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## **HERITAGE IMPACT RE-ASSESSMENT REPORT AND MANAGEMENT GUIDELINES**

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Walk-through survey and re-evaluation Report Indicating the Possible Impact on Heritage Resources by the Infrastructure Proposed for the Wind Farm near Cookhouse in the Eastern Cape.

Prepared By:



## **Credit Sheet**

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**Disclaimer;** Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. G&A Heritage and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.

## Statement of Independence

As the duly appointed representative of G&A Heritage, I Stephan Gaigher, hereby confirm my independence as a specialist and declare that neither I nor G&A Heritage have any interests, be it business or otherwise, in any proposed activity, application or appeal in respect of which the Environmental Consultant was appointed as Environmental Assessment Practitioner, other than fair remuneration for work performed on this project.

Signed off by S. Gaigher

A handwritten signature in black ink, appearing to read 'S. Gaigher', with a stylized flourish at the end.

**Site name and location:** Proposed development of a Wind Energy Facility on the farms Arolsen 69, Farm 148, Farm 148/1; Rooi Draai 146, Bavians Krans 151, Bavians Krantz 151/2, Klip Fontein 150/2 Roberts Kraal 281, Zure Kop 74/1 (Highlands), Zure Kop 74/2 (Fairfield), Van Wyks Kraal 73/2 Van Wyks Kraal 73/3 situated between the towns of Cookhouse and Bedford in the Eastern Cape Province of South Africa.

**Municipal Area:** Cacadu District Municipality.

**Developer:** African Clean Energy Development (Pty) Ltd

**Consultant:** G&A Heritage, PO Box 522, Louis Trichardt, 0920, South Africa. 38A Vorster Str. Louis Trichardt, 0920

**Date of Report:** 27 July 2012

## **Management Summary**

G&A Heritage was contracted to perform a walk-through survey of final infrastructure footprints and a re-evaluation on the findings of the original Heritage Impact Assessment (HIA) performed in 2009 for the proposed wind energy facility near Cookhouse in the Eastern Cape Province. This study looked at the final placement of wind turbines and associated infrastructure and how they would relate to and impact on the heritage sites identified during the original study. The SAHRA ARC Review Comments were used as the general Terms of Reference for this study.

## **Findings**

It was found that the final placement of the turbines and related infrastructure would not impact on most of the sites identified during the original study. Some new heritage components were however identified that could potentially be impacted, although this is highly unlikely. None of the large burial sites identified during the original study were found to be close enough to the final placements to be affected by them.

## **Recommendations**

The SAHRA ARC Review Comments (ref 9/2/034/0002) recommended management of the burial sites identified during the original study. These sites were found to be between 5 – 10km away from the final placement of the turbine sites and as such would not be affected by them. No management actions were therefore found necessary for these sites. One new possible burial site was identified, however this should not be affected by the development.

One burial site and one built environment site was newly identified during investigations and while negatively impact is unlikely it is recommended that these be managed in such a way that the contractors are aware of their locations and do not disturb the sites.

No sites are within the footprint of any development and thus no movement of roads, turbines and/or ancillary infrastructure is necessary.

## **Fatal Flaws**

No fatal flaws were identified.

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## **List of Abbreviations**

Bp	Before Present
EIA	Early Iron Age
ESA	Early Stone Age
GPS	Geographic Positioning System
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MYA	Million Years Ago
MSA	Middle Stone Age
NHRA	National Heritage Resources Act no 22 of 1999
SAHRA	South African Heritage Resource Agency
S&EIR	Scoping & Environmental Impact Reporting
WGS 84	World Geodetic System for 1984
WHS	World Heritage Site

# **Walk-through survey and Heritage Impact re-evaluation Report for the Proposed Wind Energy Facility near Cookhouse in the Eastern Cape Province**

## **Introduction**

### **Legislation and methodology**

G&A Heritage was appointed by Savannah Environmental to undertake a walk-through survey and heritage impact re-assessment for the proposed Western Stage of the Cookhouse Wind Energy Facility. This facility falls on Arolsen 69, Zure Kop 74/1 (Highlands), Zure Kop 74/2 (Fairfield), situated between the towns of Cookhouse and Bedford in the Eastern Cape Province of South Africa.

Section 27(1) of the South African Heritage Resources Act (25 of 1999) requires that a heritage study is undertaken for:

- (a) construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) construction of a bridge or similar structure exceeding 50 m in length; and
- (c) any development, or other activity which will change the character of an area of land, or water –
  - (1) exceeding 10 000 m<sup>2</sup> in extent;
  - (2) involving three or more existing erven or subdivisions thereof; or
  - (3) involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
  - (d) the costs of which will exceed a sum set in terms of regulations; or
  - (e) any other category of development provided for in regulations.

A heritage impact assessment is not limited to archaeological artefacts, historical buildings and graves. It is far more encompassing and includes intangible and invisible resources such as places, oral traditions and rituals. A heritage resource is defined as any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes the following:

- (a) places, buildings, structures and equipment;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds, including –
  - (1) ancestral graves,
  - (2) royal graves and graves of traditional leaders,
  - (3) graves of victims of conflict (iv) graves of important individuals,
  - (4) historical graves and cemeteries older than 60 years, and
  - (5) other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);
- (h) movable objects, including ;
  - (1) objects recovered from the soil or waters of South Africa including archaeological and paleontological objects and material, meteorites and rare geological specimens;
  - (2) ethnographic art and objects;
  - (3) military objects;
  - (4) objects of decorative art;
  - (5) objects of fine art;
  - (6) objects of scientific or technological interest;
  - (7) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and
  - (8) any other prescribed categories, but excluding any object made by a living person;



- (i) battlefields;
- (j) traditional building techniques.

A **'place'** is defined as:

- (a) A site, area or region;
- (b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- (c) a group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures);
- and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

**'Structures'** means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

**'Archaeological'** means:

- (a) material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- (b) rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
- (c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
- (d) features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

**'Paleontological'** means 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.

**'Grave'** means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

The removal of graves is subject to the following procedures as outlined by the SAHRA:

- Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the SAHRA;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

The above requirements were fulfilled by a Heritage Impact Assessment performed in 2009 by *ACO Associates cc* and submitted under the name;

**Heritage Impact Assessment of a proposed Wind Energy Facility to be situated on portions of farms Arolsen 69, Farm 148, Farm 148/1; Rooidraai 146, Baviaans Krans 151, Baviaans Krantz 151/2, Klip Fonteyn 150/2, Roberts Kraal 281, Zure Kop 74/1, Zure Kop 74/2, Van Wyks Kraal 73/2 and Van Wyks Kraal 73/3 in the Cookhouse District, Eastern Cape.**

The study was undertaken and reported by; **Lita Webley, David Halkett and Tim Hart.**

The study identified the following sites of heritage potential within the study area;

- *Middle Stone Age artefacts (low significance)*
- *Colonial farmstead ruins and associated features (low - medium significance)*
- *Graveyards (high significance)*
- *Historic tree lined avenues and windbreaks (low - medium significance)*

The following recommendations were given in this report relating to these sites;

*The provisional turbine layout does not indicate any impacts to identified sites. However infrastructure (roads) has not been finalised and it is possible that these may result in some impact. □*

*Polygons have been determined around some of the more complex sites, and no disturbance should occur within those areas. Some of these sites must be physically demarcated prior to construction and remain so during the operational phase. □ Once turbine and infrastructure layouts are finalised, the plans must be inspected by the heritage practitioner to ensure that no impacts will occur.*

The following review comments were received from the SAHRA Archaeological Review Committee (ARC) regarding this report;

- *The graves should be restored where these are dilapidated, and protected. For this purpose, if not already done, a proper fence, including entrance gates, must be built around them before construction operations start. The fence must be placed 2m away from the perimeter of the graves. No development is allowed within 15m from the fence line surrounding the graves....*
- *A conservation management plan (CMP) must be presented to SAHRA for the conservation of both existing graves and single graves.*
- *All other archaeological resources (e.g. historic boundary stones and ruins of old buildings over 100 years) cannot be impacted by the construction of the turbines and ancillary infrastructure. Their presence should be clearly demarcated during construction in order to avoid damage.*

The purpose of the present study is to evaluate which of the identified sites will be impacted on by the final placement of the turbine sites as provided to G&A Heritage.

The limitations and assumptions associated with this scoping study are as follows;

- It is assumed that the placement of the turbines and associated infrastructure is correct as provided.
- The purpose of the study was not to identify new sites, but to evaluate the impact on known sites.

## **Background Information**

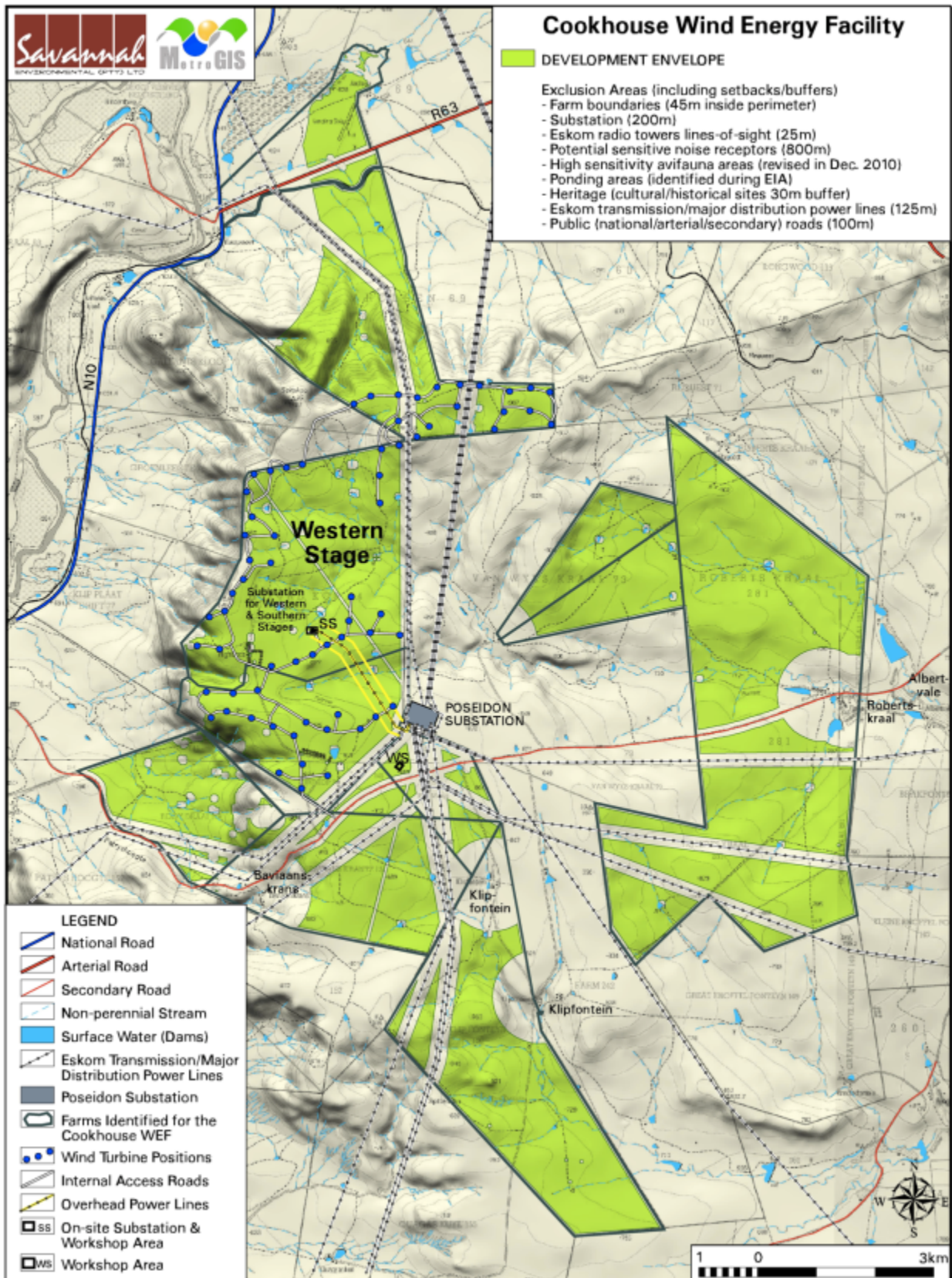
### **Original Project Description**

The Cookhouse Wind Farm project is being developed by African Clean Energy Developments (ACED). The environmental authorisation for the Cookhouse Wind Farm covers 200 turbines, which are proposed to be positioned over an area of approximately 91km<sup>2</sup>. The proponents (ACED), after extensive nationwide feasibility studies have identified this site as being suitable as it is situated on a local elevated plateau in an area where the local topography has created a wind funneling effect.

Infrastructure associated with the *Cookhouse Western Phase* wind energy facility (one of three phases of the development) will include:

The total permanent footprint associated with the facility Phase 1 will include:

- » 66 wind turbine units
- » Concrete foundations (approximately 20m x 20m x 2m) to support the turbine towers
- » Underground electrical distribution cabling between the turbines
- » One substation (up to 150 x 250 m<sup>2</sup>) on the site
- » Power line linking to the existing Eskom transmission grid at Poseidon Substation
- » An access road to the site from the main road within the area
- » Internal access roads to each wind turbine to link the turbines on site
- » A workshop and temporary lay down area for storage and maintenance
- » In addition, adjacent to each turbine site there will be a temporary lay down area of about 50 x 50 m to enable turbine installation.



**Figure 1:** The provisional locations of the substations and alternatives, workshop areas and turbines. Map supplied by Savannah Environmental (Pty) Ltd.



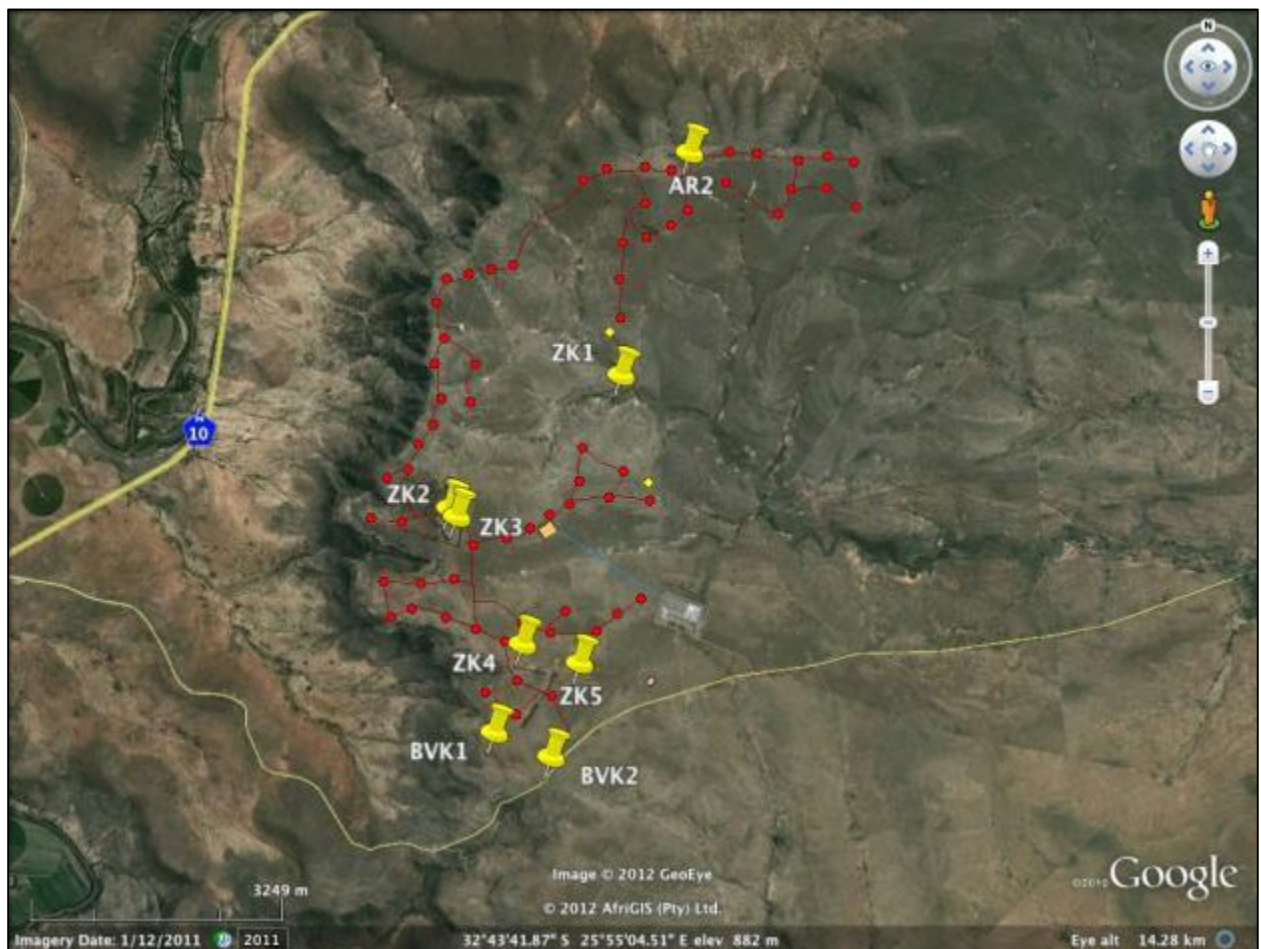
### Changed Parameters

The Cookhouse Wind Farm project is being developed by African Clean Energy Developments (ACED) in three phases. The environmental authorisation for the Cookhouse Wind Farm covers 200 turbines. The first phase of the Cookhouse Wind Farm project is the Cookhouse Western Stage comprising 66 wind turbines and it was selected as a Preferred Bidder in the First Round of the RE IPP Procurement Programme. The second and third phases of the Cookhouse project comprise the Bedford Wind Farm which includes approximately 68 wind turbines, and the Cookhouse South Wind Farm which includes approximately 62 wind turbines.

The final layout for the proposed development has, therefore, changed from the original layout assessed in the EIA. This walkthrough considered the Western Stage only, which includes;

- 66 turbines in the final layout.
- The final substation position (as indicated on the original layout).

The final layout and position of turbines and associated infrastructure is illustrated as follows;



**Figure 2.** Final layout of infrastructure and turbine placements as well as the position of heritage sites identified during the original HIA

### Original Site Recommendations

The following were the original recommendations provided by ACO, based on the original layout and study area;

*This report has identified the most significant heritage issues, which are potentially threatened by the facility. They include:*

- graveyards (high significance),*
- the ruins of old buildings (medium significance),*
- historic boundary stones (medium significance),*
- historic avenues of trees (medium significance),*
- The cultural landscape including visual intrusion of the turbines on the historical and □ natural landscape.*

*Artefact scatters □ While a number of scatters of stone tools were identified, they are of low significance and no mitigation has been proposed. With regard to the ruins and graveyards, it has been recommended that no construction of any kind should be permitted within the polygons provided in Appendix 1.*

#### *Ruins and graveyards*

*ACO recommended that these be physically identified and cordoned during the construction and operation phase of the project using appropriate materials.*

The graveyards at RK2, KFN 1, KFN 13 & KFN 14 were found (based on the new layout) to be removed from the closest point of development by the following margins:

KFN 14 – 4.89km

KFN 13 – 5.52km

KFN 1 – 4.12km

RK2 – 8.15km

Due to the distance of the development from any of the plotted sites it is anticipated that these will have no effect on these sites.

Site AR1, which falls close to the connecting road of the northern turbines was deemed to be of no importance by the original HIA, and will not be discussed further.

The only gravesites that could possibly be affected are ZK1 & BVK2.

Further sites that warrant attention are the tree lanes identified at ZK4 and ZK3.

## **Management Recommendations**

### **Grave Sites**

#### **ZK1**

This is a site with a dilapidated workers single room structure of recent nature. The previous investigation identified an irregular stone cairn as a possible grave. It is highly unlikely that this site is an actual grave and interviews with a local inhabitant indicated that they were also not aware of anyone buried at this site.

The burial site is nearly a kilometer away from the nearest development component and therefore no further recommendations are given for this site. The site will in no way be affected by the development.

As a precautionary measure the site was marked with barrier tape.



**Figure 3.** Possible grave at ZK1

#### **BVK 002**

This is another isolated stone cairn. There is a possibility that this might be a dilapidated grave indicator, however it could also be the result of field-clearing. The site is close to the access road to the terrain, however it should not be affected by the construction. The site was cordoned with barrier tape to indicate its position.



**Figure 4.** Stone cairn at BVK002

### **Tree Lanes (Ecofact Features)**

#### **Site ZK004**

This is a historic Eucalyptus lane associated with the farming culture of this specific type of landscape (marked with barrier tape). One interconnecting power line will run through the lane from Northwest to Southeast.





**Figure 4.** Historic tree lane

The cultural value of the tree lane lies in the combined effect of several trees. Due to the fact that the proposed power line will be sub-surface it is anticipated that it can traverse the line of the lane with minimal damage to the overall effect. It is recommended that a heritage practitioner monitor this traversing during the construction phase. The total impact on this (regional and cumulative) will be negligible.

### **ZK 002**

This is another historic lane in the shape of a triangle. The new development will run close to the site, but in no instance will it directly affect the site. The lane was marked with barrier tape.



**Figure 5.** Lane at ZK 002



## New Sites

During the course of the fieldwork two previously unidentified sites were recorded. The following recommendations apply to them.

### NS001

This site lies right across the road from the stone cairn identified at site BVK 002. It comprises a stone walled irrigation dam, possibly of historic nature. The coursed building style is consistent with the vernacular building style in this area and is a good example of the same. It is recommended that this feature be preserved. To this end it was demarcated with barrier tape. The only development in this area will be the access road, no development is planned that should traverse or damage this site in any way. Therefore impact should be minimal and easily mitigated.



**Figure 6.** Rock built farm dam

### NS002

This site is located 80m west of the identified site ZK005 and contains a single grave. The grave has a wrought iron barricade around. Although the barricade is quite small indicating that it might be an infant burial, the stone dressing is much larger. There is no written indicator on the grave. The grave is not close to the development and is in a good state of preservation therefore no further action is recommended. The site was demarcated with barrier tape to ensure that it is not damaged during construction.



**Figure 6.** Grave at NS002

### **Conclusion**

The original HIA report for the proposed wind energy facility was evaluated against the final placement of the turbines and associated infrastructure. The results were then measured against the SAHRA ARC Review Comments provided and the following was found;

Due to the phasing of the original 200 turbine layout, the development footprint for the 66 turbine Western Phase wind farm has been drastically reduced from the original size investigated for the HIA study. As a result nearly all the sites that the SAHRA Review Comments were based on now fall outside of the affected area.

There are two possible gravesites and one definite grave site in the present study area. None of these are in need of rehabilitation or are close enough to the development to warrant any further action. All the sites were marked with barrier tape to ensure that they will not be damaged during the construction phase.

Two historic tree lanes and one stone dam were also identified. The development will only impact on the one lane and this impact will be very small. No management action is required.

It is important to note that the SAHRA ARC Review Comments were based on the original study area where several larger graveyards were identified. These are now 5 – 10km away from the development and will not be affected at all. As such, most of the review comments are defunct when considering this Phase of the development.

Based on the report it is clear that no heritage permits will be required. Any management actions outlined here must be included in the EMP update if they are not in place already.

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