

Maralla East WEF

SCOPING HERITAGE ASSESSMENT: PROPOSED CONSTRUCTION OF THE ESIZAYO, MARALLA WEST AND MARALLA EAST WIND ENERGY FACILITIES NEAR LAINGSBURG IN THE WESTERN AND NORTHERN CAPE

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act No 25 of 1999)

Prepared for:
Ashlea Strong
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On behalf of:
BioTherm Energy (Pty) Ltd

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EXECUTIVE SUMMARY

ACO Associates cc was appointed by WSP on behalf of BioTherm Energy (Pty) Ltd to undertake a Scoping Heritage assessment for the construction of the Esizayo and Maralla East and Maralla West Wind Energy Facilities, and associated infrastructure, to the east of the R354, between Laingsburg and Sutherland in the Western and Northern Cape Provinces. This report only focuses on the Maralla East Wind Energy Facility (WEF).

Legislative Matters

The Maralla East WEF falls inside the boundaries of the Western Cape. The heritage authority responsible for providing comments (in terms of Section 38(8) of the NHRA) on the proposed development is Heritage Western Cape.

Methodology for Scoping

The Scoping report includes a desktop review of the literature (both published and unpublished) on the heritage resources for the area, as well as a field survey by Webley & Halkett from 7 to 11 March 2016. The aim of the fieldwork was to inform the background study.

The palaeontological assessment is being undertaken by Dr John Almond of Natura Viva cc.

A number of renewable energy facilities have been proposed in the area around the Eskom Komsberg substation and they have been subjected to the EIA process. They include:

- The Suurplaat Wind Energy facility (Hart et al. 2010)
- The Roggeveld Wind Energy facility (Hart & Webley 2011, 2013)
- The Sutherland WEF facility (Halkett & Webley 2011)
- The Kareebosch Wind Energy facility (Roggeveld Phase 2) (Hart & Kendrick 2015)
- The Hidden Valley Wind Energy facility (Phases 1, 2 & 3) (Booth 2012)

The limitations of this study are primarily related to the rough terrain, with many of the areas identified for turbines and powerline situated on the high ridges which were completely inaccessible.

Recommendations for the HIA

The EIA phase study needs to fulfill the requirements of heritage impact assessment as defined in section 38 of the NHRA. This means that the assessment has to cover the full range of potential heritage resources as defined in the National Heritage Resources Act 25 of 1999.

The aim of the EIA would be to identify and assess the significance of all heritage resources on the property, to assess the preferred and alternative options and to rate them in terms of significance, to determine the potential impacts on the heritage resources, and where appropriate to recommend “no-go” areas and to propose mitigation if avoidance is not possible.

- The proposed study area, including proposed routes of linear infrastructure (power lines and access roads) must be assessed by the heritage practitioner/archaeologist, who must sample sections of the terrain which may be negatively impacted by the project. He/she must record and map any heritage material found;
- The significance of each find will need to be assessed along with the impacts of the proposed activity;
- In the case of impacts to significance heritage resources, the proposed mitigation measures may include the “No-Go” alternative, avoidance, archaeological excavations or monitoring during earthworks;
- The heritage specialist should consider the cumulative impact of a number of wind energy facilities in the Sutherland area on the heritage of the study area and make recommendations for mitigation.

Conclusions

- A Notice of Intent to Develop (NID) for the Maralla East WEF must be submitted to HWC; The respective heritage authorities will interrogate the application and will indicate whether they require a Heritage Impact Assessment, and which types of heritage specialist studies they require;
- A separate specialist palaeontological assessment will be conducted and integrated within the HIA report;
- It is assumed, based on our knowledge of the surrounding areas, that the most significant heritage resources within the Maralla East WEF is likely to be Colonial type farming settlements (farm houses, sheds, kraals, farm cemeteries, etc.) as well as archaeological sites;
- It is anticipated that these resources will be located along the valley floors and kloofs and not on the ridges of the hills and mountains;
- Our assumptions about the spread and density of heritage resources is based on our knowledge of the landscape as well as assessments undertaken by other specialists on adjoining properties;
- The potential visual impacts of the proposed facility on the heritage resources of the area (i.e. the results of the VIA), must be integrated with the heritage study. It is assumed that a buffer will be necessary along the R354, since the road between Matjiesfontein and Sutherland is considered a scenic tourism route;
- Cumulative impacts are likely to occur if the proposed wind energy projects currently under consideration in the general area all proceed to the construction phase.

Indications are that in terms of archaeological heritage and built environment the proposed activity is viable, impacts are expected to be moderate and controllable. In terms of the information available at this time, no fatal flaws are anticipated.

GLOSSARY

Archaeology: Remains resulting from human activity which is in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.

Early Stone Age: The archaeology of the Stone Age between 700 000 and 2500 000 years ago.

Fossil: Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage: That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage Western Cape: The compliance authority that protect heritage in the Western Cape.

Holocene: The most recent geological time period which commenced 10 000 years ago.

Late Stone Age: The archaeology of the last 20 000 years associated with fully modern people.

Middle Stone Age: The archaeology of the Stone Age between 20-300 000 years ago associated with early modern humans.

National Estate: The collective heritage assets of the Nation

Palaeontology: Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

SAHRA: South African Heritage Resources Agency – the compliance authority which protects national heritage in the Northern Cape.

Structure (historic:) Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

Acronyms

DEA	Department of Environmental Affairs
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency
WEF	Wind Energy Facility

Archaeologists/Heritage Specialists

Lita Webley is an archaeologist (PhD from the University of Cape Town 1992) with ACO Associates cc and has been conducting Heritage Impact Assessment and archaeological specialist studies in the Western Cape, Northern Cape and Eastern Cape Provinces since 1996. She is a member of the Archaeology, Palaeontology and Meteorites Committee and the Impact Assessment Committee of Heritage Western Cape (HWC), the Provincial Heritage Resources Authority. She is accredited as a Principal Investigator by the Association of Southern African Professional Archaeologists (ASAPA) CRM section as follows:

- Principal Investigator: Stone Age, Shell Middens and Colonial Period; and
- Field Director: Grave Relocations.

ACO Associates cc has no financial or other interest in the proposed development and will derive no benefits other than fair remuneration for consulting services provided.

David Halkett (BA, BA Hons, MA (UCT)) is an Archaeologist and Member of the Association of Professional Archaeologists of Southern Africa (ASAPA) and accredited with Principal Investigator status. He has been working in heritage management for 23 years and has considerable experience in impact assessments with respect to a broad range of archaeological and heritage sites in the Northern Cape.

SPECIALIST DECLARATION

I, Lita Webley, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, 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 have no, and will not engage in, conflicting interests in undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have potential of influencing – any decision to be taken with respect to the application by the competent authority; and – the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offense in terms of regulation 71 and is punishable in terms of section 24F of the Act.

Signature of specialist

h. E. Webley

Specialist Field: Archaeology and Heritage

Name of Company: ACO Associates

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1 INTRODUCTION

ACO Associates cc was appointed by WSP on behalf of BioTherm Energy (Pty) Ltd to undertake a Scoping heritage assessment for the construction of the Esizayo and Maralla Wind Energy Facilities between Laingsburg and Sutherland in the Western and Northern Cape Provinces (Figure 1). This report considers all aspects of heritage with the exception of palaeontology which is assessed by Dr John Almond of Natura Viva cc. The remainder of this report will only focus on the Maralla East WEF.

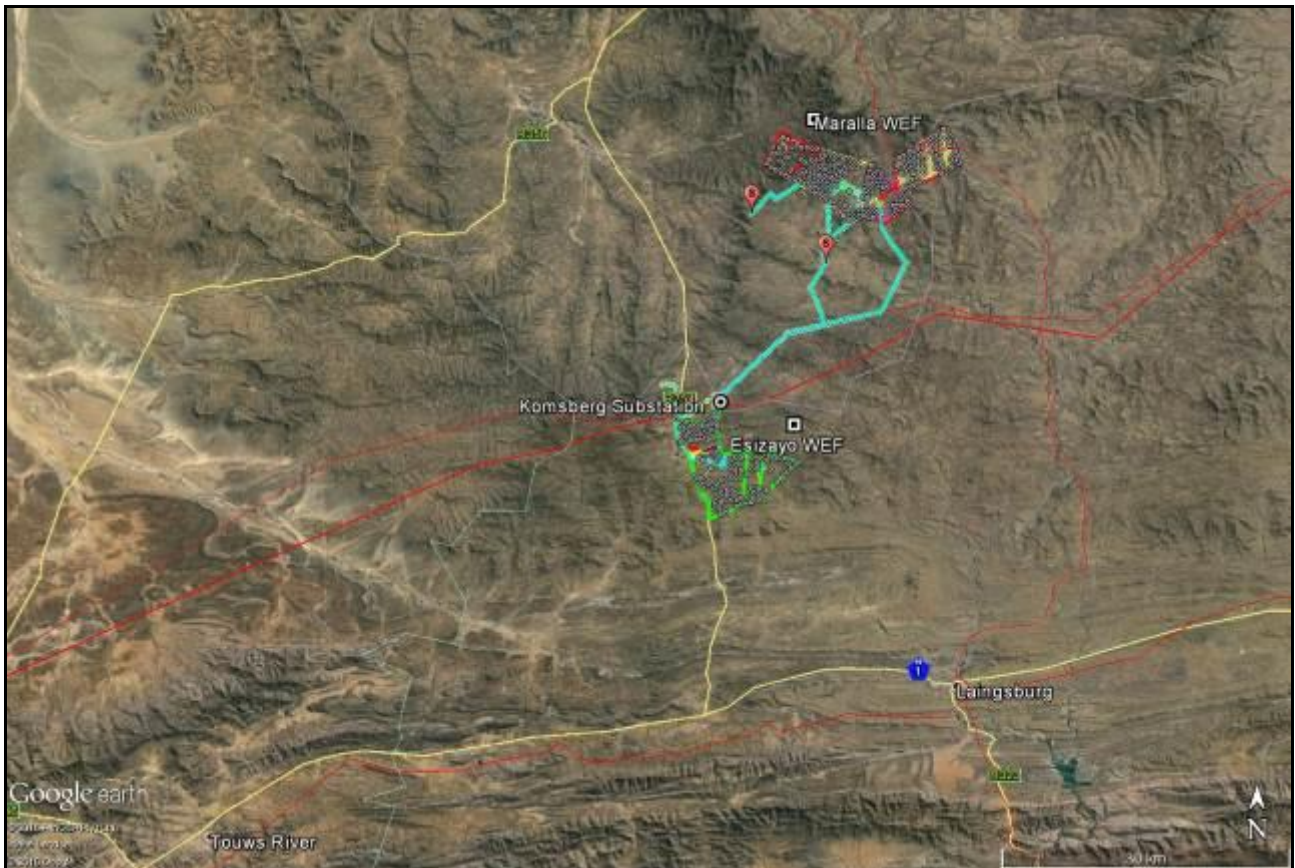


Figure 1: The proposed facilities are located off the R354 between Matjiesfontein and Sutherland. The Esizayo and Maralla East WEF falls inside the boundaries of the Western Cape Province, while the Maralla West WEF is located in the Northern Cape Province.

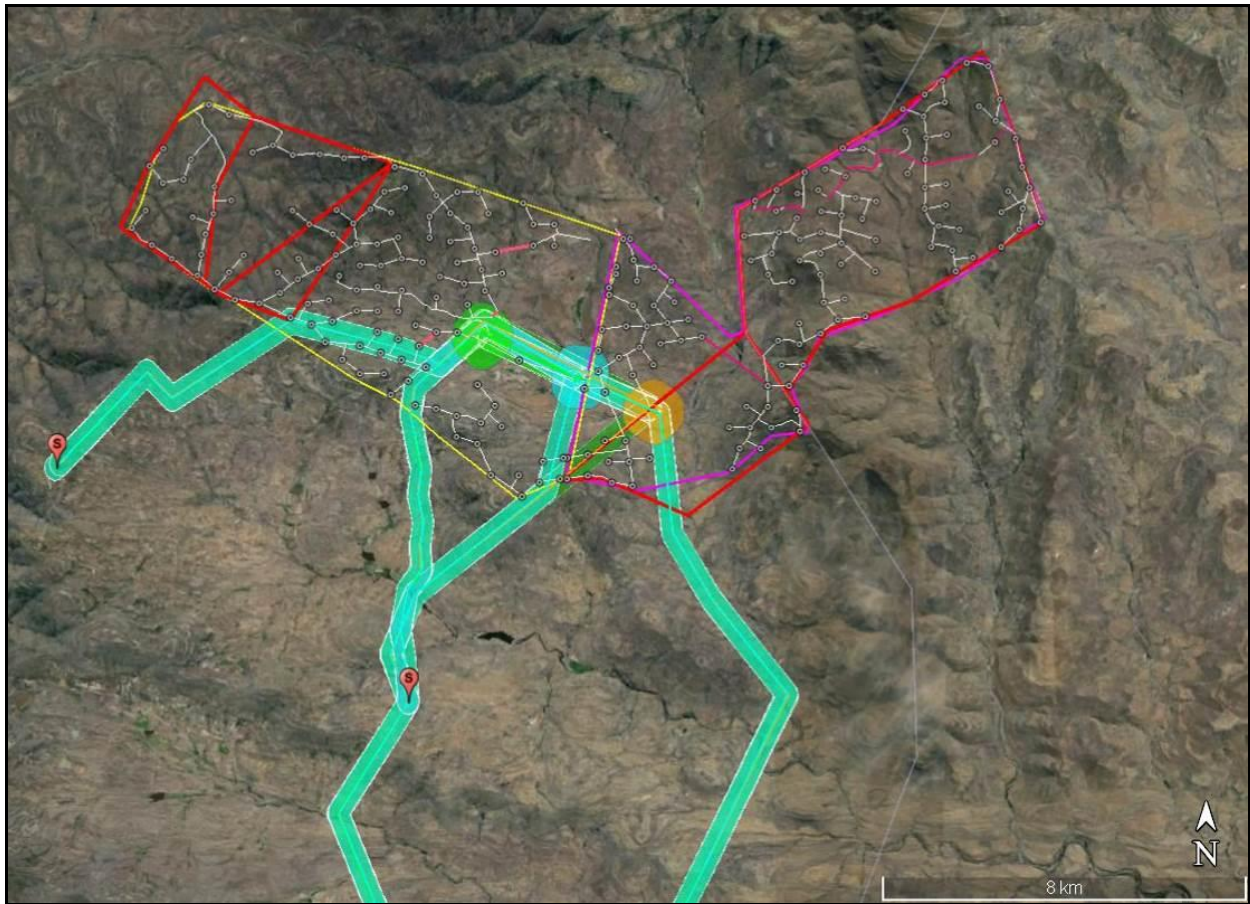


Figure 2: Maralla East and Maralla West with five powerline alternatives indicated in turquoise, and three substations in green, yellow and turquoise.

Maralla East Wind Energy Facility

The proposed Maralla East Wind Energy Facilities), will have a capacity of 250MW, is located 33km south of the town of Sutherland. in the Northern Cape Province (Figure 2). The site access is via the R354. The size of the study area is 10 105ha and it comprises the following farms:

- Remaining extent of Drie Roodeheuvelds 180;
- Remaining extent of Annex Drie Roodeheuvelds 181;
- Portion1 of Wolven Hoek 182;
- Portion 2 of Wolven Hoek 182, and
- Remaining extent of Schalkwykskraal 204.
- Remaining Extent of Welgemoed 268 (Western Cape)

Maralla East will have its own onsite IPP 33/132kV substation with transformers for voltage step up from medium voltage to high voltage. The substation will occupy an area of 150m x 150m. Two alternatives have been proposed. The onsite IPP substation will then connect to a Common 132kV substation where the power will be excavated from the Wind Farm by a double circuit 132kV powerline to either the surrounding IPP substations or the Komsberg MTS substation. The onsite IPP substation will be included in the Facility EIA.

The Common Eskom substation and Powerline will be assessed through a separate Basic Assessment Process. There are three common substations proposed. Each has four alternative routes. Two alternatives will run to surrounding IPP stations, and two to the Komsberg substation, i.e. twelve alternatives. These will form part of a separate Basic Assessment.

1.1 SCOPE AND LIMITATIONS

This study has been commissioned as a Scoping assessment. It provides a brief baseline description and attempts to predict the possible range of impacts and identify issues in terms of accumulated knowledge of the area. It sets out the methodology for a full heritage impact study.

The main deliverables are an Environmental Scoping Report with appropriate maps, drawings and figures and to include:

- Preparation of a desktop Scoping Report reviewing the existing literature of the heritage resources on affected farms;
- Describe and map the heritage characteristics of the study area;
- Map sensitive areas and provide location details (co-ordinates) of these areas;
- Integrate the results of the palaeontological study (independently commissioned) and visual impact assessment (independently commissioned) into the final heritage impact assessment (HIA).

This Scoping study includes a review of the published material as well as unpublished reports on the SAHRIS database. The 1:50 000 maps of the area as well as Google Earth aerial images were consulted. Numerous impact assessments have been conducted in proximity to the proposed facility as reflected on the SAHRIS database. Little was known of the archaeology of the study area until recently, when the area was identified as suitable for wind farm development. The following CRM reports provide valuable information on the heritage resources of the area and were consulted:

- The Suurplaat Wind Energy facility (Hart et al. 2010)
- The Roggeveld Wind Energy facility (Hart & Webley 2011, 2013)
- The Sutherland WEF facility (Halkett & Webley 2011)
- The Kareebosch Wind Energy facility (Roggeveld Phase 2) (Hart & Kendrick 2015)
- The Hidden Valley Wind Energy facility (Phases 1, 2 & 3) (Booth 2012)

There is a considerable overlap in properties between the Sutherland WEF assessed by Halkett & Webley (2011) and the proposed Maralla West WEF.

1.1.1 Assumptions

This Scoping report is based on the knowledge which has been accumulated from heritage impact assessment undertaken in surrounding areas as well as a site visit in March 2016. It assumes that the heritage resources on Esizayo and Maralla are similar to the surrounding areas.

1.1.2 Limitations

The resolution on aerial photography (Google Earth) is not sufficiently high to identify all stone structures (including kraals), archaeological sites or graves. We are limited to our existing knowledge of the study area.

2 APPROACH AND METHODOLOGY

In general, heritage resources are non-renewable, and once they are destroyed they cannot be recovered or re-introduced. This applies to palaeontological and archaeological resources, buildings that are older than 60 years as well as cemeteries and graves. It is therefore important that heritage resources are identified and their significance assessed prior to development.

Archaeological sites are particularly vulnerable as their significance is dependent on their context. The main cause of impacts to archaeological sites is direct, physical disturbance of the material itself and its context. The impacts are likely to be most severe during the construction period although indirect impacts may occur during the operational phase of the project.

It is preferable that archeological sites are conserved. Mitigation, in the form of archaeological excavations, means that while the material may have been retained and conserved in a museum, the context of the archaeological site has been lost forever.

With respect to cemeteries and graves, any impacts which result in a disturbance to a grave are considered high. They are best avoided by development. An extensive consultation process with interested and affected parties is required if exhumation is considered.

The significance of heritage resources is assessed according to the grading criteria established by the National Heritage Resources Act, No 25 of 1999.

Table 1: Grading of Heritage Resources

Grade	Level of significance	Description
I	National	Of high intrinsic, associational and contextual heritage value within a national context, i.e. formally declared or potential Grade 1 heritage resources.
II	Provincial	Of high intrinsic, associational and contextual heritage value within a provincial context, i.e. formally declared or potential Grade 2 heritage resources.
IIIA	Local	Of high intrinsic, associational and contextual heritage value within a local context, i.e. formally declared or potential Grade 3a heritage resources.
IIIB	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3b heritage resources.
IIIC	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3c heritage resources.

The subdivision of Grade III sites has been introduced in the Western Cape to facilitate significance grading at the local level.

2.1 IMPACT SCREENING TOOL

The following impact screening table has been proposed to assess the significance of identified impacts. The screening tools will allow any impacts of very low significance to be excluded from the detailed studies in the impact assessment phase. The screening tool is based on two criteria, namely probability and severity.

Severity/Beneficial Scale					
		1	2	3	4
Probability Scale	1	Very Low	Very Low	Low	Medium
	2	Very Low	Low	Medium	Medium
	3	Low	Medium	Medium	High
	4	Medium	Medium	High	High

Probability Scale

4	Definite
	Where the impact will occur regardless of any prevention measures
3	Highly Probable
	Where it is likely that the impact will occur
2	Probable
	Where there is a good possibility that the impact will occur
1	Improbable
	Where the possibility of the impact occurring is very low

Severity/Beneficial Scale

4	Very severe	Very beneficial
	An irreversible and permanent change to the affected system(s) or party(ies) which cannot be	A permanent and very substantial benefit to the affected system(s) or party(ies), with no real

	mitigated	alternative to achieving this benefit
3	Severe	Beneficial
	A long term impacts on the affected system(s) or party(ies) that could be mitigated. However, this mitigation would be difficult, expensive or time consuming or some combination of these.	A long term impact and substantial benefit to the affected system(s) or party (ies). Alternative ways of achieving this benefit could be difficult, expensive or time consuming or some combination of these.
2	Moderately severe	Moderately beneficial
	A medium to long term impacts on the affected system(s) or party(ies) that could be mitigated.	A medium to long term impact of real benefit to the affected system(s) or party (ies). Other ways of optimising the beneficial effects are equally difficult, expensive and time consuming (or some combination of these), as achieving them in this way.
1	Negligible	Negligible
	A short to medium term impacts on the affected system(s) or party(ies). Mitigation is very easy, cheap, less time consuming or not necessary.	A short to medium term impact and negligible benefit to the affected system(s) or party (ies). Other ways of optimising the beneficial effects are easier, cheaper and quicker, or some combination of these.

3 LEGISLATIVE BACKGROUND

While the National Department of Environmental Affairs is the decision making authority acting in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and Regulations (2014), they must ensure that the evaluation of the statutorily defined broad range of heritage resources fulfils the requirements of the relevant heritage resources authority in terms of Section 38 (3) of the National Heritage Resources Act (Act 25 of 1999) (NHRA) and that any comments and recommendations of the relevant heritage resources authority with regard to proposed development have been taken into account prior to the granting of the consent.

This report is conducted in terms of Section 38 (8) of the National Heritage Resources Act, No 25 of 1999.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

3.1 Structures (Section 34(1))

No person may alter or demolish any structure part of a structure which is older than 60 years without a permit issued by SAHRA or HWC, i.e. the responsible provincial heritage resources authority.

3.2 Archaeology & Palaeontology (Section 35(4))

No person may, without a permit issued by HWC, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite.

Archaeological is defined as: “material remains resulting from human activity which is in a state of disuse and is in or on land and which is older than 100 years, including artefacts, human and hominid remains and artificial features and structures”.

Palaeontological is defined as: “any fossilised remains or fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace”.

3.3 Burial grounds and graves (Section 36(3))

No person may, without a permit issued by the South African Heritage Resources Authority (SAHRA), destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

3.4 Heritage Authorities

The South African Heritage Resources Agency (SAHRA) and Heritage Western Cape (HWC) are required to provide comment on the proposed project in order to facilitate final decision making by the Department of Environmental Affairs (DEA).

4 REGIONAL OVERVIEW

4.1 Environmental attributes

The Study Area is located some 35 km south-east of Sutherland, beneath the plateaux. It is a semi-arid region with rainfall mainly in the form of summer thunderstorms. The vegetation is characteristic of the Succulent Karoo biome. The old road to Sutherland including the Komsberg pass runs through the Maralla East WEF and provides access to the plateaux.

Although myriad streams are to be found on all the farms, the Venters, Komsberg and Riet Rivers are the main channels draining the Maralla East WEF. A number of springs are also present. Old settlements tend to focus on the water resources and along river valleys. These areas contain numerous kraals, located next to pools and built against the rocky ridgelines along the valley sides.

Exotic vegetation is often present around settlements but otherwise is low scrub. Typical landforms are wide plains, surrounded by hills and koppies both above and below the escarpment.

There are a number of farm tracks which cross the study area to service fenced stock camps and associated small dams and their accompanying wind pumps. Despite human intervention related to farming, the site remains predominantly natural and isolated.

4.2 Palaeontology

A palaeontological impact assessment (PIA) of the site was commissioned as part of a comprehensive HIA for BioTherm Energy (Pty) Ltd. Dr Almond notes in his introduction that his report is a desktop Scoping assessment for inclusion in the EIA for the Maralla East WEF. His detailed report will be integrated into the HIA document.

4.3 Archaeological Background

Recent surveys by heritage practitioners as well as academics from the University of Cape Town have increased our knowledge of the archaeology of the area.

4.3.1 Pre-colonial Archaeology

There are very few Early or Middle Stone Age sites in the study area. Halkett & Webley (2011) observed Middle Stone Age (MSA) artefacts including scatters of polished/patinated stone chunks, flakes and cores, with occasional denticulation noted. Distinctive bifaces representative of the ESA were only seen on one site.

Lloyd Evans et al. (1985) excavated a small rock shelter on the grounds of the South African Astronomical Observatory in Sutherland. It contained a Later Stone Age. They comment (1985: 108) that the presence of the shell beads points to cultural ties with people along the Cape coast while the small scrapers can be assigned to the Wilton industry. Hart (2005) reported finding a dense artefact scatter associated with a shallow rock shelter while doing a survey for a golf course to the south of Sutherlands. The study indicated that archaeological sites may be found in areas that were sheltered from the wind.

Halkett & Webley (2011) and the present study, recorded only a handful of well-defined LSA sites, some associated with indigenous ceramics, generally located in proximity to water sources (springs and river banks). The LSA stone artefact assemblages included thumbnail scrapers, and the raw material included a grey chert. Large flakes on indurated shale or hornfels is also common. The Halkett & Webley (2011) study identified the presence of “open Khoekhoen encampments” along the dry river beds in the bottom of valleys and this study supports these conclusions.

One of the most common type of pre-colonial site found in the Roggeveld area, are stone kraals or stone structures (Halkett & Webley 2011; this study). They typically consist of dry stone piled wall enclosures in a roughly circular configuration, sometimes interlocking but not more than half a metre high, and ranging from 3 – 4 meters in diameter. It is believed that many of these stone structures represent the “kraals” for small stock such as fat-tailed sheep and goats. While large kraal complexes, consisting of interlocking enclosures have been recorded elsewhere on adjoining properties, none were found in the study area.

4.3.2 Rock Art

At least four small shelters with rock paintings have been recorded (Halkett & Webley 2011; and this study) in and around the study area. These included sites with indistinct human figures and some faded finger daubs. A further rock art site was reported to us by Mr Hanekom from the farm Saailands. There is a small possibility that more caves or rock shelters with rock art will be found in the study area.

4.4 Historical Background

Schoeman (1986) has described the early settlement of the Roggeveld and Sutherland area which commenced around 1750. The first recorded loan farms in the Roggeveld date to 1743, and by 1750 there were 31 registrations (Penn 2005). The early farmers found the escarpment, which enjoys the highest rainfall, particularly suitable for small stock farming during the summer months but they moved down into the valleys and plains of the Karoo to escape the extreme winters. Each Trekboer usually had in addition to a loan farm on the plateaux, a farm in the Karoo known as a *legplaats* (outpost). Initially, the population of the area remained small, because many of the early loan farms were merely “stock posts” and the owners lived elsewhere. Drought, poor grazing and attacks by the San caused many farms to be abandoned. According to Penn (2005), in the 18th century there were numerous independent Khoekhoen kraals located amongst the Trekboer farms in the Roggeveld.

Resistance to the Trekboers in the Roggeveld came initially from the San who resisted fiercely throughout the great Karoo, at times beating back the vanguard of *Trekboer* farmers. In 1754, attacks from the Khoisan are reported to have increased and flocks of sheep and herds of cattle belonging to the Trekboers were driven out of the area. This increased to the extent that it is described by Schoeman as a type of guerrilla warfare. Livestock was stolen, Khoisan herders and slaves killed, and Trekboer farms attacked. The colonists fought back by establishing the *Kommando* system. There was apparently a massacre of 186 San in the Roggeveld in 1765. Both Penn (2005) and Schoeman (1986) refer to another mass grave on the farm Gunsfontein (to the west of Schietfontein (Scholtzenhof) - and now part of a private nature reserve), possibly dating to the rebellion of the 1770's.

The Khoisan were gradually driven from the Roggeveld northward to the extent that by 1809 there is reported to have been only one settled “Bushmen” kraal left in the area. Schoeman (1986) notes that during the early years of settlement in the Roggeveld, many of the Trekboers lived in grass huts or *Matjieshuise* (mat covered houses), and in tents and some travellers found farmers living in *Matjieshuise* as late as 1839. Attempts at constructing more permanent structures were inhibited by the lack of suitable wood for roofs.

4.4.1 History of the farms

The following farms are located in the Maralla East WEF:

- **Drie Roode Heuwels 180:** An earlier circular loan farm granted to SJ Botma (who also owned Schalkwykskraal) in 1838. It then passed into the hands of a Maritz, Moller and de Vos. It was subdivided in the 1930's;

- **Annex Drie Roode Heuwels 181:** Granted to Abraham le Roux (who also owned Schalkwykskraal, Wolvenhoek and Schietfontein) in 1893. This portion of land was originally part of Wolvenhoek and subsequently incorporated into Drie Roode Heuwels;
- **Wolvenhoek 182:** Surveyed in 1893 and originally granted to Abraham le Roux. Thereafter the property was owned by a number of different families including Theron, Brink and van Wyk. It was subdivided in 1939;
- **Schalkwykskraal 204:** Surveyed and granted in 1838 to SJ Botma and JA Victor. It then passed through the hands of Meiring, Paulsen, Esterhuysen, Roussouw, Moller and de Vos. At one stage it was also owned by Abraham le Roux (of Wolvenhoek and Schietfontein);
- **Welgemoed 268:** It was surveyed in 1834 and granted to Stephanus Botma, and was retained in the family until 1905 when it is listed as part of the deceased estate of Johannes Botma. Schoeman (1986) describes how a Jan Fourie of Welgemoed joined the commando of Manie Maritz in 1901 and became active during the South African War.

The colonial heritage of the area is characterised by farmhouses (some containing an inner core dating to the 19th century), barns, stone kraals, shepherds stockposts, etc. The generic house comprised a “small oblong low hut” built of slabs of *leiklip* piled on top of each other, unplastered, with a reed roof. However, very few of these structures have been preserved. Some of the stone structures described above under pre-colonial settlements, may in fact represent colonial-era stockposts. They are generally identified by associated historic ceramics and glass. These colonial settlements are invariably found in river valleys, close to a permanent source of water.

4.5 South African War

During the South African War, the threat of Boer incursions led British forces to build fortifications at a number of strategic passes through the Roggeveld. With Manie Maritz active in the district, many young men from the Roggeveld joined the Boer cause. A stone redoubt was built at the top of the Brandkloof and Maleishoek passes. Orton & Halkett (2011) reported finding stone-walled structures relating to the South African War on the farm Jakhalsvalley 99, outside Sutherland. They related that stone-walled defensive enclosures were made by both Boer and British and it is difficult to distinguish between them, even when they are associated with historic tin cans, glass and ceramics.

This review has identified at least three possible types of stone walled enclosures:

- Pre-colonial kraals;
- Colonial era stockposts;
- Fortifications relating to the South African War.

4.6 Cemeteries and Graves/Cairns

A large number of farm cemeteries and graves have been recorded in the area by various consultants. The cemeteries are generally associated with farm settlements. However, on at least two occasions, the farm cemetery has been separated from the homestead by a road.

4.7 Landscape and Scenic Routes

According to Winter & Oberholzer (2013), the R354 between Matjiesfontein and Sutherland, which crosses the Klein Roggeveld Mountains, is an area of high scenic and rural value. It is an important tourism route to the Sutherland Observatory and is considered of Route III significance

5 IMPACTS AND ISSUES IDENTIFICATION

In the case of the proposed wind energy facility it is expected that impacts to heritage will be moderate if the most sensitive areas are avoided. During the construction phase, the following activities will result in direct impacts to the landscape and any heritage that lies on it:

- Bulldozing of roads through river valleys to the turbine sites;
- Upgrading of existing roads particularly where they cut through river valleys or are in close proximity to existing settlements (i.e. farmhouses of Wolvenhoek and Aurora).

The main impacts resulting from the operational phase of the wind facility are potential vandalism of heritage sites by staff of the wind facility(s). This includes stripping of fittings from abandoned farm buildings, careless damage to kraal walls, graffiti on rock art sites, etc. No further impacts to heritage would occur during operation of the currently proposed facility, although any expansion to the facility (effectively a new construction phase), would introduce new impacts.

Impacts resulting from the de-commissioning phase of the wind farm facility may include the dumping of electrical infrastructure on heritage sites. At this stage, indirect impacts to heritage resources that were felt during construction and operation can be reduced or removed with the successful rehabilitation of the site. Direct impacts to heritage resources would, however, remain the same. These impacts are all considered to be negative.

5.1 MARALLA EAST WEF

Severity/Beneficial Scale					
		1	2	3	4
Probability Scale	1	Very Low	Very Low	Low	Medium
	2	Very Low	Low	Medium	Medium
	3	Low	Medium	Medium	High
	4	Medium	Medium	High	High

The boundary dividing Maralla West WEF from Maralla East runs through the centre of the farm Drie Roodeheuvelds 180. Maralla East WEF will have its own onsite IPP substation (150 x 150m). These will have a 132kV powerline leading to a Common Eskom substation.

With respect the Maralla East WEF, the probability of encountering heritage sites is “probable” and the severity impact is likely to be “moderately severe”. In other words, mitigation would be possible. In other words, mitigation (preferably avoidance of sensitive sites) would be possible.

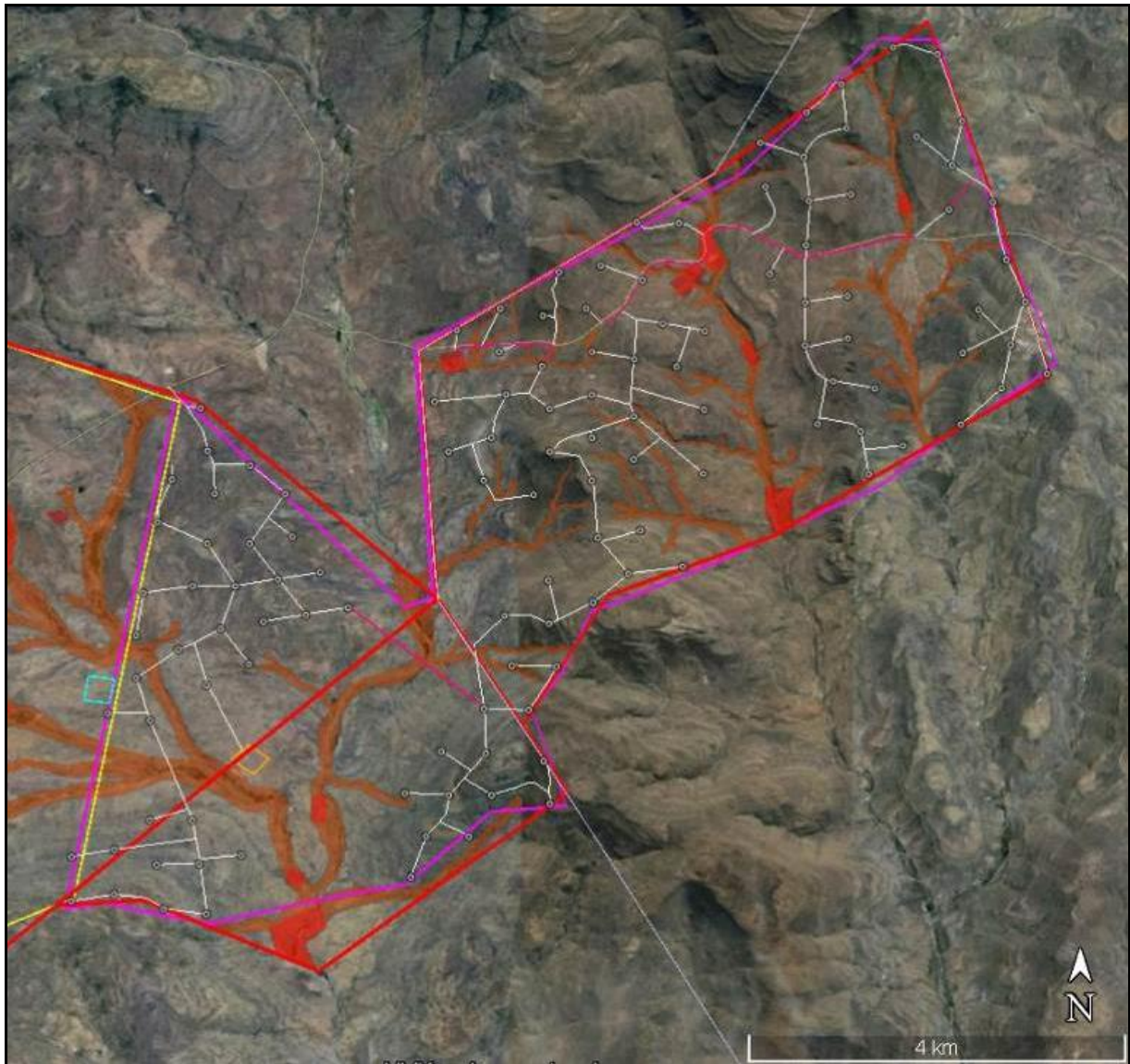


Figure 6: The Maralla East WEF indicating that the sensitive heritage locations (red polygons) are situated in the valleys, and not on the ridge lines. The areas shown in pale brown are major drainage areas which are of moderate sensitivity because they have a higher probability of containing heritage sites. The proposed substation is shown as a yellow square.

5.2 CONCLUDING COMMENTS ON POTENTIAL IMPACTS

This study notes that the proposed wind turbines are located on high lying ridges and hills and that these areas are generally devoid of heritage resources.

The study has identified that the most significant heritage sites, both colonial settlements and archaeological sites, are located in river valleys and kloofs, and they will not be impacted by the construction of the turbines. *However, impacts may occur when access roads, underground cabling or powerlines cross these river valleys/kloofs.*

The main cause of impacts to archaeological sites is direct, physical disturbance of the material itself and its context resulting in the loss of the heritage resource.

Historic structures, such as abandoned farmhouses and outbuildings as well as graveyards are sensitive to physical damage such as demolition as well as neglect. They are also context sensitive, in that changes to the surrounding landscape will affect their significance.

The probability of impacts to heritage sites is considered to be moderate. These impacts can be mitigated by avoidance.

6 TERMS OF REFERENCE FOR THE IMPACT ASSESSMENT PHASE

The EIA phase study needs to fulfill the requirements of heritage impact assessment as defined in section 38 of the NHRA. This means that the assessment has to cover the full range of potential heritage resources as defined in the National Heritage Resources Act 25 of 1999.

The aim of the EIA would be to identify and assess the significance of all heritage resources on the property, to assess the preferred and alternative options and to rate them in terms of significance, to determine the potential impacts on the heritage resources, and where appropriate to recommend “no-go” areas and to propose mitigation if avoidance is not possible.

- The proposed study area, including proposed routes of linear infrastructure (power lines and access roads) must be subjected to a survey by the heritage practitioner/archaeologist. They must record details and locations of any heritage material found;
- The significance of each find will need to be assessed along with the impacts of the proposed activity;
- In the case of impacts to significance heritage resources, the proposed mitigation measures may include the “No-Go” alternative, avoidance, archaeological excavations or monitoring during earthworks.

The HIA component of the EIA will include the following:

- A report for the Maralla East WEF including onsite IPP substation and powerlines;
- A separate BA for the Common Eskom Substation and Powerline for Maralla WEFs;

7 CONCLUSIONS AND RECOMMENDATIONS

The following recommendations to be addressed in the reports:

- A Notice of Intent to Develop (NID) for the Maralla East WEF must be submitted to HWC; The respective heritage authorities will interrogate the application and will indicate whether they require a Heritage Impact Assessment, and which types of heritage specialist studies they require;
- It is assumed that a Palaeontological Impact Assessment will be required. This must be conducted by a palaeontological specialist and integrated into the HIA;
- It is assumed, based on our knowledge of the surrounding areas, that the most significant heritage resources within the and Maralla East WEF is likely to be Colonial type farming settlements (farm houses, sheds, kraals, farm cemeteries, etc) as well as archaeological sites;
- It is anticipated that these resources will be located along the valley floors and kloofs and not on the tops of the hills and mountains;

- Our assumptions about the spread and density of heritage resources is based on our knowledge of the landscape as well as assessments undertaken by other specialists on adjoining properties;
- The potential visual impacts of the proposed facility on the heritage resources of the area (i.e. the results of the VIA), must be integrated with the heritage study. It is assumed that a buffer will be required along the R354, as the road between Matjiesfontein and Sutherland is considered a scenic tourism route;
- Cumulative impacts are likely to occur if the proposed wind energy projects currently under consideration in the general area all proceed to the construction phase.

Indications are that in terms of archaeological heritage and built environment the proposed activity is viable, impacts are expected to be limited and controllable. In terms of the information available at this time, no fatal flaws are anticipated.

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