

Proposed Development of a Battery Energy Storage System (BESS) and Associated Infrastructure at the Cuprum Substation located within Copperton, near Prieska, Northern Cape Province

Site Sensitivity Verification: Civil Aviation

Eskom Holdings SOC (Pty) Ltd

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1. Introduction

This report serves as the Site Sensitivity Verification for Civil Aviation for the Basic Assessment (BA) process associated with the proposed establishment of a Battery Energy Storage System (BESS) and associated infrastructure at the Cuprum Substation, located within Copperton, near Prieska in the Northern Cape Province. The project is being proposed by Eskom Holdings SOC Ltd (Eskom).

2. Need for the Site Sensitivity Verification

On 20 March 2020, in Government Gazette 43110, Government Notice (GN) 320, the Department of Forestry, Fisheries and the Environment (DFFE) published procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) when applying for an Environmental Authorisation (EA). GN 320 prescribes general requirements for undertaking Site Sensitivity Verification, as well as protocols for assessment and minimum report content requirements for specified environmental themes. GN 320 was enforced within 50 days of publication of the notice i.e. on 9 May 2020.

GN 320 specifically includes a protocol that provides the criteria for the specialist assessment and minimum report content requirements for impacts on civil aviation installations for activities requiring EA. This protocol replaces the requirements of Appendix 6 of the 2014 NEMA Environmental Impact Assessment (EIA) Regulations (as amended).

This specific protocol states that proposed developments that occur on sites identified as *Very High*, *High* or *Medium* sensitivity, as depicted on the National Web-Based Environmental Screening Tool (Screening Tool), must include a Civil Aviation Compliance Statement. It further states that there are no requirements if the proposed developments occur on sites identified as *Low* sensitivity on the Screening Tool. However, a Site Sensitivity Verification is required for the Civil Aviation Protocol.

Therefore, since the proposed project requires an EA in terms of the 2014 NEMA EIA Regulations (as amended), and Civil Aviation was identified as a relevant theme for the General Methodology on the Screening Tool, GN 320 must be complied with.

3. Methodology

The Site Sensitivity Verification Process and Report has been compiled based on the following methodology:

- Existing spatial databases were used to determine the location of civil aviation installations in relation to the proposed project area, and to identify preliminary areas of concern in terms of impacts to civil aviation installations;
- The proposed project sites and footprints were plotted on the Screening Tool to identify the sensitivity allocated;
- A site visit was undertaken to confirm the current land use and the environmental sensitivity as it relates to Civil Aviation;
- Additional research was undertaken to substantiate the Site Sensitivity Verification process; and
- A Site Sensitivity Verification Report was compiled (i.e. this report).

The information sources listed in Table 1 were used in the Site Sensitivity Verification process.

Table 1: Information Sources used for the Site Sensitivity Verification process

Data / Information	Source	Date	Type	Description
National web-based Environmental Screening Tool (Screening Tool)	DFFE	2020	Spatial / Online Assessment	The Screening Tool is a geographically based web-enabled application which allows a proponent intending to submit an Application for EA in terms of the 2014 NEMA EIA Regulations (as amended) to screen the

Data / Information	Source	Date	Type	Description
				proposed site for any environmental sensitivity ¹
RSA Airspaces in 3D	Air Traffic and Navigation Services SOC Limited (ATNS)	2020	Google Earth KMZ File	The RSA Airspaces in 3D data KMZ file is an initiative undertaken by the ATNS to illustrate the definitions and complexities of airspace, routes, aerodromes and navigational facilities within South Africa to the public in the interest of safety ²
Airport, Airfields and Obstacle Datasets	Civil Aviation Authority (CAA)	2018	Spatial Vector Dataset	Location of airfields in RSA.

Therefore, the Site Sensitivity Verification was undertaken using desktop analysis, satellite imagery, preliminary on-site inspection, and other available and relevant information.

4. Description of the Proposed Project

The proposed project will include the following development activities:

- Re-alignment of the Cuprum / Karoo 66 kV and the Cuprum / Kronos 11 kV overhead lines (OHL) along the peripheries of the Eskom property boundary, to make provision for the BESS and substation expansion;
- Extension of the Cuprum Substation's fence around the substation to include the BESS area;
- Extension of the Cuprum Substation's 132kV busbar to make provision for the new transformer which will extend the substation on the south-western side;
- Addition of control panels for the proposed BESS within an existing control room located within the Cuprum Substation;
- Establishment of the BESS containers on a cleared area and connection to Eskom grid infrastructure;
- Extension of the existing road by 180m which will connect to the runway inside the Cuprum Substation; and
- Re-alignment of a 170m water pipeline with a diameter of 32mm.

The aspects of the proposed development which are most likely to impact on civil aviation are the re-aligned and new OHL's, the expanded substation and the BESS. Only these elements of the proposed development have therefore been considered in this Site Sensitivity Verification.

5. Location of the Proposed Project

The proposed BESS will be situated adjacent to the existing Cuprum Substation (29° 57' 33.14" S, 22° 18' 1.26" E) located within Copperton, situated near the town of Prieska in the Northern Cape Province (refer to

¹ <https://screening.environment.gov.za/screeningtool/index.html#/pages/welcome>

² <https://www.atns.co.za/rsakmz.php>

Figure 1). The site falls under the jurisdiction of the Siyathemba Local Municipality and the Pixley ka Seme District Municipality.

The development will traverse three (3) properties, as listed below:

- Vogelstruis Bult Farm 104 Portion 1;
- Vogelstruis Bult Farm 104 Portion 5; and
- Vogelstruis Bult Farm 104 Portion 25.

Table 2: SG 21 Digit Codes of the Affected Properties

Property	SG Office		Major Region						Minor Region						Erf / Farm Number				Portion Number				
1	Kimberley	C	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	1
2	Kimberley	C	0	6	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	5
3	Kimberley	C	0	6	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	2	5	

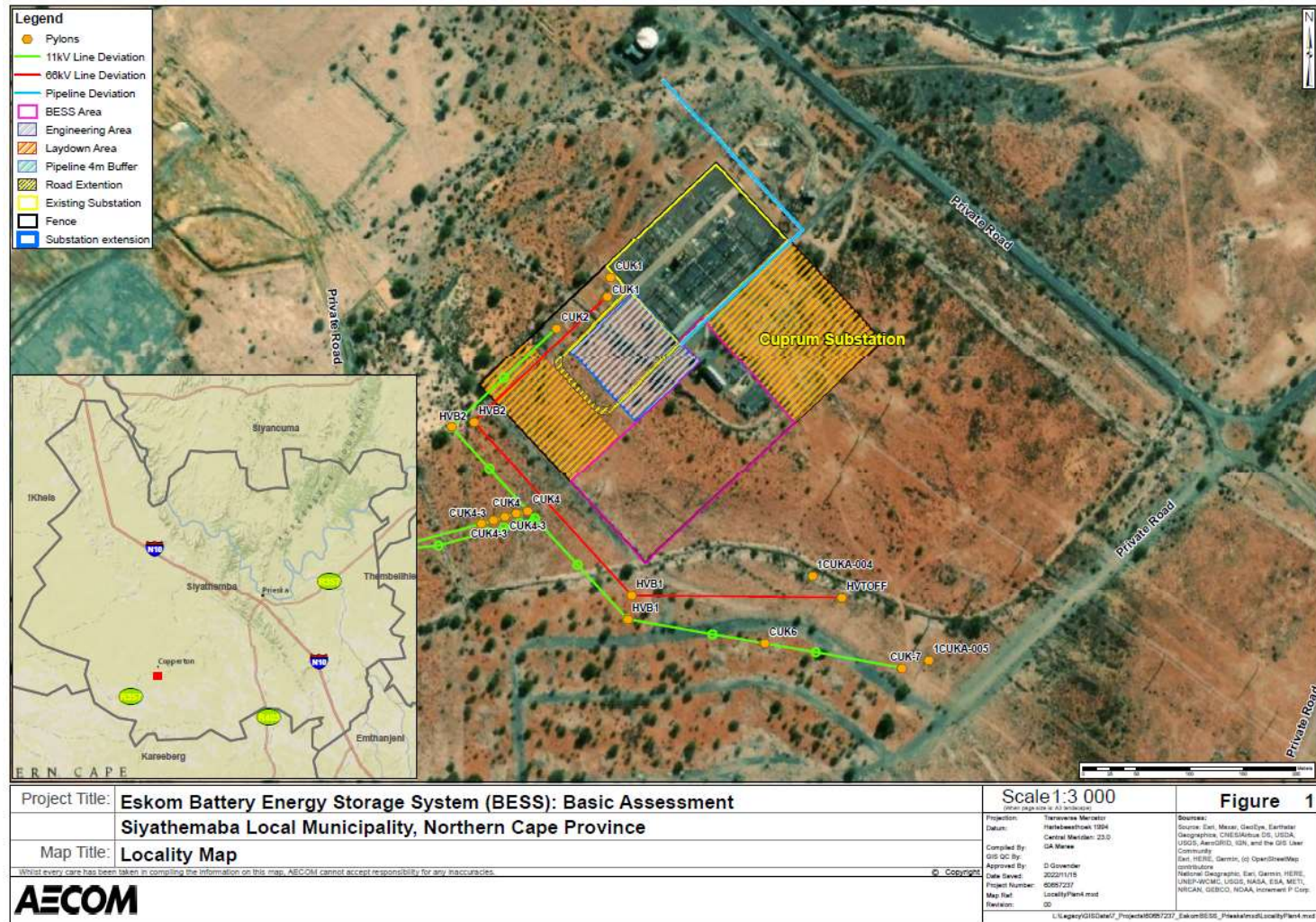


Figure 1: Locality Map

6. Details of the Environmental Assessment Practitioner

GN 320 states that prior to commencing with a specialist assessment, the current use of the land and the potential environmental sensitivity of the site under consideration, as identified by the Screening Tool, must be confirmed by undertaking a Site Sensitivity Verification. GN 320 further notes that the Site Sensitivity Verification must be undertaken by an Environmental Assessment Practitioner (EAP) or specialist with expertise in radar.

This Site Sensitivity Verification has been undertaken by Sarah Caulfield, a Senior Environmental Scientist at AECOM SA (Pty) Ltd. Sarah is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA), with Registration Number 2019/1376, as well as with the South African Council for Natural and Scientific Professions (SACNASP), with Registration Number 400716/15 in the field of Environmental Science.

7. Findings of the Screening Tool

A Screening Assessment Report was generated for the proposed project, utilising the DFFE's National web-based Screening Tool, dated 28/07/2022. The following classification was utilised in the generation of the report: Infrastructure → Localised Infrastructure → Storage → Dangerous Goods → Chemicals.

The map of civil aviation combined sensitivity generated and included in the Screening Assessment Report depicted that the proposed project site is located in a *High* sensitivity area from a civil aviation perspective i.e. *potential exists for negative impacts on civil aviation installations, but such impacts can potentially be mitigated. Further assessment may be required to investigate potential impacts fully and recommend appropriate mitigation measures (Figure 2).*



Figure 2: Map of relative Civil Aviation Theme Sensitivity

The *High* sensitivity area is based on the following trigger:

- Located within 8 km of other civil aviation aerodrome.

8. Findings of the Site Visit

The proposed development site for the project is located directly adjacent to the existing Cuprum Substation and associated control room building. No infrastructure currently occurs within the proposed footprint area, however numerous overhead powerlines run across the landscape, in proximity to the proposed development site. The site is currently therefore undeveloped and vegetated.

The vegetation on the site has been moderately to significantly disturbed, is in a highly degraded and impacted condition and was not found to support good quality shrubland. This is to be expected given the location of the proposed development site in proximity to a substation, powerlines and mining areas. Photos indicating the current state of the proposed development site are included in **Figure 3** to **Figure 6** below.

No civil aviation installations were found within the proposed project footprint for the proposed project.



Figure 3: View looking south-west across the proposed development site



Figure 4: View looking north-east across the proposed development site



Figure 5: View looking east across the proposed development site



Figure 6: View looking north across the proposed development site

9. Findings of the GIS Database Assessment

9.1 Airstrips

Four airstrips were identified in the areas surrounding the proposed development site, utilising the South African Civil Aviation Authority Database (2018). These are:

- Alkantpan 1 Airstrip – located approximately 3.65 km north-west of the proposed development site.
- Alkantpan 2 Airstrip - located approximately 6.1 km north-north-east of the proposed development site.
- Smouspan 1 Airstrip – located approximately 7.9 km north-west of the proposed development site.
- Smouspan 2 Airstrip – located approximately 5.5 km north-west of the proposed development site.

Refer to

Figure 7 for the locations of these airstrips relative to the proposed development site³.

³ No photos of these facilities are provided as permission to access the properties could not be obtained.

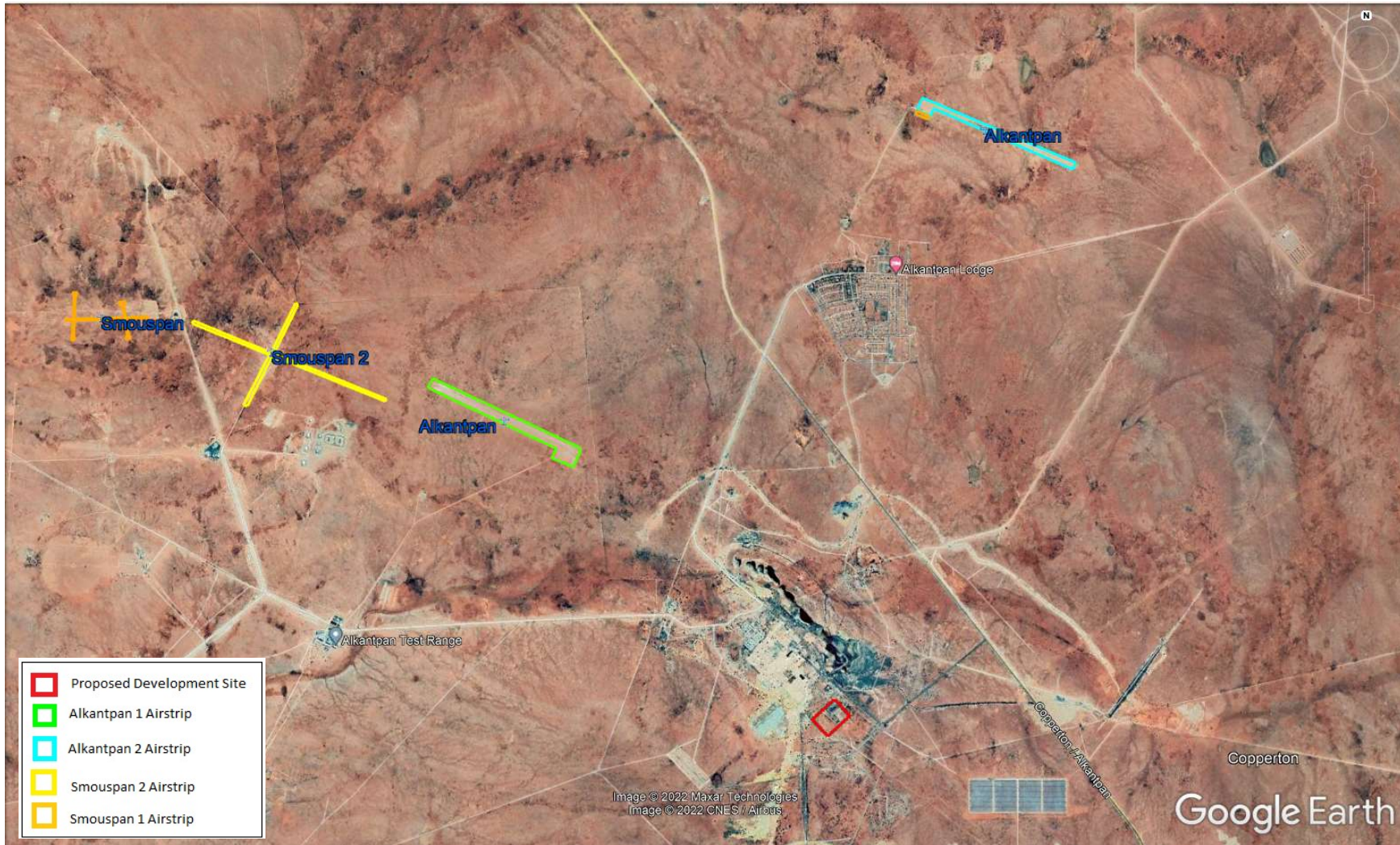


Figure 7: Map showing the location of airstrips in proximity to the proposed development site

The Alkantpan 1 and Altantpan 2 Airstrips are both oriented on a WNW – ESE orientation and measure approximately 1.7 km in length.

Smouspan 1 Airstrip is oriented with the main runway along an E - W axis, with two shorter cross runways, oriented N - S. The main runway measures approximately 900 m and the two cross runways measure approximately 450 m in length.

Smouspan 2 Airstrip is oriented with its main runway along a WNW – ESE orientation, with a shorter cross runway along a NNE – SSW orientation. The main runway measures approximately 2 km and the shorter cross runway measures approximately 1.2 km in length.

All four airstrips are only occasionally used for small aircraft associated predominantly with mining activities.

Alkantpan 1, Smouspan 1 and Smouspan 2 Airstrips are located on Portion 2 of the Farm 105, Smouspan. None of these three airstrips were identified by the Screening Tool.

Alkantpan 2 Airstrip and its hangar, which were identified by the Screening Tool, are located on Portion 0 of the Farm 104, Vogestruis Bult. Therefore, while this airstrip does not occur within the footprint area of the proposed development, it is located on the same property, which could account for the *High* sensitivity rating assigned by the Screening Tool.

Prieska Airport is located approximately 55 km north-east of the proposed development site.

9.2 Obstacles

The South African Civil Aviation Authority Database (2018) also identified a number of obstacles occurring in the areas surrounding the proposed development site. These comprise predominantly of Photo-voltaic (PV) Solar installations (refer to **Figure 8**).

The proposed development will not impact these obstacles or increase the cumulative impact of these obstacles for civil aviation activities and have therefore not been considered further.

9.3 Restricted Areas

The proposed development site is located within 2.2 km of a Restricted Area (refer to **Figure 8**). The Restricted Area is located west and north-west of the proposed development site.

As the proposed development site falls outside of the Restricted Area, and at a distance from this zone, it is the EAP's opinion that the proposed development will not impact this zone. The Restricted Area has therefore not been considered further.

Proposed Development of a Battery Energy Storage System (BESS) and Associated Infrastructure at the Cuprun Substation located within Copperton, near Prieska, Northern Cape Province

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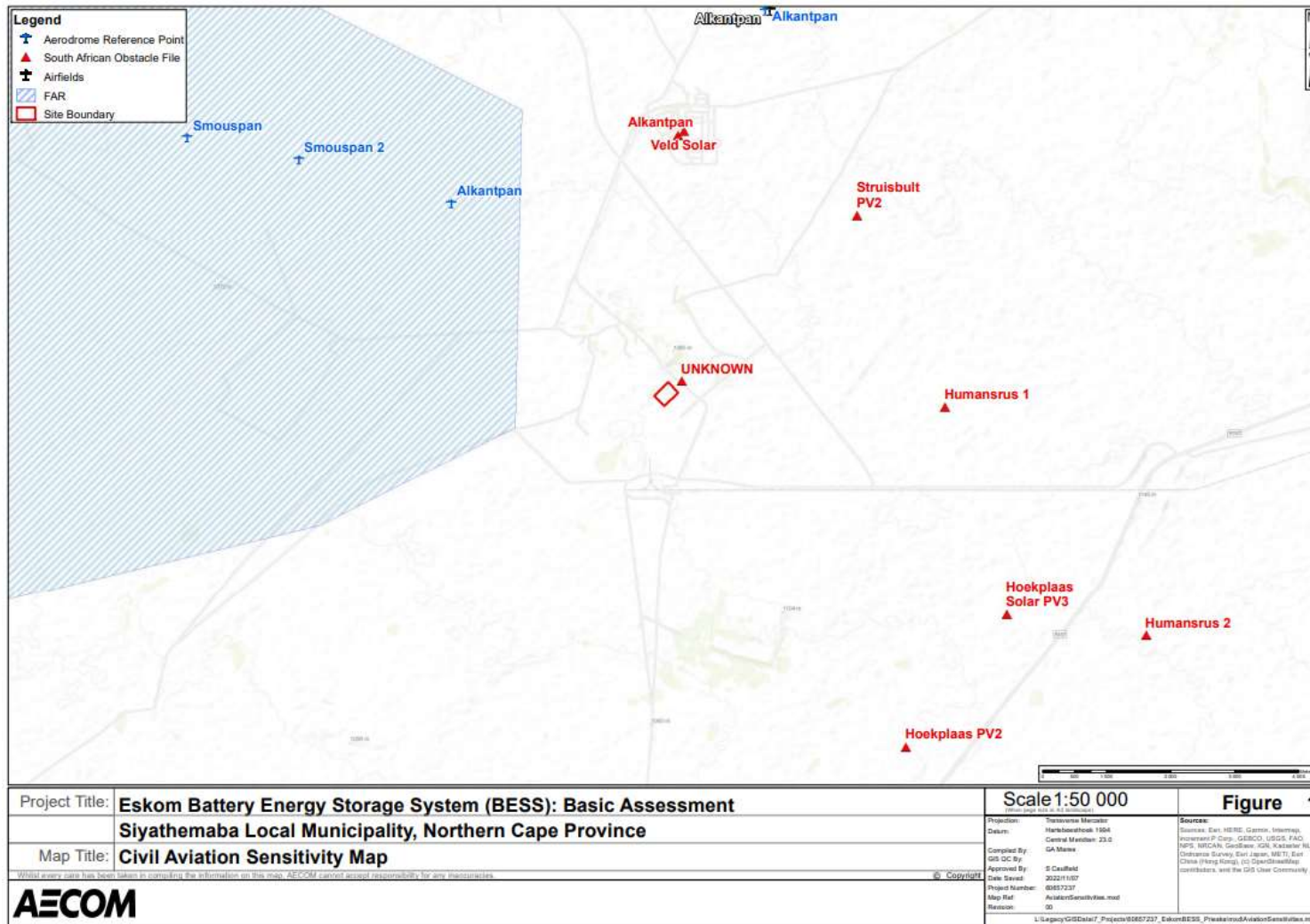


Figure 8 Civil Aviation Sensitivity Map

10. Concluding Statement

It is likely that the proposed development site was identified as having a *High* Civil Aviation sensitivity due to the fact that it occurs on the same property as an airstrip (Alkanspan 2 Airstrip on Portion 0 of Farm 104, Vogestruis Bult). The proposed development site is, however removed from the airstrip by approximately 6.1 km.

Three other airstrips, not identified by the Screening Tool, were identified through the desktop assessment. These airstrips are located between 3.65 km and 7.9 km from the proposed development site.

Given the orientation of the airstrips, and the relative position of the proposed development site, aircraft utilising the airstrips will not need to fly directly over the proposed development site during approach or take-off.

The proposed development constitutes an expansion to the existing Cuprum Substation, the establishment of a BESS directly adjacent to the existing substation and control room building, the relocation of a section of OHL and the establishment of a short section of new OHL in a landscape which is already significantly traversed by high-voltage OHL's. The cumulative impact to Civil Aviation caused by the addition of these proposed development elements to the receiving environment is deemed to be minor to insignificant.

On the basis of the above, it is the EAP's opinion that the sensitivity rating for the Civil Aviation theme can be reduced from *High*, as identified in the Screening Assessment Report, to *Low*.

As per GN 320, no further requirements will apply i.e. there is no requirement to compile a Compliance Statement.


Appendix A - EAP Declaration

I, Sarah Caulfield, declare that –

- I act as the independent environmental assessment practitioner in this site sensitivity verification;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will perform the work relating to the site sensitivity verification in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I will take into account, to the extent possible, the matters listed in Regulation 13 of the Regulations when preparing the site sensitivity verification and any report relating to the site sensitivity verification;
- I undertake to disclose to the applicant and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the site sensitivity verification by the Competent Authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the Competent Authority, unless access to that information is protected by law, in which case it will be indicated that such information exists and will be provided to the Competent Authority;
- I will perform all obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I am aware of what constitutes an offence in terms of Regulation 48 and that a person convicted of an offence in terms of Regulation 48(1) is liable to the penalties as contemplated in Section 49B of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;
- ~~• I have a vested interest in the proposed activity proceeding, such vested interest being:~~

Signature of the Environmental Assessment Practitioner	
Name of Company	AECOM SA (Pty) Ltd
Date	02/11/2022

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Appendix B – EAP's CV

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