓		✓
	Minor drainage lines	12	✓		✓
Ecology	Numerous sensitive features, including: – Dolerite ridges – Sheetwash – Washes – Plains – Stony ground – Rocky	N/A	✓	✓	✓
Birds	High risk areas	N/A	✓		✓

* Upgrades to existing roads acceptable within buffer area

3. NO-GO MAPPING

Following receipt of verified sensitivity datasets, a consolidated No-Go map was generated for applicable infrastructure, i.e. turbines, roads and MV cabling and other associated infrastructure (e.g. BESS, substations, laydown areas, site camps, etc.).

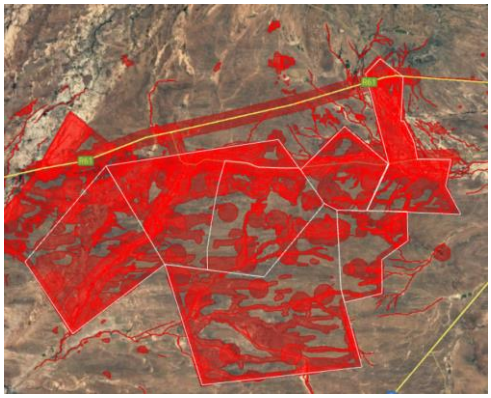


Figure 1: Turbine No-Gos

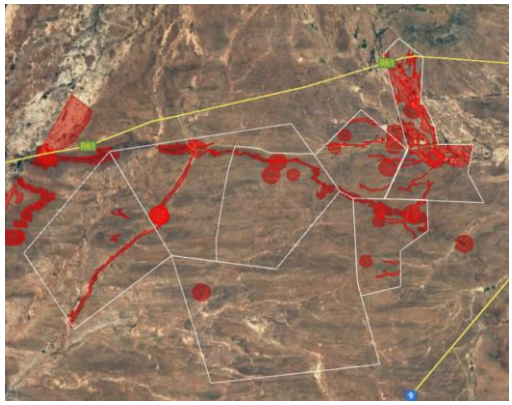


Figure 2: Roads and MV cabling No-Gos

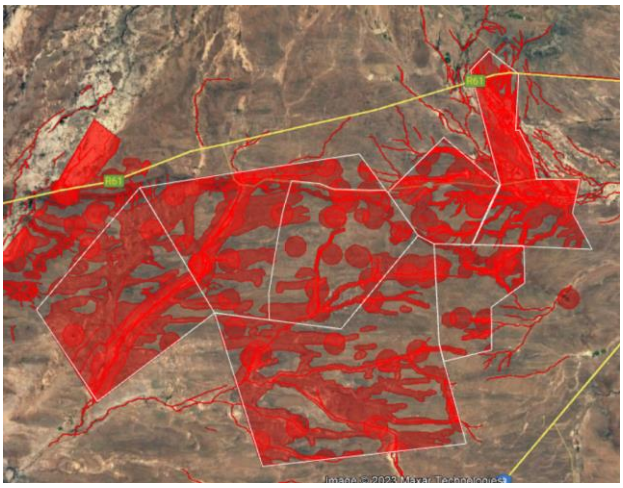
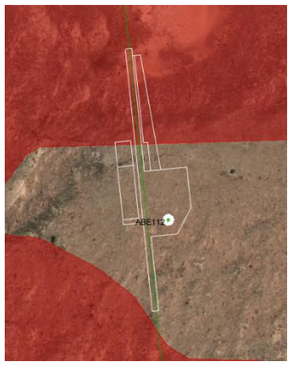


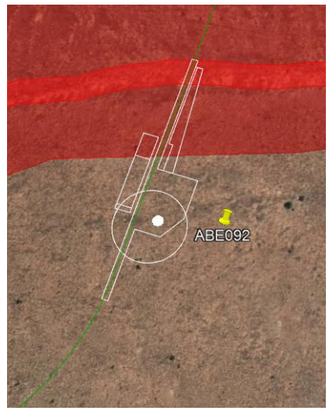
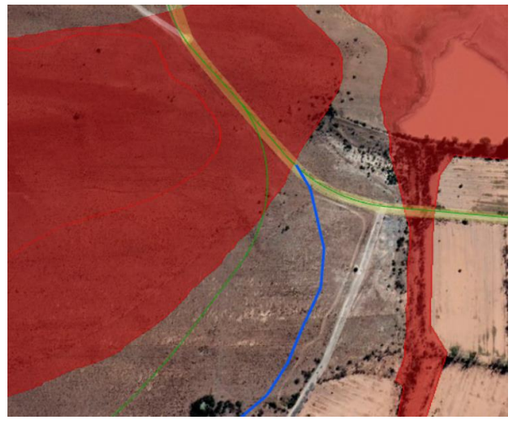
Figure 3: Other associated infrastructure No-Gos

4. 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 BAR, it is equally important to present the various technical feasibility aspects that informed the initial (preliminary) layout.

Version #	Date	Informant Constraints	Comments
Preliminary Layout			
1	October 2020	Lease areas	Boundaries of the lease areas as defined and agreed to with affected landowners
		Desktop wind resource	Desktop wind resource data informed the optimum turbine placement
		Avifaunal screening	An avifaunal specialist was appointed to conduct an initial site survey and report on any key priority species nesting within the project or neighbouring properties which may require buffering out large portions of the proposed project site. N
2	February 2021	Met mast location	Suitable locations for the measurement masts were modelled based on the preliminary layout (Version#1)
3	March 2021	Increase in turbine size to 120	Considering the extent of upstream strengthening required need sufficient scale
4	September 2021	Amendment to met mast locations	Following a site-visit undertaken by the resource technical team in May 2021, alternative measurement mast positions were identified. This had knock-on effects on the preliminary turbine layout which needed to be remodelled.
		Avoidance of aquatic buffers	Refined aquatic buffers were available at this point and were considered in this iteration.
Draft BAR Layout			
5	July 2022	Specialist constraints available at the time	All verified specialist constraints were available at this stage, except for avifauna, bats and ecology which at the time was pending further monitoring and/or verification.
		1 yr verified wind data	At the time, the project resource team had completed a year of the wind measurement campaign. The data obtained up to this point informed optimised turbine placement.
6	August 2022	Final bat constraints	Based on 12-month monitoring campaign and sensitive feature verification
7	October 2022	Final avifaunal constraints	Based on 12-month monitoring campaign and collision-risk modelling
8	November 2022	Micro-siting of turbines 13, 46 and 112 outside of no-go areas	

Turbine #	13	46	112
			

			Design Recommendation	Shift all infrastructure 18 m NW	Shift all infrastructure 130 m W OR Reflect and shift upwards	Shift 90 m S OR Reflect and shift upwards
9	November 2022	Micro-siting of turbine 92 and re-alignment of a portion of access road	**Turbine #**	Turbine 13	Access Road	
						
			Design Recommendation	Reflect the hardstands so as to remove the blade assembly area from the drainage line	A portion of the new access road (green) was microsighted outside of an ecological high senstivie area (blue). Any widening of an existing roads within ecological high sensitive areas (as above) is deemed acceptable by the ecologist: *“Yes, it is preferable to use the existing roads even where these traverse the sensitive areas. There may be one or two sites where this may be an issue, but I doubt it.* *So yes, it is ok to have the roads widened to 6m in these areas*.”	