

HERITAGE SCREENER

CTS Reference Number:	CTS23_109
SAHRA Ref Number	
Client:	Savannah
Date:	June 2023
Title:	Proposed development of the FE Tango Wind Energy Facility, Eastern Cape

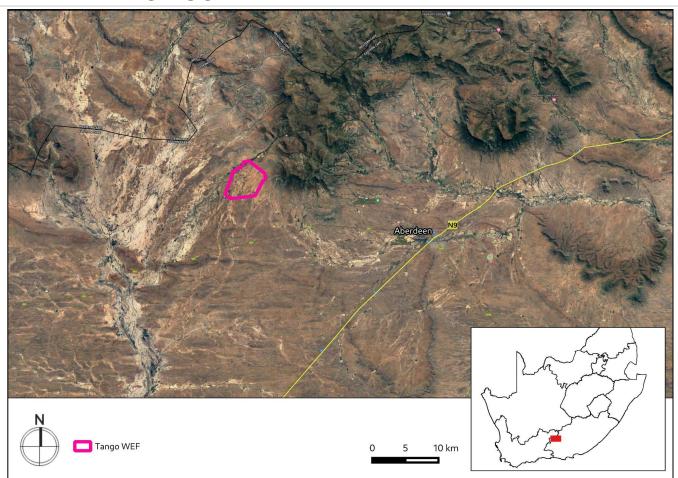


Figure 1a. Satellite map indicating the location of the proposed development in the Eastern Cape Province

Recommendation:

RECOMMENDATION

The heritage resources in the area proposed for development are not yet sufficiently recorded

Based on the available information, including the scale and nature of the proposed development, it is likely that significant heritage resources will be impacted by the proposed development and as such it is recommended that further heritage studies are required in terms of section 38 of the NHRA.



1. Proposed Development Summary

FE Tango (Pty) Ltd is proposing the development of a wind energy facility and associated infrastructure on a site located approximately 20km west of Aberdeen in the Eastern Cape Province. The project is located within the Dr Beyers Naude Local Municipality and the greater Sarah Baartman District Municipality. The project site comprises a single affected property, Portion 1 of Farm Klipstavel 72. The project is known as the FE Tango Wind Energy Facility. The project is planned as part of a cluster of renewable energy projects, which includes a second wind energy facility with a capacity of up to 622.5MW (FE Kudu Wind Energy Facility), located approximately 20km west of the FE Tango Wind Energy Facility.

The entire extent of the site falls within the Beaufort West Renewable Energy Development Zones (i.e. REDZ Focus Area 11). The undertaking of a basic assessment process for the project is in-line with the requirements stated in GNR 114 of 16 February 2018. The Tango Wind Energy Facility will have a contracted capacity of up to 240MW and comprise wind turbines with a capacity of up to 7.5MW each. The project has a preferred project site of approximately ~2 250ha. The current infrastructure is preliminarily proposed and will be updated once an optimised layout with all sensitivities considered has been generated. Access to the site will be via an access road off of the nearby R61. The FE Tango Wind Energy Facility project site is proposed to accommodate the following infrastructure:

- Wind turbines
- Concrete turbine foundations and turbine hardstands
- An on-site substation hub incorporating:
 - A132/33kV On-site substation
 - Switchyard with collector infrastructure
 - Battery Energy Storage System (BESS)
- A balance of plant area incorporating:
 - Temporary laydown areas
 - A construction camp laydown and temporary concrete batching plant
 - Operation and Maintenance buildings
- Cabling between the turbines, to be laid underground where practical.
- Access roads to the site and between project components with a width up to 10m and a servitude of 13.5m.

The project is intended to provide electricity to the national grid through the Department of Mineral Resource and Energy's (DMRE) Renewable Energy Independent Power Producer Procurement (REIPPP) Programme or other public or private off-taker programmes.

2. Application References

Name of relevant heritage authority(s)	ECPHRA
Name of decision making authority(s)	DFFE



3. Property Information

Latitude / Longitude	-32.40102, 23.75382
Erf number / Farm number	Portion 1 of Farm Klipstavel 72
Local Municipality	Dr Beyers Naude
District Municipality	Sarah Baartman
Province	Eastern Cape
Current Use	Agriculture
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Surface Area	ТВА
Depth of excavation (m)	TBA
Height of development (m)	TBA

5. Category of Development

X	Triggers: Section 38(8) of the National Heritage Resources Act
	Triggers: Section 38(1) of the National Heritage Resources Act
	1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.
	2. Construction of a bridge or similar structure exceeding 50m in length.
	3. Any development or activity that will change the character of a site-
х	a) exceeding 5 000m² in extent
	b) involving three or more existing erven or subdivisions thereof
	c) involving three or more erven or divisions thereof which have been consolidated within the past five years



4. Rezoning of a site exceeding 10 000m ²
5. Other (state):

6. Additional Infrastructure Required for this Development

TBA



7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)

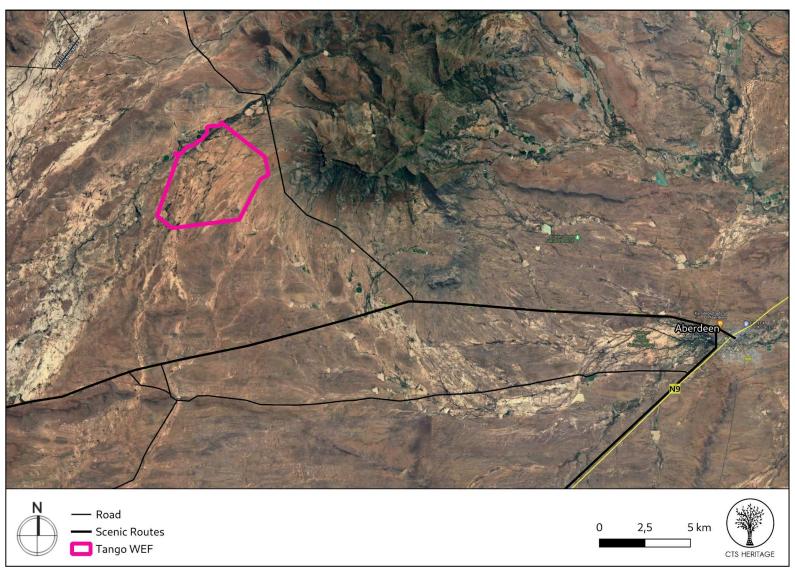


Figure 1b Overview Map. Satellite image (2023) indicating the proposed development area relative to Aberdeen



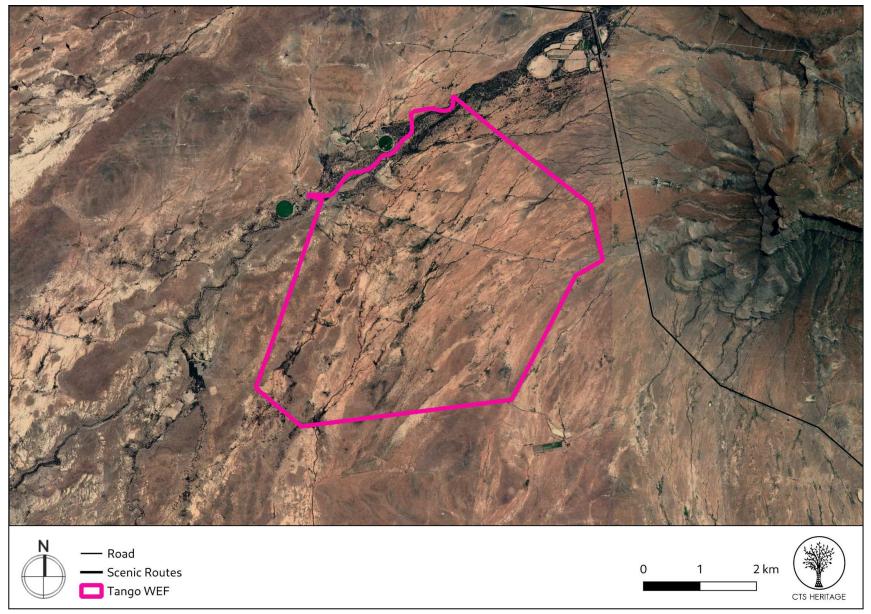


Figure 1c. Overview Map. Satellite image (2023) indicating the proposed development area at closer range.



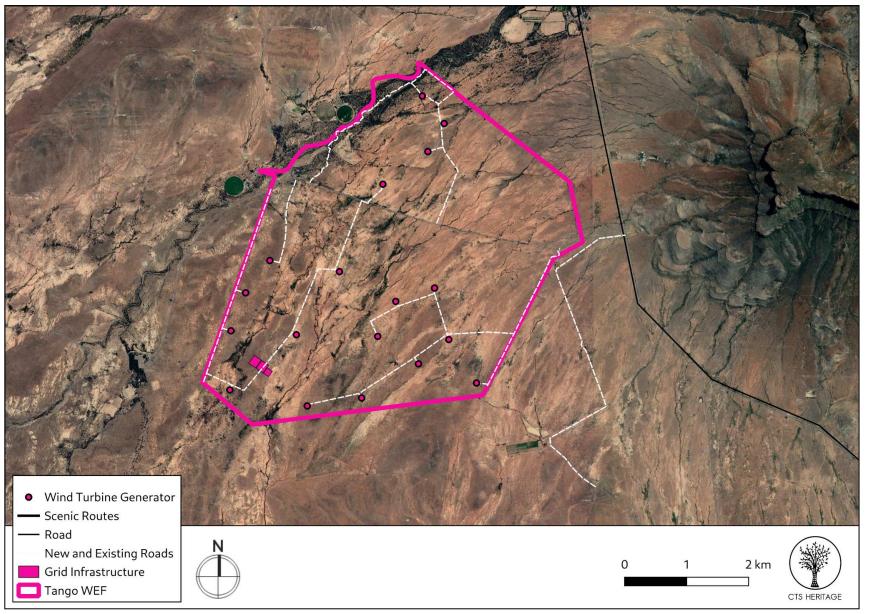


Figure 1d. Overview Map. Satellite image (2023) indicating the proposed development preliminary layout at closer range.



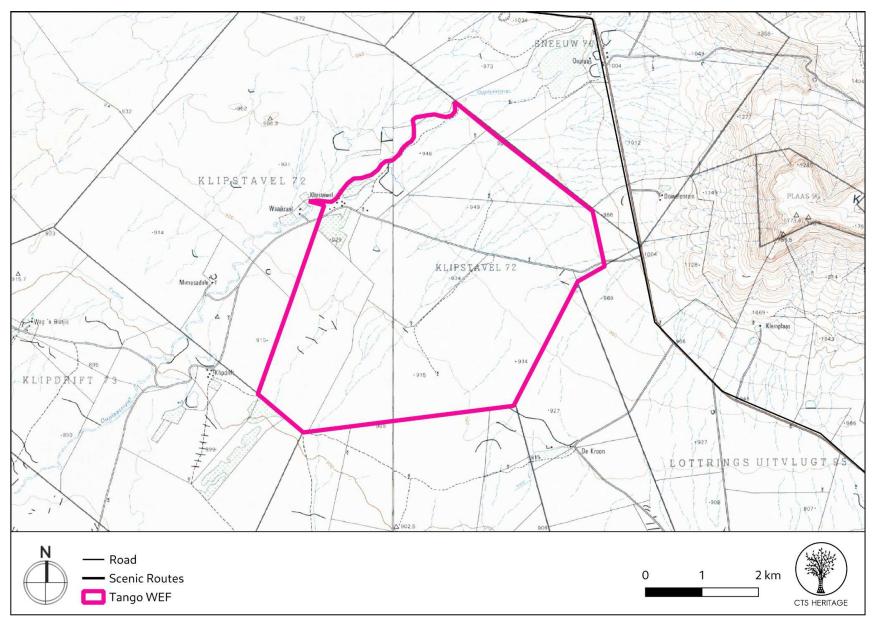


Figure 1e. Topo Map. Area proposed for development overlaying an extract from the 1:50 000 Topo Map



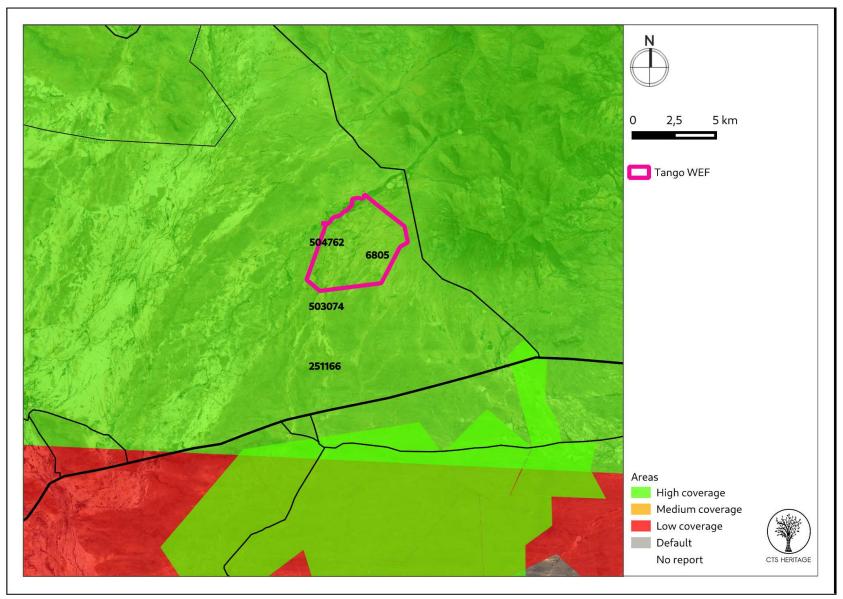


Figure 2a. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 15km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.



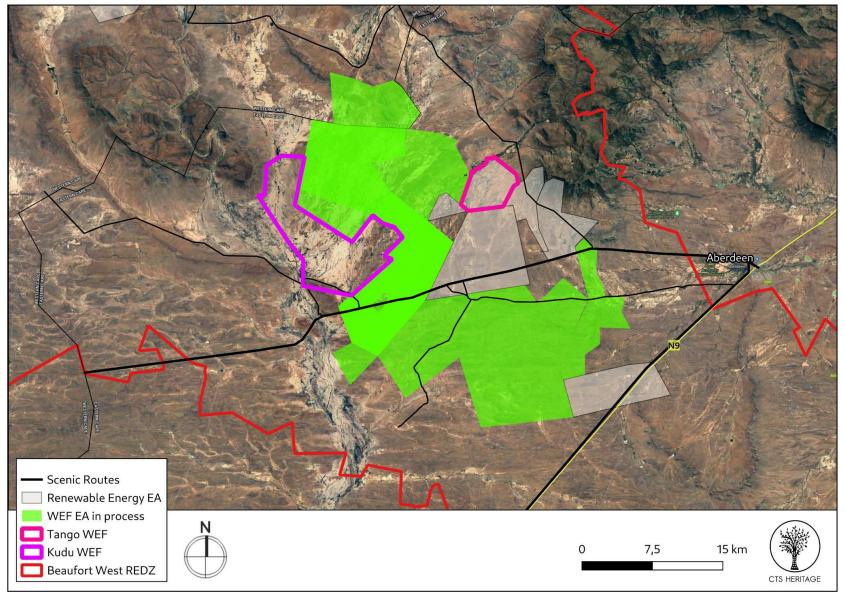


Figure 2b. Previous EAs Map. REFs with Environmental Authorisation and the Beaufort West REDZ relative to the proposed development



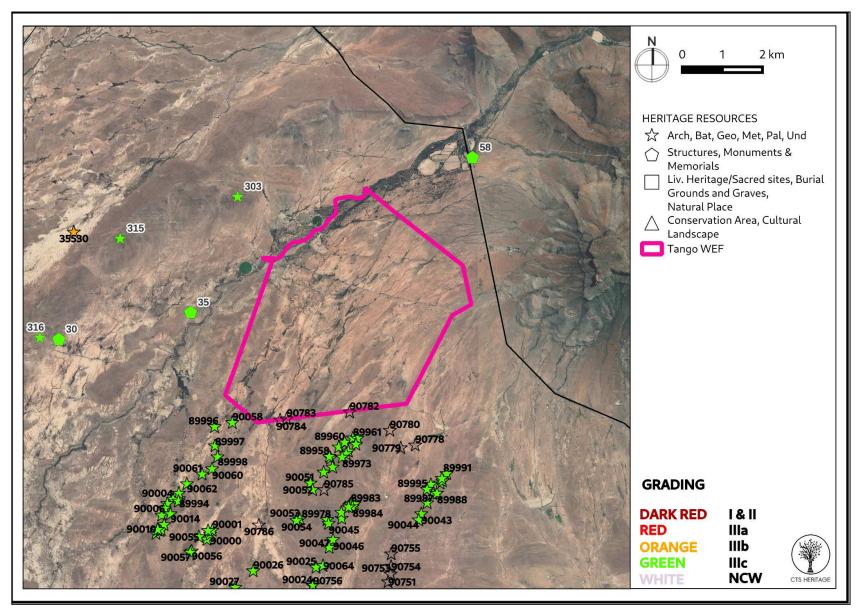


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.



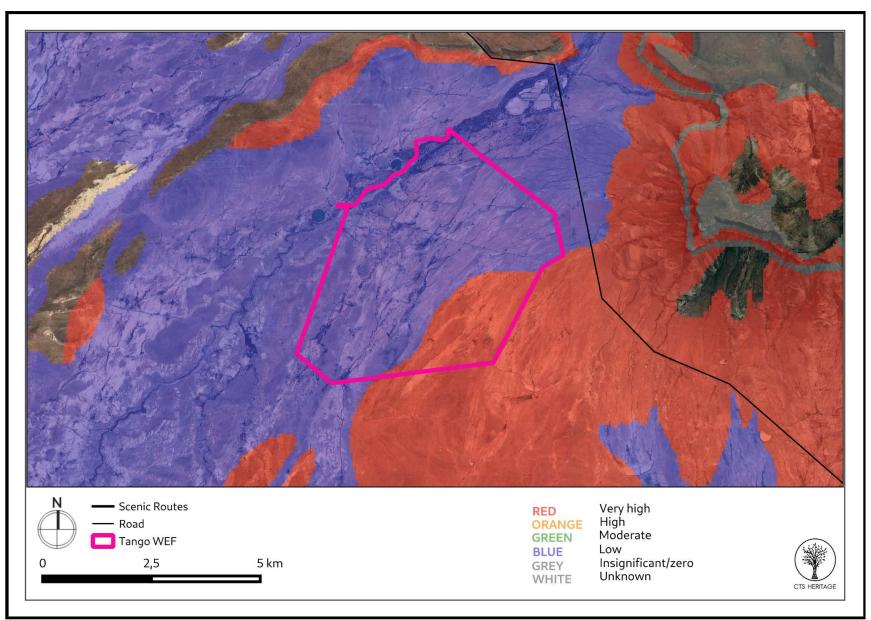


Figure 4. Palaeosensitivity Map. Indicating high and low fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.



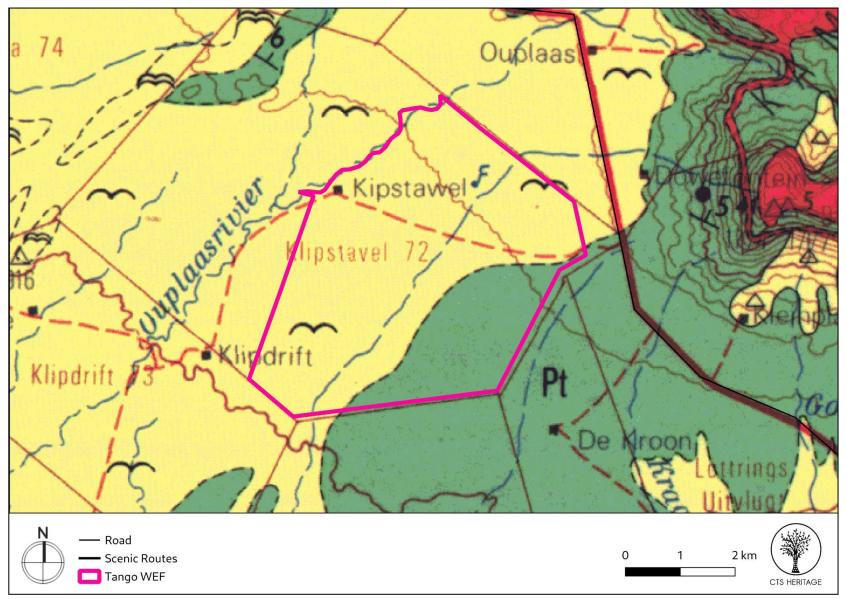


Figure 4b. Geology Map. Extract from the CGS 3222 Beaufort West Map indicating that the development area for the PV development is underlain by sediments of Pt: Poortjie Member of the Teekloof Formation of the Adelaide Subgroup and Jd: Jurassic Dolerite as well as Qc: Quaternary Sands



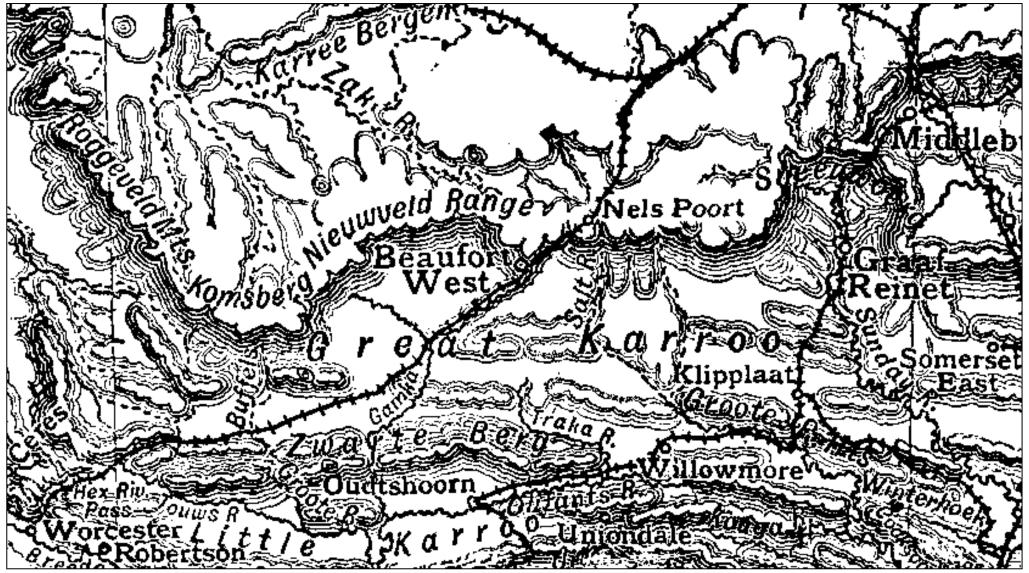


Figure 5. Historic Image. Aberdeen is located approximately half way between Beaufort West and Graaf Reniet. Map from 1911. By Encyclopedia Britannica. - 1911. Encyclopedia Britannica., Public Domain, https://commons.wikimedia.org/w/index.php?curid=19573298



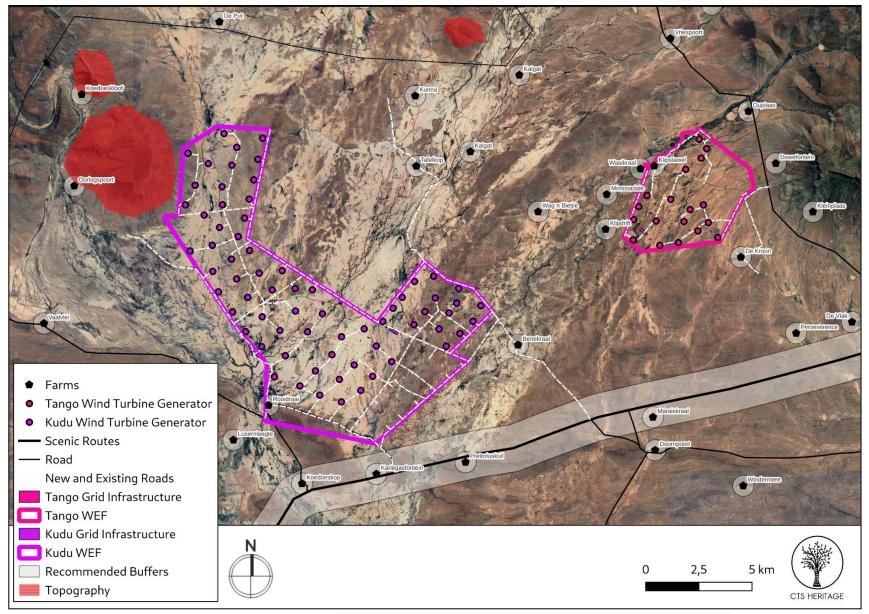


Figure 6a. Cultural Landscape. Recommended Buffers for historic roads, scenic routes and farm werfs



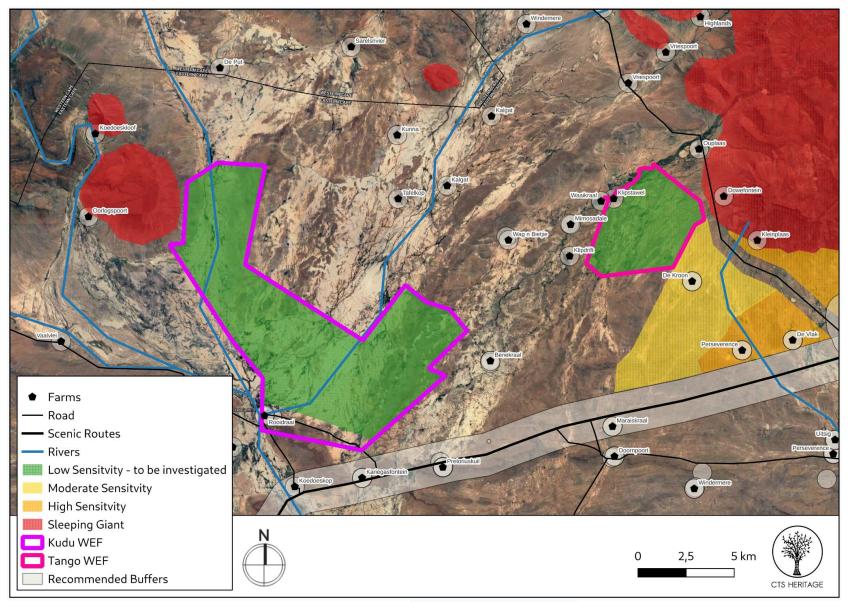


Figure 6b. Overview. Cultural Landscape Sensitvity



8. Heritage statement and character of the area

The area proposed for the Tango Wind Energy Facility Projects is located approximately 30km west of Aberdeen in the Eastern Cape, and is located within the identified Beaufort West REDZ (Figure 2b). With its numerous examples of Victorian architecture, it is one of the architectural conservation areas of the Karoo. The town is some 55 km south-west of Graaff-Reinet, 155 km east-south-east of Beaufort West and 32 km south of the Camdeboo Mountains. Laid out on the farm Brakkefontein as a settlement of the Dutch Reformed Church in 1856, it became a municipality in 1858. It is named after Aberdeen in Scotland, birthplace of the Reverend Andrew Murray of Graaff-Reinet, relieving minister. Aberdeen is filled with examples of Victorian architecture, and the Steeple of the Dutch Reformed Church, with its 50 metre Tower, is the highest in South Africa. There is a Local Authority Nature Reserve found here, as well as The Fonteinbos Nature Reserve which is both beautiful and functional, as its natural spring (Die Oog) supplies the entire town and its agricultural sector with its water.

Cultural Landscape

The name 'Karoo' has its roots in the Khoisan word meaning 'place of great dryness'. It once supported large grassy flatlands and the San and Khoekhoen migrated across the region for hunting and grazing purposes. Less than two hundred years ago large herds of antelope still roamed the grass plains. With the occupation of the area by stock farmers, the sheep gradually replaced the game and the grass receded along with changing grazing and weather patterns (Winter et al 2009; Winter & Oberholzer 2013). By the late 17th century, the Khoenhoen had moved from the region into the more water-rich southern Karoo and the coastal plains.

The area proposed for development is located in the immediate vicinity of Aberdeen, a detailed history for which is provided for online¹. The early known history of Aberdeen dates back to the late seventeenth century when Ensign Shriver was sent by Governor Simon van der Stel to barter trade goods for the sheep and cattle of the Inqua Khoisan under the leadership of Heykon. The first meeting between the Ingua and Ensign Shriver took place some 30-kilometres north west of Aberdeen in the lee of the Onder Sneeuberge in January 1689. These initial contacts between the indigenous people of the region and the European settlers at Cape Town were a pre-cursor to the movement of the Trekboers or nomadic farmers who moved away from the restrictions imposed on them by the rule of the Dutch East India Company in Cape Town. In 1777 Captain Robert Jacob Gordon an employee of the Dutch East India Company travelled along the Kraai River in the vicinity of Aberdeen and with the assistance of a draughtsman drew a panoramic view of the Camdeboo Mountains from the crest of a small koppie or hillock some seven kilometres from Aberdeen towards Graaff-Reinet. This koppie later became known as Gordon's koppie and is situated close to the N9 highway towards Graaff-Reinet.

During the early colonial period, the harshness of the Karoo region formed an almost impenetrable barrier from the Cape to the interior for colonial explorers, hunters and travellers. The 18th century was characterised by a marked increase in the rate of expansion of the boundaries of the settlement at the Cape. This was associated with the emergence of the migrant stock farmer (trekboer) (Guelke 1982 In Winter et al 2009). Early routes into the interior largely followed the tracks initially used by migrating herds of game or the cattle herds and sheep flocks of the Khoekhoen on their seasonal route between coastal and inland grazing grounds. These routes were later reinforced by generations of trek farmers moving between the markets at the Cape and their farms (Winter et al 2009).

Permanent settlement of the region only really occurred in the 19th century with towns being established near permanent water sources. The original title deeds for the land on which Aberdeen is situated were signed by the British Governor Lord Charles Somerset in 1817. Aberdeen was established on the farm Brakkefontein which was sold by its owner Jan Vorster to the Dutch Reformed Church in 1855.

Aberdeen also has links with the Anglo-Boer War. In 1901, in an effort to prevent the northbound rail link from being destroyed, the British built hundreds of blockhouses. During the

¹ https://www.karoo-southafrica.com/camdeboo/aberdeen/history-of-aberdeen/



war 139 residents of Aberdeen rebelled against the Colonial Administration and joined up with the Boers fighting on behalf of the Orange Free State and the Transvaal. By so doing they were technically traitors as all residents of the Cape Colony irrespective of whether they spoke Dutch or English were British citizens. It is likely that evidence pertaining to the Anglo-Boer War will be located in proximity to the area proposed for development.

Archaeology

Recently, a number of heritage assessments have been completed within close proximity to the area proposed for development (Figure 2a). According to Nilssen (2014, SAHRIS NID 504763), "The Karoo houses a long and rich archaeological record dating from the earliest stages of Stone Age technology that are over a million years old, to the historic period that consists of the last few hundred years of human occupation (see Nilssen 2011 and references therein). Archaeological sites include caves and rock shelters, open air artefact scatters, rock engravings and historic structures with their associated cultural materials." According to the ACO (2013, SAHRIS NID 503074), "Because of the scarcity of caves and shelters, more than 90% of Karoo archaeological sites are open sites of stone artefacts, ostrich eggshell fragments and occasionally, pottery. Bone remains are rarely preserved. Artefacts of both the Early and Middle Stone Age are widespread and may generally be described as an ancient litter that occurs at a low frequency across the landscape. Where definable scatters of Early and Middle Stone Age material occur, they are considered to be significant heritage sites.

More intensive occupation of the Karoo started around 13 000 years ago during the Later Stone Age, which is essentially the heritage of Khoisan groups who lived throughout the region. The legacy of the San includes numerous open sites while traces of their presence can also be found in most large rock shelters, often in the form of rock art. They frequently settled a short distance from permanent water sources (springs or waterholes) and made use of natural shelters such as rock outcrops or large boulders or even large bushes. In the Great Karoo, natural elevated features such as dolerite dykes and ridges played a significant role in San settlement patterns" and as such, this broader area is renowned for its well-preserved rock art and other artefacts from this time, including rock engravings and rock gongs. It is likely that similar archaeological heritage exists within the areas proposed for development and as such, impact to these resources must be assessed.

A Heritage Impact Assessment was completed in 2013 for the proposed Aberdeen WEF located east of the area proposed for development (Booth and Sanker, SAHRIS NID 251161). The findings of this assessment therefore provide an indication of the kinds of heritage resources likely to be present within this proposed development area. Booth and Sanker (2013) noted that "Surface scatters of predominantly Middle Stone Age stone artefacts were observed over most of the area proposed for the development, these included isolated as well as dense occurrences. Eight areas / sites have been identified that comprise relatively dense scatters of stone artefacts over large areas with several micro-sites within the demarcated sites. It was observed that denser distributions of stone artefacts occurred in the north and central areas of the study area, filtering out towards the south. No associated archaeological material or organic remains were documented with the stone artefact surface scatters. An historical stonewalling farmstead complex is situated adjacent to one of the proposed access roads. The complex comprised the remains of the house and two kraals. Packed stones were identified in the south-central area. The packed stone may resemble a kraal that has now collapsed. Fragments of glass and pottery were found within this area, as well as a No. 2 Musket Eley bullet casing associated with the Second Anglo-Boer War."

In 2022 and 2023, CTS Heritage has completed Heritage Impact Assessments for the proposed Aberdeen WEF Cluster and the proposed Kariega WEF Cluster. Both facilities border on the area proposed for the Kudu WEF. The findings of the assessments completed by CTS Heritage largely correlate with the findings of other assessments completed in the vicinity such as the findings of the Booth and Sanker (2013, SAHRIS NID 251161). The observations noted include high numbers of quarried stone artefacts predominantly from the Middle Stone Age and Later Stone Age period which is consistent with observations on neighbouring farms through impact assessments and research surveys. The majority of the lithic material identified was determined to be of low significance (not conservation-worthy), and the impact of the destruction of these resources was determined to be inconsequential. The findings of the completed assessments conclude that, despite the high number of observations of artefacts, these resources are common and representative of similar scatters across widespread areas of the Karoo. Despite the very high numbers of observations made, the archaeological material is ubiquitous across the entire area and in general, the results of this assessment indicate that the archaeological sensitivity of the development area is low. All of the resources identified by Booth and Sanker (2013) as well as CTS Heritage (2022, 2023) have been mapped relative to the proposed development in Figure 3.



Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by sediments of low and very high paleontological sensitivity. According to the extract from the Council for GeoSciences Map 3122 for Victoria West, the development area is underlain by the Abrahamskraal and Teekloof Formations, both of the Adelaide Subgroup of the Beaufort Group of sediments. According to the SAHRIS Fossil Heritage Browser and the Palaeotechnic Report for the Western Cape (Almond and Pether, 2008), the Beaufort Group sediments are known to preserve diverse terrestrial and freshwater tetrapods of *Tapinocephalus* to *Lystrosaurus* Biozones (amphibians, true reptiles, synapsids – especially therapsids), palaeoniscoid fish, freshwater bivalves, trace fossils (including tetrapod trackways) and sparse vascular plants (*Glossopteris* Flora, including petrified wood).

A Palaeontological Impact Assessment was completed in 2014 for the proposed Aberdeen WEF located immediately north of the area proposed for development (Almond, SAHRIS NID 251166). The findings of this assessment therefore provide an indication of the kinds of palaeontological resources likely to be present within this proposed development area. Almond (2014) noted that "The entire wind farm study area is underlain at depth by fluvial sediments assigned to the lowermost part of the Teekloof Formation (Lower Beaufort Group) that are of Late Permian age (c. 260 million years old). The mudstone-rich succession of the Hoedemaker Member represented here is associated with moderately diverse fossil biotas of the *Tropidostoma* Assemblage Zone that include a range of mammal-like reptiles, fish, amphibians as well as plants and trace fossils. To the author's knowledge there are no previously identified fossil vertebrate finds within the study area, although a small lizard-like specimen was apparently found (probably preserved within a palaeocalcrete nodule) among surface gravels along its northern margin (Mnr Loots, pers. comm., Nov. 2014). The only fossil material recorded during the present field assessment comprises sparse blocks of well-preserved silicified wood that occur widely among surface gravels through much of the study area. Most of the fossil wood specimens have probably been downwasted from channel sandstones within the Hoedemaker Member itself, but some cherty fossil wood clasts may have been introduced from elsewhere within fluvial gravels. The general lack of fossil records in the Aberdeen *vlaktes* may well be due, in large part, to very low levels of bedrock exposure in this low-relief area, as well as due to local development of cleavage, near-surface calcrete veining and weathering. It is concluded that, while there is a significant chance that fossil vertebrate remains will be disturbed, destroyed or sealed-in by the proposed wind energy facility development, these are best mitigated by applying a

In a palaeontological comment drafted by Almond (June 2023), it is noted that "recent palaeontological fieldwork by the Evolutionary Studies Institute, Wits University (Day & E

Provisional palaeosensitivity mapping by the DFFE Screening Tool suggests that the majority of both WEF project areas is of Low Palaeosensitivity, corresponding to the Late Caenozoic alluvium, with a Very High Sensitivity associated with a few, small areas featuring Beaufort Group bedrock exposure (Figure 2). Palaeontological surveys of similar terrain in neighbouring WEF project areas (Almond 2022, 2023) suggest that, in practice, fossils of scientific and conservation value are likely to be very rare at or near-surface in the latter areas due to weathering as well as thermal metamorphism by dolerite intrusions. However, where found, such fossils may be of considerable scientific interest. Since the majority of such potential fossil occurrences probably lie along ecologically protected drainage lines and / or can be effectively mitigated through professional recording and collection in the Pre-construction Phase, with little or no need for micro-siting of infrastructure, they are very unlikely to constrain the layout of the WEF facilities."

Based on the known paleontological sensitivity of this area, it is very likely that activities associated with the development of the proposed WEF will negatively impact on significant fossil heritage.



Plan of Study

Ground-truthing field assessments will be conducted by an archaeologist, a palaeontologist as well as a cultural landscape specialist. Each specialist will draft a report outlining the heritage resources identified in their respective analyses. A Heritage Impact Assessment (HIA) that satisfies section 38(3) of the NHRA will then be drafted that integrates the findings of the specialist assessments and determines the likely impact to the identified heritage resources from the proposed development. These impacts are then assessed in the HIA and mitigation measures will be proposed. The HIA will determine whether or not there are any heritage-based objections to the proposed development and will propose recommendations should the development proceed.

RECOMMENDATION

The heritage resources in the area proposed for development are not yet sufficiently recorded

Based on the available information, including the scale and nature of the proposed development, it is likely that significant heritage resources will be impacted by the proposed development and as such it is recommended that further heritage studies are required in terms of section 38 of the NHRA.



9. Scoping Assessment Impact Table

Impact

- Impact to archaeological and built environment resources
- Impact to palaeontological resources
- Impact to Cultural Landscape
- Cumulative Impact

Desktop Sensitivity Analysis of the Site

- Impact to significant archaeological resources such as Stone Age artefact scatters, burial grounds and graves, historical artefacts, historical structures and rock art engravings through destruction during the development phase and disturbance during the operational phase is unlikely.
- Impacts to palaeontological resources are unlikely.
- There is the potential for the cumulative impact of proposed solar energy facilities to negatively impact the cultural landscape due to a change in the landscape character from natural wilderness to semi-industrial, however, due to the remoteness of the area the impact on the experience of the cultural landscape is not foreseen to be significant.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Impact to significant heritage resources through destruction during the development phase and disturbance during the operational phase.	Destruction of significant heritage resources	Local scale with broader impacts to scientific knowledge	None known at present

Gaps in knowledge & recommendations for further study

The heritage resources in the area proposed for development are not yet sufficiently recorded

Based on the available information, including the scale and nature of the proposed development, it is likely that significant heritage resources will be impacted by the proposed development and as such it is recommended that further heritage studies are required in terms of section 38 of the NHRA.



APPENDIX 1: List of heritage resources within 25km of the development area

Site ID	Site no	Full Site Name	Site Type	Grading
34902	DE DENNE	DE DENNE, 13 DARLING STREET, ABERDEEN	Building	Grade IIIb
35546	GK083	Gamma Kappa 083	Artefacts	Grade IIIc
35548	GK084	Gamma Kappa 084	Rock Art	Grade IIIb
135558	DC10/NAMM/0035	Afrikaans Language Monument, Voortrekker Street, Aberdeen	Monuments & Memorials	
135559	DC10/NAMM/0040	Carel Van Heerden Memorial, Meintjies Street, Aberdeen	Monuments & Memorials	
135581	DC10/NAMM/0038	Trek Monument, Voortrekker Street, Aberdeen	Monuments & Memorials	
89811	ABER001	AberdeenWindFarm 001	Artefacts	Grade IIIc
89812	ABER002	AberdeenWindFarm 002	Artefacts	Grade IIIc
89813	ABER003	AberdeenWindFarm 003	Artefacts	Grade IIIc
89814	ABER004	AberdeenWindFarm 004	Artefacts	Grade IIIc
89815	ABER005	AberdeenWindFarm 005	Artefacts	Grade IIIc
89817	ABER006	AberdeenWindFarm 006	Artefacts	Grade IIIc
89821	ABER007	AberdeenWindFarm 007	Artefacts	Grade IIIc
89824	ABER008	AberdeenWindFarm 008	Artefacts	Grade IIIc
89827	ABER009	AberdeenWindFarm 009	Artefacts	Grade IIIc



89831	ABER010	AberdeenWindFarm 010	Artefacts	Grade IIIc
89832	ABER011	AberdeenWindFarm 011	Artefacts	Grade IIIc
89833	ABER012	AberdeenWindFarm 012	Artefacts	Grade IIIc
89834	ABER013	AberdeenWindFarm 013	Artefacts	Grade IIIc
89835	ABER014	AberdeenWindFarm 014	Artefacts	Grade IIIc
89836	ABER015	AberdeenWindFarm 015	Artefacts	Grade IIIc
89837	ABER016	AberdeenWindFarm 016	Artefacts	Grade IIIc
89838	ABER017	AberdeenWindFarm 017	Artefacts	Grade IIIc
89839	ABER018	AberdeenWindFarm 018	Artefacts	Grade IIIc
89840	ABER019	AberdeenWindFarm 019	Artefacts	Grade IIIc
89841	ABER020	AberdeenWindFarm 020	Artefacts	Grade IIIc
89954	ABER021	AberdeenWindFarm 021	Artefacts	Grade IIIc
89955	ABER022	AberdeenWindFarm 022	Artefacts	Grade IIIc
89956	ABER023	AberdeenWindFarm 023	Artefacts	Grade IIIb
89957	ABER024	AberdeenWindFarm 024	Artefacts	Grade IIIc
89958	ABER025	AberdeenWindFarm 025	Artefacts	Grade IIIc
89959	ABER026	AberdeenWindFarm 026	Artefacts	Grade IIIc
89960	ABER027	AberdeenWindFarm 027	Artefacts	Grade IIIc
89961	ABER028	AberdeenWindFarm 028	Artefacts	Grade IIIc
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89967	ABER029	AberdeenWindFarm 029	Artefacts	Grade IIIc
89968	ABER030	AberdeenWindFarm 030	Artefacts	Grade IIIc
89970	ABER031	AberdeenWindFarm 031	Artefacts	Grade IIIc
89971	ABER032	AberdeenWindFarm 032	Artefacts	Grade IIIc
89972	ABER033	AberdeenWindFarm 033	Artefacts	Grade IIIc
89973	ABER034	AberdeenWindFarm 034	Artefacts	Grade IIIc
89974	ABER035	AberdeenWindFarm 035	Artefacts	Grade IIIc
89989	ABER047	AberdeenWindFarm 047	Artefacts	Grade IIIc
89978	ABER036	AberdeenWindFarm 036	Artefacts	Grade IIIc
89979	ABER037	AberdeenWindFarm 037	Artefacts	Grade IIIc
89980	ABER038	AberdeenWindFarm 038	Artefacts	Grade IIIc
89981	ABER039	AberdeenWindFarm 039	Artefacts	Grade IIIc
89982	ABER040	AberdeenWindFarm 040	Artefacts	Grade IIIc
89983	ABER041	AberdeenWindFarm 041	Artefacts	Grade IIIc
89984	ABER042	AberdeenWindFarm 042	Artefacts	Grade IIIc
89985	ABER043	AberdeenWindFarm 043	Artefacts	Grade IIIc
89986	ABER044	AberdeenWindFarm 044	Artefacts	Grade IIIc
89987	ABER045	AberdeenWindFarm 045	Artefacts	Grade IIIc
89988	ABER046	AberdeenWindFarm 046	Artefacts	Grade IIIc



ABER048	AberdeenWindFarm 048	Artefacts	0
	7 10 01 00 0111111101	Aitelacis	Grade IIIc
ABER049	AberdeenWindFarm 049	Artefacts	Grade IIIc
ABER050	AberdeenWindFarm 050	Artefacts	Grade IIIc
ABER051	AberdeenWindFarm 051	Artefacts	Grade IIIc
ABER052	AberdeenWindFarm 052	Artefacts	Grade IIIc
ABER053	AberdeenWindFarm 053	Artefacts	Grade IIIc
ABER054	AberdeenWindFarm 054	Artefacts	Grade IIIc
ABER055	AberdeenWindFarm 055	Artefacts	Grade IIIc
ABER056	AberdeenWindFarm 056	Artefacts	Grade IIIc
ABER057	AberdeenWindFarm 057	Artefacts	Grade IIIc
ABER058	AberdeenWindFarm 058	Artefacts	Grade IIIc
ABER059	AberdeenWindFarm 059	Artefacts	Grade IIIc
ABER060	AberdeenWindFarm 060	Artefacts	Grade IIIc
ABER061	AberdeenWindFarm 061	Artefacts	Grade IIIc
ABER062	AberdeenWindFarm 062	Artefacts	Grade IIIc
ABER063	AberdeenWindFarm 063	Artefacts	Grade IIIc
ABER064	AberdeenWindFarm 064	Artefacts	Grade IIIc
ABER065	AberdeenWindFarm 065	Artefacts	Grade IIIc
ABER067	AberdeenWindFarm 067	Artefacts	Grade IIIc
	ABER050 ABER051 ABER052 ABER053 ABER054 ABER055 ABER056 ABER057 ABER058 ABER059 ABER060 ABER061 ABER062 ABER063 ABER064 ABER065	ABER050 AberdeenWindFarm 050 ABER051 AberdeenWindFarm 051 ABER052 AberdeenWindFarm 052 ABER053 AberdeenWindFarm 053 ABER054 AberdeenWindFarm 054 ABER055 AberdeenWindFarm 055 ABER056 AberdeenWindFarm 056 ABER057 AberdeenWindFarm 057 ABER058 AberdeenWindFarm 058 ABER059 AberdeenWindFarm 069 ABER060 AberdeenWindFarm 060 ABER061 AberdeenWindFarm 061 ABER062 AberdeenWindFarm 062 ABER063 AberdeenWindFarm 063 ABER064 AberdeenWindFarm 064 ABER065 AberdeenWindFarm 065	ABER050 AberdeenWindFarm 050 Artefacts ABER051 AberdeenWindFarm 051 Artefacts ABER052 AberdeenWindFarm 052 Artefacts ABER053 AberdeenWindFarm 053 Artefacts ABER054 AberdeenWindFarm 054 Artefacts ABER055 AberdeenWindFarm 055 Artefacts ABER056 AberdeenWindFarm 056 Artefacts ABER057 AberdeenWindFarm 057 Artefacts ABER058 AberdeenWindFarm 058 Artefacts ABER059 AberdeenWindFarm 059 Artefacts ABER060 AberdeenWindFarm 060 Artefacts ABER061 AberdeenWindFarm 061 Artefacts ABER062 AberdeenWindFarm 062 Artefacts ABER063 AberdeenWindFarm 063 Artefacts ABER064 AberdeenWindFarm 064 Artefacts ABER065 AberdeenWindFarm 065 Artefacts



90010	ABER068	AberdeenWindFarm 068	Artefacts	Grade IIIc
90011	ABER069	AberdeenWindFarm 069	Artefacts	Grade IIIc
90012	ABER070	AberdeenWindFarm 070	Artefacts	Grade IIIc
90013	ABER071	AberdeenWindFarm 071	Artefacts	Grade IIIc
90014	ABER072	AberdeenWindFarm 072	Artefacts	Grade IIIc
90015	ABER073	AberdeenWindFarm 073	Artefacts	Grade IIIc
90016	ABER074	AberdeenWindFarm 074	Artefacts	Grade IIIc
90017	ABER075	AberdeenWindFarm 075	Artefacts	Grade IIIc
90008	ABER066	AberdeenWindFarm 066	Artefacts	Grade IIIc
90018	ABER076	AberdeenWindFarm 076	Artefacts	Grade IIIc
90019	ABER077	AberdeenWindFarm 077	Artefacts	Grade IIIc
90020	ABER078	AberdeenWindFarm 078	Artefacts	Grade IIIc
90021	ABER079	AberdeenWindFarm 079	Artefacts	Grade IIIc
90022	ABER080	AberdeenWindFarm 080	Artefacts	Grade IIIc
90023	ABER081	AberdeenWindFarm 081	Artefacts	Grade IIIc
90024	ABER082	AberdeenWindFarm 082	Artefacts	Grade IIIc
90025	ABER083	AberdeenWindFarm 083	Artefacts	Grade IIIc
90026	ABER084	AberdeenWindFarm 084	Artefacts	Grade IIIc
90027	ABER085	AberdeenWindFarm 085	Artefacts	Grade IIIc



ABER086	AberdeenWindFarm 086	Artefacts	Grade IIIc
ABER087	AberdeenWindFarm 087	Artefacts	Grade IIIc
ABER088	AberdeenWindFarm 088	Artefacts	Grade IIIc
ABER089	AberdeenWindFarm 089	Artefacts	Grade IIIc
ABER090	AberdeenWindFarm 090	Artefacts	Grade IIIc
ABER091	AberdeenWindFarm 091	Artefacts	Grade IIIc
ABER092	AberdeenWindFarm 092	Artefacts	Grade IIIc
ABER093	AberdeenWindFarm 093	Artefacts	Grade IIIc
ABER094	AberdeenWindFarm 094	Artefacts	Grade IIIc
ABER095	AberdeenWindFarm 095	Artefacts	Grade IIIc
ABER096	AberdeenWindFarm 096	Artefacts	Grade IIIc
ABER097	AberdeenWindFarm 097	Artefacts	Grade IIIc
ABER098	AberdeenWindFarm 098	Artefacts	
ABER099	AberdeenWindFarm 099	Artefacts	Grade IIIc
ABER100	AberdeenWindFarm 100	Artefacts	Grade IIIc
ABER101	AberdeenWindFarm 101	Artefacts	Grade IIIc
ABER102	AberdeenWindFarm 102	Artefacts	Grade IIIc
ABER103	AberdeenWindFarm 103	Artefacts	Grade IIIc
ABER104	AberdeenWindFarm 104	Artefacts	Grade IIIc
	ABER087 ABER088 ABER089 ABER090 ABER091 ABER092 ABER093 ABER094 ABER095 ABER096 ABER097 ABER098 ABER099 ABER100 ABER101 ABER102 ABER103	ABER087 AberdeenWindFarm 087 ABER088 AberdeenWindFarm 088 ABER089 AberdeenWindFarm 089 ABER090 AberdeenWindFarm 090 ABER091 AberdeenWindFarm 091 ABER092 AberdeenWindFarm 092 ABER093 AberdeenWindFarm 093 ABER094 AberdeenWindFarm 094 ABER095 AberdeenWindFarm 095 ABER096 AberdeenWindFarm 096 ABER097 AberdeenWindFarm 097 ABER098 AberdeenWindFarm 098 ABER099 AberdeenWindFarm 099 ABER100 AberdeenWindFarm 100 ABER101 AberdeenWindFarm 101 ABER102 AberdeenWindFarm 102 ABER103 AberdeenWindFarm 103	ABER087 AberdeenWindFarm 087 Artefacts ABER088 AberdeenWindFarm 088 Artefacts ABER089 AberdeenWindFarm 089 Artefacts ABER090 AberdeenWindFarm 090 Artefacts ABER091 AberdeenWindFarm 091 Artefacts ABER092 AberdeenWindFarm 092 Artefacts ABER093 AberdeenWindFarm 093 Artefacts ABER094 AberdeenWindFarm 094 Artefacts ABER095 AberdeenWindFarm 095 Artefacts ABER096 AberdeenWindFarm 096 Artefacts ABER097 AberdeenWindFarm 097 Artefacts ABER098 AberdeenWindFarm 098 Artefacts ABER099 AberdeenWindFarm 099 Artefacts ABER100 AberdeenWindFarm 100 Artefacts ABER101 AberdeenWindFarm 101 Artefacts ABER102 AberdeenWindFarm 102 Artefacts ABER103 AberdeenWindFarm 103 Artefacts



90047	ABER105	AberdeenWindFarm 105	Artefacts	Grade IIIc
90050	ABER106	AberdeenWindFarm 106	Artefacts	Grade IIIc
90051	ABER107	AberdeenWindFarm 107	Artefacts	Grade IIIc
90052	ABER108	AberdeenWindFarm 108	Artefacts	Grade IIIc
90053	ABER109	AberdeenWindFarm 109	Artefacts	Grade IIIc
90054	ABER110	AberdeenWindFarm 110	Artefacts	Grade IIIc
90056	ABER112	AberdeenWindFarm 112	Artefacts	Grade IIIc
90057	ABER113	AberdeenWindFarm 113	Artefacts	Grade IIIc
90058	ABER114	AberdeenWindFarm 114	Artefacts	Grade IIIc
90059	ABER115	AberdeenWindFarm 115	Artefacts	Grade IIIc
90060	ABER116	AberdeenWindFarm 116	Artefacts	Grade IIIc
90061	ABER117	AberdeenWindFarm 117	Artefacts	Grade IIIc
90062	ABER118	AberdeenWindFarm 118	Artefacts	Grade IIIc
90063	ABER119	AberdeenWindFarm 119	Artefacts	Grade IIIc
90064	ABER120	AberdeenWindFarm 120	Artefacts	Grade IIIc
90055	ABER111	AberdeenWindFarm 111	Artefacts	Grade IIIc
90065	ABER121	AberdeenWindFarm 121	Artefacts	Grade IIIc
90066	ABER122	AberdeenWindFarm 122	Artefacts	Grade IIIc
90067	ABER123	AberdeenWindFarm 123	Artefacts	Grade IIIc
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90068	ABER124	AberdeenWindFarm 124	Artefacts	Grade IIIc
90069	ABER125	AberdeenWindFarm 125	Artefacts	Grade IIIc
90070	ABER126	AberdeenWindFarm 126	Artefacts	Grade IIIc
90071	ABER127	AberdeenWindFarm 127	Stone walling	Grade IIIc
90072	ABER128	AberdeenWindFarm 128	Stone walling	Grade IIIc
90073	ABER129	AberdeenWindFarm 129	Building, Stone walling	Grade IIIc
90074	ABER130	AberdeenWindFarm 130	Artefacts	Grade IIIc
90075	ABER131	AberdeenWindFarm 131	Structures	Grade IIIc
90744	ABER132	AberdeenWindFarm 132	Palaeontological	Ungraded
90745	ABER133	AberdeenWindFarm 133	Palaeontological	Ungraded
90746	ABER134	AberdeenWindFarm 134	Palaeontological	Ungraded
90747	ABER135	AberdeenWindFarm 135	Palaeontological	Ungraded
90748	ABER136	AberdeenWindFarm 136	Palaeontological	Ungraded
90749	ABER137	AberdeenWindFarm 137	Palaeontological	Ungraded
90750	ABER138	AberdeenWindFarm 138	Palaeontological	Ungraded
90751	ABER139	AberdeenWindFarm 139	Palaeontological	Ungraded
90752	ABER140	AberdeenWindFarm 140	Palaeontological	
90753	ABER140	AberdeenWindFarm 140	Palaeontological	Ungraded
90754	ABER141	AberdeenWindFarm 141	Palaeontological	Ungraded
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ABER142	AberdeenWindFarm 142	Palaeontological	Ungraded
ABER143	AberdeenWindFarm 143	Palaeontological	Ungraded
ABER144	AberdeenWindFarm 144	Palaeontological	Ungraded
ABER145	AberdeenWindFarm 145	Palaeontological	
ABER145	AberdeenWindFarm 145	Palaeontological	Ungraded
ABER146	AberdeenWindFarm 146	Palaeontological	Ungraded
ABER147	AberdeenWindFarm 147	Palaeontological	Ungraded
ABER148	AberdeenWindFarm 148	Palaeontological	Ungraded
ABER149	AberdeenWindFarm 149	Palaeontological	Ungraded
ABER150	AberdeenWindFarm 150	Palaeontological	Ungraded
ABER151	AberdeenWindFarm 151	Palaeontological	Ungraded
ABER152	AberdeenWindFarm 152	Palaeontological	Ungraded
ABER154	AberdeenWindFarm 154	Palaeontological	Ungraded
ABER155	AberdeenWindFarm 155	Palaeontological	Ungraded
ABER156	AberdeenWindFarm 156	Palaeontological	Ungraded
ABER157	AberdeenWindFarm 157	Palaeontological	Ungraded
ABER158	AberdeenWindFarm 158	Palaeontological	Ungraded
ABER159	AberdeenWindFarm 159	Palaeontological	Ungraded
ABER160	AberdeenWindFarm 160	Palaeontological	Ungraded
	ABER143 ABER144 ABER145 ABER145 ABER146 ABER147 ABER148 ABER149 ABER150 ABER151 ABER151 ABER152 ABER155 ABER155 ABER155 ABER156 ABER157 ABER158 ABER159	ABER143 AberdeenWindFarm 143 ABER144 ABER145 AberdeenWindFarm 145 ABER145 AberdeenWindFarm 145 ABER146 ABER147 AberdeenWindFarm 147 ABER148 AberdeenWindFarm 148 ABER149 AberdeenWindFarm 149 ABER150 AberdeenWindFarm 150 ABER151 AberdeenWindFarm 151 ABER152 AberdeenWindFarm 152 ABER154 AberdeenWindFarm 154 ABER155 ABER155 ABER156 ABER157 AberdeenWindFarm 156 ABER157 AberdeenWindFarm 157 ABER158 ABER158 AberdeenWindFarm 158 ABER159 AberdeenWindFarm 159	ABER143 AberdeenWindFarm 143 Palaeontological ABER144 AberdeenWindFarm 144 Palaeontological ABER145 AberdeenWindFarm 145 Palaeontological ABER146 AberdeenWindFarm 146 Palaeontological ABER146 AberdeenWindFarm 146 Palaeontological ABER147 AberdeenWindFarm 147 Palaeontological ABER148 AberdeenWindFarm 148 Palaeontological ABER149 AberdeenWindFarm 149 Palaeontological ABER150 AberdeenWindFarm 150 Palaeontological ABER151 AberdeenWindFarm 151 Palaeontological ABER152 AberdeenWindFarm 152 Palaeontological ABER154 AberdeenWindFarm 154 Palaeontological ABER155 AberdeenWindFarm 155 Palaeontological ABER156 AberdeenWindFarm 156 Palaeontological ABER157 AberdeenWindFarm 157 Palaeontological ABER158 AberdeenWindFarm 158 Palaeontological



90786	ABER161	AberdeenWindFarm 161	Palaeontological	Ungraded
90787	ABER162	AberdeenWindFarm 162	Palaeontological	Ungraded
90777	ABER153	AberdeenWindFarm 153	Palaeontological	Ungraded
17	9/2/001/0003	Post Office and Magistrate's Court, Grey Street, Aberdeen	Building	Grade II



APPENDIX 2: Reference List

	Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title	
251161	AIA Phase 1	Celeste Booth, Sholeen Shanker	25/03/2013	A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED 200MW ESKOM WIND ENERGY FACILITY, NEAR ABERDEEN, CAMDEBOO LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.	
251166	Palaeontological Specialist Reports	John E Almond	31/12/2014	PALAEONTOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED ABERDEEN 200 MW WIND FARM, CAMDEBOO LOCAL MUNICIPALITY, EASTERN CAPE.	
354680	HIA Phase 1	Lita Webley, David Halkett	30/11/2015	Heritage Impact Assessment: Proposed Uranium Mining and Associated infrastructure on portions of the farm Quaggasfontein and Ryst Kuil near Beaufort West in the Western Cape and De Pannen near Aberdeen in the Eastern Cape	
354681	AIA Phase 1	Lita Webley	30/11/2015	Archaeological Impact Assessment: Proposed uranium mining and associated infrastructure on portions of the farms Quaggasfontein and Ryst Kuil near Beaufort West in the Western Cape and De Pannen near Aberdeen in the Eastern Cape	
354683	PIA Phase 1	Bruce Rubidge	24/04/2008	Palaeontological study of the Rystkuil channel	
6805	AIA Phase 1	Len van Schalkwyk, Elizabeth Wahl	01/09/2007	Heritage Impact Assessment of Gamma Grassridge Power Line Corridors and Substation, Eastern, Western and Northern Cape Provinces, South Africa	
7852	AIA Phase 1	J Kinahan	03/10/2008	Archaeological Baseline Survey of the Proposed Ryst Kuil Uranium Project	

Lavin, Winter, Almond (2022). Heritage Impact Assessment for the proposed development of the Aberdeen WEF Cluster near Aberdeen, Eastern Cape. Section 38(8) HIA submitted to ECPHRA. Unpublished.

Lavin, Winter, Almond (2023). Heritage Impact Assessment for the proposed development of the Kariega WEF Cluster near Aberdeen, Eastern Cape. Section 38(8) HIA to be submitted to ECPHRA. Unpublished.



APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

Archaeological Impact Assessment
Department of Agriculture and Rural Development (KwaZulu-Natal)
Department of Environment, Forest and Fisheries (National)
Department of Environmental Affairs and Development Planning (Western Cape)
Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)
Department of Economic Development, Environment, Conservation and Tourism (North West)
Department of Economic Development and Tourism (Mpumalanga)
Department of economic Development, Tourism and Environmental Affairs (Free State)
Department of Environment and Nature Conservation (Northern Cape)
Department of Mineral Resources (National)
Gauteng Department of Agriculture and Rural Development (Gauteng)
Heritage Impact Assessment
Department of Economic Development, Environment and Tourism (Limpopo)
Mineral and Petroleum Resources Development Act, no 28 of 2002
National Environmental Management Act, no 107 of 1998
National Heritage Resources Act, no 25 of 1999
Palaeontological Impact Assessment
South African Heritage Resources Agency
South African Heritage Resources Information System
Visual Impact Assessment

Full guide to Palaeosensitivity Map legend

RED:	VERY HIGH - field assessment and protocol for finds is required
ORANGE/YELLOW:	HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN:	MODERATE - desktop study is required
BLUE/PURPLE:	LOW - no palaeontological studies are required however a protocol for chance finds is required
GREY:	INSIGNIFICANT/ZERO - no palaeontological studies are required
WHITE/CLEAR:	UNKNOWN - these areas will require a minimum of a desktop study.



APPENDIX 4 - Methodology

The Heritage Screener summarises the heritage impact assessments and studies previously undertaken within the area of the proposed development and its surroundings. Heritage resources identified in these reports are assessed by our team during the screening process.

The heritage resources will be described both in terms of **type**:

- Group 1: Archaeological, Underwater, Palaeontological and Geological sites, Meteorites, and Battlefields
- Group 2: Structures, Monuments and Memorials
- Group 3: Burial Grounds and Graves, Living Heritage, Sacred and Natural sites
- Group 4: Cultural Landscapes, Conservation Areas and Scenic routes

and **significance** (Grade I, II, IIIa, b or c, ungraded), as determined by the author of the original heritage impact assessment report or by formal grading and/or protection by the heritage authorities.

Sites identified and mapped during research projects will also be considered.

DETERMINATION OF THE EXTENT OF THE INCLUSION ZONE TO BE TAKEN INTO CONSIDERATION

The extent of the inclusion zone to be considered for the Heritage Screener will be determined by CTS based on:

- the size of the development,
- the number and outcome of previous surveys existing in the area
- the potential cumulative impact of the application.

The inclusion zone will be considered as the region within a maximum distance of 50 km from the boundary of the proposed development.

DETERMINATION OF THE PALAEONTOLOGICAL SENSITIVITY

The possible impact of the proposed development on palaeontological resources is gauged by:

- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in three categories, namely low, medium and high. In most instances the extent of the map corresponds to the extent of the development for which the specific report was undertaken.



Low coverage will be used for:

- desktop studies where no field assessment of the area was undertaken;
- reports where the sites are listed and described but no GPS coordinates were provided.
- older reports with GPS coordinates with low accuracy ratings;
- reports where the entire property was mapped, but only a small/limited area was surveyed.
- uploads on the National Inventory which are not properly mapped.

Medium coverage will be used for

- reports for which a field survey was undertaken but the area was not extensively covered. This may apply to instances where some impediments did not allow for full coverage such as thick vegetation, etc.
- reports for which the entire property was mapped, but only a specific area was surveyed thoroughly. This is differentiated from low ratings listed above when these surveys cover up to around 50% of the property.

High coverage will be used for

• reports where the area highlighted in the map was extensively surveyed as shown by the GPS track coordinates. This category will also apply to permit reports.

RECOMMENDATION GUIDE

The Heritage Screener includes a set of recommendations to the applicant based on whether an impact on heritage resources is anticipated. One of three possible recommendations is formulated:

(1) The heritage resources in the area proposed for development are sufficiently recorded - The surveys undertaken in the area adequately captured the heritage resources. There are no known sites which require mitigation or management plans. No further heritage work is recommended for the proposed development.

This recommendation is made when:

- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for the proposed development.

This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

- improvement on some components of the heritage assessments already undertaken, for instance with a renewed field survey and/or with a specific specialist for the type of heritage resources expected in the area
 - compilation of a report for a component of a heritage impact assessment not already undertaken in the area



- undertaking mitigation measures requested in previous assessments/records of decision.
- (3) The heritage resources within the area proposed for the development have not been adequately surveyed yet Few or no surveys have been undertaken in the area proposed for development. A full Heritage Impact Assessment with a detailed field component is recommended for the proposed development.

Note:

The responsibility for generating a response detailing the requirements for the development lies with the heritage authority. However, since the methodology utilised for the compilation of the Heritage Screeners is thorough and consistent, contradictory outcomes to the recommendations made by CTS should rarely occur. Should a discrepancy arise, CTS will immediately take up the matter with the heritage authority to clarify the dispute.