

described as relatively tolerant of disturbed environments, provided migration corridors of suitable habitat are maintained to link pristine habitats.



Plate 4-2: An Angulate tortoise (*Chersina angulata*) found in the Middleton area.

Table 4-3: Threatened and endemic reptiles likely to occur in the Middleton region. <b>Latin name</b>	<b>Common Name</b>	<b>Conservation Status</b>
<i>Acontias meleagris orientalis</i>	Golden legless skink	Eastern Cape endemic
<i>Afroedura karroica</i>	Inland rock gecko	Eastern Cape Endemic
<i>Afroedura tembulica</i>	Queenstown rock gecko	Eastern Cape Endemic
<i>Bitis arietans</i>	Puff Adder	
<i>Bradypodion ventrali</i>	Southern Dwarf Chameleon	Eastern Cape Endemic
<i>Causus rhombeatus</i>	Common Night Adder	N/A
<i>Croaphopeltis hotamboeia</i>	Herald or Red-lipped herald	N/A
<i>Dasypeltis scabra</i>	Common or Rhombic Egg Eater	LC
<i>Geochelone pardalis</i>	<b>Leopard tortoise</b>	N/A
<i>Goggia essexi</i>	<b>Essex's Dwarf Leaf-toed Gecko</b>	Eastern Cape Endemic (LC)
<i>Homoroselaps lacteus</i>	Spotted Harlequin Snake	N/A
<i>Lamprophis fuliginosus</i>	Brown House Snake	N/A
<i>Lamprophis guttatus</i>	Spotted House Snake	N/A
<i>Leptotyphlops conjunctus</i>	Cape and Eastern Thread Snakes	N/A
<i>Lycophidion capense</i>	Cape Wolf Snake	N/A
<i>Mabuya capensis</i>	Cape Skink	N/A
<i>Nucras taeniolata</i>	Striped Scrub lizard	N/A
<i>Pedioplanis burchelli</i>	Burchell's Sand Lizard	N/A
<i>Pelomedusa subrufa</i>	<b>Marsh or Helmeted terrapin</b>	N/A

<i>Prosymma sundevallii</i>	Sundevalls Shovel-snout	N/A
<i>Psammophis crucifer</i>	Cross-marked or Montane Grass Snake	N/A
<i>Psammophis notostictus</i>	Karoo Sand Snake or Whip Snake	N/A
<i>Psammophylaxrhombeatus</i>	Spotted or Rhombic Skaapsteker	N/A
<i>Pseudaspis cana</i>	Mole Snake	N/A
<i>Rhinotyphlops lalandei</i>	Delalandes Beaked Blind Snake	N/A
<i>Tropidosaura Montana</i> subsp. <i>rangeri</i>	Common mountain lizard	Eastern Cape Endemic
<i>Varanus albigularis</i>	Rock or White-throated Monitor	N/A

Source: CSIR (2004); Branch (1998)

Amphibians are well represented in sub-Saharan Africa, from which approximately 600 species have been recorded. A relatively rich amphibian fauna occurs in the Eastern Cape, where a total of 32 species and sub-species occur. This represents almost a third of the species known from South Africa. Knowledge of amphibian species diversity in the Middleton region is limited and based on collections housed in national and provincial museums. It is estimated that as many as 17 species may occur. Table 4-4 lists species of frogs that are endemic or of conservation concern, and may occur in the Middleton region.

**Table 4-4: Threatened and endemic frogs likely to occur in the Middleton area**

Latin name	Common name	Conservation Status
<i>Anhydrophryne rattrayi</i>	Hogsback frog	Endangered (Eastern Cape endemic)
<i>Bufo amatolicus</i>	Amatola toad	Endangered (Eastern Cape endemic)
<i>Bufo pardalis</i>	Leopard toad	Eastern Cape endemic

Source: CSIR (2004)

#### 4.1.2. Birds

Nine bird species are endemic to South Africa, but there are no Eastern Cape endemics. However, there are 62 threatened species within the Eastern Cape Province (Barnes, 2000). Most of these species occur in grasslands or are associated with wetlands, indicating a need to conserve what is left of these ecosystems (Barnes, 2000). A number of inland species are found from the Karoo region e.g. Acacia pied barbet, common Ostrich, Cape Penduline Tit, Southern Black Korhaan and Blue Cranes. The greatest abundance of birds is found in Valley Thickets and in the Aloe flowering season with Sunbirds being extremely conspicuous.

Mountain ridges have the species of the fynbos biome e.g. Cape Sugarbirds. In the forests and on grassland slopes, Knysna Turaco, Narina Trogons, Dark-backed Weavers, Canaries and African Goshawks are some of the birds found. Many birds occur in the bushveld, savanna, bush clumps and thicket areas. Although Middleton does not occur near any important bird areas (Figure 4-4) there are a few threatened bird species likely to occur in the Middleton and surrounding region (Table 4-5).

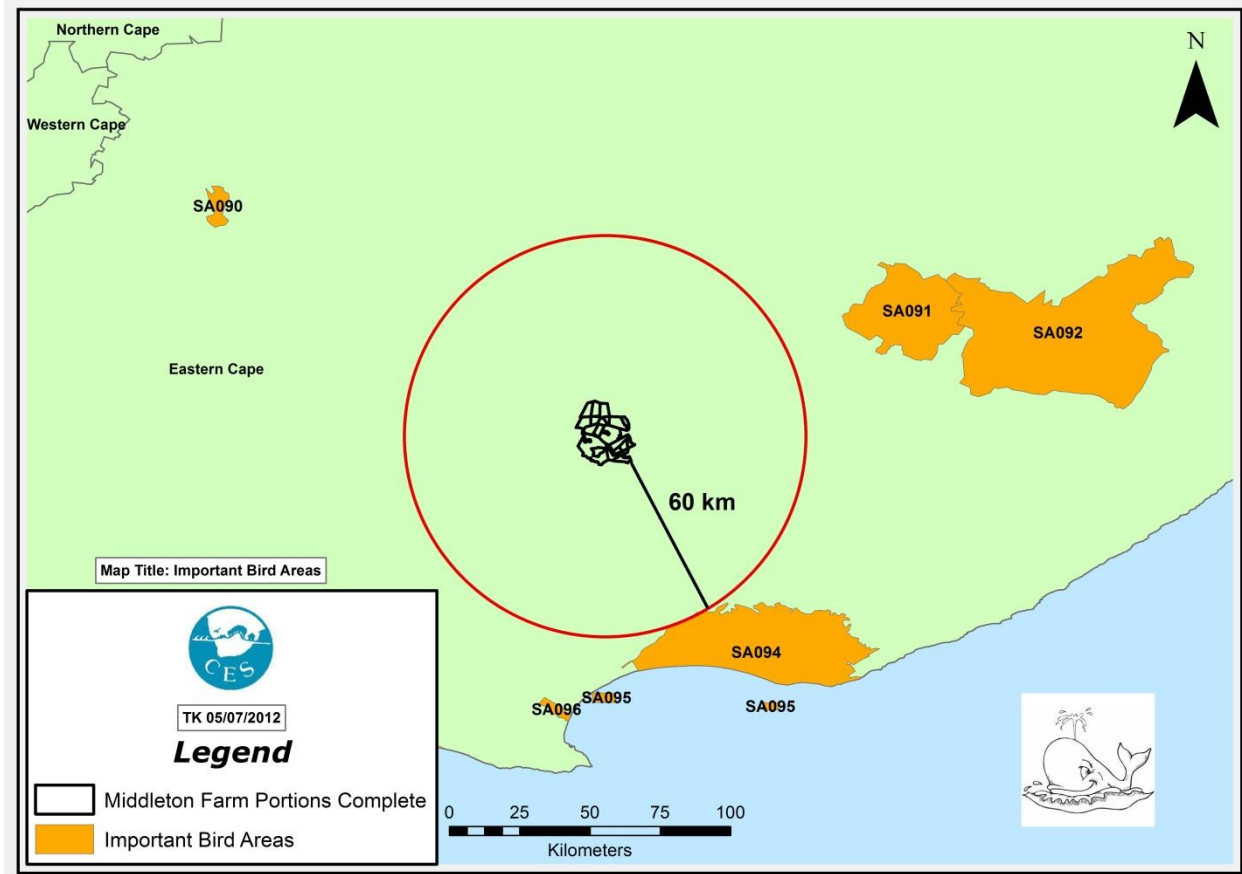


Figure 4-4: Important Bird Areas (IBAs) surrounding the proposed project site

Table 4-5: Threatened bird species likely to be encountered in Middleton and surrounds.

Common name	Latin name	Conservation status
Bearded vulture	<i>Gypaetus barbatus</i>	Endangered
Black Harrier	<i>Circus Maurus</i>	Near-threatened
Black Stork	<i>Ciconia nigra</i>	Near-threatened
Blackwinged Plover	<i>Vanellus melanopterus</i>	Near-threatened
Blue Crane	<i>Anthropoides paraisea</i>	Vulnerable
Blue Korhaan	<i>Eupodotis caerulescens</i>	Near-threatened
Broadtailed Warbler	<i>Schoenicola brevirostris</i>	Near-threatened
Bush Blackcap	<i>Lioptilus nigricapillus</i>	Near-threatened
Cape Parrot	<i>Poicephalus robustus</i>	Endangered
Cape Vulture	<i>Gyps coprotheres</i>	Vulnerable
Corncrake	<i>Crex crex</i>	Vulnerable
Crowned Eagle	<i>Stephanoaetus coronatus</i>	Near-threatened
Delegorgue’s Pigeon	<i>Columba delegorguei</i>	Vulnerable
African Grass Owl	<i>Tyto capensis</i>	Vulnerable
Greater Flamingo	<i>Phoenicopterus ruber</i>	Near-threatened
Ground Hornbill	<i>Bucorvus leadbeateri</i>	Vulnerable
Halfcollared Kingfisher	<i>Alcedo semitorquata</i>	Near-threatened
Kori Bustard	<i>Ardeotis kori</i>	Vulnerable
Lanner Falcon	<i>Falco biarmicus</i>	Near-threatened
Lesser Flamingo	<i>Phoenicopterus minor</i>	Near-threatened
Lesser Kestrel	<i>Falco naumanni</i>	Vulnerable
Ludwig’s Bustard	<i>Neotis ludwigii</i>	Vulnerable
African Marsh Harrier	<i>Circus ranivorus</i>	Vulnerable

Common name	Latin name	Conservation status
Martial Eagle	<i>Polemaetus bellicosus</i>	Vulnerable
Pallid Harrier	<i>Circus macrourus</i>	Near-threatened
Peregrine Falcon	<i>Falco peregrinus</i>	Near-threatened
Secretary Bird	<i>Sagittarius serpentarius</i>	Near-threatened
Stanley's Bustard	<i>Neotis denhami</i>	Vulnerable
Stripes Flufftail	<i>Sarothrura affinis</i>	Vulnerable
Wattled Crane	<i>Burgeranus carunculatus</i>	Endangered
Whitebacked Night Heron	<i>Gorsachias leuconotus</i>	Vulnerable
Whitebellied korhaan	<i>Eupodotis cafra</i>	Vulnerable

#### 4.1.3. Mammals

Large game makes up less than 15% of the mammal species in South Africa and a much smaller percentage in numbers and biomass. In developed and farming areas, such as Middleton, this percentage is greatly reduced, with the vast majority of mammals present being small or medium-sized. Except where reintroduced into protected areas, lions, black wildebeest, red hartebeest, buffalo, black rhinoceros, elephant, hippopotamus and reedbuck are absent. Cheetah and hunting dog are no longer found in the area and leopard and ratel are rare (Skead, 1974b). Distribution maps suggest that the antelope that are abundant are bushbuck, duiker, steenbok and kudu. Blesbok, bontebok and gemsbok have been reintroduced on some farms.

Of the cat species, the lynx (caracal) and black-footed cat are found. Jackal are also found as is the aardwolf, but it is not abundant.

Vervet monkeys are common and baboons are found in appropriate sites in kloofs and valleys. Rock dassies, genet and mongoose species are also common and aardvark occur in the region but are not abundant (Plate 4-3). Multiple rodent species are found in the area and include rats and mice, the cane rat, springhare and porcupine. A number of species of bat also occur. Table 4-6 lists large and medium sized mammals on the IUCN Red Data List that occur in the Eastern Cape Province and may or may not be present on site.



Plate 4-3: Typical excavations made by the Aardvark (*Orycteropus afer*), which, though rarely seen, occurs in the area.

Table 4-6: Threatened large to medium-sized mammals in the Eastern Cape Province (Source: Smithers, 1986)

Common name	Latin name	Conservation Status
Wild dog	<i>Lycaon pictus</i>	Endangered
Brown Hyaena	<i>Hyaena brunnea</i>	Rare
Aardwolf	<i>Proteles cristatus</i>	Rare
Black-footed cat	<i>Felis nigripes</i>	Rare
Serval	<i>Felis serval</i>	Rare
Leopard	<i>Panthera pardus</i>	Rare
Blue Duiker	<i>Philantomba monticola</i>	Rare
Honey Badger	<i>Mellivora capensis</i>	Vulnerable
African Wild Cat	<i>Felis lybica</i>	Vulnerable
Aardvark	<i>Orycteropus afer</i>	Vulnerable
Cape Mountain Zebra	<i>Equus zebra</i>	Vulnerable
Black Rhinoceros	<i>Diceros bicornis</i>	Vulnerable
Oribi	<i>Ourebia ourebi</i>	Vulnerable
Pangolin	<i>Manis temminckii</i>	Vulnerable
Small-spotted cat	<i>Felis nigripes nigripes</i>	Rare

**4.1.4. Bats**

Of specific importance for wind farm developments are the presence of bats in the area. A confounding number of bat fatalities have been found at the bases of wind turbines throughout the world. Echolocating bats should be able to detect moving objects better than stationary ones, which begs the question, why are bats killed by wind turbines (Baerwald *et al.*). Table 4-7 lists the species of bats likely to occur in Middleton and surrounds, and thus may be affected by the proposed development. A specialist study will be conducted during the EIA phase to determine the impact of the development on the bat populations.

**Table 4-7: Bat species that occur in the Middleton area which are likely to be affected by the wind turbines.**

Order: Chiroptera		
Common Name	Species Name	SSC
Straw-coloured fruit bat	<i>Eidolon helvum</i>	Near Threatened
Egyptian fruit bat	<i>Rousettus aegypticus</i>	
Geoffrey's horseshoe bat	<i>Rhinolophus clivosus</i>	Least Concern
Cape horseshoe bat	<i>Rhinolophus capensis</i>	Least Concern
Temminck's hairy bat	<i>Myotis tricolor</i>	Least Concern
Cape serotine bat	<i>Eptesicus capensis</i>	Least Concern
Common slit-faced bat	<i>Nycteris thebaica</i>	Least Concern
Giant yellow house bat	<i>Scotophilus nigrita</i>	Least Concern
Schreiber's long-fingered bat	<i>Miniopterus schreibersi</i>	Near Threatened
Tomb bat	<i>Taphozous mauritanus</i>	Least Concern
Angola free-tailed bat	<i>Tadarida condylura</i>	Least Concern
Wahlberg's epaulated bat	<i>Epomophorus wahlbergi</i>	Least concern
Banana bat	<i>Pipistrellus nanus</i>	Least Concern
Egyptian free-tailed bat	<i>Tadarida aegyptiaca</i>	Least Concern
Lesser woolly bat	<i>Kerivoula lanosa</i>	Least Concern

**4.1.6 Conservation and planning tools**

Several conservation planning tools are available for the area. These tools allow for the determination of any sensitive and important areas from a vegetation and faunal point of view at the scoping stage of a development. They allow for the fine-tuning of plans and turbine layouts to assist in reducing potential environmental impacts at the planning stage of the development. The tools used are outlined in Table 4-8 below.

**Table 4-8: Conservation and planning tools considered for the proposed project**

<b>Tool</b>	<b>Motivation</b>	<b>Relevancy</b>	<b>Notes</b>
<b>Important Bird Area (IBA)</b>	Important Bird Areas are globally recognized areas essential for the protection of bird species. In order to be classified as an IBA, an area must contain Globally threatened species, restricted range species, biome restricted species or congregations of species.	Irrelevant. The Middleton Project site is not surrounded by any IBAs (Figure 4-4).	An avifauna impact assessment in the EIA phase will determine the impacts of the proposed facility on Birds.
<b>Wetlands</b>	Wetlands are very important aspects of the ecosystem as they are process areas. Not only do they form habitat for both flora and fauna, they also perform vital ecosystem functions. It is for this reason that wetlands are always rated with a high sensitivity and should be conserved.	Relevant. There are important wetlands within the project area (Figure 4-5).	Wetlands will be discussed in more detail in the EIA phase.
<b>Protected Areas Expansion Strategy (PAES)</b>	The objective of the PAES is to form an overarching strategic framework for a protected area network that 'conserves a comprehensive, representative and adequate sample of biodiversity and maintains key ecological processes across the landscape and seascape.' The areas earmarked by this study should be protected.	Low relevancy, the project area does not occur close to any areas earmarked for expansion (Figure 4-6).	This will be discussed in brief in the Ecological Impact Assessment to be carried out in the EIA phase.
<b>Protected Areas</b>	Protected areas are areas that are already conserved. Areas in close proximity to the proposed development may be affected by the development and thus must be taken into account.	Low relevancy, no protected areas occur within approximately 20kms of the site (Figure 4-6).	This will be discussed further in the Avifaunal and Bat Impact Assessments that will be conducted during the EIA phase.
<b>STEP</b>	The Subtropical Thicket Ecosystem Planning Project maps vegetation and assigns each of these a conservation	Relevant. A large portion of the study area has been described as	The area of the proposed wind energy facility falls into one STEP

	<p>criterion. It is very important in determining sensitivity.</p>	<p>Vulnerable by STEP (Figure 4-2).</p>	<p>category: Vulnerable. This is very important and will be discussed in further detail in the Ecological Impact Assessment.</p>
<p><b>Critical Biodiversity Areas (CBA)</b></p>	<p>Critical Biodiversity Areas (CBA's), as defined by SANBI, are regions that are critical for the conservation of biodiversity and the maintenance of ecosystem functioning. These areas should remain in a natural state as far as possible.</p>	<p>Relevant, the proposed project site occurs in areas classified as Critical Biodiversity Areas (Figure 4-7).</p>	<p>CBA's will be discussed in more detail in the Ecological Impact Assessment in the EIA phase of the development.</p>

The implications of the project on these conservation planning objectives, and the implications these hold for the project, will be subject to further discussion and assessment during the EIA phase. The intention of the Scoping phase will be to secure as much relevant comment and direction from associated government agencies and line function departments to place the project within the appropriate contexts and prescriptions of these tools.

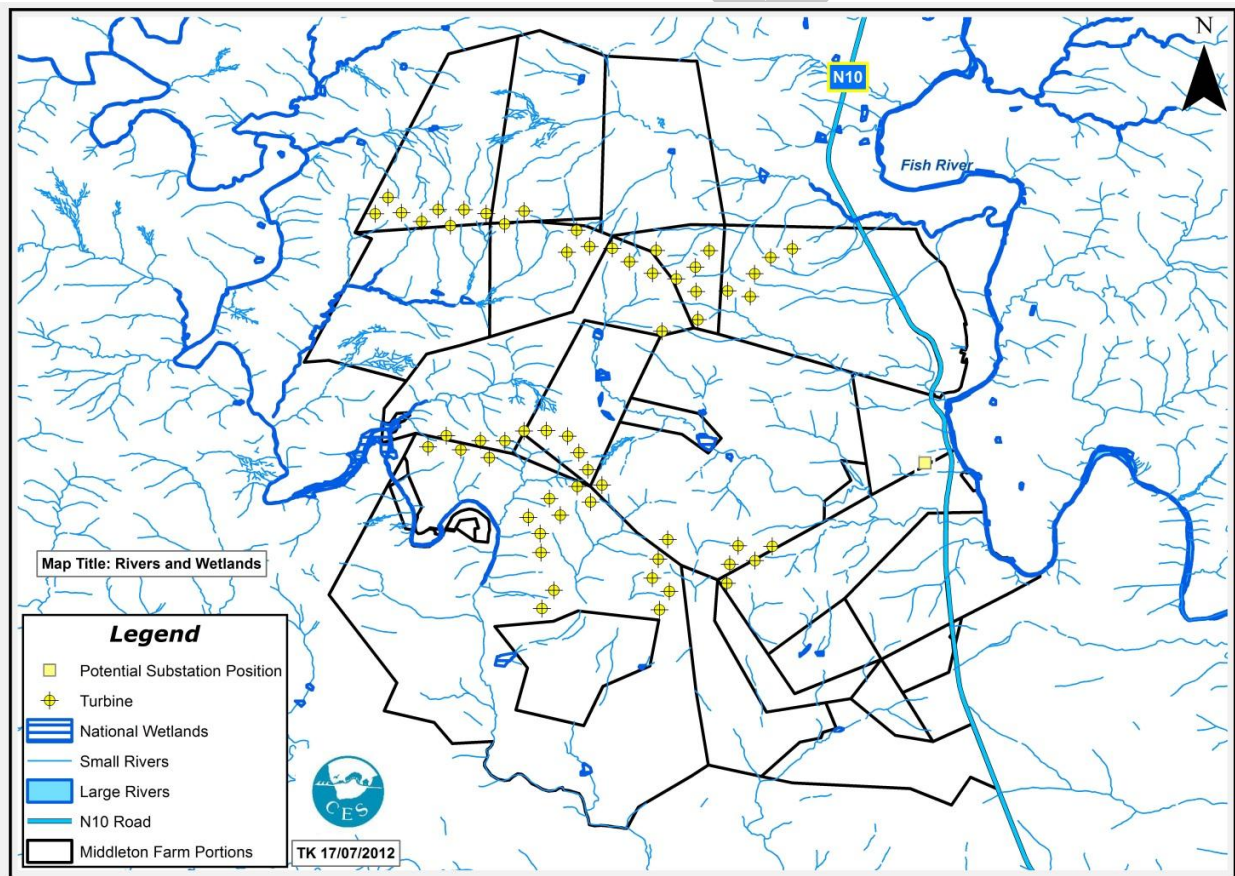


Figure 4-5: Important Wetlands surrounding the proposed project site



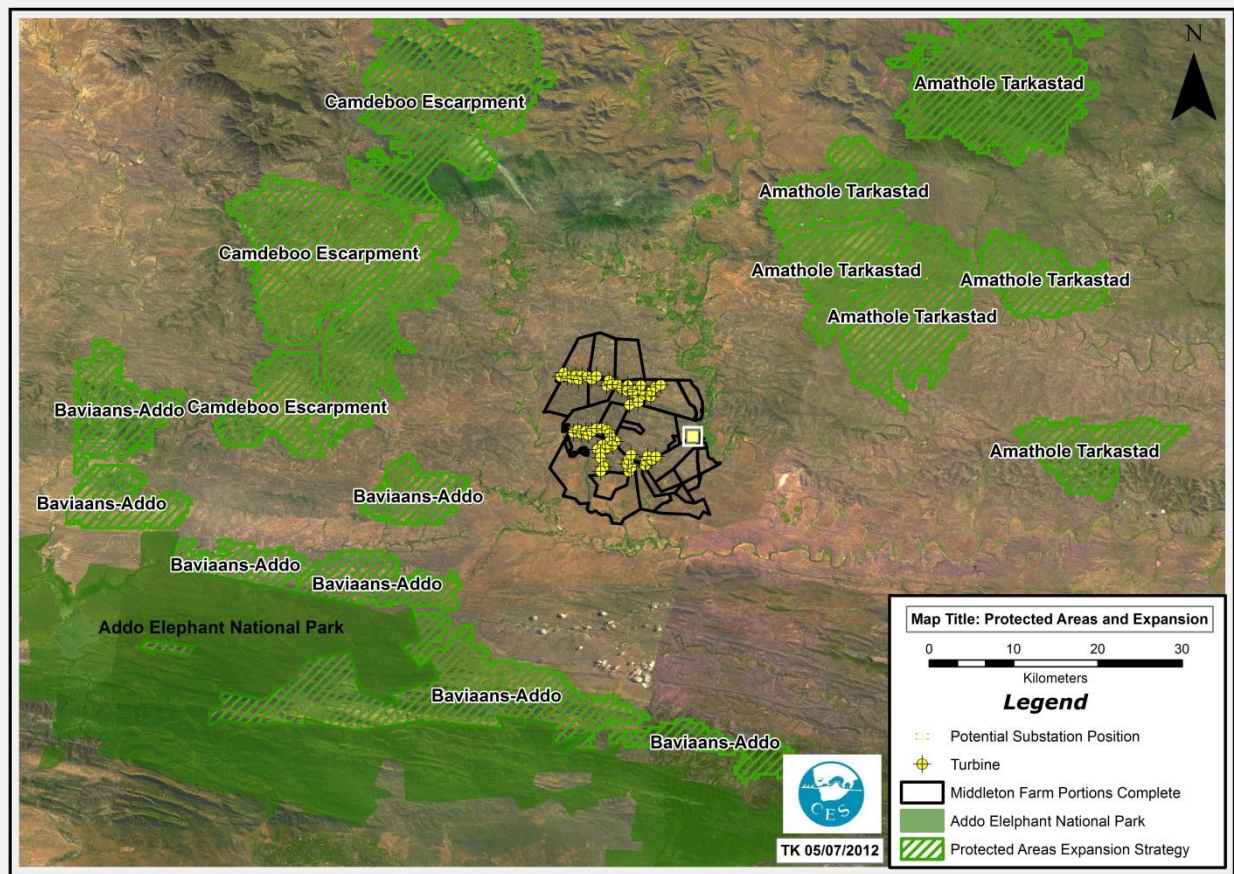


Figure 4-6: Protected Areas and Formal, Informal and National Protected Area Expansion Project Focus Areas surrounding the proposed project site

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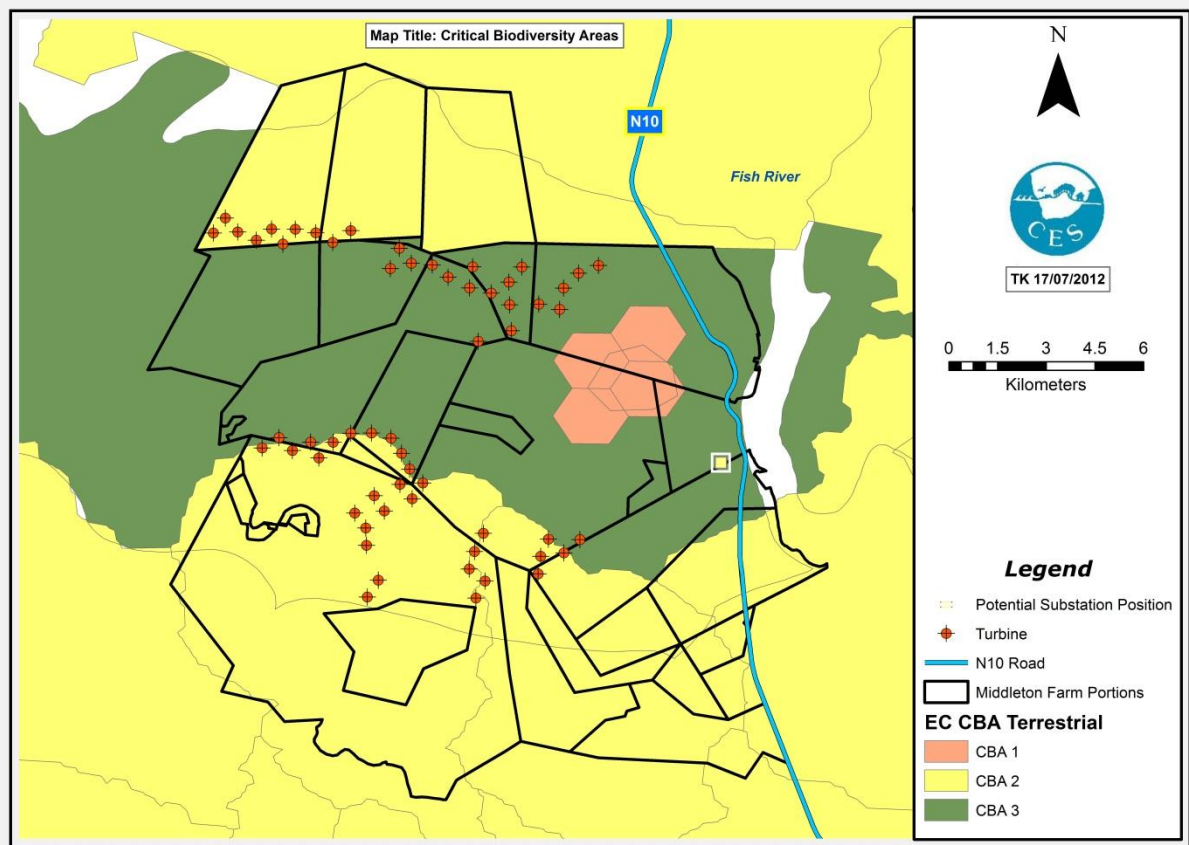


Figure 4-7: Critical Biodiversity Areas (CBA) for the proposed project site

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## 4.2. Socio-Economic Profile

### 4.2.1. Introduction

In South Africa, economic and rural development are debilitated by a spike in electricity demand after the 2008 electricity crises (CDE, 2008), coupled with a shortage in electricity. In addressing this challenge, the government is viscosly embarking upon a renewable energy strategy, which has been outlined in its White Paper on Renewable Energy (Republic of South Africa, 2003). Much has been done in the country to leverage electricity demand, such as through the government's Integrated Electrification Plan (2007), where solar photovoltaic systems were developed for households in remote, rural areas. It is therefore to be expected that the development of wind farms in the Eastern Cape will not only leverage cleaner electricity demand in the country, but also holds the potential to uplift communities and provide a new array of employment opportunities for this province.

The proposed Middleton Wind Energy Project is to be developed in the Eastern Cape Province of South Africa, a province covering approximately 169 580 km<sup>2</sup> or 13.9% of South Africa's total land area. According to StatsSA (2007), the population of the province has increased from 6,27 million in 2001 to 6,52 in 2007 and accounts for the third largest provincial population make-up. More specifically, the project will be developed in the Cacadu District Municipality, constituting of six district municipalities (BCRM IDP, 2012-2017). One of these municipalities is the Blue Crane Route Municipality (BCRM) where the project will be developed. This section provides a brief socio-economic profile of the BCRM<sup>1</sup>.

### 4.2.2. The social profile of the Blue Crane Route Municipality

The BCRM consists of six wards, namely Cookhouse, Aeroville and Somerset East Town, Old Location and 11th Avenue, Pearston and Mnandi. According to the 2007 South African Community Census, the population of the BCRM is estimated at 25,573, which represents about 0.4% of the whole province and 7.0% of the Cacadu District. The municipality itself estimates the population between 2009 and 2010 at 39,318.

The population of this district appears to be predominantly young with more than 55% under 30 years of age (StatsSA, 2001). However, the BCRM's IDP notes that, although the population is predominantly youthful, the population does appear to be aging since 6.7% of the population is above the working-age population of 65. The racial make-up of the population is largely Black, with a male-to-female ratio of 1:05. Furthermore, 26% of the population is estimated to reside in rural villages, homesteads and settlements, with the remaining 74% living in the three major urban nodes of the BCRM namely Cookhouse, Somerset East and Pearston. In terms of education, approximately 12.8% of the municipality's population have no schooling, 24.8% have primary education, while only 39.6% of the population have a secondary education. About 10% have a matric, while a low 4.1% have a higher education with a matric. This educational data is illustrated in Table 4-9.

<sup>1</sup> The most reliable socio-economic statistical data currently available from StatsSA is the 2001 South African Census. In order to account for major data variations since 2001, a community survey has also been conducted in 2007, the data of which was published in 2010. However, the data from the latter survey is largely sampled-based, and deemed unreliable by many academics in the social sciences. Subsequently, a census has been undertaken in 2011, of which the data will only be available in 2013.

**Table 4-9: Education in the BCRM**

EDUCATION	PERCENTAGE (STATSSA 2001)
No schooling	12.8%
Some primary schooling	24.8%
Some secondary schooling	39.6%
Grade 12	10.0%
Tertiary education (with matric)	4.1%
Tertiary education (without matric)	0.3%
Not applicable	8.4%
<b>TOTAL</b>	<b>100%</b>

Source: StatsaSA, 2001

The majority of the residents of the municipality do not receive any form of income, while those who do, receive mostly between R1-R800 per month (StatsSA, 2001). An insignificant 11.5% of those who do receive an income, receive above R3,200 per month. These findings are illustrated in Table 4-10 below.

**Table 4-10: Income levels of BCRM residence**

INCOME GROUP	PERCENTAGE
R1 - R400	20.3%
R401 – R800	46.3%
R801 - R1 600	13.4%
R1 601 - R3 200	8.5%
R3 201 - R6 400	6.5%
R6 401 - R12 800	3.3%
R12 801 - R25 600	0.9%
R25 601 - R51 200	0.3%
R51 201 - R102 400	0.2%
R102401-R204800	0.2%
R204 801 or more	0.0%
<b>TOTAL</b>	<b>100.0%</b>

Source: StatsaSA, 2001

Based on StatsSA 2001 estimates, nearly 40% of the BCRM's population is economically active<sup>2</sup> with an unemployment rate of approximately 35.4%. In South Africa, the strict definition for the economically active population is all the people from the working-age group who are either employed or unemployed. Unemployment rates are calculated as a percentage of the economically active population. In addition, the youth dependency levels of communities within the municipality are fairly low at 0.45:1, which reveals that, for every one economically active person, only 0.45 non-economically active youth have to be provided for. Lastly, the IDP of the BCRM states that an estimated 26% of individuals within the municipality are dependent on some form of social assistance, which is also in line with the district average of 27%.

The high unemployment rate of the BCRM is also mirrored by the unemployment rate of the province. According to the Eastern Cape Development Corporation (ECDC) (2012), high unemployment continues to remain a challenge in the province, although improvements are evident. For example, it is estimated that about 152,000 formal jobs were created in the province between 2004 and 2006, which reduced the unemployment rate of the province to about 22% according to the South African Labour Force Survey of 2007.

<sup>2</sup> Herewith defined within the parameters of the working-age population of between 15 and 64.

### 4.2.3. Economy of the Eastern Cape and Blue Crane Route Municipality

The economy of the Eastern Cape has grown faster than the national economy over the past few years. According to the ECDC (2012), the province has become increasingly export-orientated, with great potential for growth of its existing industry and the establishment of new ones. Coupled with the province's geographical location, sea and air ports and infrastructure, the total export of the province has grown by about 20% in real terms during the years 2000 to 2001. It is estimated by the ECDC that the provincial Gross Domestic Product (GDP) increased by 4.7% in 2006 (from 4.8% in 2005), which compares to the national GDP growth of 5% in 2006 (5.1% in 2005). The most prominent employment sectors of the province include agriculture (such as crops, fisheries and forestry), agro-processing, manufacturing and tourism.

Closer to the BCRM, based upon data which is captured in the BCRM's Local Economic Development (LED) Strategy for 2008, economic growth in 2008 was roughly estimated at 2.3% per annum (BCRM IDP, 2012). Table 4-11 highlights the identified employment sectors of those residents who are employed.

**Table 4-11: Employment sectors of the BCRM**

EMPLOYMENT SECTOR	PERCENTAGE
Agricultural-related work	37.0%
Community services	30.3%
Wholesale and retail	13.2%
Construction	6.5%
Manufacturing	5.5%
Business services	4.5%
Transport and communication	2.1%
Electricity, gas and water	0.6%
Mining and quarrying	0.1%
TOTAL	100.0%

As can be seen by the table above, the most predominant employment sectors are those related to agricultural work (37.0%), community services (30.3%), wholesale and retail (13.2%) and construction (6.5%). Evidently, the agricultural sector dominates these sectors, comprising about 25.58% of employment in the municipality (BCRM IDP, 2012). Although agricultural work has been declining, this sector remains the dominant sector of employment. According to the ECDC, the manufacturing sector grew by 21% in real terms from 1998 to 2001, compared to 9% for South Africa as a whole. The province's manufacturing sector is well integrated into the world economy, and is also highly reliant on electricity and will therefore be affected by electricity availability. Although the employment provided by the manufacturing and construction sectors remains low for the municipality, these, together with the agricultural sector, are seen by the municipality as the most productive sectors. Consequently, the BCRM prioritises these sectors to generate employment opportunities and promoting LED.

### 4.2.4. Development needs of the Blue Crane Route Municipality

A SWOT analysis has been undertaken by the BCRM during 2007 and 2012 to analyse its situational status and administration. Based upon this analysis, several factors were identified in the municipality such as aging infrastructure and the need for community services and LED.

Although wind farms do not generally provide a plethora of employment opportunities, the farm will create a niche market that may broaden the economic base and spur development in the area. As the construction and manufacturing sectors are already highly influential in this district, a wind farm can create more opportunities for specialised manufacturing and construction. According to Terra Wind Energy, Middleton (Pty) Ltd, it is estimated that new employment opportunities will be created in the construction phase of the activity as local workers would be used wherever possible. No employment opportunities will be created during the development stage. Permanent employment opportunities might also be created during the operational phase of the activity, as the facility will require maintenance.

In addition, the IDP of the BCRM identifies a need for electricity infrastructure along with an electricity upgrading and maintenance program. The Middleton Wind Energy Project is therefore an appropriate means to achieve this goal. Moreover, the proposed project is also in line with the Cacadu District's Spatial Development Framework (SDF), as it will provide an additional source of electricity in order to supplement the current irregular and limited supply of electricity in the area. Furthermore, the SDF also notes that the existing road network is not sufficiently maintained, which directly affects the potential growth rate of the tourism and agricultural sectors. The proposed wind farm is therefore further aligned with the SDF as it will improve and maintain road infrastructure that is required to access the site, namely the N10 and N2.

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## 5. PUBLIC PARTICIPATION PROCESS

According to regulation 28 (1) of the EIA regulations (2010), *A scoping report must include –*

- (h) details of the public participation process conducted in terms of regulation 27(a) including –*
  - (i) the steps that were taken to notify potentially interested and affected parties of the application;*
  - (ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the application have been displayed, placed or given;*
  - (iii) a list of all persons or organisations that were identified and registered in terms of regulation 55 as interested and affected parties in relation to the application; and*
  - (iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues.*

In line with the above-mentioned legislative requirement, this Chapter of the report provides the details of the Public Participation Process followed during the Scoping Phase of the EIA for the proposed Middleton wind energy project.

The Scoping phase of the EIA provides for the involvement of Interested and Affected Parties (I&APs), in forums that allow them to voice their opinions and concerns, at an early stage of the proposed project. Such engagement is critical in the EIA, as it contributes to a better understanding of the proposed project among I&APs, and raises important issues that need to be assessed in the EIA process.

There are four key steps within the overall public participation process. These include -

- Notifying I&APs of the EIA;
- Holding public meetings;
- Making provision for I&APs to review and comment on all reports before they are finalised and submitted to the competent authority; and
- Making a record of responses to comments and concerns available to I&APs.

Prior to the preparation of this Scoping Report the above steps have comprised the activities described in sections 5.1 – 5.3 below.

### 5.1. NOTIFYING INTERESTED AND AFFECTED PARTIES OF THE EIA

#### 5.1.1. *Background information document*

A five-page Background Information Document (BID) that provided basic information on the proposed project, the EIA process, a list of property portions and contact details for registration as an I&AP was prepared in both English and Afrikaans. The BID was sent to all persons responding to the inception advertising and organisations identified as potential I&APs identified in previous EIA processes conducted in the area by CES. The BID is reproduced in Appendix C-1.

#### 5.1.2. *Written notices*

Written notices were sent to the owners and/or occupants of land immediately surrounding and within 100m of the proposed project area. Copies of these letters, together with the details of the landowners in question to whom the letters were sent, are included in Appendix C-2. Letters were also sent to:

- Department of Agriculture
- Department of Energy
- Department of Environmental Affairs
- Various Ward Councillors
- South African Civil Aviation Authority
- South African Heritage Resources Agency

- South African National Roads Agency Limited
- Wildlife and Environment Society of Southern Africa (WESSA)
- Blue Crane Tourism Office
- Department of Water Affairs

Copies of these letters are included in Appendix C-3.

### **5.1.3. Advertisements**

An advertisement was placed in two Provincial Newspapers (Die Burger on 14 June 2012 and The Herald on 14 June 2012) and in five local newspaper's (Somerset Budget, Cradock Courant, Middelburg Courant, Winterberg News and Fort Beaufort Advocate) on 14 June 2012 in order to:

- Advise readers of the intention to undertake an EIA for the proposed project, and;
- Invite them to register as I&APs.

A period of four weeks (14 June – 12 July 2012) was allowed for registration of I&APs after the advertisement appeared. A copy of the advertisement is included in Appendix C-4.

### **5.1.4. Site notices**

The NEMA regulations require the erection of “*a notice board at a place conspicuous to the public at the boundary or on the fence of the site where the activity to which the application relates is or is to be undertaken; and any alternative site mentioned in the application*”.

Therefore in accordance with this requirement, five 800 X 600mm single sided corex notice board was placed on the boundary of the proposed project sites near the proposed locations. The location, text of the site notice and photographs of the fixed notices are provided in Appendix C-5.

## **5.2. PUBLIC REVIEW PERIOD OF DRAFT ESR AND MEETINGS**

During the 40 day public review period for this Draft Environmental Scoping Report (ESR) a public meeting will be held. The availability of the report for review will be advertised in The Herald, Die Burger and the Somerset Budget, and all registered I&APs will be notified in writing of the review period and of the public meeting to be held.

## **5.3. REGISTRATION OF INTERESTED AND AFFECTED PARTIES AND COMMENTS DATABASE**

A register of I&APs to date has been compiled, containing all available contact details of those who responded to the advertisement(s) and/or registered as I&APs (Appendix C-6).

A record of all comments received, together with a note of the responses given, was also maintained (Appendix C-8).

The issues and concerns raised during the Scoping Phase up until the preparation of this Draft Scoping Report are discussed in Chapter 6 that follows. To date there are no issues that have been raised by any the I&AP's.



## 6. ISSUES IDENTIFIED DURING SCOPING

According to regulation 28 (1) of the EIA regulations (2010), *A scoping report must include –*

*1(g) a description of the environmental issues and potential impacts, including cumulative impacts that have been identified*

### 6.1. Possible Environmental Issues & Impacts

Tables 6-1 to 6-3 list the environmental issues and resulting impacts that have been identified in the following phases of project development: planning and design, construction, operation, and decommissioning. The identification of these impacts has resulted in the recommendation of various specialist assessments. These impacts have been identified for all the various options proposed, and hence once clarification on these options is gained, some of these impacts may become redundant. Relevant aspects will be assessed during the EIA phase.

It must be noted that there is another wind energy facility proposed for the Cookhouse area that is situated approximately 20km North of the Middleton wind farm. The potential cumulative impacts of siting two proposed projects in close location to each other will also be subject to EIA phase review and reporting.

**Table 6-1: Issues and impacts potentially relevant to the planning and design phase of the proposed project**

PLANNING AND DESIGN PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
Environmental Legal and Policy compliance	Direct	Potentially positive/negative	<ul style="list-style-type: none"> <li>The planning and design of the wind farm should take into account, and comply with all relevant environmental legislation and policy, e.g. Local and District Spatial Development Frameworks</li> </ul>
Landscape & visual	Direct/Indirect/ Cumulative	Potentially Negative	<ul style="list-style-type: none"> <li>Design of the wind turbine layout could result in an alteration of the landscape character and sense of place.</li> </ul>
Existing infrastructure	Direct/Indirect	Potentially negative/positive	<ul style="list-style-type: none"> <li>The wind farm should be designed to make maximum use of existing infrastructure such as roads, electrical connections and substations, etc. in order to minimize environmental disturbances created by construction.</li> </ul>
Electromagnetic Interference (EMI)	Direct/Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>Wind farms can cause television, radio and microwave interference by blocking and / or causing part of the signal to be delayed. Accurate siting of wind turbines in the planning and design phase should reduce these effects.</li> </ul>
Shadow flicker	Direct/Cumulative	Potentially Negative	<ul style="list-style-type: none"> <li>The layout of wind turbines should be designed in order to minimize the effects of shadow flicker and reflectivity on surrounding landowners.</li> </ul>

**Table 6-2: Issues and impacts potentially relevant to the construction phase of the proposed project**

<b>CONSTRUCTION PHASE</b>			
<b>Issue</b>	<b>Impact</b>	<b>Nature</b>	<b>Description of Issue/ Impact</b>
Landscape & visual	Direct/Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>Visual disturbance of the landscape during construction will be caused by the construction activity, and the presence and use of very large machinery.</li> </ul>
Ecology	Direct/Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>Irreversible habitat destruction associated with the construction camp, are likely to be the largest sources of risk to faunal and floral communities in the broader region.</li> <li>The construction of the wind farm could cause disturbance to local wildlife, especially breeding birds.</li> <li>During construction, aquatic fauna could be adversely affected if significant amounts of silt or any hydrocarbons or chemicals are allowed to enter water bodies. These impacts could also occur outside of the site boundary, downstream.</li> </ul>
Cultural heritage & archaeology	Direct/Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>The construction of a wind farm could have a direct physical impact on any undiscovered archaeological remains or other features of cultural heritage on the site.</li> <li>There could also be certain physical impacts along the wider route used to transport turbines to the site, for example heavy or wide loads could damage historic bridges and culverts, and road improvements such as corner widening could damage any features adjacent to the road.</li> </ul>
Noise	Direct	Potentially Negative	<ul style="list-style-type: none"> <li>Adverse noise effects could potentially occur during the construction of the wind farm, for example from the movement of heavy goods vehicles.</li> </ul>
Socio-economic	Direct/Indirect	Potentially positive/negative	<ul style="list-style-type: none"> <li>During construction, the wind farm could have a beneficial local economic effect, supporting companies manufacturing turbine parts and providing work for construction and haulage contractors, for example.</li> <li>Jobs may also be created for local communities. It could therefore have a beneficial social and economic impact in the area.</li> </ul>
Traffic &	Direct/Indirect	Potentially	<ul style="list-style-type: none"> <li>It is possible that there could be a</li> </ul>

CONSTRUCTION PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
transport		Negative	<p>very high number of heavy vehicle movements spread over the construction period. The average number of heavy vehicle movements per day might not be significant, but there could be peaks that might have a detrimental effect on sensitive receptors, especially if any of these are near the local access route.</p> <ul style="list-style-type: none"> <li>Transporting turbine parts and specialist construction equipment to the site by long and/or slow moving vehicles could cause traffic congestion, especially if temporary road closures are required.</li> <li>There could also be an adverse effect on the integrity of existing road infrastructure such as bridges.</li> </ul>
Wetlands, Surface and Groundwater	Direct/ Indirect	Potentially negative	<ul style="list-style-type: none"> <li>The construction of the wind farm has the potential to affect water quality adversely within the streams on and near to the site and further downstream.</li> <li>Sediment is especially likely to be created during the excavation of turbine foundations, the laying of access tracks, digging of cable runs and soil stripping and stockpiling to create temporary areas of hard-standing, such as the construction compound.</li> <li>Pollution could arise from the spillage or leaking of diesel, lubricant and cement.</li> </ul>
Geology and topography	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>The construction of the wind turbines will require excavations in order to lay adequate foundations. Approximately 500 m<sup>3</sup> of substrate will have to be excavated for each turbine.</li> <li>Furthermore, minor excavations will be required for the construction of access roads as well as the laying of electrical cabling.</li> </ul>
Health and safety	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>Health and safety aspects will mostly pertain to activities defined under the Occupational Health and Safety Act (Act No. 85 of 1993).</li> </ul>
Removal of top soil and soil erosion	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>The construction of the individual wind turbines will require the clearing of vegetation which will result in exposed soil surfaces. This will increase the</li> </ul>

<b>CONSTRUCTION PHASE</b>			
<b>Issue</b>	<b>Impact</b>	<b>Nature</b>	<b>Description of Issue/ Impact</b>
			chances of soil erosion.
<b>Impacts on air quality</b>	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>Impacts on air quality during the construction phase will primarily be as a result of increased dust levels associated with the required excavation, vegetation clearing, grading and other construction activities.</li> </ul>
<b>Pollution and Solid Waste</b>	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>It is anticipated that the proposed development will produce solid waste in the form of building rubble such as excavated soil and vegetation and excess concrete, bricks, etc. and general waste such as litter during the construction phase.</li> </ul>
<b>Impacts on soils</b>	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>Impacts on soil may primarily be due to compaction, erosion and contamination.</li> </ul>

**Table 6-3: Issues and impacts potentially relevant to the operational phase of the proposed project**

<b>OPERATIONAL PHASE</b>			
<b>Issue</b>	<b>Impact</b>	<b>Nature</b>	<b>Description of Issue/ Impact</b>
Landscape & visual		Potentially negative	<ul style="list-style-type: none"> <li>Alteration of the landscape character and sense of place because of the wind turbine array.</li> </ul>
Ecology	Direct/Indirect/ Cumulative	Potentially negative	<ul style="list-style-type: none"> <li>The wind farm could result in a permanent physical loss of important habitat and species on the land required for the turbines and ancillary elements.</li> <li>There could additionally be habitat severance and fragmentation, particularly from linear elements such as the access tracks.</li> <li>The maintenance of the wind farm could cause disturbance to local wildlife, especially breeding birds.</li> </ul>
Avifauna and Bats	Direct/Indirect/ Cumulative	Potentially negative	<ul style="list-style-type: none"> <li>When the wind farm is operational, certain types of bird species, for example raptors, could avoid the area due to the rotating blades, and could consequently be affected by a loss of feeding habitat.</li> <li>Particular types of bird species, for example, raptors, divers and geese, could be susceptible to collision with the turbines and any overhead wires,</li> </ul>

OPERATIONAL PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
			<p>particularly if the scheme straddles regular flight lines between roosting and feeding grounds or where the site is used by birds for hunting.</p> <ul style="list-style-type: none"> <li>As discussed in Chapter 4 the potential impacts on bats may be significant if the study area does in fact support significant communities of these mammals.</li> </ul>
Cultural heritage & archaeology	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>The presence of a wind farm could indirectly affect the visual appeal of a cultural heritage feature within 35km of the site (maximum visually discernible distance).</li> </ul>
Noise	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>The wind turbines could potentially give rise to adverse noise effects, particularly at lower wind speeds or in sheltered locations where the noise of the blades is not masked by the noise of the wind.</li> </ul>
Electromagnetic Interference (EMI)	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>Wind farms can cause television, radio and microwave interference by blocking and / or causing part of the signal to be delayed.</li> </ul>
Shadow flicker & reflectivity	Direct/Indirect/ Cumulative	Potentially negative	<ul style="list-style-type: none"> <li>Rotating blades may catch and reflect sunlight at short intervals, resulting in flickering that is potentially irritating and may result in health-related impacts.</li> </ul>
Socio-economics	Direct/Indirect/ Cumulative	Potentially negative or positive	<ul style="list-style-type: none"> <li>The wind farm could potentially discourage people from visiting the area and therefore have an adverse effect on tourism.</li> <li>The wind farm could also have a more localized effect on particular tourism facilities nearby and within sight of the wind farm.</li> <li>Jobs may be created for local communities. It could therefore have a beneficial social and economic impact in the area.</li> </ul>
Traffic & transport	Direct/Indirect/	Potentially negative or positive	<ul style="list-style-type: none"> <li>Any highway modifications which are provided to facilitate the scheme could, have long lasting traffic benefits.</li> </ul>
Air quality & climate change	Direct/Indirect/ Cumulative	Potentially positive	<ul style="list-style-type: none"> <li>The electricity generated by the wind farm will displace some of that produced by fossil fuel based forms of electricity generation. The scheme, over its lifetime, will therefore avoid the production of a sizeable amount of CO<sub>2</sub>, SO<sub>2</sub> and NO<sub>2</sub> that would otherwise be emitted</li> </ul>

OPERATIONAL PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
			<p>to the atmosphere.</p> <ul style="list-style-type: none"> <li>The surface layer of vegetation across the remainder of the site might represent a 'carbon sink' where carbon is absorbed from the atmosphere.</li> <li>The turbines could also cause a loss of carbon store material, particularly if the farm disrupts natural drainage patterns and leads to the lowering of water levels and the drying out of natural vegetation.</li> </ul>
Wetlands, Surface and Groundwater	Direct/ Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>The placement of turbines on the banks of drainage lines may result in erosion of the banks and disturbance to the riparian vegetation.</li> <li>The use of blinding cement on roadways could affect the pH of surface water, fines could wash out of bare slopes before natural regeneration has established, and there could be leaks or spillages of lubricants from any permanent maintenance compound.</li> <li>Any deterioration of water quality as a result of the wind farm could potentially affect private water supply abstractions in the vicinity of the site.</li> <li>Areas of ecological value such as wetlands within and beyond the site could be sensitive to any alteration of localized drainage patterns which might arise from the introduction of turbine bases, access tracks and underground cable runs.</li> <li>The introduction of roads and impermeable areas of hard standing could increase rates of run-off and therefore the risk of localized flooding.</li> </ul>
<b>Loss of agricultural land</b>	Direct	Potentially negative	<ul style="list-style-type: none"> <li>The proposed development site is currently zoned as agriculture I. The proposed development will therefore result in a loss of agricultural potential.</li> </ul>
<b>Impacts on aviation</b>	Direct/Indirect	Potentially negative	<ul style="list-style-type: none"> <li>Wind turbine blade tips, at their highest point, may reach more than 150 m in height. If located near airports or known flight paths, a wind farm may impact aircraft safety directly through potential collision or alteration of flight paths.</li> </ul>

OPERATIONAL PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
			Furthermore, wind turbines could potentially cause electromagnetic interference with aviation radar.

**Table 6-4: Issues and impacts potentially relevant to the decommissioning phase of the proposed project**

DECOMMISSIONING PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
Landscape & visual	Direct/Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>Visual disturbance of the landscape during decommissioning will be caused by the presence and use of very large machinery.</li> </ul>
Ecology	Direct/Indirect	Potentially Negative/positive	<ul style="list-style-type: none"> <li>The decommissioning of the wind farm could cause disturbance to local wildlife, especially breeding birds.</li> <li>The removal of the wind turbines could prompt the return of certain species of wildlife that had avoided the area while the turbines were present. This could include larger bird species.</li> </ul>
Noise	Direct	Potentially Negative	<ul style="list-style-type: none"> <li>Adverse noise effects could potentially occur during the decommissioning of the wind farm, for example from the movement of large vehicles.</li> </ul>
Socio-economics	Direct/Indirect	Potentially Positive	<ul style="list-style-type: none"> <li>During decommissioning, the wind farm could have a beneficial local economic effect by providing jobs for local communities.</li> <li>Further employment opportunities may result from any new developments that could occur on the site once the wind turbines have been decommissioned.</li> </ul>
Traffic & transport	Direct/Indirect	Potentially Negative	<ul style="list-style-type: none"> <li>A high number of heavy vehicle movements will occur during the decommissioning phase. The average number of heavy vehicle movements per day might not be significant, but there could be peaks that might have a detrimental effect on sensitive receptors, especially if any of these are near the local access route.</li> <li>Transporting turbine parts and specialist construction equipment away from the site by long and/or slow moving vehicles could cause traffic congestion, especially if</li> </ul>

DECOMMISSIONING PHASE			
Issue	Impact	Nature	Description of Issue/ Impact
			temporary road closures are required. <ul style="list-style-type: none"> <li>• There could also be an adverse effect on the integrity of existing road infrastructure such as bridges.</li> </ul>
Land Use	Direct/Indirect/ Cumulative	Potentially positive	<ul style="list-style-type: none"> <li>• Land previously unavailable for certain types of land use will now be available for those uses, e.g. agriculture</li> </ul>
Soils	Direct/Indirect	Potentially positive	<ul style="list-style-type: none"> <li>• After the removal of all wind farm-related structures, the disturbed soils should be re vegetated to avoid unnecessary soil erosion.</li> </ul>

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## 6.2. Issues and Response Trail from Previous Study

A previous study was done for a proposed wind farm in the Middleton area in 2011. The previous study planned to host up to 200 turbines, each with a power output of between 2-3 MW (Mega Watts). The total potential output of the wind farm would have been 2055 MW. Since the area earmarked for the new proposed Middleton wind farm overlaps with a section of the old study site, we have included the issues and comments raised from the previous study in the comments and response trail below (Table 6-1).

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**Table 6-1: Issue and Response Trail as it stands on 14 January 2011 incorporating comments since the start of the scoping phase and following release of the draft scoping report.**

Raised By:	Event & Date	Issue, Concern, Comment	Response
<b>Visual Issues</b>			
Dr. Paul Martin	1.10.2010 via email	The cumulative visual impacts of all the wind farms proposed for an area need to be assessed, not just on an individual project basis.	Noted. A visual specialist study will be undertaken during the EIR phase of the project.
<b>Avifaunal Issues</b>			
Dr. Paul Martin	1.10.2010 via email	The large number of wind farms proposed for the Middleton - Cookhouse - Bedford area will result in the sterilization of large areas of land for the larger bird species such as Blue Cranes, Denham's Bustards and Secretarybirds as they are expected to avoid the areas where the turbines are located. This is expected to have a large negative impact on their populations via loss of useable habitat.	Avifaunal issues will be dealt with extensively during the EIR phase by an avifaunal specialist
<b>Impact on other Businesses</b>			
Mr Murray Gardiner (Giltedge Travel)	6.12.2010 via email	We support wind energy, however an assessment of the location of these wind farms is crucial. We believe that windfarms we send clients to will impact negatively on their experience and manmade turbines will take away from an authentic bush experience. We are one of Shamwaris largest tour operators and the Eastern Cape is our first choice for a game experience for our client, and we believe the location of this winfarm will have serious consequences on the game reserves we support and the people that work there.	These comments have been noted and incorporated in to the FSR. Please see Appendix B-15 for a copy of this letter.

<p>Ms Linda Pampallis (Thompsons Africa)</p>	<p>6.12.2010 via email</p>	<p>As one of the biggest suppliers of business to the Eastern Cape private game reserves the wind farms planned adjacent to private game reserves would impact negatively on the guest experience. Our clients would choose other options if they knew about the wind farms in advance as they are looking for a “wild Africa” experience. This will have a massive impact on the eco – tourism product in the Eastern Cape and will have an indirect negative spin off on the economy. The wind farms adjacent to reserves will have a negative socio – economic impact on the area as it will result in decreased occupancies, resulting in lodge closures and ultimately job losses.</p>	<p>These comments have been noted and incorporated in to the FSR. Please see Appendix B-15 for a copy of this letter.</p>
<p><b>General Issues</b></p>			
<p>Dr. Paul Martin</p>	<p>1.10.2010 via email</p>	<p>1. While renewable energy initiatives are welcomed, a lack of policy direction and guiding SEA with respect to the potential locations of wind farms in SA and the maximum number of turbines to be allowed in each area so as to maximise the positive impacts and minimize the negative impacts has resulted in a plethora of proposals for wind farms in the Eastern &amp; Western Cape Provinces. The projects cannot be assessed on a piecemeal basis.</p>	<p>These comments have been noted and incorporated in to the FSR. Please see Appendix B-15 for a copy of this letter. CES has motivated to the national Department of Environmental Affairs that an SEA be undertaken to better guide and manage wind farm EIA's in the country.</p>
		<p>2. The cumulative impacts of all proposed. The wind farms in an area need to be assessed.</p>	<p>CES will undertake to plot the other proposed wind farms in the area and will assess the cumulative impact with all the other impacts identified in the EIA phase of the project.</p>
		<p>3. The cumulative impacts need to be assessed and authorizations given to only those wind farms that are located in the most appropriate areas. Authorizations should not be allocated on a first come, first served basis.</p>	<p>This is out of the ambit of this EIA. The competent authority, Department of Environmental Affairs, needs to address this issue.</p>

<p>Mr Andre van der Spuy</p>	<p>6.12.2010 via email</p>	<p>1. I have made a considerable investment into my farm over the last 3 years since it has been in my ownership. This investment was based on the prevailing compatible land uses in the region at the time and which was consistent with the land use zonings. I deem the latter to have afforded me a reasonable level of expectation of present and future land uses on which my investment decision was based. The proposed Middleton wind farm is neither consistent with these land use zonings and usage and therefore contravenes the rights of protection afforded to me by the prevailing land use zonings. Consequently I will be opposing this (and other wind farm proposals) by all the legal means at my disposal and fully reserve all my rights in terms of this submission and any subsequent ones.</p>	<p>The rezoning application for the wind energy facility is outside the ambit of the EIA. This is a separate process and is authorized by the local municipality. As such, the current land use zoning scheme will not be reflective of the potential change in land use to accommodate wind farms as it is in all likelihood a new phenomenon that would not have been considered by local spatial and town planners.</p>
		<p>2. I will expect the relevant authorities, including the Blue Crane Route Municipality, Cacadu District Municipality, The Department of Economic Development and Environmental Affairs, The Department of Environmental Affairs, and the South African Heritage Resources Agency, amongst others, to fully implement their mandates and thereby protect my rights and investment (financial and other) in my property.</p>	<p>These authorities were identified as I&amp;APs at the start of the EIA process and have been involved since the project's inception. It is expected therefore that they will act within their respective mandates should they deem the proposed project to be infringing on Mr van der Spuy's rights.</p>
		<p>3. The motivation provided under section 1.3 is disingenuous and vague and flawed. In its very general discussion of the benefits of renewable energy no mention is made specifically of wind energy. In light of the generality of the DSR's motivation I take the liberty to also submit herewith a presentation by Mr. Nick Fox in which is outlined the case against wind farms. I support the claims of said document.</p>	<p>The presentation prepared by Mr Nick Fox is included under Appendix B-15.</p>

		<p>4. The social upliftment benefits made in the DSR constitute nothing more than empty promises which are deplorable to the extent that they may raise the expectations of the “community” that they refer to. The motivation is superficial and non-committal. No evidence of community engagement or even identification is provided. No evidence is provided to back up these general promises. The motivation does not even identify possible local community initiatives or facilities that would be supported</p>	<p>The social upliftment development projects have yet to be identified with the assistance of the Local Municipality and other interest groups. When this information is available, it will be disseminated to all I&amp;APs.</p>
		<p>5. It is noted that the obligatory BBBEE shareholder is already lined up. Who are the individual shareholders and where do they permanently reside? I expect that all of the BBBEE beneficiaries permanently reside outside of the Eastern Cape and that they are wealthy individuals.</p>	<p>GEO group is a parent company of Terra Power and is BEE compliant. More information can be obtained from the Applicant directly.</p>
		<p>6. A proper disclosure of all the beneficiaries and an associated projected income plan statement is called for as part of a comprehensive socio-economic study for this proposal. The community benefits should be specifically identified and quantified against the overall income generation. Without this it is impossible for the Competent Authority to make an informed decision around the true socio-economic benefits versus the environmental costs.</p>	<p>This information is available from the Applicant directly. As the proposed project is in the feasibility phase the figures called for are not yet available to the EAP. It is also unfair of the Applicant and/or EAP to engage with the proposed beneficiaries when it is uncertain if the proposed project will obtain environmental authorisation and/or power purchase agreement from Eskom. It would be unwise of the Applicant and/or EAP to engage with and make statements/promises at this early stage of the project development.</p>

		<p>7. Again, section 2 of the DSR is extremely vague and superficial to the extent that it is impossible for an I&amp;AP (and not doubt also Organ of State) to assess or consider the wind farm proposal. The Executive Summary states that the BID proposed 685 turbines for the project. This has been revised to 703 in the DSR it then claims. However under Section 1.1 it claims that only 200 turbines are proposed. Still later the DSR (section 2.2) states 685 turbines again. What is going on? The potential output is similarly claimed at different places to be 500MW, 1712MW and 1757.5MW! Still more bizarrely the project area is claimed to vary from 27 000 to 30 000ha. This is a difference of 30km<sup>2</sup>! In light of this are the various Figures presented in the DSR correct or which scenario do they reflect?</p>	<p>The EAP apologises for the confusion regarding the total amount of turbines and areal changes. The amount of turbines and MW projected may change again due to the findings of the specialist studies and geotechnical study which takes place after the environmental authorisation has been received. Turbine locations may also change slightly. The revised layouts will be submitted to DEA for approval if this occurs after authorisation is received. The drawings in the report are the most up-to-date drawings.</p>
		<p>8. The second bullet point under Section 1.5.2 is a flagrant contravention of Section 28(1)(b) of the EIA Regulations as no “proper understanding” is possible given that a “...project description taken from preliminary specifications and site layouts for the proposed wind energy facility ... have not been finalized and are likely to undergo a number of iterations and refinements before they can be regarded as definitive.” NEMA requires the project proposal and alternatives to be fully developed in order to enable I&amp;APs to make meaningful comment thereon. This is not possible with the Middleton proposal as it is presented in such a vague and non-committal manner. If permitted by the Competent authority to proceed in this way then I fully suspect the proposal to be “amended” by the Applicant/ EAP after the comment period and this to then be motivated by being termed a “mitigation” amendment.</p>	<p>See comment above.</p>

		<p>9. There is no description of plan of the internal access roads. How long (distance) will this road network be? Where will they be routed specifically? It is stated that they will be approximately 5m wide. Since each turbine will have such an access road the total physical footprint of the combined access road will be massive yet this is not even considered! How are we meant to comment on this aspect when we don't even know where they will be! "Possible" upgrading of existing roads is referred to. Well, is it necessary or not? Will it be the roads to my farm? Will any rivers/drainage lines be impacted?</p>	<p>There is a routing study currently underway. This study will detail the options available to the Applicant to best get the turbines from port to the project site. The study will detail what roads are to be used and which may require upgrade. The access roads between the turbines will be included in this study. As soon as the study is made available, the I&amp;APs will be informed of the findings. Similarly, the various scenarios presented in the routing study will be subject to EIA phase assessment.</p>
		<p>10. There is no description or plan of the underground cable routes. How long? Routing?</p>	<p>The electrical cables are required to connect the turbines to each other and to the electrical sub-station. Thus the cables will run between the turbines and then connect to the sub-station. The turbine locations have not yet been finalised as discussed above so once this is finalised, the cable routes will be developed.</p>
		<p>11. The description about the overhead power lines is equally vague and it is clear that this whole component has not even been designed yet! Is the substation(s???) that may(???) be connected to a new one or existing one? "Up to" two sub-stations are proposed. Again, how am I meant to comment on a mere possibility? What would they look like? How big? Location? Servicing infrastructure? Etc? etc? etc?</p>	<p>Two new substations will be established on site to convey the electrical to the national grid. The Applicant is in discussion with Eskom regarding these specifications. The overhead power lines are part of this discussion.</p>
		<p>12. It is just stated that buildings, in the plural, will occur as well as a store. Vague! Above comments and questions apply!</p>	<p>It is not yet determined where the buildings will be placed. The buildings will most likely be empty barns or storage buildings on the landowners farm.</p>
		<p>13. Figure 2-1: A more meaningful plan would include the other proposed wind farms within the depicted area. This would provide some basis for establishing the extent of overall proposed development of the countryside as well as the cumulative impact thereof. Please provide such</p>	<p>The shapefiles of the RES Spitskop Wind Energy facility have been requested from Savannah Environmental Consultants. Once these are received a detailed cumulative map will be produced in the EIR.</p>

	14. Figure 2-2: Some of the “black dots” fall outside the proposed project area! These are 90m high turbines being proposed for placement on another land owners farm.	As discussed above, the placement of the turbines is not finalised yet. The GPS coordinates of the turbines are currently being micro-sited according to Eskom, Department of Agriculture, Department of Energy and District Roads Engineer requirements by an external independent company.
	15. Plates 2-1 to 2-3 are irrelevant and misplaced. They constitute nothing more than promotional material in favour of the Applicant.	These plates were included to give uninformed people, who are not familiar with wind farms, an idea of what the Middleton wind energy facility will look like.
	16. Section 2.2.2.3 confirms that the activity of installing anemometers is part of the development proposal and which should be considered under the authorization being applied for. Currently the Middleton anemometer has been installed without authorization under NEMA as they are deemed by the Applicant to be a separate activity. This approach however constitutes incremental development which is expressly forbid under the NEMA EIA Regulations. I am aware that the applicant has installed a mast (maybe more) on one of the subject properties already and is advised herein that this constitutes an illegal activity. I have already brought this matter to the attention of the EAP and the South African Heritage Resources Agency (SAHRA) previously.	In terms of the 2010 EIA regulations wind monitoring masts do not require environmental authorisation. The applicant has indicated that these were erected post promulgation of the 2010 EIA regulations therefore not requiring authorisation in terms thereof. As a result of these masts not requiring environmental authorisation Mr van der Spuy's assertion that the applicant has commenced with the incremental development of the wind farm under application is devoid of logic, and cannot therefore be considered. The EAP does not concur with Mr van der Spuy's assertion that these require authorisation under the Heritage Act. Should SAHRA deem this to be the case it is their responsibility to act accordingly.
	17. No description of the “construction platforms” is provided. How big are they? Will they be used to accommodate materials and machinery? How will they be “partially rehabilitated”?	The construction platforms are required to erect the turbines. Once the turbines are erected vegetation will be re-established right up to the turbine shafts.



		<p>18. Section 2.2.2.4 (a) : I note that turbine foundation will be about 400m (based on a 20x20 squ.m. footing). Given that 703 (??) turbines will be installed this translates to a footprint area of 28ha for the foundations alone and which does not factor in the likelihood of the area of disturbance being significantly greater than the foundation area, nor the various other components of the overall development, such as rods, cables, powerlines etc.). The area of physical disturbance by the proposed development will be massive yet I see nowhere in the DSR any information on this. This needs to be addressed.</p>	<p>The construction platforms and turbine foundations will require an relatively small area (compared to the total land area identified for the wind farm) to be disturbed. These figures will be firmed up and reported on in the EIR phase.</p>
		<p>19. Under 2.2.2.4 “Electrical connection” reference is made to the “point of interconnection”. Where will this/ these be? The DSR mentions various parties (Eskom, local Municipality, independent system operator) but has not investigated the detail enough to provide us I&amp;APs with definitive information on which to comment.</p>	<p>See discussion above regarding discussions with Eskom.</p>
		<p>20. Section 2.2.3 is clearly pure guesswork based upon “existing publications”. Does the Applicant have no experience then in this field?</p>	<p>The timing of the project is an indication of the projected time it will take to erect the turbines. This projection is dependent on the arrival of turbines from port, road quality to transport the turbines to site and weather dependent.</p>
		<p>21. Section 2.2.4 is telling in the sense that it confirms that the amount of permanent jobs that would be created by this proposal should it be approved would be negligible (and I would suggest nett negative due to the loss of farm worker employment as the farms would become economically viable without labour – hence job loss).</p>	<p>See comment above regarding socio-economic plans.</p>

	<p>22. The Executive Summary states that the life span of turbines is 25 years which is in conflict with section 2.2.5 which states that the life span of turbines is 40 years! Again , the information is confusing! It is clear that the wind farm is a temporary development and the question is asked whether such a development justifies the permanent environmental impacts and societal disruptions that it will deliver. This aspect is not addressed in the DSR and from the Plan of Study of EIA (POSOE) it is clear that it is not intended to be assessed in the EIR either. This should be rectified. Still more uncertainty is evident from the statement that “If refurbishment is economical” then the life span could be extended. There is too much uncertainty attached to this development proposal to rationally permit its authorization</p>	<p>The total lifespan of the wind farm is 25 years. If the project is a success and it is financially, environmentally and socially viable the turbines can be refurbished and the life span of the wind farm extended to approximately 40 years.</p>
	<p>23. The study area is said to cover an area of 30 000 or 27 000ha. This is a significantly large tract of land. All of it, without exception as far as I can detect, is designated Conservation Biodiversity Area 2 (CBA2) status under the Eastern Cape Biodiversity Conservation Plan (ECBDPC). These areas acknowledge near-natural landscapes, ecological corridors and such like and are “irreplaceable”. The conservation-worthy status of the biophysical environment in which the proposal falls is beyond question. Furthermore, it also falls within the Albany “Hotspot”, an internationally recognized area of high biodiversity.</p>	<p>Yes, that is true. This is discussed in more detail in the Ecological Specialist Report in the EIA phase of the project. However, briefly: the land, although classified as near-natural landscape is transformed and heavily degraded due to the current land use (grazing) and there is little left to conserve. The relatively small footprint of the wind farm and infrastructure will not reduce the area of this already degraded vegetation significantly.</p>