

**PROPOSED MIDDLETON WIND ENERGY PROJECT
BLUE CRANE ROUTE MUNICIPALITY
EASTERN CAPE PROVINCE OF SOUTH AFRICA**

DEA Reference Number: 14/12/16/3/3/2/372

ENVIRONMENTAL SCOPING REPORT

DRAFT FOR PUBLIC REVIEW

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EXECUTIVE SUMMARY

Background

Terra Wind Energy (PTY) Ltd trading as Terra Wind Energy, Middleton (PTY) Ltd, a renewable energy company, was founded to supply Africa with clean, renewable and sustainable power sources. Terra Wind Energy (PTY) Ltd plan to develop a wind power generation facility (known as a 'wind farm') in the Middleton Area, within the Blue Crane Route Municipality, , Eastern Cape Province, South Africa. According to Terra Wind Energy, Middleton (Pty) Ltd, available wind data in South Africa shows Middleton to have favourable wind conditions sufficient to support a wind farm. This has been confirmed by on site wind monitoring that has been ongoing since mid 2011.

The facility will cover an area of approximately 24 000 ha located on 23 property portions on the farms Wellington Grove Farm (Portion 2, 8, 9 and remaining extent of Farm no. 381); Wilton Farm (Portion 2 and remaining extent of Farm No. 409); Hartebeest Kuil Farm (Portion 1, 2 and Remaining Extent of Farm No. 220); Bloemhof Farm (Portion 1 and Remaining Extent of Farm No. 166); Draaihoek Farm (Portion 21 of Farm No. 221); Jaskraal Farm (Portion 1 of Farm No. 160); Gunsteling Farm (Remaining Extent of Farm No's 164 and 165); Klein Jas Kraal (Remaining Extent of Farm No. 161); Farm 215 (Remaining Extent of Farm No. 215); Doornkloof Farm (Portion 2, 3 and Remaining Extent of Farm No. 431 and Remaining Extent of Farm No. 431); Van Aardtskraal Farm (Portion 1 of Farm No 163) and Rietfonetin Farm (Remaining Extent of Farm No. 160), approximately 20km South of Cookhouse, along the N10 (See Figure 1).

The Terra Wind Energy, Middleton (Pty) Ltd wind energy facility will consist of approximately 60 turbines, depending on the model and size of turbine selected. An investigation of the wind regime of the site will decide the model of turbines to be installed. The facility will have a maximum generating output of approximately 140 MW.

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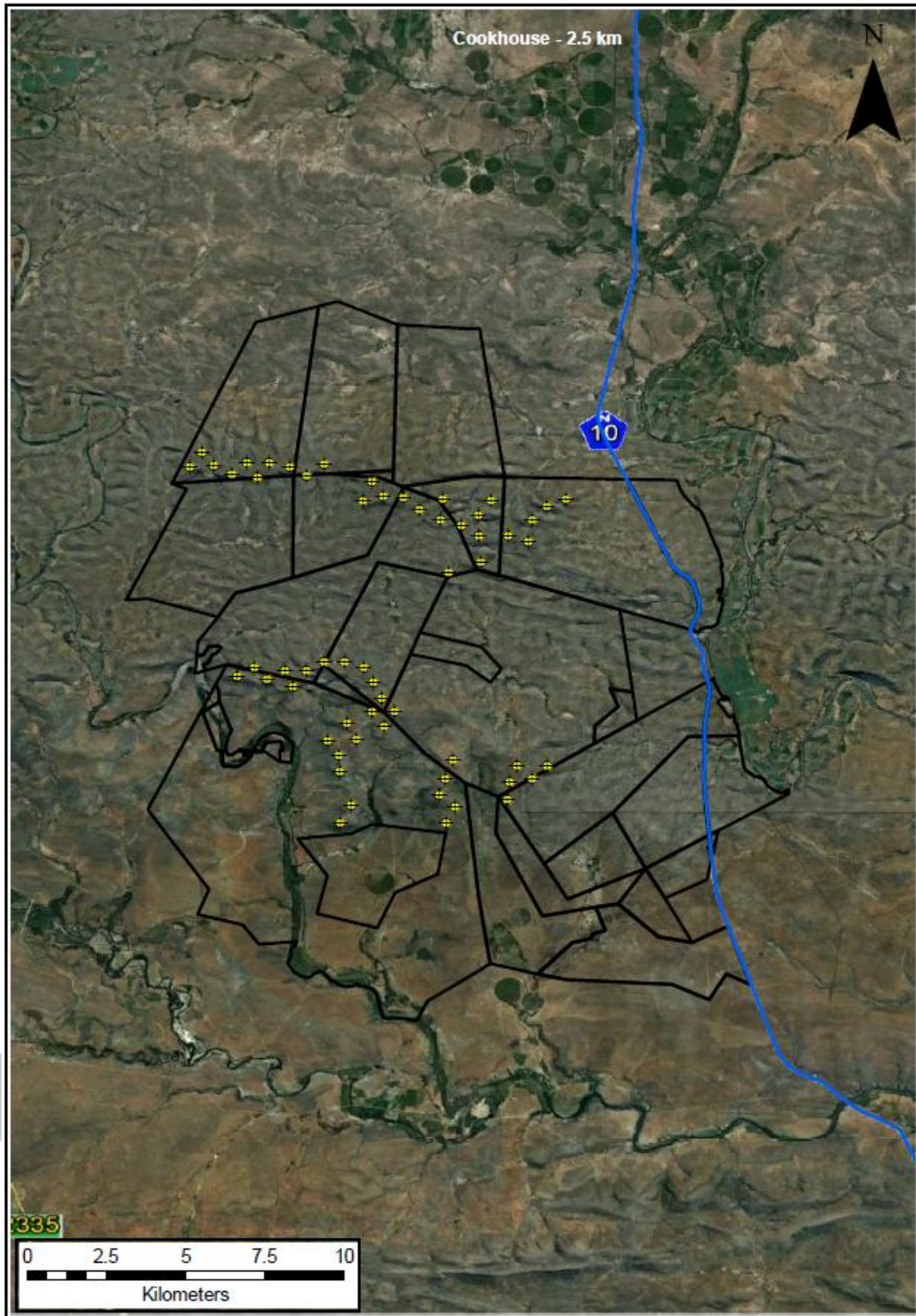


Figure 1: Google Maps and Earth image indicating the study area property portions (black polygons) of the proposed Middleton wind energy project relative to the town of Cookhouse.

Project motivation

Most of South Africa's energy comes from non-renewable sources like coal, petroleum, natural gas, propane, and uranium; however the proponents of renewable energy sources like biomass, geothermal energy, hydropower, solar energy, and wind energy is a major factor that the South African sector need to consider greatly. It is estimated that approximately 1% only of the country's electricity is currently generated from renewable energy sources. The energy sector in South Africa alone emits approximately 380 988.41 Green House Gases (GHGs) (Eastern Cape Climate Change Conference, 2011).

South Africa's total emissions was estimated to be 461 million tonnes CO₂ equivalent in the year 2000. Approximately 83% of these emissions were associated with energy supply and consumption (380 988.41 GHGs), 7% from industrial processes, 8% from agriculture, and 2% from waste. This poses great threat to the environment and livelihoods of citizens.

Eskom currently generates 95% of the electricity used in South Africa with a 40.87 GW net maximum installed capacity. By the year 2020 an additional 20 GW generation capacity would be required and up to 40 GW by 2030 to sustain the energy demands in the country. There is however a political will to change the energy mix to reduce the dependency of the economy on fossil fuels and facilitate the uptake of renewable energy resources.

The first step towards a solution in terms of climate change came in the form of the United Nations Convention on Climate Change 1994 (UNFCCC) and its associated Kyoto protocol 1997, adopted at the third session of COP 3, where countries agreed to reduce their greenhouse gas emissions to the levels they were at in 1990 by the year 2012. The protocol was first opened for signature from 16 March 1998 to 15 March 1999 at United Nations Headquarters, New York and by that date the Protocol had received 84 signatures. For the protocol to be ratified at least 55 of the 176 UN countries had to sign the protocol and these had to represent more than 55% of 1990 global carbon dioxide emissions.

So far, there are 141 nations, including South Africa, that have ratified the protocol (Borchert, 2007). The Kyoto Protocol is very similar in principles to the UNFCCC, but places a heavier burden on developed nations under the principle of "common but differentiated responsibilities" as well asserting binding targets for 37 industrialized countries and the European community for reducing emissions. The Kyoto Protocol also offers supplementary means of meeting targets via the use of three market-based mechanisms, namely emissions trading, clean development mechanisms and joint implementation.

Unfortunately it is quite unlikely that signing a treaty will stop global warming. Even if all the nations that have signed do achieve their targets it will mean a reduction of only 5.2% below 1990 levels. To stabilize global warming below the 2°C level this figure would have to be between 50 and 90% (Borchert, 2007). South Africa has put in place a long term mitigation scenario (LTMS) by which the country aims to develop a plan of action which is economically viable and internationally aligned to the world effort on climate change. The scenario period (2003-2050) South Africa will aim to take action to mitigate GHG emissions by 30% to 40% by the year 2050.

This is a reduction of between 9000 tons and 17 500 tons of CO₂ by 2050. In January 2010, South Africa pledged to the UNFCCC, a 34% and 42% reduction against business as usual emissions growth trajectory by the year 2020 and 2025 respectively. Renewable energies need to be pursued vigorously not only to aid in reducing greenhouse gas concentrations but also because coal and other fossil fuels will not always be around, since they are non-renewable. The White Paper on Renewable Energy (2003) lays the foundation for prioritizing the implementation of renewable energy and sets a target, as a policy objective, of ten thousand gigawatt-hours (GWh) of renewable energy contribution to the final energy demand in South Africa by 2013.

South Africa's current electricity generation and supply system is over stretched with the Eastern Cape Province constrained by the availability and stability of electricity supply reliant on the import of power. Under the IPP Producer Procurement Programme, South Africa will seek to procure the first 3725 MW of renewable capacity by 2016 (1850 MW of on-shore wind) to meet the renewable energy target of 4000 MW by 2014 and 9000 MW by 2030. Fossil fuels supply 90% of South Africa's energy needs with demands on energy supply increasing by 3.5% in the next 20 years. The establishment of the proposed Middleton Wind Energy Project will contribute to strengthening the existing electricity grid for the area and will aid the government in achieving its goal of a 30% share of all new power generation being derived from Independent Power Producers (IPP).

Due to concerns such as climate change, and the on-going exploitation of non-renewable resources, there is increasing international pressure on countries to increase their share of renewable energy generation. The South African Government (White Paper on Renewable Energy, 2003) has recognised the country's high level of untapped renewable energy potential and the equally high level of current fossil-fired power generation, and has placed targets of 10 000 GWh of renewable energy (biomass, wind, solar and small hydro) by 2013 in order to begin to redress the balance. In order to kick start the renewable energy sector in South Africa, a Feed-in Tariff for various renewable energy technologies was established. This Feed-in tariff guarantees the price of electricity supply from the renewable energy installation.

South Africa's use of renewable resources is currently limited and highly fossil fuel dependent. The benefits of "green" electricity such as wind turbines, as opposed to that of traditional coal powered stations, is the reduction of Carbon Dioxide (CO₂) and Sulphur Dioxide (SO₂) emissions and no water required for the operation thereof. Localised electricity production can also compensate for voltage losses resulting from transmitting this power over long distances from Mpumalanga Province where most coal fired power stations are located (and the bulk of South Africa's energy generation capacity resides). In addition to the above-mentioned potential benefits, the proposed project site was selected due to:

- Good wind resources suitable for the installation of a large wind energy facility.
- The proposed project site has localised wind intensified by a funnelling effect caused by surrounding topographical features.
- Proximity to connectivity opportunities such as substations or High Voltage/Medium Voltage (HV/MV) overhead lines traversing the proposed development site
- The site is easily accessible from the N10 (which have direct access to the N2 Highway) which will facilitate in the transportation of wind turbines and construction to the site.
- The immediate surrounding area is not densely populated
- There is potential and appetite within the Blue Crane Route Local Municipality to engage with new technologies and industries.

The Middleton area, and Central Karoo area of the Eastern Cape in general, is a particularly dry area of the country with unpredictable rainfall. Agriculture in the region is dominated by small livestock farming, with the exception of cultivated fields using water from boreholes or river abstraction. The landowners approached by the applicant, to be part of this wind energy project, expressed their commitment to the project in the hope that utilisation of portions of their land for wind turbines will be a source of additional income to supplement their farming income.

Terra Wind Energy, Middleton (PTY) Ltd intends to contribute to SA and local economic growth in a socio-economic and environmentally sustainable way. Identification and implementation of socially responsible schemes will be done during post construction. A local community trust or organisation is intended to benefit from the project. Terra Wind Energy, Middleton (PTY) Ltd and enterprise development initiatives intend to give active socio-economic support. Employment (direct and indirect) is expected to be created by the project, especially during the construction phase.

The local Municipality is the provider of electricity within Blue Crane Route. The formal supply of electricity ranges from a full connection and prepaid system to a ready board system. Table 1 below shows a breakdown of the energy provision within the Blue Crane Route. The majority of consumers have access to either electricity or paraffin as a source of power and heat while street lighting is provided to all urban neighbourhoods except for high mast lighting in Aeroville, Old Location, New Brighton and Francesvale (Somerset East Urban Area). A major capital outlay is however envisaged to upgrade both urban and rural networks. The overhead line from Somerset East to Pearston and other areas is currently running at full capacity. A new transformer is to be installed as an emergency measure. Electricity has been included in the infrastructure analysis because of the importance of this basic service in the lives of all individuals, especially in this area. The Blue Crane Route Municipality has a good infrastructure base but upgrading is needed in order for the service to be provided effectively.

Table 1: Energy provision (Source: Blue Crane Route Municipality IDP).

| Type | Number of Households | Percentage (%) |
|-------------------|----------------------|----------------|
| Electricity | 3305 | 41.3 |
| Other Electricity | 173 | 2.2 |
| Gas | 68 | 0.8 |
| Paraffin | 3473 | 43.4 |
| Candles | 950 | 11.9 |
| Other | 0 | 0 |
| Unspecified | 34 | 0.4 |
| Total | 8003 | 100 |

Legal Requirements

The EIA process is guided by regulations made in terms of Chapter 5 of the National Environmental Management Act No. 107 of 1998 (NEMA). The regulations (GNR. 543) set out the procedures and criteria for the submission, processing and consideration of and decisions on applications for the environmental authorisation of activities. Three lists of activities, published on 02 August 2010, as Government Notice Numbers R.544 to 546, define the activities that require, either a Basic Assessment (applies to activities with limited environmental impacts (GN.R. 544) or within a prescribed geographical area – province (GN.R. 546)), or a Scoping and Environmental Impact Assessment (applies to activities which are significant in extent and duration) (GN.R. 545). The activities triggered by the proposed development are listed in Table 1 below.

Table 1: Listed activities potentially triggered by the proposed Middleton Wind Energy Project

| Number and date of the relevant notice | Activity No(s) | Description |
|---|----------------|--|
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (10) | The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; |
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (18) | The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: (i) a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving; (a) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or |

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| | | (b) occurs behind the development setback line. |
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (23) | The transformation of undeveloped, vacant or derelict land to – (i) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or (ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; - except where such transformation takes place – (i) for linear activities; or (ii) for purposes of agriculture or afforestation, in which case Activity 16 of Notice No. R. 545 applies. |
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (38) | The expansion of facilities for the transmission and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase. |
| Listing Notice 2 of R545 EIA Regulations dated 18 June 2010 | (1) | The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more. |
| Listing Notice 2 of R545 EIA Regulations dated 18 June 2010 | (8) | The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex. |
| Listing Notice 2 of R545 EIA Regulations dated 18 June 2010 | (15) | Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (4) | The construction of a road wider than 4 metres with a reserve less than 13,5 metres (a) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces: (i) Outside urban areas, in : (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (10) | The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. (a) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces: ii. Outside urban areas, in: (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in |

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| | | <p>chapter 5 of the Act and as adopted by the competent authority;</p> <ul style="list-style-type: none"> (dd) Sites or areas identified in terms of an International Convention; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (ff) Core areas in biosphere reserves; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve; (hh) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; (ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; (jj) Within 500 metres of an estuary. |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (12) | <p>The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <ul style="list-style-type: none"> (a) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (b) Within critical biodiversity areas identified in bioregional plans; (c) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas. |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (13) | <p>The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required for:</p> <ul style="list-style-type: none"> (1) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this list. <p>the undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No. 544 of 2010</p> <ul style="list-style-type: none"> (a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority. (b) National Protected Area Expansion Strategy Focus areas. (c) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape and Western Cape: <ul style="list-style-type: none"> i. In an estuary; ii. Outside urban areas, the following: <ul style="list-style-type: none"> (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; |

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| | | <ul style="list-style-type: none"> (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (dd) Sites or areas identified in terms of an International Convention; (ee) Core areas in biosphere reserves; (ff) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (gg) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined. <p>iii. In urban areas, the following:</p> <ul style="list-style-type: none"> (aa) Areas zoned for use as public open space; (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose; (cc) Areas seawards of the development setback line; (dd) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined. |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (14) | <p>The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetation cover constitutes indigenous vegetation</p> <ul style="list-style-type: none"> (i) All areas outside urban areas |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (19) | <p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <ul style="list-style-type: none"> (a) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces: <ul style="list-style-type: none"> (ii) Outside urban areas, in: <ul style="list-style-type: none"> (bb) National Protected Area Expansion Strategy Focus areas; (cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (ii) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined. |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (26) | <p>Phased activities for all activities listed in this Schedule and as it applies to a specific geographical area, which commenced on or after the effective date of this Schedule, where any phase of the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.</p> |

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| | | All the areas as identified for the specific activities listed in this schedule. |
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Because the proposed development triggers listed activities from GNR.545, it will require a full Scoping and EIA. This process (Figure 1-1) is regulated by Part 3 of Chapter 3 of the 2010 EIA Regulations and described in detail further on in this report. It is important to note that, in addition to the requirements for an authorisation in terms of the NEMA, there may be additional legislative requirements that need to be considered prior to commencing with the activity, for example: the National Heritage Resources Act (Act No 25 of 1999), the National Water Act (Act No 36 of 1998) Aviation Act (Act No 74 of 1962) as amended, White Paper on Energy Policy for South Africa (Energy White Paper), White Paper on Renewable Energy Policy (Renewable Energy White Paper), the Integrated Energy Plan for the Republic of South Africa (March, 2003) etc.

The Environmental Impact Assessment

Coastal & Environmental Services (CES), a well-established specialist environmental consulting firm with offices in Grahamstown and East London, have been appointed by Terra Wind Energy, Middleton (PTY) Ltd as Environmental Assessment Practitioner (EAP) to conduct the Environmental Impact Assessment (EIA).

The competent authority that must consider and decide on the application for authorisation in respect of the activities listed in Table 1 is the Department of Environmental Affairs (DEA), formerly the Department of Environmental Affairs and Tourism (DEAT), as the Department has recently reached agreement with all Provinces that all electricity-related projects, including generation, transmission and distribution, are to be submitted to DEA, irrespective of the nature of the applicant. This decision has been made in terms of Section 24(C)(3) of the NEMA (Act No 107 of 1998). The decision is effective for all projects initiated before, and up until, approximately 2015.

The EIA process is divided into two key phases - Scoping and Environmental Impact Assessment. This Draft Environmental Scoping Report (ESR) presents the outcomes of the first phase of the environmental impact assessment process. The Scoping Process has been undertaken to identify and describe:

- The nature of the proposed project;
- The legal, policy and planning context for the proposed project;
- Important biophysical and socio-economic characteristics of the affected environment;
- Potential environmental issues or impacts, so they may be addressed in the EIA phase;
- Feasible alternatives that must be assessed in the EIA phase;
- The Plan of Study (POS) for the EIA phase.

Provision was made in the Scoping Phase for the involvement of Interested and Affected Parties (I&APs) in the forthcoming EIA process.

Project Description

The term wind energy describes the process by which wind turbines convert the kinetic energy in the wind into mechanical power and a generator can then be used to convert this mechanical power into electricity. Typical turbine subsystems include:

- A rotor or blades – the portion of the wind turbine that collects energy from the wind and converts this wind energy into rotational shaft energy to turn the generator.
- A nacelle (enclosure) containing a drive train, usually including a gearbox (some turbines do not require a gearbox) and a generator which converts the turning motion of a wind turbine's blades (mechanical energy) into electricity.

- A tower, to support the rotor and drive train - the tower on which a wind turbine is mounted is not only a support structure, but it also raises the wind turbine so that its blades safely clear the ground and so can reach the stronger winds at higher elevations.
- Electronic equipment such as controls, electrical cables, ground support equipment, and interconnection equipment.
- Turbine step-up transformer which can be indoor or outdoor, depending on the turbine model.

The ultimate size of the wind turbines will depend on further technical assessments but will typically consist of rotor turbines (3x50m blades) with rotor diameters of around 100 meters mounted atop an 80 - 100 meter high steel or hybrid steel/concrete tower. As with all projects of this nature being developed by Independent Power Producers (IPP's) the electricity will be fed into the national Eskom grid.

Typically, the development of the wind farm is divided into various phases:-

- *Pre-feasibility:* Terra Wind Energy, Middleton (Pty) Ltd conduct surveys to ensure obvious issues surrounding the project should not impact on the progress and the final acceptance of the project. This includes visits to local authorities, civil aviation authorities, identifying local communities, wind resource evaluation from existing data, grid connectivity, environmental impact assessment, logistical and project phasing requirements.
- *Feasibility* Terra Wind Energy, Middleton (Pty) Ltd will firm up and carry out thorough investigations to establish the actual costs, and economic viability of the project by designing the financial model with financial institutions, verifying wind resources by onsite measurement, ensuring grid connection is economical and feasible in the time frames of the project, identifying possible off-takers for the electricity.
- *Wind Measurement:* Prior to the establishment of the full facility, it will be necessary to erect, a number of wind measurement masts to gather wind speed data and correlate these measurements with other meteorological data in order to produce a final wind model of the proposed project site. The measurement campaign will last not less than 12 months in order to ensure verifiable data is used for the economics of the project.
- *Implementation:* Building of a wind farm comprises-

Civil works:

1. Roads: An internal road network will be constructed for access to each turbine and to the substation during the construction phase by construction vehicles and equipment (bulldozers, trucks, cranes etc.).
2. Platforms: A temporary area of 40mx25m will be established for each turbine to allow the turbine lifting and enough spacing for the cranes. At the end of construction, the platforms will be reduced and the permanently occupied area will be about 20mx20m.
3. Turbine foundations: These will be of approximately 15mx15mx2.5m.
4. Cabling: Underground 22kV electrical cables will be entrenched adjacent to the access roads (about 1m in depth) to connect the turbines to the electrical substation to be constructed on site.
5. Civil works for the 22/66 kV electrical substation, including relevant buildings.

Erection/commissioning:

1. Wind turbine erection: Each turbine will be erected by utilising suitable cranes.
2. Electrical equipment: Step-up transformer, switchgears, busbars and ancillary equipment will be installed in the electrical substation.
3. Commissioning and startup: Once connected to the Eskom distribution grid, the commissioning of the wind farm with all relevant functional tests will be carried out up until the final start-up of the whole wind farm.

Commercial operation

During the period when the turbines are operational, there are only a few crews who carry out routine maintenance requiring only light vehicles to access the site. Only major breakdowns would necessitate the use of cranes and trucks.

➤ *Timing Estimation:*

The overall wind farm construction schedule will be about 12-18 months, dependant on the delivery times of the turbine components and main equipment. Described below is a typical schedule:

- Platforms/Roads/cables laydown = 20 weeks;
- Turbines foundations = 10 weeks for each foundation (including 8 weeks to let the foundation concrete dry);
- Civil works for the substation = 12 weeks;
- Wind turbines/electrical substation erection = 2 turbines/week (in good low wind weather conditions);
- Substation erection = 8 weeks; and
- Commissioning and electrical connection = 4 weeks.

- *Refurbishment and rehabilitation of the site after operation:* Current wind turbines are designed to last for over 25 years and this is the figure that has been used to plan the life span of a modern wind farm. If refurbishment is economical, the facility life span could be expanded by another 25 years. Decommissioning of the wind energy facility at the end of its lifespan will be undertaken in agreement with the landowners and according to the land use agreement.

The Affected Environment

Climate

Due to the location of the study area at the confluence of several climatic regimes, namely temperate and subtropical, the Eastern Cape Province of South Africa has a complex climate. There are wide variations in temperature, rainfall and wind patterns, mainly as a result of movements of air masses, altitude, mountain orientation and the proximity of the Indian Ocean.

There is data available for climatic conditions in Somerset East, which is close to the study site. The annual mean rainfall is 570mm (ranging from 278mm to 994mm), with a March high of 84mm and a June low of 21mm. The mean annual daily temperature is 17.2°C with a mean monthly daily temperature high in January of 22.2°C and low in June and July of 12.6°C.

Geology and topography

The Eastern Cape Province contains a wide variety of landscapes, from the stark Karoo (the semi-desert region of the central interior) to mountain ranges and gentle hills rolling down to the sea. The climate and topography give rise to the great diversity of vegetation types and habitats found in the region. The mountainous area on the northern border forms part of the Great Escarpment.

Another part of the escarpment lies just north of Bisho, Somerset East and Graaff-Reinet. In the south of the province, the Cape Folded Mountains start between East London and Port Elizabeth and continue westward into the Western Cape. As is the situation in KwaZulu-Natal, the Eastern Cape is characterised by a large number of short, deeply incised rivers flowing parallel to each other.

Middleton and the surrounding areas (including Somerset East) occur in the Karoo Supergroup and comprise mainly of the Beaufort Group with some Karoo Dolerite (Rust, 1998). The Beaufort group overlays the Ecca Group and was deposited on land through alluvial processes. It is characterised by reddish-purple and mottled, greenish, mudstone beds, interbedded with lenticular, creamy and buff coloured sandstone beds. The mudstone beds are a diagnostic feature of the Beaufort Group. A couple of long Dolerite outcrops occur in the area (Rust, 1998). The Adelaide subgroup occurs as a subgroup of the Beaufort Group, and forms most of the geology of the area. The Adelaide subgroup comprises the Middleton Formation and the Balfour Formation which are made up of layers of a greenish-grey mudstone, shale and sandstone (Mucina and Rutherford, 2006).

Vegetation and flora

The vegetation of the Eastern Cape is complex and is transitional between the Cape and subtropical floras and many taxa of diverse phytogeographical affinities reach the limits of their distribution in this region. The region is best described as a tension zone where four major biomes converge and overlap (Lubke *et al.* 1988). The dominant vegetation is Succulent Thicket (Spekboomveld or Valley Bushveld), a dense spiny vegetation type unique to this region. While species in the canopy are of subtropical affinities, and generally widespread species, the succulents and geophytes that comprise the understorey are of karroid affinities and are often localised endemics.

There are two main vegetation classifications for the area. These are Mucina and Rutherford (2006) and the Subtropical Thicket Ecosystem Project (STEP). There are five Mucina and Rutherford (2006) and five STEP Vegetation types for the general Cookhouse area. Mucina and Rutherford vegetation types include: Great Fish Thicket, Bedford Dry Grassland, Albany Broken Veld, Southern Karoo Riviere Cape Inland Salt pans. STEP vegetation types for the area include: Hartebeest Karroid Thicket, Fish Spekboom Thicket, Aliwal North Dry Grassland, Southern Karoo Alluvia and Camdeboo-Aberdeen Karoo.

Fauna

The Eastern Cape is home to 133 reptile species including 21 snakes, 27 lizards and eight chelonians (tortoises and turtles) (Branch, 1998). The majority of these are found in Mesic Succulent Thicket and riverine habitats.

The list of reptiles of special concern is very significant since it includes five endemic species (two of which are endangered), eight CITES (Committee for International Trade in Endangered Species) listed species, one rare species and four species at the periphery of their range. More than a third of the species are described as relatively tolerant of disturbed environments, provided migration corridors of suitable habitat are maintained to link pristine habitats.

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. However, none of these species are endemic or of conservation concern.

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 extinct. Cheetah and hunting dog are no longer found in the area and leopard, ratel and vaal ribbok are almost extinct (Skead, 1974b). The antelope that are abundant in the thick bush (thicket or bushclump savanna) 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 are common, but tree dassies are only found inland in forests along larger rivers. Genet and mongoose species are also common.

Aardvark also occur in the region. Multiple rodent species are found in the area and include rats and mice, the cane rat, springhare and porcupine.

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.* and Barclay *et al.*; 2007). Chapter 4 lists the species of bats likely to occur in areas around Middleton wind farm, and potentially affected by the proposed development. Bat impacts will be assessed in a separate specialist report in the EIA phase of the proposed development.

Socio-economic description

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 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 km² 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.

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 as 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.

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.

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.

The Public Participation Process

During the Scoping Phase a public participation process (PPP) is being undertaken to allow Interested and Affected Parties (I&APs) to voice their concerns and raise issues regarding the proposed project. The key elements of the process included:

- Development and distribution of a Background Information Document (BID);
- Informing I&APs of the proposed development through newspaper advertisements, site notice boards and notification letters,
- A public meeting will be held during the 40 day public review of the Draft ESR. 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.

Throughout this process, a register of I&APs will be compiled and maintained, together with a record of their comments and responses from the project proponent and the Environmental Assessment Practitioner. This Draft ESR is now made available to DEA and all I&APs to provide I&APs with an opportunity to review and comment on the report before it is finalised, taking account of any comments received during the review period, and forwarded to DEA.

Issues and Concerns

An extensive list of the issues identified and raised during the public consultation process, and responses thereto by the EAP, will be provided in Chapter 6 of the final scoping report.

Identification of Alternatives

Since the core business area of the project proponent is wind farm development for the generation of electricity, the fundamental alternative of a development other than to construct and operate a wind farm is therefore not viable in this case, and will not be considered further in the EIA. Modifications or variations to the design of the wind farm that will facilitate the reduction or minimisation of environmental impacts i.e. incremental alternatives will be investigated, including modifications to the design or layout, technology and operational aspects of the proposed project.

The EIA Phase will also examine the impact of no development (i.e. the “No Go” option). The no-go alternative will be used as a baseline throughout the environmental assessment process against which potential impacts will be compared in an objective manner and will be fully assessed in the EIR.

The Way Forward – EIA Phase

This Draft Scoping Report (DSR) includes the outline of a Plan of Study (PoS) for the EIA phase, which includes Terms of Reference (ToR) for specialist studies as they are currently envisaged and the methodology that will be used to assess impacts and rate their significance. Consultation with DEA will be on going throughout this EIA. However, it is anticipated that DEA will provide relevant comment with respect to the adequacy of this Plan of Study for the EIA, as it informs the content of the Environmental Impact Report (EIR) and sufficiency thereof. The following specialist studies are proposed for the EIA Phase of the assessment:-

- Visual Impact Assessment
- Noise Impact Assessment
- Ecological Impact Assessment (incorporating flora and fauna)
- Avifauna (Bird) Impact Assessment
- Bat Impact Assessment
- Heritage, Archaeological and Palaeontological Impact Assessment
- Agricultural Impact Assessment

The significance of impacts will be assessed based on specialist input using a standardised rating methodology. “Significance” includes the spatial and temporal scales of impacts, the likelihood of impacts occurring, and the severity of impacts or potential benefits.

An EIR will be prepared that will describe the nature of the proposed project and its environmental setting, summarise the results of the specialist studies, and recommend practical and reasonable mitigation measures to avoid, minimise or offset any negative impacts from the development. In this regard the EIA Phase will actively engage and contribute to the planning process so as to mitigate environmental impacts through improved design and layout. The overall objective of the EIR is to provide DEA with sufficient information about the proposed project and its associated environmental and social impacts on which to make an informed decision.

An Environmental Management Programme (EMPr) will be prepared that provide practical and actionable management, monitoring and institutional measures to be undertaken during the construction, operation and decommissioning of the proposed wind energy facility. Such measures are designed to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The public participation process initiated in the Scoping Phase will continue throughout the EIA Phase.

In this regard a critical outcome of the EIA phase will be the Draft EIR and Draft EMPr. These reports will be released for public review and comment, and will also be presented to I&APs during public meetings, before they are finalised and presented to DEA. An environmental authorisation may be granted or rejected by the authority based on the review of these reports. The decision will be advertised, and registered I&APs will also be informed in writing and given the opportunity to appeal the decision.

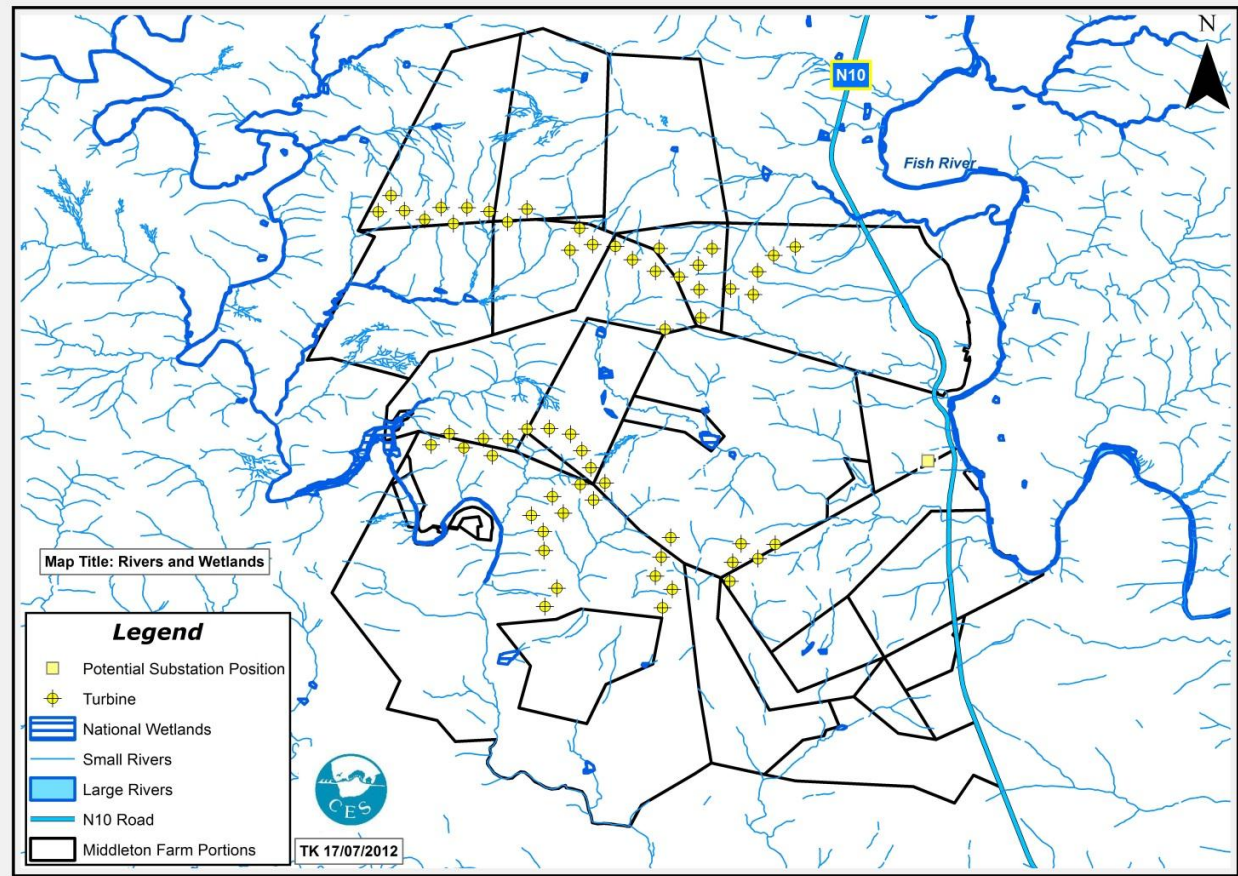
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LIST OF ABBREVIATIONS

| | |
|-------------------|--|
| BID: | Background Information Document |
| CES: | Coastal and Environmental Services |
| CITES: | Committee for International Trade in Endangered Species |
| DEA: | Department of Environmental Affairs |
| DWA: | Department of Water Affairs |
| EAP: | Environmental Assessment Practitioner |
| EIA: | Environmental Impact Assessment |
| EIR: | Environmental Impact Report |
| EMPr: | Environmental Management Programme |
| ESR: | Environmental Scoping Report |
| GNR: | Government Notice Regulation |
| ha: | Hectare |
| I&APs: | Interested and Affected Parties |
| IPP: | Independent Power Producer |
| kV | Kilovolt |
| Ltd: | Limited |
| MW: | Mega Watts |
| NEMA: | National Environmental Management Act 107 of 1998 as amended in 2006 |
| NERSA: | National Energy Regulator of South Africa |
| PNCO: | Provincial Nature Conservation Ordinance |
| PoS: | Plan of Study |
| PPA: | Power Purchase Agreement |
| PPP: | Public Participation Process |
| RDB: | Red Data Book |
| REFIT: | Renewable Feed In Tariff |
| SSC: | Species of Special Concern |
| ToR: | Terms of Reference |
| WT: | Wind Turbine |

1. INTRODUCTION

1.1. BACKGROUND TO THE STUDY

Terra Wind Energy, Middleton (Pty) Limited - a renewable energy company, plans to develop a wind power generation facility (known as a 'wind farm') on the farms (Wellington Grove Farm (Portion 2, 8, 9 and remaining extent of Farm no. 381); Wilton Farm (Portion 2 and remaining extent of Farm No. 409); Hartebeest Kuil Farm (Portion 1, 2 and Remaining Extent of Farm No. 220); Bloemhof Farm (Portion 1 and Remaining Extent of Farm No. 166); Draaihoek Farm (Portion 21 of Farm No. 221); Jaskraal Farm (Portion 1 of Farm No. 160); Gunsteling Farm (Remaining Extent of Farm No's 164 and 165); Klein Jas Kraal (Remaining Extent of Farm No. 161); Farm 215 (Remaining Extent of Farm No. 215); Doornkloof Farm (Portion 2, 3 and Remaining Extent of Farm No. 431 and Remaining Extent of Farm No. 431); Van Aardtskraal Farm (Portion 1 of Farm No 163) and Rietfontein Farm (Remaining Extent of Farm No. 160), approximately 20km South of Cookhouse, along the N10.

The proposed wind farm is located in the Middleton Area within the Blue Crane Route Municipality, Eastern Cape Province, South Africa and will cover an area of approximately 24 000 ha. According to Terra Wind Energy, Middleton (Pty) Ltd available wind data in South Africa shows Middleton to have favourable wind conditions sufficient to support a wind farm. This has been confirmed by on site wind monitoring that has been ongoing since 2011.

The Terra Wind Energy, Middleton (Pty) Ltd wind energy facility will consist of approximately 60 turbines, depending on the model and size of turbine selected. An investigation of the wind regime of the site will decide the model of turbines to be installed. The facility will have a maximum generating output of approximately 140 MW.

Improvement of the existing road infrastructure and study area access routes will be required for the construction phase.

In accordance with the requirements of the National Environmental Management Act No. 107 of 1998, and relevant Environmental Impact Assessment (EIA) regulations made in terms of this Act (Government Notice No R.543) promulgated in 2010, the proposed project requires a full Scoping and EIA process to be conducted.

Coastal & Environmental Services (CES) have been appointed by Terra Wind Solutions (Pty) Limited as the Environmental Assessment Practitioner (EAP) to conduct the EIA.

1.2. THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The EIA process is guided by regulations made in terms of Chapter 5 of the National Environmental Management Act No. 107 of 1998 (NEMA), published as Government Notice No R.543 in Government Gazette No 33306 of 2 August 2010. The regulations set out the procedures and criteria for the submission, processing and consideration of and decisions on applications for the environmental authorisation of activities.

Three lists of activities, published on 2 August 2010, as Government Notice Numbers R.544, R.545 and R.546, define the activities that require, respectively, a Basic Assessment (applies to activities with limited environmental impacts), or a Scoping and Environmental Impact Assessment (applies to activities which are significant in extent and duration).

The activities triggered by the proposed Middleton wind energy project are listed in Table 1-1 below.

Table 1-1: Listed activities potentially triggered by the proposed Middleton Wind Energy Project

| Number and date of the relevant notice | Activity No(s) | Description |
|---|----------------|--|
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (10) | The construction of facilities or infrastructure for the transmission and distribution of electricity - (ii) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; |
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (18) | The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: (i) a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving; (c) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or (d) occurs behind the development setback line. |
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (23) | The transformation of undeveloped, vacant or derelict land to – (iii) residential, retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or (iv) residential, retail, commercial, recreational, industrial or institutional use, outside an urban area and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares; - except where such transformation takes place – (i) for linear activities; or (ii) for purposes of agriculture or afforestation, in which case Activity 16 of Notice No. R. 545 applies. |
| Listing Notice 1 of R544 EIA Regulations dated 18 June 2010 | (38) | The expansion of facilities for the transmission and distribution of electricity where the expanded capacity will exceed 275 kilovolts and the development footprint will increase. |
| Listing Notice 2 of R545 EIA Regulations dated 18 June 2010 | (1) | The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more. |
| Listing Notice 2 of R545 EIA Regulations dated 18 June 2010 | (8) | The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex. |
| Listing Notice 2 of R545 EIA Regulations dated 18 June 2010 | (15) | Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; |
| Listing Notice 3 of R546 EIA Regulations | (4) | The construction of a road wider than 4 metres with a reserve less than 13,5 metres |

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| <p>dated 18 June 2010</p> | | <p>(b) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces: (ii) Outside urban areas, in : (ff) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> |
| <p>Listing Notice 3 of R546 EIA Regulations dated 18 June 2010</p> | <p>(10)</p> | <p>The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres.</p> <p>(b) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces: iii. Outside urban areas, in: (kk) A protected area identified in terms of NEMPAA, excluding conservancies; (ll) National Protected Area Expansion Strategy Focus areas; (mm) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (nn) Sites or areas identified in terms of an International Convention; (oo) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (pp) Core areas in biosphere reserves; (qq) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve; (rr) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; (ss) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; (tt) Within 500 metres of an estuary.</p> |
| <p>Listing Notice 3 of R546 EIA Regulations dated 18 June 2010</p> | <p>(12)</p> | <p>The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <p>(d) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; (e) Within critical biodiversity areas identified in bioregional plans; (f) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas.</p> |
| <p>Listing Notice 3 of R546 EIA Regulations dated 18 June 2010</p> | <p>(13)</p> | <p>The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, except where such removal of vegetation is required</p> |

| | | |
|--|-------------|--|
| | | <p>for:</p> <p>(2) the undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this list.</p> <p>the undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No. 544 of 2010</p> <p>(d) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority.</p> <p>(e) National Protected Area Expansion Strategy Focus areas.</p> <p>(f) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape and Western Cape:</p> <p>iv. In an estuary;</p> <p>v. Outside urban areas, the following:</p> <p>(hh) A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>(ii) National Protected Area Expansion Strategy Focus areas;</p> <p>(jj) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>(kk) Sites or areas identified in terms of an International Convention;</p> <p>(ll) Core areas in biosphere reserves;</p> <p>(mm) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;</p> <p>(nn) Areas seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined.</p> <p>vi. In urban areas, the following:</p> <p>(ee) Areas zoned for use as public open space;</p> <p>(ff) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose;</p> <p>(gg) Areas seawards of the development setback line;</p> <p>(hh) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined.</p> |
| <p>Listing Notice 3 of R546 EIA Regulations dated 18 June 2010</p> | <p>(14)</p> | <p>The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetation cover constitutes indigenous vegetation</p> <p>(iii) All areas outside urban areas</p> |
| <p>Listing Notice 3 of R546 EIA Regulations dated 18 June 2010</p> | <p>(19)</p> | <p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p>(a) In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces:</p> <p>(ii) Outside urban areas, in:</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(cc) Sensitive areas as identified in an environmental</p> |

| | | |
|---|------|--|
| | | <p>management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;</p> <p>(iv) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined.</p> |
| Listing Notice 3 of R546 EIA Regulations dated 18 June 2010 | (26) | <p>Phased activities for all activities listed in this Schedule and as it applies to a specific geographical area, which commenced on or after the effective date of this Schedule, where any phase of the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.</p> <p>All the areas as identified for the specific activities listed in this schedule.</p> |

Because the proposed development triggers a number of listed activities from GNR.545, it will require a full Scoping and EIA. This process (Figure 1-1) is regulated by Chapter 3 of Part 3 of the EIA regulations and described in detail in Appendix A of this report.

The competent authority that must consider and decide on the application for authorisation in respect of the activities listed in Table 1-1 is the Department of Environmental Affairs (DEA), formerly the Department of Environmental Affairs and Tourism (DEAT), as the Department has recently reached agreement with all Provinces that all electricity-related projects, including generation, transmission and distribution, are to be submitted to DEA, irrespective of the nature of the applicant. This decision has been made in terms of Section 24(C)(3) of the National Environmental Management Act (Act No 107 of 1998). The decision is effective for all projects initiated before, and up until, approximately 2015.

It is important to note that in addition to the requirements for an authorisation in terms of the NEMA, there may be additional legislative requirements which need to be considered prior to commencing with the activity, for example: the National Heritage Resources Act (Act No 25 of 1999), Aviation Act (Act No 74 of 1962) as amended, White Paper on Energy Policy for South Africa (Energy White Paper), White Paper on Renewable Energy Policy (Renewable Energy White Paper), the Integrated Energy Plan for the Republic of South Africa (March, 2003) etc. These are discussed in detail in Chapter 3 of this report.

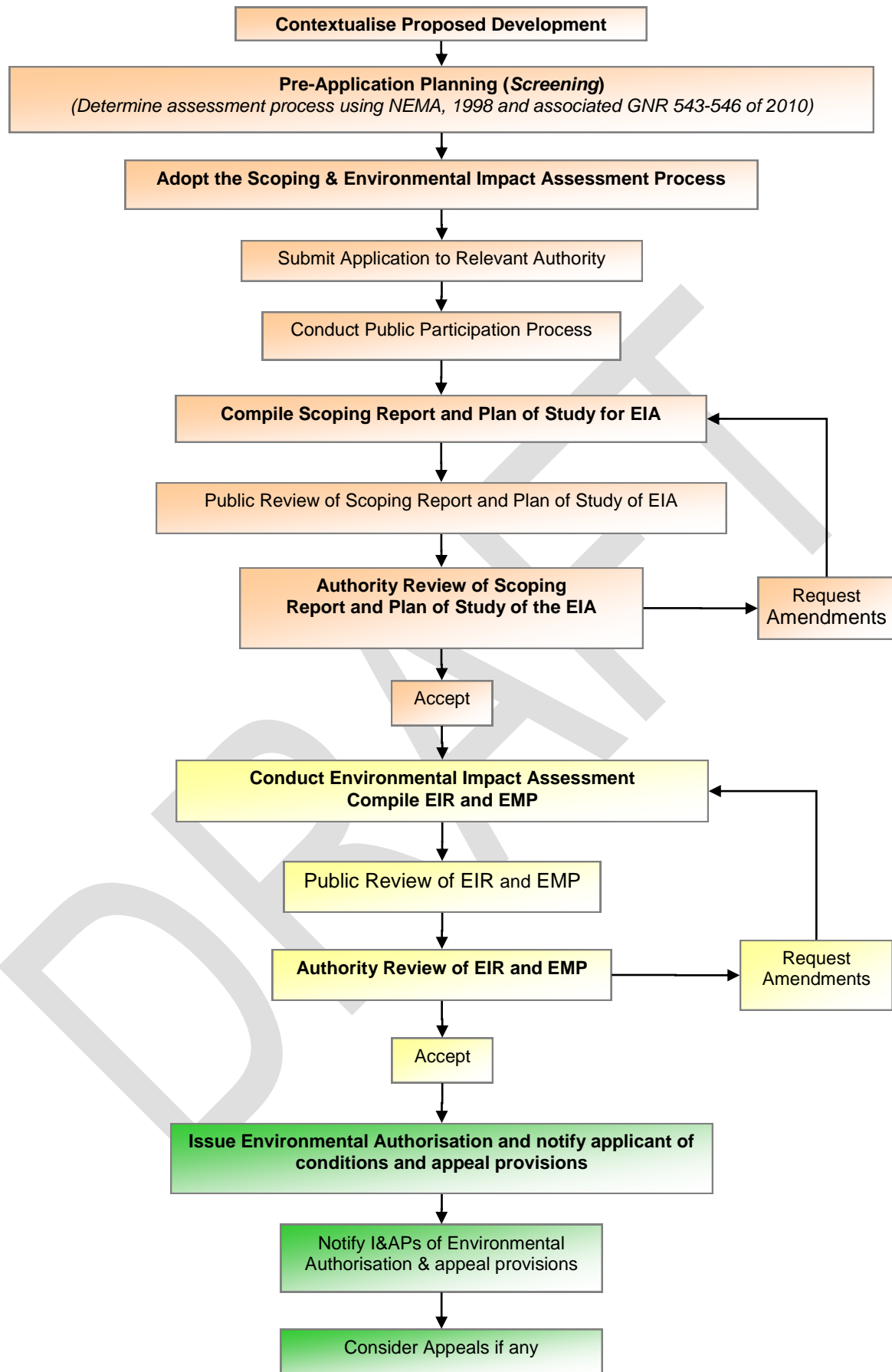


Figure 1-1: The EIA process under current legislation (NEMA 1998)

1.3. MOTIVATION FOR ACTIVITY

According to regulation 28 (1) of the EIA regulations (2010), *A scoping report must include –*
ii) a description of the need and desirability of the proposed activity

Electricity supply

The establishment of the proposed Middleton Wind Energy Installation will contribute to strengthening the existing electricity grid for the area and will aid the government in achieving its goal of a 30% share of all new power generation being derived from Independent Power Producers (IPPs). In addition to the above-mentioned potential benefits, the proposed project site was selected due to:

- Global enthusiasm towards clean energy projects.
- Good wind resources suitable for the installation of a large wind energy facility.
- The proposed project site has localised wind intensified by a funnelling effect caused by surrounding topographical features.
- The site is easily accessible from gravel roads off the N10 which will assist in the transportation of wind turbines to the site.
- The surrounding area is not densely populated.
- There is potential and appetite within the Blue Crane Route Local Municipality to engage with new technologies and industries.

Climate change

Most of South Africa's energy comes from non-renewable sources like coal, petroleum, natural gas, propane, and uranium; however the proponents of renewable energy sources like biomass, geothermal energy, hydropower, solar energy, and wind energy is a major factor that the South African sector need to consider greatly. It is estimated that approximately 1% only of the country's electricity is currently generated from renewable energy sources. The energy sector in South Africa alone emits approximately 380 988.41 Green House Gases (GHGs) (Eastern Cape Climate Change Conference, 2011).

South Africa's total emissions was estimated to be 461 million tonnes CO₂ equivalent in the year 2000. Approximately 83% of these emissions were associated with energy supply and consumption (380 988.41 GHGs), 7% from industrial processes, 8% from agriculture, and 2% from waste. This poses great threat to the environment and livelihoods of citizens.

Eskom currently generates 95% of the electricity used in South Africa with a 40.87 GW net maximum installed capacity. By the year 2020 an additional 20 GW generation capacity would be required and up to 40 GW by 2030 to sustain the energy demands in the country. There is however a political will to change the energy mix to reduce the dependency of the economy on fossil fuels and facilitate the uptake of renewable energy resources.

The first step towards a solution in terms of climate change came in the form of the United Nations Convention on Climate Change 1994 (UNFCCC) and its associated Kyoto protocol 1997, adopted at the third session of COP 3, where countries agreed to reduce their greenhouse gas emissions to the levels they were at in 1990 by the year 2012. The protocol was first opened for signature from 16 March 1998 to 15 March 1999 at United Nations Headquarters, New York and by that date the Protocol had received 84 signatures. For the protocol to be ratified at least 55 of the 176 UN countries had to sign the protocol and these had to represent more than 55% of 1990 global carbon dioxide emissions.

So far, there are 141 nations, including South Africa, that have ratified the protocol (Borchert, 2007). The Kyoto Protocol is very similar in principles to the UNFCCC, but places a heavier burden on developed nations under the principle of “common but differentiated responsibilities” as well as asserting binding targets for 37 industrialized countries and the European community for reducing emissions. The Kyoto Protocol also offers supplementary means of meeting targets via the use of three market-based mechanisms, namely emissions trading, clean development mechanisms and joint implementation.

Unfortunately it is quite unlikely that signing a treaty will stop global warming. Even if all the nations that have signed do achieve their targets it will mean a reduction of only 5.2% below 1990 levels. To stabilize global warming below the 2°C level this figure would have to be between 50 and 90% (Borchert, 2007). South Africa has put in place a long term mitigation scenario (LTMS) by which the country aims to develop a plan of action which is economically viable and internationally aligned to the world effort on climate change. The scenario period (2003-2050) South Africa will aim to take action to mitigate GHG emissions by 30% to 40% by the year 2050.

This is a reduction of between 9000 tons and 17 500 tons of CO₂ by 2050. In January 2010, South Africa pledged to the UNFCCC, a 34% and 42% reduction against business as usual emissions growth trajectory by the year 2020 and 2025 respectively. Renewable energies need to be pursued vigorously not only to aid in reducing greenhouse gas concentrations but also because coal and other fossil fuels will not always be around, since they are non-renewable. The White Paper on Renewable Energy (2003) lays the foundation for prioritizing the implementation of renewable energy and sets a target, as a policy objective, of ten thousand gigawatt-hours (GWh) of renewable energy contribution to the final energy demand in South Africa by 2013.

South Africa’s current electricity generation and supply system is over stretched with the Eastern Cape Province constrained by the availability and stability of electricity supply reliant on the import of power. Under the IPP Producer Procurement Programme, South Africa will seek to procure the first 3725 MW of renewable capacity by 2016 (1850 MW of on-shore wind) to meet the renewable energy target of 4000 MW by 2014 and 9000 MW by 2030. Fossil fuels supply 90% of South Africa’s energy needs with demands on energy supply increasing by 3.5% in the next 20 years. The establishment of the proposed Middleton Wind Energy Project will contribute to strengthening the existing electricity grid for the area and will aid the government in achieving its goal of a 30% share of all new power generation being derived from Independent Power Producers (IPP).

Due to concerns such as climate change, and the on-going exploitation of non-renewable resources, there is increasing international pressure on countries to increase their share of renewable energy generation. The South African Government (White Paper on Renewable Energy, 2003) has recognised the country’s high level of untapped renewable energy potential and the equally high level of current fossil-fired power generation, and has placed targets of 10 000 GWh of renewable energy (biomass, wind, solar and small hydro) by 2013 in order to begin to redress the balance. In order to kick start the renewable energy sector in South Africa, a Feed-in Tariff for various renewable energy technologies was established. This Feed-in tariff guarantees the price of electricity supply from the renewable energy installation.

South Africa’s use of renewable resources is currently limited and highly fossil fuel dependent. The benefits of “green” electricity such as wind turbines, as opposed to that of traditional coal powered stations, is the reduction of Carbon Dioxide (CO₂) and Sulphur Dioxide (SO₂) emissions and no water required for the operation thereof. Localised electricity production can also compensate for voltage losses resulting from transmitting this power over long distances from Mpumalanga Province where most coal fired power stations are located (and the bulk of South Africa’s energy generation capacity resides).

The local Municipality is the provider of electricity within Blue Crane Route. The formal supply of electricity ranges from a full connection and prepaid system to a ready board system. Table 1-2 below shows a breakdown of the energy provision within the Blue Crane Route. The majority of consumers have access to either electricity or paraffin as a source of power and heat while street lighting is provided to all urban neighbourhoods except for high mast lighting in Aeroville, Old Location, New Brighton and Francesvale (Somerset East Urban Area). A major capital outlay is however envisaged to upgrade both urban and rural networks. The overhead line from Somerset East to Pearston and other areas is currently running at full capacity. A new transformer is to be installed as an emergency measure. Electricity has been included in the infrastructure analysis because of the importance of this basic service in the lives of all individuals, especially in this area. The Blue Crane Route Municipality has a good infrastructure base but upgrading is needed in order for the service to be provided effectively.

Table 2-2: Energy provision (Source: Blue Crane Route Municipality IDP).

| Type | Number of Households | Percentage (%) |
|-------------------|----------------------|----------------|
| Electricity | 3305 | 41.3 |
| Other Electricity | 173 | 2.2 |
| Gas | 68 | 0.8 |
| Paraffin | 3473 | 43.4 |
| Candles | 950 | 11.9 |
| Other | 0 | 0 |
| Unspecified | 34 | 0.4 |
| Total | 8003 | 100 |

Social development

The Middleton area, and Central Karoo area of the Eastern Cape in general, is a particularly dry area of the country with unpredictable rainfall. Agriculture in the region is dominated by small livestock farming, with the exception of a few cultivated fields using water from boreholes or river abstraction. The landowners approached by the applicant to be part of this wind energy project expressed their commitment to the project in the hope that utilisation of portions of their land for wind turbines will be a source of additional income to supplement their farming income. Terra Wind Energy, Middleton intends to contribute to SA and local economic growth in a socio-economic and environmentally sustainable way that will provide benefits to the local community.

The long term presence in Middleton (minimum 25 years) will allow for the identification and implementation of a socially responsible scheme during and post construction. A local community trust or organisation is intended to benefit from the project. Terra Wind Energy, Middleton intends to give active socio-economic support to the local community. Employment (direct and indirect) is expected to be created by the project, especially during the construction phase.

1.4. SCOPING PHASE

The proposed project is currently in the Scoping Phase. The aim of this phase is to determine, in detail, the scope of the EIA required for the proposed activities. The principal objectives of the Scoping Phase in accordance with the regulatory requirements are to:

- Describe the nature of the proposed project;
- Enable preliminary identification and assessment of potential environmental issues or impacts to be addressed in the subsequent EIA phase;
- Define the legal, policy and planning context for the proposed project;
- Describe important biophysical and socio-economic characteristics of the affected environment;
- Undertake a public participation process that provides opportunities for all Interested and Affected Parties (I&APs) to be involved;
- Identify feasible alternatives that must be assessed in the EIA phase; and
- Define the Plan of Study (PoS) for the EIA phase.

1.5. THE SCOPING REPORT

This report is the first of a number of reports that will be produced in the EIA process (see Figure 1-1 above). The scoping report has been produced in accordance with the requirements as stipulated in Section 28 of the EIA regulations (GNR 543), which clearly outlines the content of a scoping report, and Sections 54-57 which cover the activities necessary for a successful Public Participation Process (PPP). Section 1.5.1 below provides the detailed structure of this scoping report and section 1.5.2 that follows outlines the limitations and assumptions under which this report was compiled.

1.5.1. Structure

The structure of the report is as follows:

Chapter 1 - Introduction: Provides background information on the proposed project, a brief description of the EIA process required by NEMA and its associated regulations, and describes the key steps in the EIA process that have been undertaken thus far, and those that will be undertaken in the future. The details and expertise of the Environmental Assessment Practitioner (EAP) who prepared this report are also provided in this Chapter.

Chapter 2 – Project description: Provides a description of the proposed development, the property on which the development is to be undertaken and the location of the development on the property. The technical details of the process to be undertaken are also provided in this Chapter.

Chapter 3 – Relevant Legislation: Identifies all the legislation and guidelines that have been considered in the preparation of this scoping report.

Chapter 4 – Description of the affected environment: Provides a brief overview of the bio-physical and socio-economic characteristics of the site and its environs that may be affected by the proposed development compiled largely from published information, but supplemented by information from a site visit.

Chapter 5 – Public Participation Process: Provides details of the public participation process conducted in terms of Regulation 28(a) including:

- The measures undertaken thus far to notify I&APs of the application;
- Proof that notice boards, advertisements and notices notifying potential I&APs of the application have been displayed, placed or given;
- A list of all persons and organisations that were identified and registered in terms of Regulation 57 as I&APs in relation to the application.

Chapter 6 – Issues identified during Scoping: Provides a description of the key issues that have been identified by the project team and through discussions with I&APs thus far in the Scoping Phase, and that will be assessed in the EIA phase.

Chapter 7 - Alternatives: Provides a brief discussion of the feasible and reasonable alternatives to the proposed project that have been identified and considered, some of which will be investigated further in the EIA Phase.

Chapter 8 - Plan of Study: Sets out the proposed approach to the environmental impact assessment of the proposed project including:

- A description of the scope of work that will be undertaken as part of the EIA phase, including any specialist reports or specialised processes, and the manner in which the described scope of work will be undertaken;
- An indication of the stages at which the competent authority will be consulted;
- A description of the proposed methodology for assessing the environmental issues and

- alternatives, including the option of not proceeding with the proposed development;
- Particulars of the public participation process that will be conducted during the EIA phase; and
- Any specific information required by the authority.

References: Cites any texts referred to during preparation of this report.

Appendices: Containing all supporting information

1.5.2. Assumptions and Limitations

This report is based on currently available information and, as a result, the following limitations and assumptions are implicit in it:

- Descriptions of the natural and social environments are based on limited fieldwork and available literature. More information will be provided in the EIA phase based on the outcomes of the specialist studies.
- The report is based on a project description taken from preliminary design specifications and site layouts for the proposed wind energy facility that have not yet been finalised and are likely to undergo a number of iterations and refinements before they can be regarded as definitive. All potential turbine array alternatives will, however, be contained within the property boundaries of the study area.
- The preliminary turbine site layout and associated infrastructure will be presented in the EIA phase and subject to the necessary specialist assessments. It is anticipated that this preliminary layout will be further refined as per the outcomes of these studies and overall EIA findings.

1.6. DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

According to regulation 17 of the EIA regulations (2010), An EAP must –

(a) be independent; and

(b) have expertise in conducting environmental impact assessments, including knowledge of the Act, these Regulations and any guidelines that have relevance to the proposed activity

In fulfillment of the above-mentioned legislative requirement, provided below are the details of the Environmental Assessment Practitioner (EAP) that prepared this draft scoping report as well as the expertise of the individual members of the study team.

1.6.1. Details of the EAP

Coastal and Environmental Services (CES)

Physical Address: 67 African Street, Grahamstown 6139

Postal Address: P.O. Box 934, Grahamstown 6140

Telephone: +27 46 622 2364

Fax: +27 46 622 6564

Website: www.cesnet.co.za

Email: info@cesnet.co.za

1.6.2. Expertise of the EAP

CES is one of the largest specialist environmental consulting firms in southern Africa. Established in 1990, and with offices in Grahamstown and East London, we primarily specialise in assessing the impacts of development on the natural, social and economic environments. CES's core expertise lies in the fields of strategic environmental assessment, environmental management plans, environmental management systems, ecological/environmental water requirements, environmental risk assessment, environmental auditing and monitoring, integrated coastal zone management, social impact assessment and state of environment reporting.

In addition to adhering to all relevant national legislative requirements, CES is often required to review and summarise for specific projects, acquisition of equity funding from the majority of financial institutions demands that developments must meet certain minimum standards that are generally benchmarked against the Policy and Performance Standards of the International Finance Corporation and the World Bank Operational Directives and Policies. CES has worked on large projects in South Africa, Mozambique, Malawi, Kenya, Madagascar and Egypt and has been acknowledged by international lenders such as the World Bank and the International Finance Corporation, and the large mining companies continue to approach us as their preferred environmental consultant for this type of project.

Provided below are short *curriculum vitae* (CVs) of each of the team members involved in the proposed project EIA to date.

Dr. Kevin Whittington-Jones

(Role: Report Review)

Kevin holds a PhD in Environmental Biotechnology and an MSc in Zoology (marine ecology) and is a Director at CES. His professional interests include environmental business risk, management systems, waste management and climate change. Prior to joining CES he held various academic posts at Rhodes University, including that of Senior Lecturer at the Rhodes Investec Business School. Kevin has consulted extensively on environmental issues throughout Africa, including South Africa, Namibia, Swaziland, Mozambique, Sierra Leone, Kenya, Madagascar and Egypt. In addition to routine environmental impact assessments, waste management specialist studies and environmental due diligence and site contamination assessments, he has been actively involved in a number of climate change-related projects. These include the climate change risk assessment for all South African ports, the Greenhouse Gas Assessments for two biofuel projects and a heavy mineral mining operation and the climate change strategy for the Eastern Cape Province of South Africa. He has also been involved in EIAs for numerous wind farm projects around South Africa.

Dr Chantel Bezuidenhout

(Role: Project Leader and Reviewer)

Chantel holds MSc and PhD degrees in Botany (estuarine ecology) and a BSc degree in Botany and Geography from NMMU. Chantel's main focus is estuarine ecology and she has done extensive work on 13 systems from the Orange River Mouth in the Northern Cape to the Mngazi Estuary in the Transkei. As a result she has been involved in a number of ecological reserve determination studies including the Kromme, Seekoei and Olifants systems. Chantel has been an Environmental Consultant for approximately 5 years and as such has been focused on environmental management and impact assessment. Chantel is well versed in environmental legislation and has been involved in number of environmental impact assessments and management plans in South Africa, Zambia and Madagascar. She is currently employed in the Grahamstown office of CES.

Ms Amber Jackson

(Role: Project Manager)

Ms Amber Jackson, has an M.Phil in Environmental Management from the University of Cape Town. Topics covered included environmental management theory, social and ecological systems, climate change and environmental law. With a dissertation in food security that investigated the complex food system of soft vegetables produced in the Philippi Horticultural Area and the soft vegetables purchased at different links, both formal and informal, in the food system. Prior to this she obtained a BSc degree in Zoology and 'Ecology, Conservation and Environment' and a BSc (Hons) in 'Ecology, Conservation and Environment' from the University of the Witwatersrand. Her honours thesis title was: Landscape Effects on the Richness and Abundance of the Herpetofauna in the Kruger National Park.

Ms Tarryn Martin

(Role: PPP and Report Production)

Tarryn holds a BSc (Botany and Zoology), a BSc (Hons) in African Vertebrate Biodiversity and a MSc with distinction in Botany from Rhodes University. Tarryn's Master's thesis examined the impact of fire on the recovery of C₃ and C₄ Panicoid and non-Panicoid grasses within the context of climate change. She has spent time at Rhodes University working as a research assistant and has spent many years working within the corporate tourism industry as a project manager. Her research interests include biodiversity conservation, ecotourism and climate change.

Ms Leigh-Ann DeWet

(Role: Ecological Specialist and Report Production)

Environmental Consultant\Botanical Specialist. Leigh-Ann holds a BSc (Botany and Entomology) as well as a BSc (Hons) and MSc in Botany from Rhodes University. She conducts vegetation sensitivity assessments, in turn to aid and guide developments and thereby minimising their impacts on sensitive vegetation.

2. PROJECT DESCRIPTION

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

(b) a description of the proposed activity;

(d) a description of the property on which the activity is to be undertaken and the location of the activity on the property, or if it is –

(i) a linear activity, a description of the route of the activity; or

(ii) an ocean-based activity, the coordinates where the activity is to be undertaken

In line with the above-mentioned legislative requirement, this chapter identifies the location and size of the site of the proposed Middleton IPP wind energy project, and provides a description of its various components and arrangements on the site.

2.1. LOCATION AND SITE DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed wind farm is located in the Blue Crane Route Municipality within the Cacadu District Municipality, Eastern Cape Province, South Africa (Figure 2-1 and 2-2). The project has a study area of approximately 24 000 ha located on 23 property portions which are tabulated below:

Table 2-1: Farm name and property portions of Land Owners

| FARM | PROPERTY PORTION |
|-----------------------|---|
| Wellington Grove Farm | <ul style="list-style-type: none"> • Portion 9 of Farm No. 381; • Remaining Extent of Farm No. 381; • Portion 2 of farm No. 381; • Portion 8 of Farm No. 381 |
| Wilton Farm | <ul style="list-style-type: none"> • Portion 2 of Farm No. 409; • Remaining Extent of Farm No. 409 |
| Rietfontein Farm | <ul style="list-style-type: none"> • Remaining Extent of Farm No. 160 |
| Hartebeest Kuil Farm | <ul style="list-style-type: none"> • Portion 2 of Farm No. 220; • Portion 1 of Farm No. 220; • Remaining Extent of Farm No. 220 |
| Bloemhof Farm | <ul style="list-style-type: none"> • Portion 1 of Farm No. 166; • Remaining Extent of Farm No. 166 |
| Draaihoek Farm | <ul style="list-style-type: none"> • Portion 21 of farm No. 221 |
| Jaskraal Farm | <ul style="list-style-type: none"> • Portion 1 of Farm No. 160 |
| Gunsteling Farm | <ul style="list-style-type: none"> • Remaining Extent of Farm No. 165; • Remaining Extent of Farm No. 164 |
| Klein Jas Kraal Farm | <ul style="list-style-type: none"> • Remaining Extent of Farm No. 161 |
| Farm 215 | <ul style="list-style-type: none"> • Remaining Extent of Farm No. 215 |
| Doornkloof Farm | <ul style="list-style-type: none"> • Remaining Extent of Farm No. 230; • Portion 2 of Farm no. 230; • Portion 3 of Farm No. 230; • Remaining Extent of Farm No. 431 |
| Van Aardtskraal Farm | <ul style="list-style-type: none"> • Portion 1 of Farm No. 163 |

These farms are currently used for animal husbandry and agriculture, primarily the grazing of domestic and game animals. A more detailed description of the activities associated with the proposed wind energy facility is contained in Section 2.2.



Figure 2-1: Google Earth image indicating the location of the proposed Middleton wind energy project.

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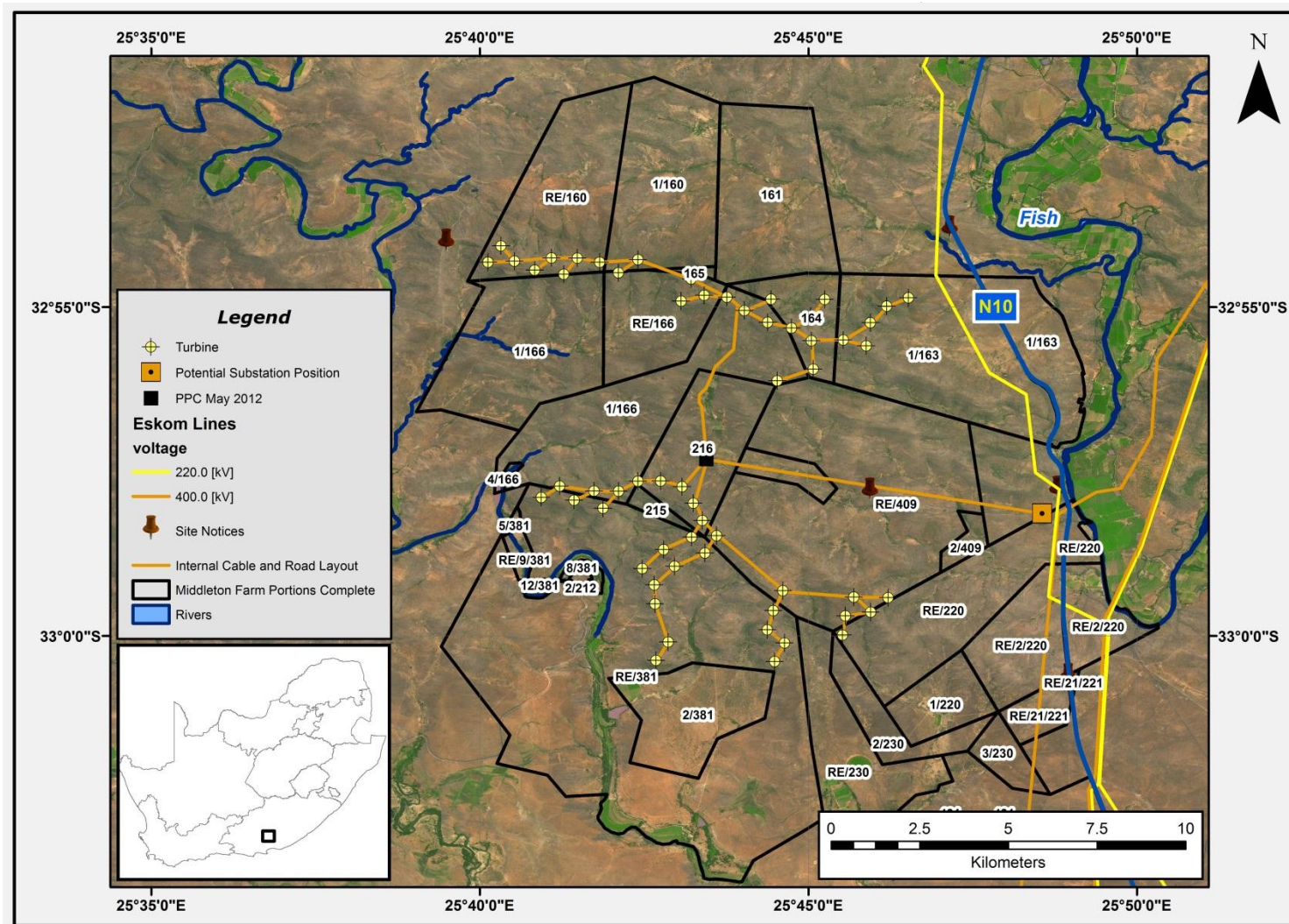


Figure 2-2: The property portions, turbine sites and infrastructure of the proposed Middleton wind energy project

2.2. DETAILED DESCRIPTION OF THE MIDDLETON WIND ENERGY PROJECT

The wind farm which will be spread over 23 adjacent property portions in the Middleton area. These land portions are planned to host up to 60 turbines, each with a nominal power output ranging between 1.6 - 3 Mega Watts (MW). The maximum total potential output of the wind farm would be approximately 140 MW, which will serve to further support the regional and national power balance.

The ultimate size of the wind turbines will depend on further technical assessments but will typically consist of rotor turbines (3x50 m length blades) with rotor diameters of around 100 meters mounted atop a 80 - 100 meter high steel (or hybrid steel/concrete) tower. Other infrastructure components associated with the proposed wind energy facility are *inter alia*:

- Concrete foundations to support the wind turbine towers.
- Internal access roads to each turbine - approximately 5 meters wide.
- Underground cables connecting the wind turbines.
- 22/66kV electrical substation.
- Possible upgrading of existing roads for the transportation of the turbines to the wind energy facility.
- Buildings to house the control instrumentation and backup power support, as well as a store room for the maintenance equipment.

2.2.1. Production of electricity from wind

Wind energy is a form of solar energy. Winds are caused by the uneven heating of the atmosphere by the sun, the irregularities of the earth's surface, and rotation of the earth. Wind flow patterns are modified by the earth's terrain, bodies of water, and vegetation. This wind flow or motion energy (kinetic energy) can be used for generating electricity. The term "wind energy" describes the process by which wind is used to generate mechanical power or electricity. Wind turbines convert the kinetic energy in the wind into mechanical power and a generator can then be used to convert this mechanical power into electricity. A typical wind turbine consists of (refer to Figure 2-3):

- A rotor, with 3 blades, which react with the wind and convert the energy into rotational motion;
- A nacelle which houses the equipment at the top of the tower;
- A tower, to support the nacelle and rotor;
- Electronic equipment i.e. controls, transformers, electrical cables and switchgear, ground support equipment, and interconnection equipment; and
- Turbine step-up transformer which will be next to the turbine (refer to Plate 2-1).

The amount of energy which the wind transfers to the rotor depends on the density of the air (the heavier the air, the more energy received by the turbine), the rotor area (the bigger the rotor diameter, the more energy received by the turbine), and the wind speed (the faster the wind, the more energy received by the turbine). Provided in the sections that follow, is a detailed discussion on the various components of the proposed project.

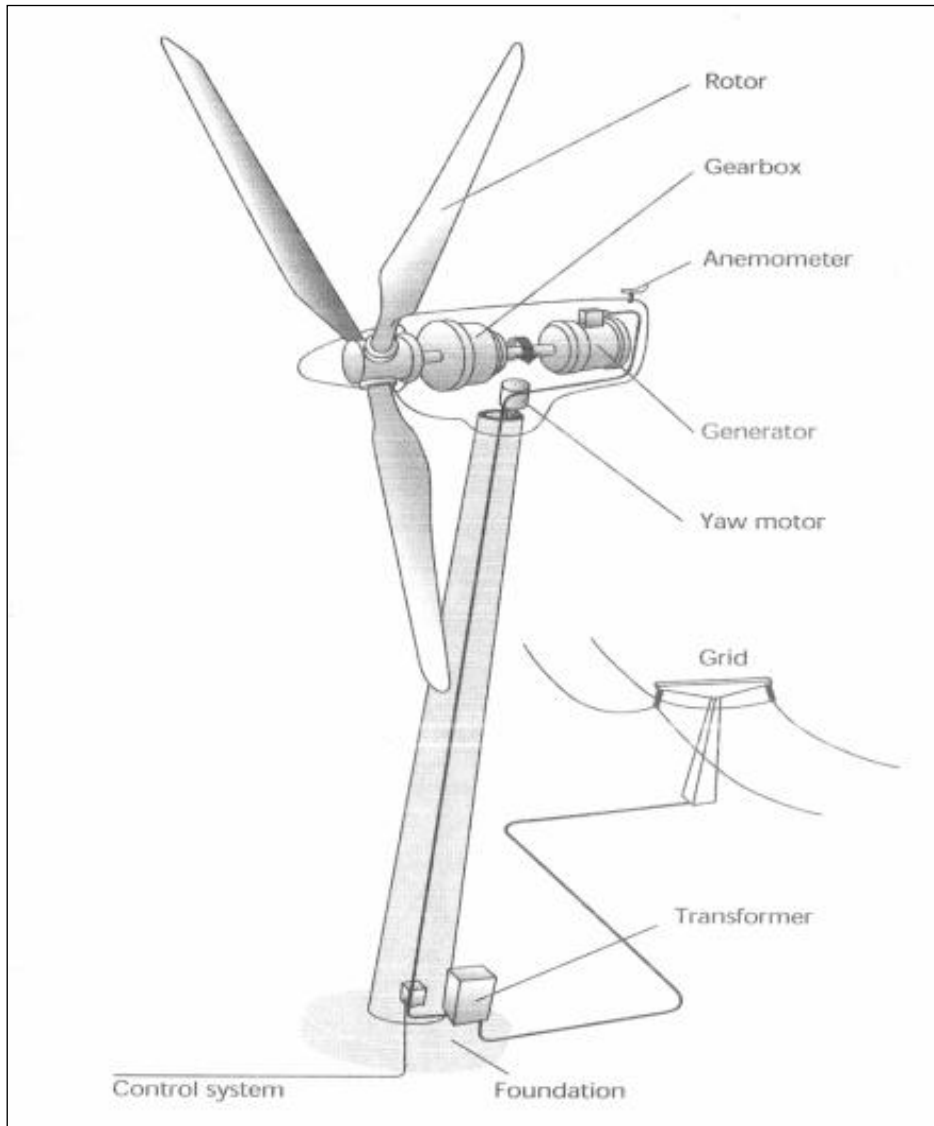


Figure 2-3: Illustration of the main components of a typical wind turbine



Plate 2-1: Photographs illustrating the turbine step-up transformer

2.2.2. Stages of wind farm development

Typically, the development of a wind farm is divided into four phases namely:-

- Pre-feasibility
- Feasibility
- Wind Measurement
- Implementation

Each of the above-mentioned phases is described in detail in sections below.

Pre-feasibility

During the pre-feasibility phase, the proponent conducts surveys to ensure that obvious issues surrounding the project should not impact on the progress and the final acceptance of the project. This includes visits to local authorities, civil aviation authorities, identifying local communities, wind resource evaluation from existing data, grid connectivity, environmental impact assessment, logistical and project phasing requirements.

Feasibility

During the feasibility phase the proponent will firm up and carry out thorough investigation to establish the actual costs, and economic viability of the project by designing the financial model with financial institutions, verifying wind resources by onsite measurement, ensuring grid connection is economical and feasible in the timeframes of the project and identifying possible off-takers for the electricity. Once the feasibility studies are complete the proponent will identify which parts of the project will be constructed first. Then, in an organised fashion the project will be expanded according to the availability of grid capacity and turbines.

Wind Measurement

It is necessary to erect a wind measurement mast to gather wind speed data and correlate these measurements with other meteorological data in order to produce a final wind model of the proposed project site. A measurement campaign of at least 12 months in duration is necessary to ensure verifiable data is obtained. The project proponent has already erected three masts in the project study area (during 2011 – Plate 2-2) and has commenced with the data capturing campaign. This data will advise on the economics of the project and finalise the positions of the wind turbines. The 80-meter mast is a guyed lattice tower designed specifically for wind resource measurements. The mast is ‘marked’ as per the requirements of the Civil Aviation Authority.



Plate 2-2: An example of a meteorological mast

Implementation

The construction of a wind farm is divided into three phases namely:-

- Civil works

- Erection/commissioning
- Operational

Each of the above-mentioned phases is described in detail below.

1. Civil works

A temporary ‘construction platform’ is required at each turbine foundation site to ensure safe and stable access by heavy machinery and equipment (bulldozers, trucks, cranes etc.) during the construction phase. These platforms will be connected by access roads (if none currently exists) that must meet the following requirements:

- Approximately 5 m width with 0.5 m clearance on either side of the road (total of 6 m clearance);
- 30 cm pebble bed;
- Maximum 10% slope; and
- Curve radius of at least 25m (this will depend on turbine supplier transportation specifications).

Once the wind farm is operational, the construction platforms can be partially rehabilitated to reduce the final cumulative area of the total development footprint of the individual turbines.

Geotechnical studies and foundation works

A detailed geotechnical study of the area is always undertaken for safety purposes, usually after the environmental authorisation has been secured. This comprises drilling, penetration and pressure assessments. For the purpose of the foundations, approximately 500 m³ of substrate would need to be excavated for each turbine of the dimensions described above.

These excavations are then filled with steel-reinforced concrete (Plate 2-3). The foundations can vary according to the quality of the soil.

The main dimensions for the foundation of a 3MW/100m high wind turbine are shown in Figure 2-4 with underground foundation, tower base, above ground foundation, and ground level.

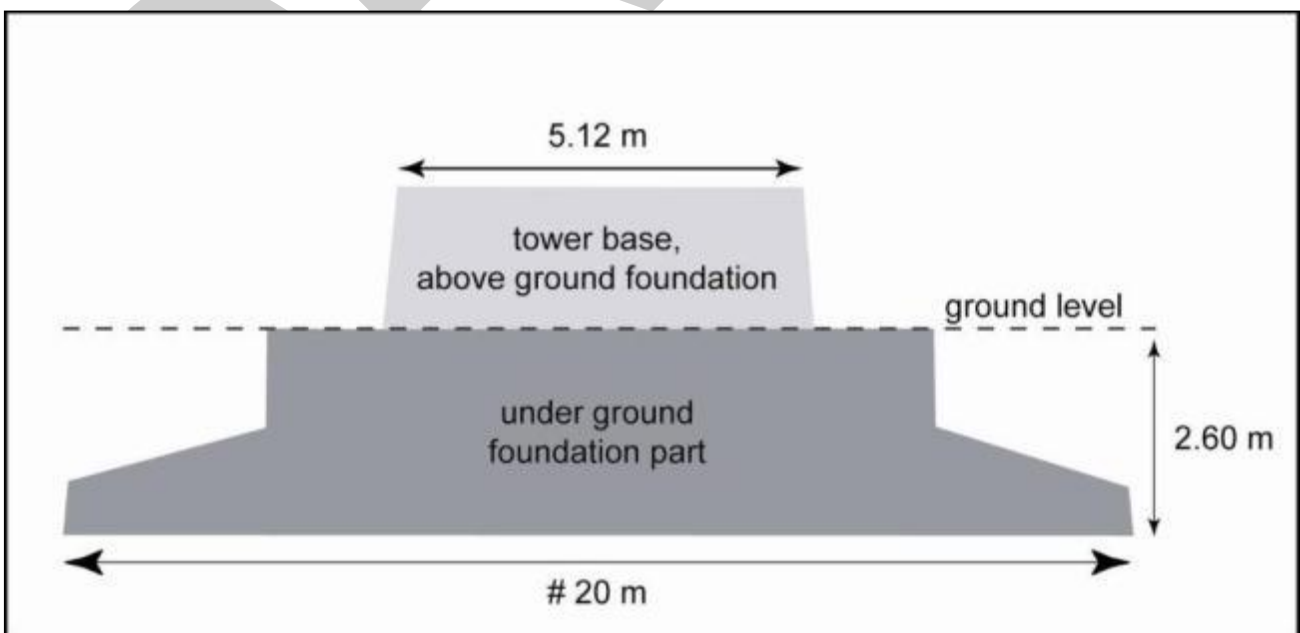


Figure 2-4: The main dimensions for the foundation of a 3MW/100m high wind turbine

Electrical cabling and substation

Electrical and communication cables will be entrenched (approximately 1m deep) and be routed adjacent to the access roads.

The 22/66 kV substation will comprise an area of about 5 000 m² (0.5 ha) which will be fenced. Standard foundations for the electrical equipment will be constructed. The provisional general area for the substation is indicated in Figures 2-5 and 2-6.



Plate 2-3: Concrete pouring of a turbine foundation – note the tower base collar in the foreground

2. Erection/commissioning

Turbine erection

The process is quick (around 3 days per turbine) if the weather conditions permit. This phase is the most complex and costly and utilises heavy lift cranes in the assembly process (Plate 2-4).

Electrical connection

Each turbine is fitted with its own transformer that steps up the voltage usually to 22 kV. The entire wind farm is then connected to the “point of interconnection” which is the electrical boundary between the wind farm and the municipal or national grid. Most of these works will typically be carried out by and in agreement with the transmission or distribution company (line upgrade, connection to the sub-station, burial of the cables etc.) Eskom, the local Municipality, or an

independent system operator as the case may be.

The existing high and medium voltage electrical network that traverses the studies are depicted in Figure 2-2.

The electricity will be fed into the national ESKOM grid.

The interconnection of the wind farm to the Eskom Distribution electrical grid will require the construction of a 22/66 kV substation on the project site which to step up the 22 kV turbine supply. Various route alternatives for the powerlines and project substation site alternatives line will be presented in the EIR phase.

3. Operational phase

During the period when the turbines are operational, on-site human activity drops to a minimum, and includes routine maintenance requiring only light vehicles to access the site. Only major breakdowns would necessitate the use of cranes and trucks.

2.2.3. Timing estimation

Based on existing publications, the development, construction and implementation of a wind farm of these approximate dimensions would require about 12-18 months, depending on the delivery times of the main equipment. Described below is a typical schedule :

- Platforms/Roads/cable laydown = 20 weeks;
- Turbines foundations = 10 weeks for each foundation (including 8 weeks to let the foundation concrete dry);
- Civil works for the substation: = 12 weeks;
- Wind turbines/electrical substation erection = 2 turbines/week (in good low wind weather conditions);
- Substation erection = 8 weeks; and
- Commissioning and electrical connection = 4 weeks.



Plate 2-4: Assembly and erection of the tower sections using cranes

2.2.4. Refurbishment and rehabilitation of the site after operation

Current wind turbines are designed to last for over 25 years and this is the figure that has been used to plan the life span of a modern wind farm. Should the refurbishment of the wind farm be financially, environmental and socially viable, the life span can be extended by another 25 years. Terra Wind Energy, Middleton undertakes to dismantle all wind turbines and foundations to a depth of 1 meter underground. The excavation will be backfilled with soil, and grass will be replanted in order restore the site’s appearance to its original state within a matter of weeks. The only residual material is the deeper concrete works below surface.

2.2.5. Conceptual layout

Figure 2-2 is the preliminary layout that has been developed taking the local social and ecological sensitivities identified to date into account (refer to chapter 4). The final road layout and cable routing will be defined at a later stage based on the definition of the final locations of the turbines. The final layout will maximise the use of existing tracks where possible.

3. RELEVANT LEGISLATION

According to regulation 28 (1) and (2) of the EIA regulations (2010), *A scoping report must include –*
 1(f) *an identification of all legislation and guidelines that have been considered in the preparation of the scoping report*
 (2) *In addition, a scoping report must take into account any guidelines applicable to the kind of activity which is the subject of the application.*

In line with the above-mentioned legislative requirement, the development of the proposed Middleton wind energy project, described in Chapter 2 above, will be subject to the requirements of a number of laws both international and national. These include:

3.1. INTERNATIONAL

3.1.1. *The 1992 United Nations Framework Convention on Climate Change (FCCC)*

The FCCC is a framework convention which was adopted at the 1992 Rio Earth Summit. South Africa signed the FCCC in 1993 and ratified it in August 1997 (Glazwesky, 2005). The stated purpose of the FCCC is to, “*achieve....stabilisation of greenhouse gas concentrations in the atmosphere at concentrations at a level that would prevent dangerous anthropogenic interference with the climate system*”, and to thereby prevent human-induced climate change by reducing the production of greenhouse gases defined as, “*those gaseous constituents of the atmosphere both natural and anthropogenic, that absorb and re-emit infrared radiation*”.

Relevance to the proposed project:

- The FCCC is relevant in that the proposed project will contribute to a reduction in the production of greenhouse gases by providing an alternative to fossil fuel-derived electricity, and will assist South Africa to begin demonstrating its commitment to meeting international obligations.

3.1.2. *The Kyoto Protocol (2002)*

The Kyoto Protocol is a protocol to the FCCC which was initially adopted for use on 11 December 1997 in Kyoto, Japan, and which entered into force on 16 February 2005 (UNFCCC, 2009). The Kyoto Protocol is the chief instrument for tackling climate change. The major feature of the Protocol is that, “*it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions. These amount to an average of five per cent against 1990 levels, over the five-year period 2008-2011*” (UNFCCC, 2009). The major distinction between the Protocol and the Convention is that, “*while the Convention **encouraged** industrialised countries to stabilize GHG emissions, the Protocol **commits** them to do so*”.

Relevance to the proposed project:

- The Kyoto Protocol is relevant in that the proposed project will contribute to a reduction in the production of greenhouse gases by providing an alternative to fossil fuel-derived electricity, and will assist South Africa to begin demonstrating its commitment to meeting international obligations.

3.2. NATIONAL

3.2.1. *The Constitution Act (108 of 1996)*

This is the supreme law of the land. As a result, all laws, including those pertaining to the proposed development, must conform to the Constitution. The Bill of Rights - Chapter 2 of the Constitution, includes an environmental right (Section 24) according to which, everyone has the right:

- a) *To an environment that is not harmful to their health or well-being; and*

- b) To have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that:
- (i) Prevent pollution and ecological degradation;
 - (ii) Promote conservation; and
 - (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Relevance to the proposed project:

- Obligation to ensure that the proposed development will not result in pollution and ecological degradation; and
- Obligation to ensure that the proposed development is ecologically sustainable, while demonstrating economic and social development.

3.2.2. The National Environmental Management Act (NEMA) (107 of 1998)

The objective of NEMA is: “To provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for coordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.”

A key aspect of NEMA is that it provides a set of environmental management principles that apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. The proposed development has been assessed in terms of possible conflicts or compliance with these principles. Section 2 of NEMA contains principles (see Box 1) relevant to the proposed project, and likely to be utilised in the process of decision making by DEA.

BOX 1: NEMA ENVIRONMENTAL MANAGEMENT PRINCIPLES

| | |
|--------|--|
| (2) | Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. |
| (3) | Development must be socially, environmentally and economically sustainable. |
| (4)(a) | Sustainable development requires the consideration of all relevant factors including the following: <ul style="list-style-type: none"> i. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied; ii. That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied; iii. That waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner. |
| (4)(e) | Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle. |
| (4)(i) | The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. |
| (4)(j) | The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected. |
| (4)(p) | The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment. |
| (4)(r) | Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure. |

As these principles are utilised as a guideline by the competent authority in ensuring the protection of the environment, the proposed development should, where possible, be in accordance with these principles. Where this is not possible, deviation from these principles would have to be very strongly motivated.

NEMA introduces the duty of care concept, which is based on the policy of strict liability. This duty of care extends to the prevention, control and rehabilitation of significant pollution and environmental degradation. It also dictates a duty of care to address emergency incidents of pollution. A failure to perform this duty of care may lead to criminal prosecution, and may lead to the prosecution of managers or directors of companies for the conduct of the legal persons. Employees who refuse to perform environmentally hazardous work, or whistle blowers, are protected in terms of NEMA. In addition NEMA introduces a new framework for environmental impact assessments, the EIA Regulations (2010) discussed previously.

Relevance to the proposed project:

- The developer must be mindful of the principles, broad liability and implications associated with NEMA and must eliminate or mitigate any potential impacts.
- The developer must be mindful of the principles, broad liability and implications of causing damage to the environment.

3.2.3. The National Environment Management: Biodiversity Act (10 of 2004)

This Act provides for the management and conservation of South Africa’s biodiversity within the framework of the National Environmental Management Act 107 of 1998 (see Box 2). In terms of the Biodiversity Act, the developer has a responsibility for:

- a) *The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations).*
- b) *Application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all developments within the area are in line with ecological sustainable development and protection of biodiversity.*
- c) *Limit further loss of biodiversity and conserve endangered ecosystems.*

The objectives of this Act are:

- d) *To provide, within the framework of the National Environmental Management Act, for –*
 - (i) *The management and conservation of biological diversity within the Republic;*
 - (ii) *The use of indigenous biological resources in a sustainable manner.*

The Act’s permit system is further regulated in the Act’s Threatened or Protected Species Regulations, which were promulgated in February 2007.

Relevance to the proposed project:

- The proposed development must conserve endangered ecosystems and protect and promote biodiversity;
- Must assess the impacts of the proposed development on endangered ecosystems;
- No protected species may be removed or damaged without a permit; and
- The proposed site must be cleared of alien vegetation using appropriate means.

BOX 2: MANAGEMENT AND CONSERVATION OF SOUTH AFRICA’S BIODIVERSITY WITHIN THE FRAMEWORK OF NEMA

| CHAPTER 4 | |
|---------------------------|--|
| | Provides for the protection of species that are threatened or in need of national protection to ensure their survival in the wild; <ul style="list-style-type: none"> ○ to give effect to the Republic’s obligations under international agreements regulating international trade in specimens of endangered species; and ○ ensure that the commercial utilization of biodiversity is managed in an ecologically sustainable way. |
| CHAPTER 5 (Part 2) | |
| Section 73 | A person who is the owner of land on which a listed invasive species occurs must: <ol style="list-style-type: none"> a) notify any relevant competent authority, in writing, of the listed invasive species |

| | |
|-------------------|--|
| | <p>occurring on that land;</p> <p>b) take steps to control and eradicate the listed invasive species and to prevent it from spreading; and</p> <p>c) take all required steps to prevent or minimise harm to biodiversity.</p> |
| Section 75 | <ul style="list-style-type: none"> Control and eradication of a listed invasive species must be carried out by means of methods that are appropriate for the species concerned and the environment in which it occurs. Any action taken to control and eradicate a listed invasive species must be executed with caution and in a manner that may cause the least possible harm to biodiversity and damage to the environment. The methods employed to control and eradicate a listed invasive species must also be directed at the offspring, propagating material and re-growth of such invasive species in order to prevent such species from producing offspring, forming seed, regenerating or re-establishing itself in any manner. |

3.2.4. *The National Forests Act (84 of 1998)*

The objective of this Act is to monitor and manage the sustainable use of forests. In terms of Section 12 (1) (d) of this Act and GN No. 1012 (promulgated under the National Forests Act), no person may, except under licence:

- Cut, disturb, damage or destroy a protected tree; or
- Possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree.

Relevance to the proposed project:

- If any protected trees in terms of this Act occur on site, the developer will require a licence from the DAFF to perform any of the above-listed activities.

3.2.5. *National Heritage Resources Act (25 of 1999)*

The protection of archaeological and paleontological resources is the responsibility of a provincial heritage resources authority and all archaeological objects, paleontological material and meteorites are the property of the State. *“Any person who discovers archaeological or paleontological objects or material or a meteorite in the course of development must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority”.*

Relevance to the proposed Terra Wind Energy, Middleton (Pty) Ltd Wind Energy Project:

- An archaeological impact assessment must be undertaken during the detailed EIR phase of the proposed project.
- No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority.
- No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter or deface archaeological or historically significant sites.

3.2.6. *National Environment Management: Air Quality Act (39 of 2004)*

The objective of this act is to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development.

Part 6 of the act deals with dust control and states that *“Steps must be taken to prevent nuisance dust or other measures aimed at the control of dust”*

Relevance to the proposed project:

- The “best practicable means” for the abatement of dust during construction if approved have to be taken.
- All appliances used for preventing or reducing to a minimum the escape into the atmosphere of noxious or offensive gases have to be properly operated and maintained and the best practice means for achieving this implemented.

3.2.7. National Environmental Management: Air Quality Act (39 of 2004)

As with the Atmospheric Pollution Prevention Act 45 of 1965, the objective of the new Air Quality Act is to protect the environment by providing the necessary legislation for the prevention of air pollution.

3.2.8. The White Paper on Energy Policy for South Africa (Energy White Paper)

The White Paper on the Energy Policy for South Africa (Energy White Paper) is an overarching document which sets out the government’s official policy on the supply and consumption of energy for the next decade. One of the main goals of the White Paper is to create energy security by diversifying the energy supply and energy carriers. Currently, much of South Africa’s energy is derived from extremely expensive imported fuels and coal-powered energy generation, which could be threatened by climate change response measures of developed countries (refer to section 3.1 above). The White Paper points out that, South Africa has abundant energy sources and it stresses that, “*all possible energy carriers should be tapped to ensure economic growth and development*”. Many of the sectors contributing to the Gross Domestic Product (GDP) are practically driven by these energy carriers. In fact, according to Glazwesky (2005), industry as a whole consumes approximately 40% of the total electricity generated, making it the chief energy source for South Africa’s economic growth and development.

In addition to the above the Energy White Paper notes that there is currently insufficient renewable energy data and lack of transparency in publicly sharing the data. Information on renewable energy system applications, system standards, installation and performance guides, technical and economic characteristics, and identifying human training capacity is essential as the government commits to a healthier environment as part of their agenda. The position of the Energy White Paper on renewable energy is based on the integrated resource planning principle of, “*ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options*”, and this has subsequently been elaborated by the White Paper on Renewable Energy (see section 3.2.9 that follows).

Relevance to the proposed project:

- The proposed Wind Farm project is a direct consequence of the Government’s White Paper on Energy Policy and the requirements therein to improve energy security of supply through diversification, as well as the demonstration and introduction of cleaner energy technologies and the promotion of competition and empowerment in the electricity market.

3.2.9. The White Paper on Renewable Energy Policy (Renewable Energy White Paper)

The White Paper on the Renewable Energy Policy (Renewable Energy White Paper) complements the White Paper on Energy Policy discussed in section 3.2.8 above, by pledging “*Government Support for the development, demonstration and implementation of renewable energy sources for both small and large scale applications*”. It sets out the policy principles, goals and objectives to achieve, “*An energy economy in which modern renewable energy increases its share of energy consumed and provides affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation*”. The Department of Minerals and

Energy (DME) (now the Department of Energy) embarked on an Integrated Energy Plan (IEP) to develop the renewable energy resources, while taking safety, health and the environment into consideration. The government set a target of, “10 000 GWh (0.8Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro”. Four strategic areas that needed to be addressed to create the appropriate enabling environment for the promotion of renewable energy were identified. These included:

- Financial instruments;
- Legal instruments;
- Technology development, and;
- Awareness raising, capacity building and education.

3.2.10. Integrated Energy Plan for the Republic of South Africa, March 2003

The former Department of Minerals and Energy (DME) commissioned the Integrated Energy Plan (IEP) in response to the requirements of the National Energy Policy in order to provide a framework by which specific energy policies, development decisions and energy supply trade-offs could be made on a project-by-project basis. The framework is intended to create a balance between energy demand and resource availability so as to provide low cost electricity for social and economic development, while taking into account health, safety and environmental parameters. In addition to the above, the IEP recognised the following:

- South Africa is likely to be reliant on coal for at least the next 20 years as the predominant source of energy;
- New electricity generation will remain predominantly coal based but with the potential for hydro, natural gas and nuclear capacity;
- Need to diversify energy supply through increased use of natural gas and new and renewable energies;
- The promotion of the use of energy efficiency management and technologies;
- The need to ensure environmental considerations in energy supply, transformation and end use;
- The promotion of universal access to clean and affordable energy, with the emphasis on household energy supply being coordinated with provincial and local integrated development programmed;
- The need to introduce policy, legislation and regulations for the promotion of renewable energy and energy efficiency measures and mandatory provision of energy data, and;
- The need to undertake integrated energy planning on an on-going basis.

Relevance to the proposed project:

- The proposed Wind Farm project is in line with the IEP with regards to diversification of energy supply and the promotion of universal access to clean energy.

3.2.11. Electricity Regulation Act (Act No. 4 of 2006)

The Electricity Regulation Act (Act No. 4 of 2006) became operation on 1 August 2006 and the objectives of this Act are to:

- Facilitate universal access to electricity;
- Promote the use of diverse energy sources and energy efficiencies, and;
- Promote competitiveness and customer and end user choice.

Relevance to the proposed project:

- The proposed Wind Farm project is in line with the call of the Electricity Regulation Act No. 4 of

2006 as it is has the potential to improve energy security of supply through diversification.

3.2.12. Electricity Regulation on New Generation Capacity (Government Gazette No 32378 of 5 August 2009)

On 5 August 2009 the government of the Republic of South Africa promulgated the Electricity Regulations on New Generation Capacity (Government Gazette No 32378) which were made by the Department of Energy in terms of the Electricity Regulation Act 2006 (see 3.2.11 above), and are applicable to:- (a) all types of generation technology including renewable generation and co-generation technology (i.e. landfill gas, small hydro (less than 10 MW), wind and concentrated solar power (with storage)) but excluding nuclear power generation technology; (b) base load, mid-merit and peak generation; and (c) take effect from the date of promulgation, unless otherwise indicated.

The objectives of these regulations are:

- The regulation of entry by a buyer and an Independent Power Producer (IPP) into a power purchase agreement;
- The facilitation of fair treatment and the non-discrimination between IPP generators and the buyer;
- The facilitation of the full recovery by the buyer of all costs incurred by it under or in connection with the power purchase agreement and an appropriate return based on the risks assumed by the buyer there under and, for this purpose to ensure the transparency and cost reflectivity in the determination of electricity tariffs;
- The establishment of rules and guidelines that are applicable in the undertaking of an IPP bid programme and the procurement of an IPP for purposes of new generation capacity;
- The provision of a framework for the reimbursement by the regulator, of costs incurred by the buyer and the system operator in the power purchase agreement, and;
- The regulation of the framework of approving the IPP bid programme, the procurement process, the Renewable Feed in Tariff (REFIT) programme, and the relevant agreements to be concluded.

The Guidelines describe the basic structure of the REFIT programme, including the roles of various parties in the programme, namely National Energy Regulator of South Africa (NERSA), Eskom and renewable energy generators. Pursuant to the Guidelines, Eskom's "Single Buyer Office" is to be appointed as the Renewable Energy Purchasing Agency (REPA), the exclusive buyer of power under the REFIT programme. Generators participating in the REFIT scheme are required to sell power generated by renewable technologies to Eskom as the REPA under a Power Purchase Agreement, and are entitled to receive regulated tariffs, based on the particular generation technology. NERSA is tasked with the administration of the REFIT programme, including setting the tariffs and verifying that generation is genuinely from renewable energy sources.

While the Regulations deal generally with procurement under an IPP bid programme (defined in the Regulations to mean a bidding process for the procurement of new generation capacity and/or ancillary services from IPPs), and specify the use of a bidding process involving requests for prequalification, requests for proposals and negotiations with the preferred bidder, the Regulations set out a special process for the procurement of renewable energy and cogeneration under the REFIT programme, described in Regulation 7. This Regulation states that NERSA is to, "*develop rules related to the criteria for the selection of "renewable energy IPPs... that qualify for a licence"*" and sets out a list of matters that the criteria prescribed by NERSA should take account of. These include:

- Compliance with the integrated resource plan and the preferred technologies;
- Acceptance by the IPP of a standardised power purchase agreement;
- Preference for a plant location that contributes to grid stabilisation and mitigates against transmission losses;

- Preference for a plant technology and location that contributes to local economic development;
- Compliance with legislation in respect of the advancement of historically disadvantaged individuals;
- Preference for projects with viable network integration requirements;
- Preference for projects with advanced environmental approvals;
- Preference for projects demonstrating the ability to raise finance;
- Preference for small distributed generators over centralized generators; and
- Preference for generators that can be commissioned in the shortest time.

According to Dewey & LeBouef (August, 2009), it appears, therefore, that successful REFIT projects may not be selected through a conventional bidding process, but instead, applications will be selected on the basis of prescribed criteria. Just what such criteria are, and how they will be applied and weighted is not yet clear, but it is expected that this will be set out in the rules to be developed by NERSA as required by Regulation 7(2)(a).

Relevance to the proposed project:

- The proposed Middleton Wind Energy Project is required to comply with any guidelines relating to the IPP bid programme and the REFIT programme.

3.2.13. Aviation Act (Act No. 74 of 1962): 13th Amendment of the Civil Aviation Regulations 1997

Section 14 of obstacle limitations and marking outside aerodrome or heliport (CAR Part 139.01.33) under this Act specifically deals with wind turbine generators (wind farms). According to this section, “A wind turbine generator is a special type of aviation obstruction due to the fact that at least the top third of the generator is continuously variable and offers a peculiar problem in as much marking by night is concerned. The Act emphasizes that, when wind turbine generators are grouped in numbers of three or more they will be referred to as “wind farms”.

Of particular importance to the proposed project are the following:-

- **Wind farm placement:** Due to the potential of wind turbine generators to interfere on radio navigation equipment, *no wind farm should be built closer than 35km from an aerodrome.* In addition, much care should be taken to consider visual flight rules routes, proximity of known recreational flight activity such as hang gliders, en route navigational facilities etc.
- **Wind farm Markings:** *Wind turbines shall be painted bright white to provide the maximum daytime conspicuousness. The colours grey, blue and darker shades of white should be avoided altogether. If such colours have been used, the wind turbines shall be supplemented with daytime lighting, as required.*
- **Wind farm Lighting:**
 - Wind farm (3 or more units) Lighting: *In determining the required lighting of a wind farm, it is important to identify the layout of the wind farm first.* This will allow the proper approach to be taken when identifying which turbines need to be lit. Any special consideration to the site’s location in proximity to aerodromes or known corridors, as well as any special terrain considerations, must be identified and addressed at this time. Details are as follows:
 - Not all wind turbine units within an installation or wind farm need to be lit. Definition of the periphery of the installation is essential. Lighting of interior wind turbines is of lesser importance unless they project above the peripheral units. This can be the case when higher ridges or plateaus are present within the wind farm area.
 - Obstruction lights within a group of wind turbines should have unlighted separations or gaps of no more than 800 m if the integrity of the group

appearance is to be maintained. This is especially critical if the arrangement of objects is essentially linear, as is the case with most wind turbine groups.

- Any array of flashing or pulsed obstruction lighting, intended to warn of a group of wind turbines forming an entity (i.e., a line, string, or series of units), shall be synchronized to flash simultaneously. If an installation consists of a number of widespread, but obviously separated areas or entities more than 1500 m from each other, it is not necessary that all such areas flash synchronously.
- Night time wind turbine obstruction lighting should consist of medium intensity type B aviation red flashing lights. Minimum intensities of 2000 candela for night-time red flashing or strobe lights are required. *Note: Steady-burning obstruction lights shall not be used.*
- White medium intensity type A strobe lights may be used in lieu of the preferred medium intensity type B strobe lights, but must be used alone without any red lights, and must be positioned in the same manner as the red flashing lights.
- Since the hub of the wind turbine unit is frequently as large as the nacelle (body) itself, a top-mounted obstruction light should be raised well above the surface of the nacelle so that it may be easily seen from directly in front of the turbine. Placement of the light fixtures on the turbine nacelle should be accomplished to ensure that they are visible from 360 degrees, with particular attention being made to ensure that the hub of the turbine rotor in no way blocks the light from an aircraft approaching the windward side of the turbine at the same elevation as the turbine hub.
- When possible, antennas or towers of heights over 45 m that are within the turbine farm area should be incorporated into the lighting plan for the site, as they offer tall, unobstructed platforms on which lighting fixtures can be mounted and should be included in the synchronization and spacing calculations.
- Each turbine should only require one fixture if the site is monitored, and that *a failed light fixture can be replaced within the next working day*. Failure to replace a failed fixture, which is essential to maintaining the 800 m-separation requirement, will result in an unsafe gap in the lighting configuration. *If the facility does not possess the capability to replace fixtures within the next working day, each turbine shall be fitted with two separate fixtures*. A well-balanced lighting plan has all the light fixtures within the wind farm flash at the same time, thus delineating the farm as one large obstruction and navigation between the turbines should be discouraged. The synchronisation function can be accomplished through various means, either by radio frequency devices, hard-wired control cables, or independently mounted global positioning system synchroniser units. The site developer can decide the selection of the units, as long as the end result is that all lights flash perceptibly at the same time. If the developer fails to synchronise the fixtures, the developer will be required to add additional fixtures at closer spacing. The very basis of the lighting standards for wind farms is centred on the synchronous flashing of the perimeter lighting.
- **Turbine Lighting Assignment:** *The following guidelines should be followed to determine which turbines, need to be equipped with lighting fixtures. Again, the placement of the lights is contingent upon which type of configuration is being used.*
 - Linear: A light should be placed on each turbine positioned at each end of the line or string of turbines. From those end turbines, lights should then be positioned such that the next lit turbine is no more than 800 m, from the last lit turbine. This pattern should continue until the end of the string is reached. If the last segment is significantly short, it may be practical to move the lit turbines back one or two turbines towards the starting point to present a nice, well-balanced string of lights. A high concentration of lights, in close proximity, should be avoided.

- Cluster: A starting point should be selected along the outer perimeter of the cluster. This turbine should be lit, and then, continuing along the outer perimeter of the farm, a light should be placed on the next turbine with the maximum gap between the lit turbines being no more than 800 m. This pattern should continue around the perimeter of the cluster, and end at the starting point. If it appears that the lights are crowded at the ending point, the lit turbines may be moved back by one turbine to present a balanced lighting presentation. If it is determined that the distance across the cluster is of a distance greater than 1500 m, or the terrain may vary within the cluster (+30 m from the perimeter elevations), it may be appropriate to place a few lit turbines at strategic locations throughout the centre of the cluster. This will prevent pilots from believing they may be able to climb over the outer perimeter and descend down into the centre of the cluster. Discretion should be used when placing these lights to maintain a well-balanced, safe lighting configuration.
- Grid: Initially, each of the defined corners of the grid layout should be selected for lighting, and then, using the same concept of the cluster configuration, lights should be placed on turbines along the outer limits of the farm so that the maximum spacing between lit turbines is no more than 800 m. If it appears as though the end of the lighting strings may be crowded, it may be necessary to move the lights back one or two turbines to create an even lighting configuration. If the grid is more than 1500 m wide across the centre of the group of turbines, it may be appropriate to position one or two lights within the centre of the configuration to again provide warning to pilots attempting to climb over the outer limits of the grid, and descending into the centre of the grid. Elevation should also be considered.
- Special Instances: On occasion, if one or two turbines may be positioned at locations that do not lend themselves to the linear, cluster, or grid layouts, the following guidelines should be followed. If the turbine protrudes from the general limits of the wind farm, the turbine should automatically receive a lighting fixture. If another turbine is collocated with the first turbine, it does not require any lighting as long as it is within 150 m from the lit turbine and not positioned on the outboard side of the lit turbine. If these requirements cannot be met, both turbines, in this case, would need to be illuminated.

Due to requirements of the Act to ensure the safety of aircrafts, the project proponent will engage directly with the Civil Aviation Authority regarding the structural details of the facility.

3.2.14. Occupational Health and Safety Act (85 of 1993)

The objective of this Act is to provide for the health and safety of persons at work (See Box 3). In addition, the Act requires that, “as far as reasonably practicable, employers must ensure that their activities do not expose non-employees to health hazards” (Glazewski, 2005: 575). The importance of the Act lies in its numerous regulations, many of which will be relevant to the proposed wind energy project. These cover, among other issues, noise and lighting.

Relevance to the proposed Terra Wind Energy, Middleton (PTY) Ltd Wind Energy Project:

- The developer must be mindful of the principles and broad liability and implications contained in the OHS Act and mitigate any potential impacts.

BOX 3: HEALTH AND SAFETY OF PERSONS AT WORK ACCORDING TO THE OCCUPATIONAL HEALTH AND SAFETY ACT

| 8: GENERAL DUTIES OF THE EMPLOYERS TO THEIR EMPLOYEES | |
|---|---|
| (1) | Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees. |
| (2) | Without derogating from the generality of an employer's duties under subsection (1), the matters to which |

| | |
|--|--|
| | <p>those duties refer include in particular-</p> <ul style="list-style-type: none"> a) The provision and maintenance of systems of work, plant and machinery that, as far as is reasonably practicable, are safe and without risks to health; b) Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment; d) Establishing, as far as is reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as is reasonably practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures; e) Providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees; f) As far as is reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store or transport any article or substance or to operate any plant or machinery, unless the precautionary measures contemplated in paragraphs (b) and (d), or any other precautionary measures which may be prescribed, have been taken; g) Taking all necessary measures to ensure that tire requirements of this Act are complied with by every person in his employment or on premises under his control where plant or machinery is used; h) Enforcing such measures as may be necessary in the interest of health and safety; i) Ensuring that work is performed and that plant or machinery is used under the general supervision of a person trained to understand the hazards associated with it and who have the authority to ensure that precautionary measures taken by the employer are implemented; and authority as contemplated in Section 37 (1) (b). |
| 14: GENERAL DUTIES OF EMPLOYEES AT WORK | |
| Every employee shall at work:- | |
| (a) | Take reasonable care for the health and safety of himself and of other persons who may be affected by his acts or omissions; |
| (b) | As regards any duty or requirement imposed on his employer or any other person by this Act, cooperate with such employer or person to enable that duty or requirement to be performed or complied with; |
| (c) | Carry out any lawful order given to him, and obey the health and safety rules and procedures laid down by his employer or by anyone authorized thereto by his employer, in the interest of health or safety; |
| (d) | If any situation which is unsafe or unhealthy comes to his attention, as soon as practicable report such situation to his employer or to the health and safety representative for his workplace or section thereof, as the case may be, who shall report it to the employer; and |
| (e) | If he is involved in any incident which may affect his health or which has caused an injury to himself, report such incident to his employer or to anyone authorized thereto by the employer, or to his health and safety representative, as soon as practicable but not later than the end of the particular shift during which the incident occurred, unless the circumstances were such that the reporting of the incident was not possible, in which case he shall report the incident as soon as practicable thereafter. |
| 15: DUTY NOT TO INTERFERE WITH, DAMAGE OR MISUSE THINGS | |
| [S. 15 substituted by S. 3 of Act No. 181 of 1993.] | |
| | No person shall intentionally or recklessly interfere with, damage or misuse anything which is provided in the interest of health or safety. |

3.2.15. Other relevant legislation

Other legislation that may be relevant to the proposed Middleton wind energy project includes:-

National:

- The Telecommunication Act (1966) which has certain requirements with regard to potential impacts on signal reception;
- The Environment Conservation Act No 73 of 1989 (ECA) Noise Control Regulations, which specifically provide for regulations to be made with regard to the control of noise, vibration and shock, including prevention, acceptable levels, powers of local authorities and related matters;
- The Conservation of Agricultural Resources Act 43 of 1983 controls and regulates the conservation of agriculture and lists all regulated invasive species;
- The Development Facilitation Act 67 of 1995 provides for development and planning;

- The Environmental Conservation Act 73 of 1989 provides for effective protection, control and utilisation of the environment;
- The Mountain Catchment Areas Act 63 of 1970 provides for catchment conservation;
- The National Water Act 36 of 1998 regulates all matters relating to water including-drainage lines;
- The Physical Planning Act 135 of 1991 provides land use planning;
- The Tourism Act 72 of 1993 provides for the promotion of tourism and regulates the tourism industry;
- The Skills Development Act 97 of 1998 promotes the development of skills; and
- Nature and Environmental Conservation Ordinance (No. 19 of 1974), which lists species of special concern which require permits for removal.

In addition to the above, aside from the environmental authorisation, there are other permits, contracts and licenses that will need to be obtained by the project proponent for the proposed project some of which fall outside the scope of the EIA. However, for the purposes of completeness, these include:-

- Local Municipality: Land Rezoning Permit
- National Energy Regulator of South Africa (NERSA): Generation License
- Eskom: Connection agreement and Power Purchase Agreement (PPA)

3.3. MUNICIPAL BY-LAWS

Certain activities related to the proposed development may, in addition to National legislation, be subject to control by municipal by-laws. Relevant by-laws will be identified as part of the various specialist studies during the EIA Phase.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

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

(e) a description of the environment that may be affected by the activity and the manner in which the activity may be affected by the environment

In line with the above-mentioned legislative requirement, this chapter provides a description of the natural and socio-economic environments that could potentially be impacted by the proposed Middleton wind energy project.

Previous studies undertaken for proposed developments in Cookhouse (near Middleton) and the larger BCRM have included detailed descriptions of the general characteristics of the area in terms of climate, topography and geology, and therefore only a synthesis of this information is provided in this chapter (Section 4.1).

Descriptions of the flora are based on a survey of the relevant literature to determine what could be expected to be found on or near the site. A socio-economic profile of the BCRM - the area that will be most directly affected by the construction and operation of the proposed Middleton wind energy project is presented in Section 4.2 of this chapter. The profile includes basic demographic data on the municipal area.

4.1. THE BIO-PHYSICAL ENVIRONMENT

4.1.1 Climate

Due to the location of the study area at the confluence of several climatic regimes, namely temperate and subtropical, the Eastern Cape Province of South Africa has a complex climate. There are wide variations in temperature, rainfall and wind patterns, mainly as a result of movements of air masses, altitude, mountain orientation and the proximity of the Indian Ocean.

There is data available for climatic conditions in Somerset East, which is close to the study site. The annual mean rainfall is 570mm (ranging from 278 mm to 994 mm), with a March high of 84 mm and a June low of 21 mm. The mean annual daily temperature is 17.2°C with a mean monthly daily temperature high in January of 22.2°C and low in June and July of 12.6°C (www.saexplorer.co.za).

4.1.2 Geology and Topography

The Eastern Cape Province contains a wide variety of landscapes, from the stark Karoo (the semi-desert region of the central interior) to mountain ranges and gentle hills rolling down to the sea. The climate and topography give rise to the great diversity of vegetation types and habitats found in the region. The mountainous area on the northern border forms part of the Great Escarpment.

Another part of the escarpment lies just north of Bisho, Somerset East and Graaff-Reinet. In the south of the province, the Cape Folded Mountains start between East London and Port Elizabeth and continue westward into the Western Cape. As is the situation in KwaZulu-Natal, the Eastern Cape is characterised by a large number of short, deeply incised rivers flowing parallel to each other.

Middleton and the surrounding areas (including Somerset East) occur in the Karoo Supergroup and comprise mainly of the Beaufort Group with some Karoo Dolerite (Rust, 1998). The Beaufort group overlays the Ecca Group and was deposited on land through alluvial processes. It is characterised by reddish-purple and mottled, greenish, mudstone beds, interbedded with lenticular, creamy and buff coloured sandstone beds. The mudstone beds are a diagnostic feature of the Beaufort Group. A couple of long Dolerite outcrops occur in the area (Rust, 1998). The Adelaide subgroup occurs as a subgroup of the Beaufort Group, and forms most of the geology of the area.

The Adelaide subgroup comprises the Middleton Formation and the Balfour Formation which are made up of layers of a greenish-grey mudstone, shale and sandstone (Mucina and Rutherford, 2006).

Mucina and Rutherford (2006) describe the geology and soil for each of the vegetation types in the region (Table 4-1).

Table 4-1: Geology and soils of each of the vegetation types of the study area

| Vegetation Type | Geology and Soils |
|------------------------|---|
| Albany Broken Veld | Mainly shales and some sandstones of various stratigraphic units within the Witteberg Group of the Cape Supergroup and the Beaufort, Ecca and Dwyka Groups of the Karoo Supergroup. Mainly Glenrosa and/or Mispah soils (Fc land type) with some red-yellow, apedal, drained soils, with a high base status, generally <300 mm deep, typical of Ag land type. |
| Bedford Dry Grassland | Loam or clay-loam soils typical of Fc (most of the region) as well as Db and Fb land types on the mudstones and sandstones of the Adelaide Subgroup (Beaufort Group, Karoo Supergroup). |
| Great Fish Thicket | Mostly on shallow (< 1 m) clay soils (Glenrosa and Mispah) derived from the Adelaide and Estcourt Formations (Beaufort Group, Karoo Supergroup) mudstone and arenite. Half the area falls within the Fc land type, with Fb the only other one of some importance. |
| Southern Karoo Riviere | Recent sandy-clayey alluvial deposits rich in salt occurring on mudrocks and sandstones of the Adelaide Subgroup (Beaufort Group of the Karoo Supergroup) that support soils typical of Ia land type. |

Source: Mucina & Rutherford (2006)

4.1.3 Site Sensitivities and Current Land Use

The majority of the area has been subject to grazing, mostly by small livestock such as goats and sheep although there was evidence of large livestock grazing such as cattle. Small pockets along the valley floors have been cultivated for crops (Plate 4-1). Initial indications are that the land is degraded as a result of the current land use, however a full ecological specialist study will be conducted during the EIA phase.



Plate 4-1: Current land use in the Middleton area

4.1.4 Floristics and Vegetation

Vegetation

The vegetation of the Eastern Cape is complex and is transitional between the Cape and subtropical floras and many taxa of diverse phytogeographical affinities reach the limits of their distribution in this region. The region is best described as a tension zone where four major biomes converge and overlap (Lubke *et al.* 1988). The dominant vegetation is Succulent Thicket (Spekboomveld or Valley Bushveld), a dense spiny vegetation type unique to this region. While species in the canopy are of subtropical affinities, and generally widespread species, the succulents and geophytes that comprise the understory are of karroid affinities and are often localised endemics.

There are two vegetation classifications pertinent to the area. These are the National vegetation map developed by Mucina and Rutherford and the Subtropical Ecosystem Planning (STEP) Project. Each of these projects and descriptions of the relevant vegetation types are described below.

National Vegetation Map: Mucina and Rutherford

Mucina and Rutherford (2006) have developed the National Vegetation map as part of a South African National Biodiversity Institute (SANBI) funded project: "It was compiled in order to provide floristically based vegetation units of South Africa, Lesotho and Swaziland at a greater level of detail than had been available before." The map was developed using a wealth of data from several contributors and has allowed for the best national vegetation map to date, the last being that of Acocks developed over 50 years ago. This map forms the base of finer scale bioregional plans such as STEP. This SANBI Vegmap project has two main aims:

- “to determine the variation in and units of southern African vegetation based on the analysis and synthesis of data from vegetation studies throughout the region, and
- to compile a vegetation map. The map was to accurately reflect the distribution and variation on the vegetation and indicate the relationship of the vegetation with the environment. For this reason the collective expertise of vegetation scientists from universities and state departments were harnessed to make this project as comprehensive as possible.”

The map and accompanying book describe each vegetation type in detail, along with the most important species including endemic species and those that are biogeographically important. This is the most comprehensive data for vegetation types in South Africa.

Mucina and Rutherford (2006) define the following vegetation types (Figure 4.1) from which source these descriptions are derived:

Bedford Dry Grassland

This vegetation type occurs in the Eastern Cape on gently undulating plains. It consists of open, dry grassland interspersed with *Acacia karroo* woodland vegetation. The grassland is dominated by *Digitaria argyrograpta*, *Tragus koelerioides*, *Eragrostis curvula* and *Cymbopogon caesius*. It is classified as **Least Threatened** by Mucina and Rutherford (2006), with a conservation target of 23%. None is statutorily conserved and only 1% privately conserved. 3% has been transformed for cultivation. Erosion is high in 25% of the vegetation type.

Great Fish Thicket

Great Fish Thicket occurs in the Eastern Cape quite extensively in and around the lower Great Fish River and Keiskamma River Valley's. Succulent thicket occurs in steep slopes. Thicket is dominated by *Portulacaria afra* which becomes less dominant and replaced by *Euphorbia bothae* with increasing aridity. With increasing moisture *P. afra* is replaced by *Euphorbia tetragona* and *E. triangularis*. Vegetation tends to be clumped. This vegetation type is classified as **Least Threatened** by Mucina and Rutherford (2006). The conservation target is 19%, with 6% conserved and 4% transformed (3% cultivation, 1% urbanization).

Albany Broken Veld

Named for the Albany District where it is found, this veld type only occurs in the Eastern Cape and extends from the Zuurberg Mountains, around the confluence of the Great and Little Fish Rivers extending eastwards on low mountain ridges and hills. It is an open grassy karroid dwarf shrubland with scattered low trees (*Boscia oleoides*, *Euclea undulate*, *Pappea capensis*, *Schotia afra*), dwarf shrubs (*Becium burchellianum*, *Chrysocoma ciliata*) and grasses (*Eragrostis obtusa*). It is classified as **Least Threatened** with a conservation target of 16%, with 12% privately conserved. About 3% has been transformed for cultivation.

Southern Karoo Riviere

This karroid vegetation occurs in both the Eastern and Western Cape, is associated with rivers and is embedded in several vegetation types. It is found in riverine flats with a complex of *Acacia karroo* or *Tamarix usneoides* thickets and edged by *Salsola* dominated shrubland. It is listed as **Least Threatened**, with a conservation target of 24%. Only 1.5% is statutorily and privately conserved, 12% has been transformed for cultivation and the construction of dams.

Cape inland salt pans

The Cape inland salt pans occur in the Western Cape and to a smaller extent in the Eastern Cape occurring as far east as the broader surrounds of the Nelson Mandela Metropole. They occur at an

altitude of 0-150m with few isolated pans at around 500m. This vegetation type are characterised by small depressions dominated by low succulent scrub composed of creeping chenopods and salt tolerant herbs and grasses. It is listed as **Vulnerable** with a conservation target of 24%. 20% is statutorily conserved in the Agulhas and West Coast National Parks as well as in the Soetendalsvlei and Rocherpan Nature Reserves. 3% is privately conserved and more than 20% has been transformed for cultivated land, mines and urban sprawl.

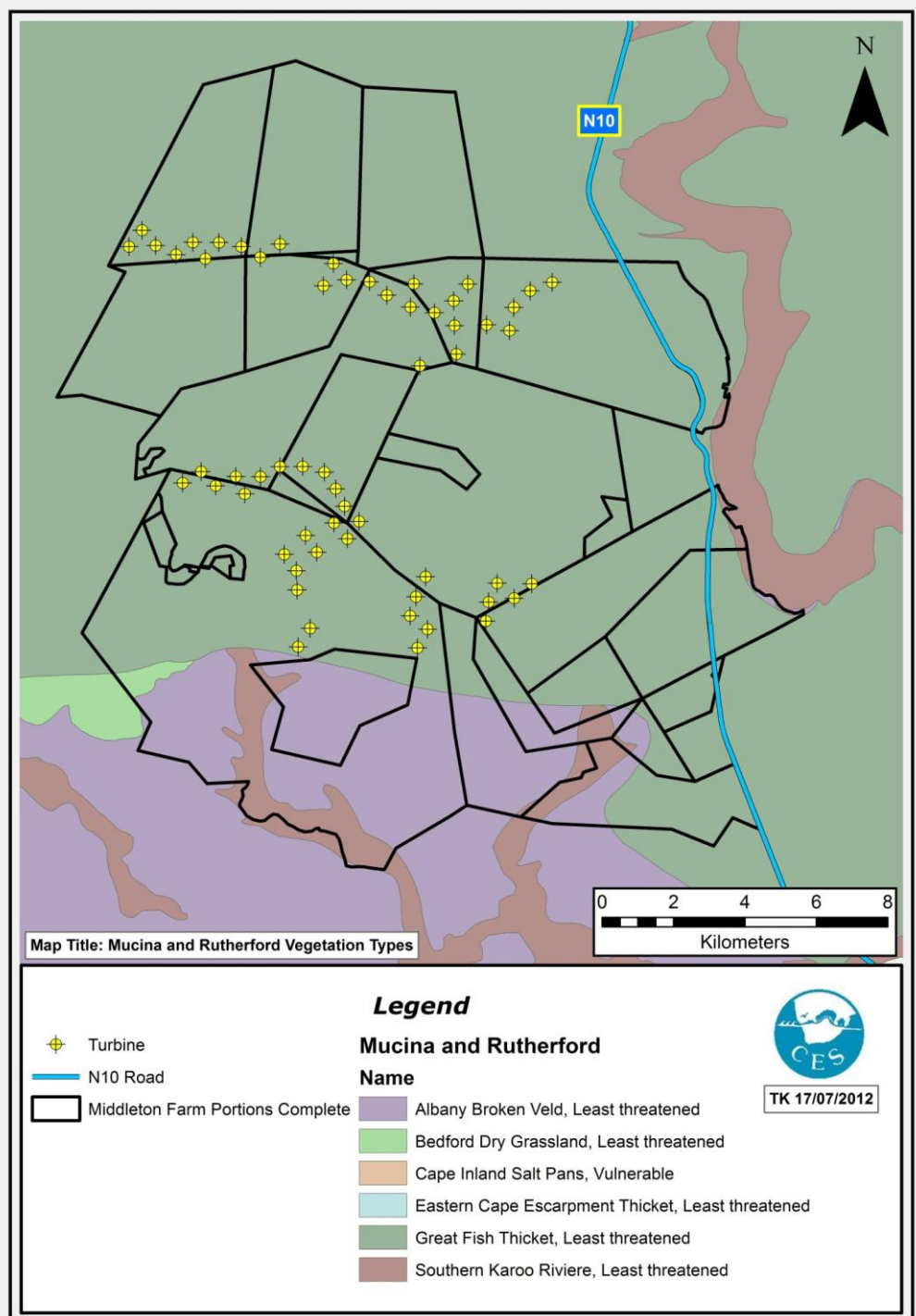


Figure 4-1: Mucina and Rutherford vegetation map of the study area.

Subtropical Ecosystem Planning (STEP) Project

The Subtropical Ecosystem Planning (STEP) Project aims to identify priority areas that would ensure the long-term conservation of the subtropical thicket biota and to ensure that the assessment outcomes, are integrated into the policies and practices of the private and public sector that are responsible for land-use planning and the management of natural resources in the region (Pierce *et al.* 2005). STEP (Figure 4-2) identifies five vegetation types in this region and Pierce & Mader (2006) describe these as follows:

Hartebeeste Karroid Thicket

This Thicket is listed as **Least Threatened** and comprises fragmented thicket clumps comprising species typical of Fish Valley Thicket. Trees of Fish Valley Thicket include doppruim (*Pappea capensis*) and gwarrie (*Euclea undulate*) as well as shrubs such as needlebush (*Azima tetraantha*). The Nama-karoo matrix is dominated by kankerkaroo (*Pentzia incana*) and *Becium burchellianum*.

Fish Spekboom Thicket

Fish Spekboom Thicket, which forms part of the Thicket Biome and the Valley Thicket vegetation type is classified as **Vulnerable**. Valley Thicket grows in areas with relatively intermediate rainfall for Thicket. It can be impenetrable when in pristine condition but overgrazing results in a savanna-like vegetation with occasional trees. Ubiquitous thicket tree/shrub species include: *Pappea capensis*, *Azima tetraantha* and *Rhus longispina*. Succulent species of *Crassula* and *Aloe* as well as spekboom (*Portulacaria afra*), *Euphorbia grandidens* and *Euphorbia tetragonal* are the most common.

Fish Spekboom Thicket, specifically is a variable thicket type with tree euphorbias (*Euphorbia curvirama*, *Euphorbia grandidens* and *Euphorbia tetragonal*) as well as spekboom (*Portulacaria afra*). In addition, there are also woody tree and shrub species present including: *Pappea capensis*, *Schotia afra* and *Rhigozum obobvatum*.

Aliwal North Dry Grassland

Aliwal North Dry Grassland, which forms part of the Grassland Biome, consists mainly of grasses, with very few trees (<10%) or shrubs and is classified as **Least Threatened** (Pierce & Mader 2006). Aliwal North Dry Grassland is a pure grassland of sweet grass, including: *Themeda triandra*, *Digitaria eriantha*, *Sporobolus fimbriatus* and *Eragrostis chloromelas*.

Camdeboo-Aberdeen Karoo

This vegetation type, classified as **Least Threatened**, forms part of the Nama-Karoo biome, which is a sparse vegetation type dominated by dwarf shrubs. Grasses and succulents may occur among the shrubs. *Acacia karroo* can become common. Camdeboo-Aberdeen Karoo is usually dense and dominated by ankerkaroo (*Pentzia incana*), with other dominants including doringkapokbos (*Eriocephalus spinescense*), pleisterbos (*Hermannia* spp.) and doublaarvygies (*Drosanthemum* spp.).

Southern Karoo Alluvia

This vegetation type is classified as Currently **Not Vulnerable**. It is characteristically a sparse woodland of sweet thorn (*Acacia karroo*) and wolwedoring (*Lycium* spp.). The shrub layer is dominated by ankerkaroo (*Pentzia incana*) and ganna (*Salsola* spp.). The grass layer includes bushman grass (*Stipagrostis* spp.) amongst others.

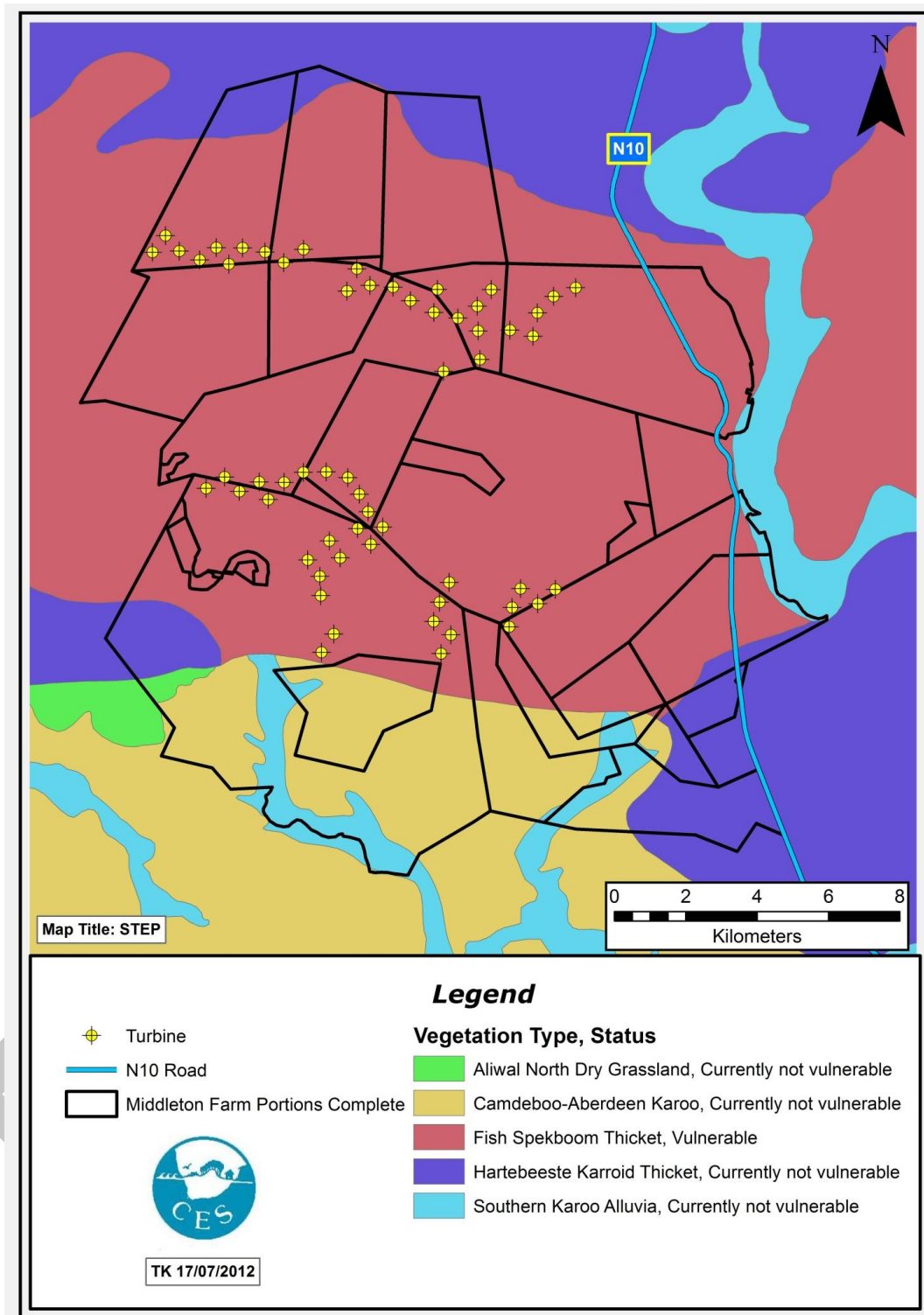


Figure 4-2: STEP vegetation map of the study area

Floristics

Middleton falls within the Albany Centre of Floristic Endemism; also known as the Albany Hotspot (Figure 4-3). This is an important centre for plant taxa, and, according to van Wyk and Smith (2001), contains approximately 4000 vascular plant species with approximately 15% either endemic or near-endemic (Victor and Dold, 2003). This area was delimited as the, ‘region bounded in the west by the upper reaches of the Sundays and Great Fish River basins, in the east by the Indian Ocean, in the south by the Gamtoos–Groot River basin, and in the north by the Kei River basin’ (Victor & Dold, 2003).

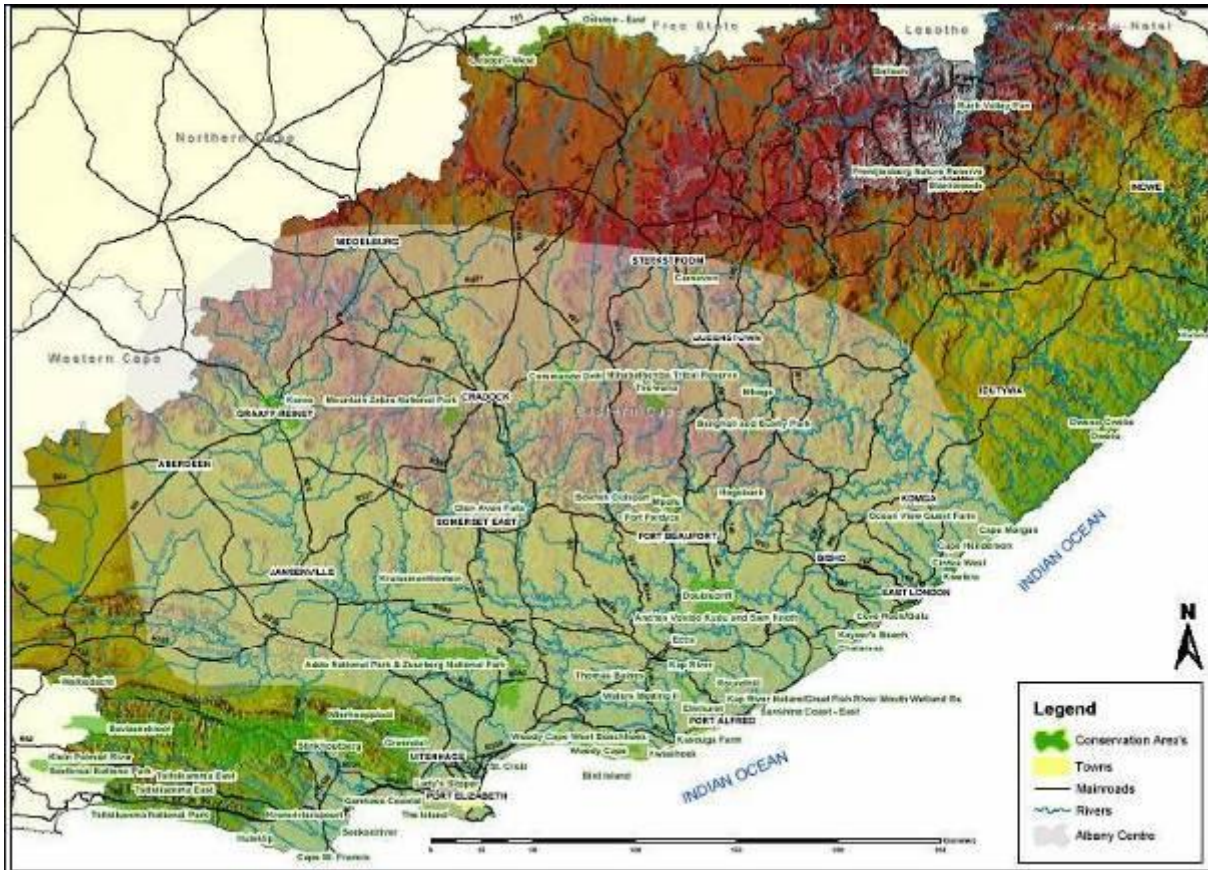


Figure 4-3: The Albany Centre of Endemism, also known as the ‘Albany Hotspot’, has long been recognised as an important centre of plant species diversity and endemism (From van Wyk and Smith 2001).

Potential Species of Special Concern (PSSC)

Potential Species of Special Concern (PSSC) include all those plants listed in terms of the IUCN, CITES and both national and provincial legislation that may occur in the area of study. If any of these species are found to occur on site, they are given the status of Confirmed Species of Special Concern (CSSC). Such a list will be produced in the EIA stage of the proposed development. The list of PSSC includes an estimated 450 species which are listed individually by the IUCN red data list, the South African National Biodiversity Institute (SANBI), the Forests Act and the Provincial Nature Conservation Ordinance (PNCO) 16 of 1974. In addition, the PNCO lists eight plant families and six plant genera that are afforded blanket protection throughout the province.

Species endemic to the area are described by Mucina and Rutherford (2006). In addition to the endemic taxa, there are also a number of species expected to be found in the study area, some of which are listed as protected by various conservation bodies (Table 4-2). The list is not complete as many species and taxa require additional study. The taxa with many data deficient species include specifically the Mesembranchemaceae family, as well as members of the Amaryllidaceae (Amaryllids), Iridaceae (Irises), Orchidaceae (Orchids) and Apocynaceae (Lianas), as well as members of the genus *Aloe*.

Table 4-2: Endemic species and potential species of special concern to the vegetation types found in the study area and Middleton surrounds.

| Scientific Name | IUCN | Cites | Red Data List | PNCO | Tree Species |
|---|------|-------|---------------|------------|-----------------------|
| <i>Aloe tenuior</i> | N/A | II | LC | Schedule 4 | N/A |
| <i>Amphiglossa callunoides</i> | N/A | N/A | VU | N/A | N/A |
| <i>Boscia albitrunca</i> | N/A | N/A | LC | N/A | Protected Tree Specie |
| <i>Brachystelma huttonii</i> | N/A | N/A | Rare | N/A | N/A |
| <i>Ceropegia fimbriata</i> | N/A | N/A | DDT | N/A | N/A |
| <i>Ceropegia fimbriata</i> subsp. <i>fimbriata</i> | N/A | N/A | VU | N/A | N/A |
| <i>Cotyledon orbiculata</i> | N/A | N/A | LC | N/A | N/A |
| <i>Delosperma ecklonii</i> | N/A | N/A | LC | N/A | N/A |
| <i>Euphorbia cumulate</i> | N/A | II | LC | N/A | N/A |
| <i>Euphorbia inermis</i> var. <i>huttoniae</i> | N/A | II | LC | N/A | N/A |
| <i>Euphorbia meloformis</i> | N/A | II | NT | Schedule 4 | N/A |
| <i>Euryops gracilipes</i> | N/A | N/A | VU | N/A | N/A |
| <i>Faucaria tigrina</i> | N/A | N/A | EN | N/A | N/A |
| <i>Haworthia aungustifolia</i> var. <i>pauciflora</i> | N/A | N/A | LC | Schedule 4 | N/A |
| <i>Haworthia cummingii</i> | N/A | N/A | | N/A | N/A |
| <i>Haworthia cymbiformis</i> var. <i>ramose</i> | N/A | N/A | DDT | Schedule 4 | N/A |
| <i>Haworthia cymbiformis</i> var. <i>incurvula</i> | N/A | N/A | DDT | Schedule 4 | N/A |
| <i>Haworthia cymbiformis</i> var. <i>obtusa</i> | N/A | N/A | DDT | N/A | N/A |
| <i>Isolepis expallescens</i> | N/A | N/A | LC | N/A | N/A |
| <i>Ornithogalum britteniae</i> | N/A | N/A | VU | N/A | N/A |
| <i>Ornithogalum perdurans</i> | N/A | N/A | VU | N/A | N/A |
| <i>Pelargonium sidoides</i> | N/A | N/A | LC | N/A | N/A |
| <i>Rhombophyllum albanense</i> | N/A | N/A | LC | N/A | N/A |
| <i>Rhombophyllum dyeri</i> | N/A | N/A | LC | N/A | N/A |
| <i>Tetradenia barberae</i> | N/A | N/A | Rare | N/A | N/A |
| <i>Zaluzianskya vallispiscis</i> | N/A | N/A | LC | N/A | N/A |

4.1.5 Fauna

4.1.1. Amphibians and Reptiles

Over one hundred species of reptiles and amphibians occur on the Eastern and Southern Cape Coastal Belt (Branch, 1998). Most are generalists, and represent the transition from temperate to tropical fauna, some montane forms occur in the Cape Fold Mountains (Branch 1998).

The Eastern Cape is home to 133 reptile species including 21 snakes, 27 lizards and eight chelonians (tortoises and turtles) (Plate 4-2). The majority of these are found in Mesic Succulent Thicket and riverine habitats. Table 4-3 provides an indication of the threatened and endemic reptile species with distribution ranges that include the Middleton area. The list of reptiles of special concern is very significant since it includes five endemic species (two of which are endangered), eight CITES (Committee for International Trade in Endangered Species) listed species, one rare species and four species at the periphery of their range. More than a third of the species are

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. Latin name | Common Name | Conservation Status |
|---|--------------------------------------|----------------------------|
| <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> | Leopard tortoise | N/A |
| <i>Goggia essexi</i> | Essex's Dwarf Leaf-toed Gecko | 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> | Marsh or Helmeted terrapin | 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).

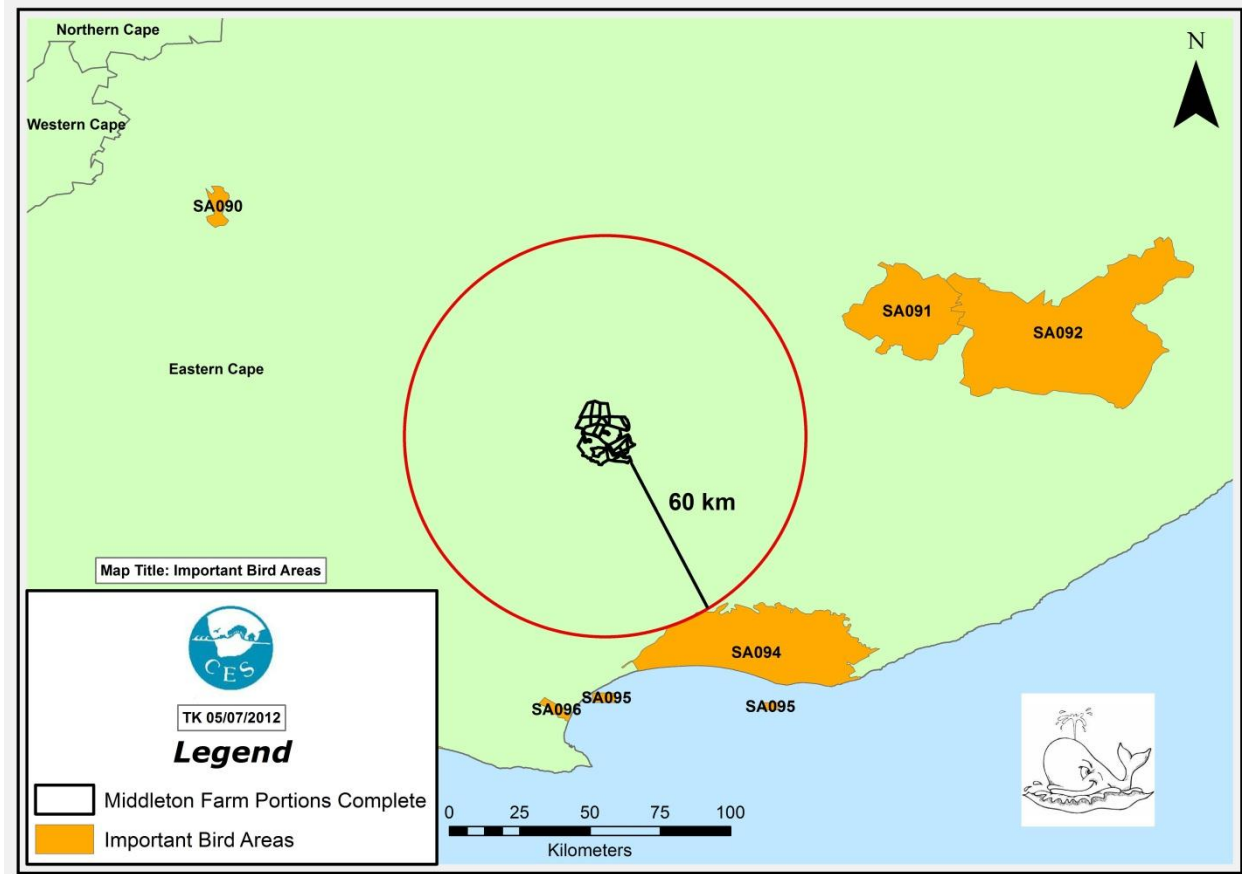


Figure 4-4: Important Bird Areas (IBAs) surrounding the proposed project site

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

| Tool | Motivation | Relevancy | Notes |
|--|--|---|---|
| Important Bird Area (IBA) | 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. |
| Wetlands | 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. |
| Protected Areas Expansion Strategy (PAES) | 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. |
| Protected Areas | 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. |
| STEP | 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>Critical Biodiversity Areas (CBA)</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.

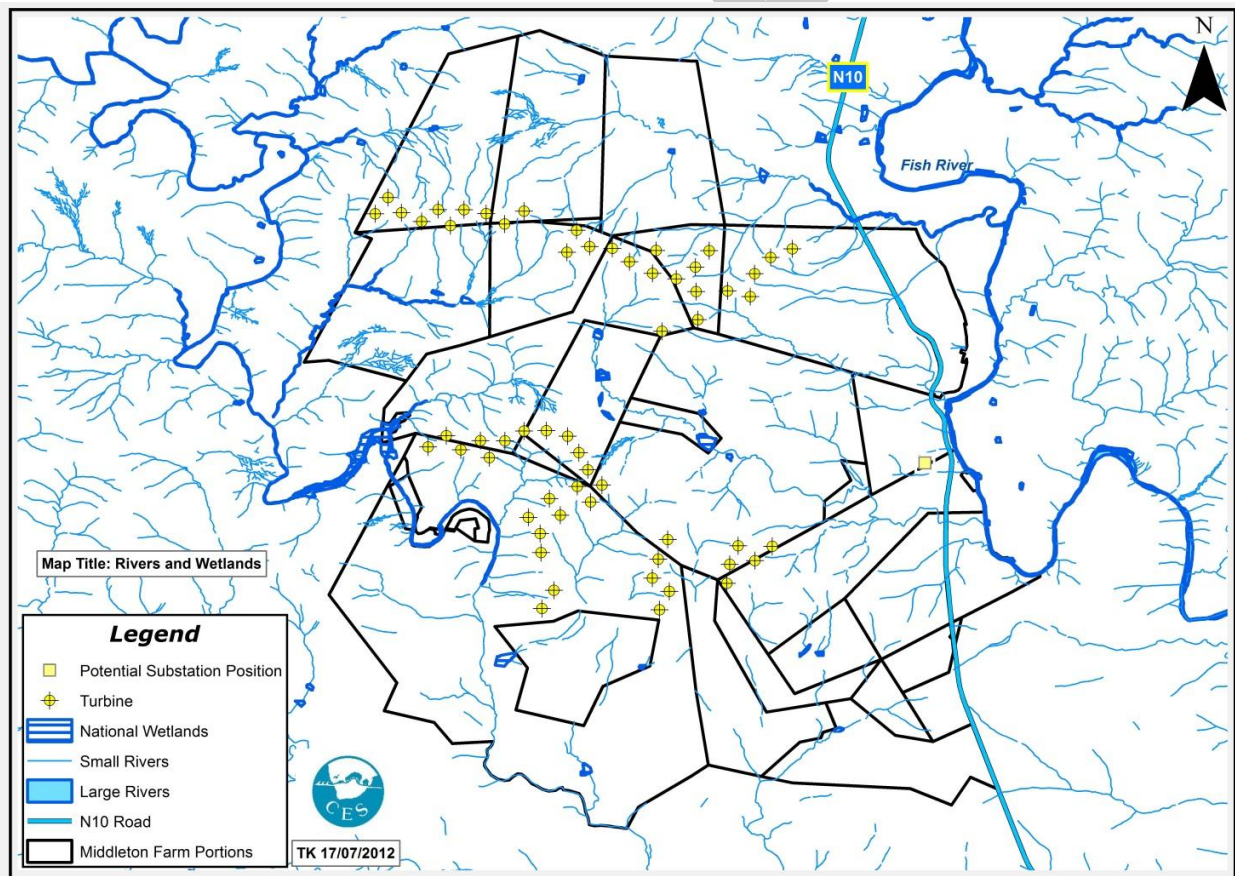


Figure 4-5: Important Wetlands surrounding the proposed project site

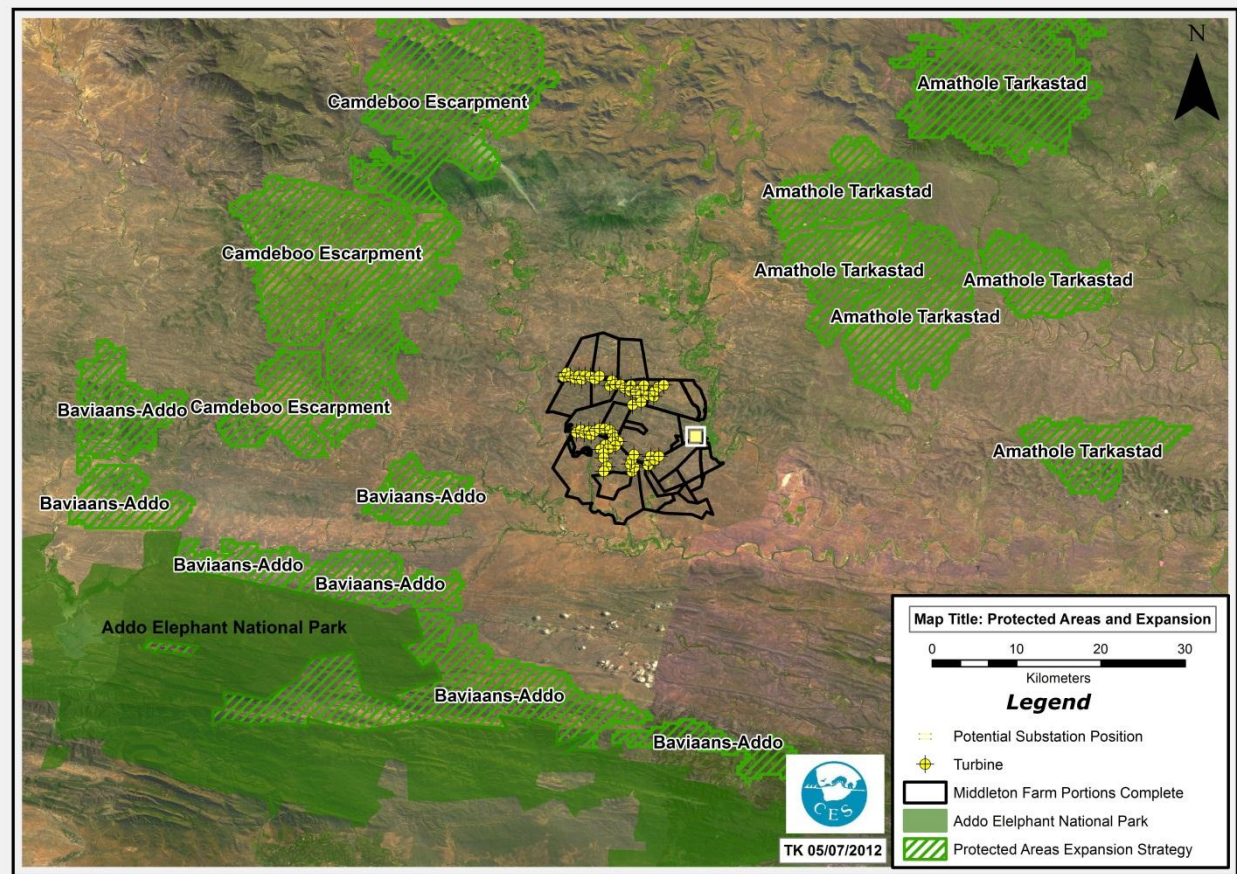


Figure 4-6: Protected Areas and Formal, Informal and National Protected Area Expansion Project Focus Areas surrounding the proposed project site

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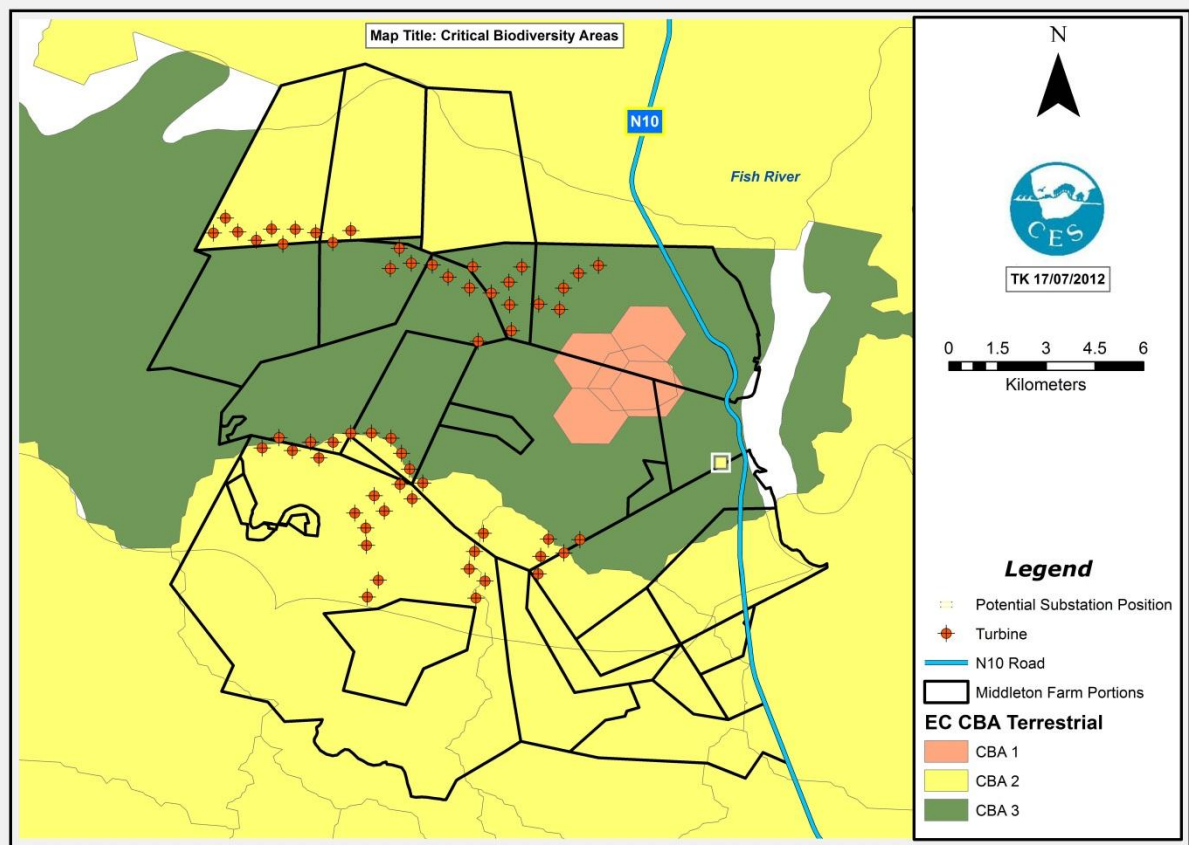


Figure 4-7: Critical Biodiversity Areas (CBA) for the proposed project site

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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 km² 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 BCRM¹.

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.

¹ 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% |
| TOTAL | 100% |

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% |
| TOTAL | 100.0% |

Source: StatsaSA, 2001

Based on StatsSA 2001 estimates, nearly 40% of the BCRM's population is economically active² 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.

² 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"> 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 |
| Landscape & visual | Direct/Indirect/Cumulative | Potentially Negative | <ul style="list-style-type: none"> Design of the wind turbine layout could result in an alteration of the landscape character and sense of place. |
| Existing infrastructure | Direct/Indirect | Potentially negative/positive | <ul style="list-style-type: none"> 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. |
| Electromagnetic Interference (EMI) | Direct/Indirect | Potentially Negative | <ul style="list-style-type: none"> 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. |
| Shadow flicker | Direct/Cumulative | Potentially Negative | <ul style="list-style-type: none"> The layout of wind turbines should be designed in order to minimize the effects of shadow flicker and reflectivity on surrounding landowners. |

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

| CONSTRUCTION PHASE | | | |
|---------------------------------|-----------------|-------------------------------|---|
| Issue | Impact | Nature | Description of Issue/ Impact |
| Landscape & visual | Direct/Indirect | Potentially Negative | <ul style="list-style-type: none"> Visual disturbance of the landscape during construction will be caused by the construction activity, and the presence and use of very large machinery. |
| Ecology | Direct/Indirect | Potentially Negative | <ul style="list-style-type: none"> 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. The construction of the wind farm could cause disturbance to local wildlife, especially breeding birds. 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. |
| Cultural heritage & archaeology | Direct/Indirect | Potentially Negative | <ul style="list-style-type: none"> 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. 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. |
| Noise | Direct | Potentially Negative | <ul style="list-style-type: none"> Adverse noise effects could potentially occur during the construction of the wind farm, for example from the movement of heavy goods vehicles. |
| Socio-economic | Direct/Indirect | Potentially positive/negative | <ul style="list-style-type: none"> 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. Jobs may also be created for local communities. It could therefore have a beneficial social and economic impact in the area. |
| Traffic & | Direct/Indirect | Potentially | <ul style="list-style-type: none"> It is possible that there could be a |

| 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"> • 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. • There could also be an adverse effect on the integrity of existing road infrastructure such as bridges. |
| Wetlands, Surface and Groundwater | Direct/ Indirect | Potentially negative | <ul style="list-style-type: none"> • 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. • 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. • Pollution could arise from the spillage or leaking of diesel, lubricant and cement. |
| Geology and topography | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> • The construction of the wind turbines will require excavations in order to lay adequate foundations. Approximately 500 m³ of substrate will have to be excavated for each turbine. • Furthermore, minor excavations will be required for the construction of access roads as well as the laying of electrical cabling. |
| Health and safety | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> • Health and safety aspects will mostly pertain to activities defined under the Occupational Health and Safety Act (Act No. 85 of 1993). |
| Removal of top soil and soil erosion | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> • The construction of the individual wind turbines will require the clearing of vegetation which will result in exposed soil surfaces. This will increase the |

| CONSTRUCTION PHASE | | | |
|----------------------------------|-----------------|----------------------|---|
| Issue | Impact | Nature | Description of Issue/ Impact |
| | | | chances of soil erosion. |
| Impacts on air quality | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> 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. |
| Pollution and Solid Waste | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> 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. |
| Impacts on soils | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> Impacts on soil may primarily be due to compaction, erosion and contamination. |

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

| OPERATIONAL PHASE | | | |
|--------------------------|--------------------------------|----------------------|---|
| Issue | Impact | Nature | Description of Issue/ Impact |
| Landscape & visual | | Potentially negative | <ul style="list-style-type: none"> Alteration of the landscape character and sense of place because of the wind turbine array. |
| Ecology | Direct/Indirect/ Cumulative | Potentially negative | <ul style="list-style-type: none"> 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. There could additionally be habitat severance and fragmentation, particularly from linear elements such as the access tracks. The maintenance of the wind farm could cause disturbance to local wildlife, especially breeding birds. |
| Avifauna and Bats | Direct/Indirect/ Cumulative | Potentially negative | <ul style="list-style-type: none"> 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. Particular types of bird species, for example, raptors, divers and geese, could be susceptible to collision with the turbines and any overhead wires, |

| 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"> 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. |
| Cultural heritage & archaeology | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> 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). |
| Noise | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> 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. |
| Electromagnetic Interference (EMI) | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> Wind farms can cause television, radio and microwave interference by blocking and / or causing part of the signal to be delayed. |
| Shadow flicker & reflectivity | Direct/Indirect/ Cumulative | Potentially negative | <ul style="list-style-type: none"> Rotating blades may catch and reflect sunlight at short intervals, resulting in flickering that is potentially irritating and may result in health-related impacts. |
| Socio-economics | Direct/Indirect/ Cumulative | Potentially negative or positive | <ul style="list-style-type: none"> The wind farm could potentially discourage people from visiting the area and therefore have an adverse effect on tourism. The wind farm could also have a more localized effect on particular tourism facilities nearby and within sight of the wind farm. Jobs may be created for local communities. It could therefore have a beneficial social and economic impact in the area. |
| Traffic & transport | Direct/Indirect/ | Potentially negative or positive | <ul style="list-style-type: none"> Any highway modifications which are provided to facilitate the scheme could, have long lasting traffic benefits. |
| Air quality & climate change | Direct/Indirect/ Cumulative | Potentially positive | <ul style="list-style-type: none"> 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 CO₂, SO₂ and NO₂ that would otherwise be emitted |

| OPERATIONAL PHASE | | | |
|-----------------------------------|------------------|----------------------|---|
| Issue | Impact | Nature | Description of Issue/ Impact |
| | | | <p>to the atmosphere.</p> <ul style="list-style-type: none"> The surface layer of vegetation across the remainder of the site might represent a 'carbon sink' where carbon is absorbed from the atmosphere. 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. |
| Wetlands, Surface and Groundwater | Direct/ Indirect | Potentially Negative | <ul style="list-style-type: none"> The placement of turbines on the banks of drainage lines may result in erosion of the banks and disturbance to the riparian vegetation. 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. 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. 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. The introduction of roads and impermeable areas of hard standing could increase rates of run-off and therefore the risk of localized flooding. |
| Loss of agricultural land | Direct | Potentially negative | <ul style="list-style-type: none"> The proposed development site is currently zoned as agriculture I. The proposed development will therefore result in a loss of agricultural potential. |
| Impacts on aviation | Direct/Indirect | Potentially negative | <ul style="list-style-type: none"> 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. |

| 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"> Visual disturbance of the landscape during decommissioning will be caused by the presence and use of very large machinery. |
| Ecology | Direct/Indirect | Potentially Negative/positive | <ul style="list-style-type: none"> The decommissioning of the wind farm could cause disturbance to local wildlife, especially breeding birds. 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. |
| Noise | Direct | Potentially Negative | <ul style="list-style-type: none"> Adverse noise effects could potentially occur during the decommissioning of the wind farm, for example from the movement of large vehicles. |
| Socio-economics | Direct/Indirect | Potentially Positive | <ul style="list-style-type: none"> During decommissioning, the wind farm could have a beneficial local economic effect by providing jobs for local communities. Further employment opportunities may result from any new developments that could occur on the site once the wind turbines have been decommissioned. |
| Traffic & transport | Direct/Indirect | Potentially Negative | <ul style="list-style-type: none"> 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. Transporting turbine parts and specialist construction equipment away from the site by long and/or slow moving vehicles could cause traffic congestion, especially if |

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

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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 |
|--------------------------------------|---------------------|---|--|
| Visual Issues | | | |
| 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. |
| Avifaunal Issues | | | |
| 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 |
| Impact on other Businesses | | | |
| 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. |

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|--|----------------------------|---|--|
| <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>General Issues</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 & 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&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> |

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| | | <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&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> |

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| | | <p>7. Again, section 2 of the DSR is extremely vague and superficial to the extent that it is impossible for an I&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 30km²! 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&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> |

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| | | <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&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> |

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| | 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. |

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| | | <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&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> |

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| | <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> |

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| | | <p>24. Despite all of this, the description in the DSR is based upon a 5 day site visit (by whom?), relevant literature and a synthesis of information from studies in Cookhouse and the greater BCRM area. This is wholly inadequate and provides no benchmark against which further studies of the potential impact of the proposed development can be assessed. Thorough baseline studies are called for of ALL the biophysical components specific to the site by relevant specialists. These must include site-specific monitoring over a period that will provide significant data (i.e. at least a year for avifaunal and botanical assessments).</p> | <p>A full Ecological Impact Assessment report will be prepared in the EIA phase. The Bio-Physical Section of the FSR was a general scoping exercise to ascertain what vegetation is expected to be on site and what the state of said vegetation is.</p> |
| | | <p>25. While the EAP , in the Executive summary, states specifically that there are no amphibian species which are “endemic or of conservation concern” no comment is made on the conservation status of all the other faunal groups (reptiles, terrestrial mammals, bats, birds) and which all in fact DO have species of significant conservation concern in the subject area! The selective presentation of information is no coincidence and the independence of the EAP is accordingly called into question.</p> | <p>Yes, in the executive summary only the amphibians are mentioned, however, other groups are detailed in the main report.</p> |
| | | <p>26. Section 4.1.4 (Vegetation and floristics) is based on general vegetation mapping information at a vegetation type level. Proper EIA requires site specific investigation at least to local habitat or vegetation community level if it is to properly inform the EIA. The categories under the STEP description simply describe the categories themselves rather than relate them back to actual; vegetation on the site. The paragraph (section 4.1.4.2) given over to the site visit is pitiful to say the least and offers absolutely nothing in terms of information value to the assessment other than not missing the opportunity to harp on about the degraded state of the veld.</p> | <p>A full Ecological Impact Assessment report will be prepared in the EIA phase. The Bio-Physical Section of the FSR was a general scoping exercise to ascertain what vegetation is expected to be on site and what the state of said vegetation is.</p> |

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| | | 27. The section dealing with birds is again general and deals at a national and provincial scale. The reference “Barnes, 2000 is not listed in the reference section. Please provide this. | Barnes, K.N. (ed.), 2000. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. |
| | | 28. The information presented is meaningless and provides the reviewer with absolutely no idea of the conservation status of the avifauna of the site. A proper avifaunal baseline study by a suitably qualified ornithologist of the site specific is required. The baseline data should be established over the seasonal regime i.e. at least one year’s worth of monitoring. From personal observation this area is densely populated with various bustard species and which will be negatively impacted by the proposal. Blue Cranes also frequent the study area and are prone to collisions with tall structures and power lines. | A full Avifaunal Impact Assessment report will be prepared in the EIA phase by an independent sub-consultant as is the norm for projects of this nature. |
| | | 29. Again the sections on reptiles, amphibians and mammals are general and meaningless in relation to the actual site. No ground-truthing has even been attempted. Specialists should be employed to produce a comprehensive baseline assessment of the subject site. Mountain Reedbuck have been omitted but are also found within parts of the site. | A full Ecological Impact Assessment report will be prepared in the EIA phase. The Bio-Physical Section of the FSR was a general scoping exercise to ascertain what vegetation is expected to be on site and what the state of said vegetation is. |
| | | 30. The invertebrates section 4.1.5.5 is also dismissive of the largest group of fauna in the area. A proper specialist baseline study is called for. It is also confounding how the discussion on bats is placed in the section on Terrestrial Invertebrates. Bats are vertebrate mammals! | A full Ecological Impact Assessment report will be prepared in the EIA phase. The Bio-Physical Section of the FSR was a general scoping exercise to ascertain what vegetation is expected to be on site and what the state of said vegetation is. |

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| | | <p>31. The discussion on bats highlights the negative impact that wind turbines have on bat populations. No site specific data is provided. The mitigation measures suggested seem to be unconvincing in their effectiveness and it will be interesting to see whether the Applicant reduces the intended height of the turbines accordingly (although at this point no definite height of the intended turbines has been provided so this is open to manipulation!!!). A specialist baseline study is definitely required for this group of fauna. Not surprisingly, since the impact on bats is so significance the issue is not even acknowledged in the Executive Summary!</p> | <p>The bat impact assessment will be part of the specialist studies conducted during the EIA phase.</p> |
| | | <p>32. Section 4.2: I cannot find the Noise Impact Specialist Report (Volume 2) referred to under this section anywhere in the report. It is not listed in the contents table</p> | <p>This was a mistake in the Draft Scoping Report which has been corrected now. The Noise Impact Assessment study will be undertaken as part of the EIA by an independent sub-consultant.</p> |
| | | <p>33. Under section 4.3 the proposal is said to likely have “indirect” socio-economic benefits for the BCRM area. However these benefits are conveniently described as being direct benefits under the Motivation section 1.3 “Social Upliftment”.</p> | <p>Please refer to the earlier response regarding the socio-economic projects that yet have to be developed by the Applicant in conjunction with the BCRM and other stakeholders.</p> |

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| | | <p>34. The description under section 4.3 has however no way to disguise the fact that very few to no permanent jobs will be created by the Middleton Wind farm proposal. In fact the only beneficial phase in terms of job creation will be the construction phase which, according to the DSR, will be only a couple of months long! Based on my own personal discussions with other farmers in the area I foresee a more likely scenario of large job loss from the participant farms as the wind farm would immediately bring the participant farm to a point of financial sustainability and thereby alleviate the landowner from having to do his “best to earn a living from the land” (from the DSR, section 1.3). Under this scenario the first financial savings for the farmer would be to cut his number of employees.</p> | <p>This is speculation on Mr van der Spuy's part. At this time there is no way of knowing what farm labour job losses, if any, may arise from the project.</p> |
| | | <p>35. I did not receive a copy of the BID and was not invited directly by the EAP to participate in this EIA despite my farm being only approximately 500m from the site and being very clearly within the field of anticipated impact.</p> | <p>This is a serious issue and is not taken lightly by the EAP. The Applicant supplied the contact details of all surrounding landowners as part of the preliminary information provided to the EAP. In addition to this, the EAP verified the surrounding landowner contact details with the landowners encountered on site during the site visit in August 2010. Mr van der Spuy is not an immediately adjacent landowner but one property portion away from being one. As such, the EAP has notified all adjacent landowners in terms of Section 54 of the EIA regulations. It must be noted that Mr van der Spuy is an absentee landowner who resides in Cape Town.</p> |
| | | <p>36. The proposed Middleton development is similarly a power generation proposal (same as a coal power station or nuclear facility) and should be treated on equal footing as regards the EIA. This would include nation-wide consultation and impact assessment. The fact that the application has to be considered by the National DEA confirms this assertion</p> | <p>The EAP has conducted the initial PPP in accordance with the minimum requirements of the EIA regulations and considers the statement that it should be subject to nationwide PPP as logistically onerous. Numerous wind farm applications have been submitted to DEA to date and none have to the knowledge of the EAP been required to conduct the PPP on a national level. It appears that Mr van der Spuy is not aware that all power generation applications are submitted to DEA as a matter of course - irrespective of the scale or technology thereof.</p> |
| | | <p>37. This EIA is fatally flawed through its lack of consideration of genuine reasonable alternatives</p> | <p>The EAP does not agree with this assertion. Alternatives have been presented that will be subject to EIA phase assessment.</p> |

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| | | 38. A proper socio-economic study is required and which focuses on the impact of the proposal on game farms, nature reserves and ecotourism operations. It should address the effect of the proposal on adjacent land values too. A detailed assessment of the jobs likely to be created and lost should be undertaken. All of these studies must be ground-truthed through use of surveys as opposed to convenient theoretical procedures. | Noted. However, it is the opinion of the EAP that any attempt to assess the potential impacts on land values would only be a theoretical procedure in itself as Mr van der Spuy himself points out. The EAP is of the view that as wind farms are a new phenomenon in the country there are no local precedents by which to gauge whether this would lead to a loss in property value or even an increase therein. |
| | | 39. A proper disclosure of the financial benefits of the proposed development must be undertaken to allow for informed assessment of the “need and desirability”. The beneficiaries and the destination of income generated must be identified without which the true socio-economic benefits of this proposal will not be known and will prevent an informed decision by the CA. | This information is available from the Applicant directly. |
| | | 40. Proper biodiversity assessments (bats, birds, mammals, invertebrates) must be undertaken by suitable specialists and which must also consider the reasonable alternatives put forward by the applicant. These studies need to be based on a proper understanding of the local biota and which will necessitate at least year-long monitoring of the various biota. | A full Ecological Impact Assessment report will be prepared in the EIA phase. The Bio-Physical Section of the FSR was a general scoping exercise to ascertain what vegetation is expected to be on site and what the state of said vegetation is. |
| | | 41. A Visual Impact assessment must also be done but must be ground-truthed through surveys with potentially affected land owners and land users and visitors. It must be conducted by a specialist. | A comprehensive Visual Impact Assessment report will be prepared in the EIA phase by an independent sub-consultant. |

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| | | <p>42. This DSR and the Plan of Study of EIA do not even mention the issue of cumulative impacts which are required to be considered under NEMA EIA Regulations 31(2)(l)(i). These locations of other wind farm proposals within the Eastern Cape should be plotted with the Middleton proposal and the cumulative impacts assessed accordingly. Assessment of the Middleton proposal impacts alone is meaningless considering that it is very close to the Cookhouse wind farm proposal (to the north) and the RES Spitskop proposal (just to the south).</p> | <p>See previous comment regarding cumulative impacts.</p> |
| | | <p>43. Impact ratings must allocate a “high significance” rating for information gaps and information limitations, by default, in line with the precautionary principle.</p> | <p>This is standard practice for the EAP as contained in the section of the ESR detailing the significance rating methodology.</p> |

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7. ALTERNATIVES

According to regulation 28 (1) and (3) of the EIA regulations (2010), A scoping report must include –

(j) a description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity

(3) The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in subregulation (1)(c), exist.

One of the objectives of an EIA is to investigate alternatives to the proposed project. There are two types of alternatives - Fundamental Alternatives and Incremental Alternatives.

7.1. FUNDAMENTAL ALTERNATIVES

Fundamental alternatives are developments that are totally different from the proposed project and usually involve a different type of development on the proposed site, or a different location for the proposed development.

7.1.1. A different type of development

The current zoning for the 23 property portions is agriculture. The current development proposed is the production of renewable energy. Non-renewable production of energy is unfavourable in terms of the Kyoto Protocol and therefore not an option. In terms of renewable energy production - wind is the most appropriate.

The land is currently owned and run as small livestock and agricultural farms. Since the core business of the project proponent is wind energy facilities, the fundamental alternative of a development other than the proposed facility is therefore not viable in this case, and will not be considered further in the EIA.

7.1.2. A different location

High wind levels occur in specific areas across South Africa. A limited number of those areas are available for development. The main determinants in selecting the proposed location were:-

- Wind speed;
- Proximity to a grid connection point, and;
- Available land.

Preliminary investigations have identified that the proposed project site meets these criteria and so different locations for the current project will not be considered. The wind resource and connectivity to the grid are the critical factors to the overall feasibility of the project.

7.1.3. Land use alternatives

The development of a wind farm is not a mutually exclusive land use. A number of activities can be carried out in close proximity to the turbines without adverse effect. There are, however, activities that must be excluded from the immediate vicinity and possibly even the surrounding areas. Table 7-1 is a simple matrix (as determined by CES) indicating some of the land use activities that may, or cannot, be complementary to wind farm development.

Table 7-1: Matrix indicating land uses contemplated to occur in conjunction with development of a wind farm

| Land use | Same land | | Surrounding land | |
|--|-----------|----|------------------|----|
| | Yes | No | Yes | No |
| Farming | | | | |
| Livestock | * | | * | |
| Crops | * | | * | |
| Game | * | | * | |
| Eco-tourism (perception-dependent) | * | * | * | |
| Settlement | | * | * | |
| Light Industry (Industry-dependent) | * | * | * | |
| Aerodromes | | * | | * |
| Conservation | * | | * | |

7.1.4. No-Go development

The no development option assumes the site remains in its current state, i.e. agricultural land. The no-go alternative will be used as a baseline throughout the assessment process against which potential impacts will be compared in an objective manner and will be fully assessed in the EIR.

7.2. INCREMENTAL ALTERNATIVES

Incremental alternatives are modifications or variations to the design of a project that provide different options to reduce or minimise environmental impacts. There are several incremental alternatives that can be considered, including:

- The design or layout of the activity;
- The technology to be used in the activity, and;
- The operational aspects of the activity.

7.2.1. Layout Alternatives

In the EIA phase, various layouts (siting of wind turbines) will be assessed to determine which one will be ideal from an energy generation point of view with the least impact on fauna, flora and ecological processes. An ecological specialist, avifauna specialist and bat specialists (to name but a few) have been appointed to assess the status of the fauna and flora and to determine the conservation status of the proposed development. The following criteria will be considered in determining the final layout: (1) recommendations from the various specialists (2) guidelines from relevant bioregional plans (3) comments from I&APs and other stakeholders (4) site visits and (5) scientific publications (6) the developer following wind data recorded on site.

7.2.2. Technology Alternatives

Various technology alternatives (i.e. size, height and type of wind turbine) will be presented and assessed in the EIR.

8. PLAN OF STUDY FOR EIA

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

(n) *a plan of study for environmental impact assessment which sets out the proposed approach to the environmental impact assessment of the application, which must include –*

(i) *a description of the tasks that will be undertaken as part of the environmental impact assessment process, including any specialist reports or specialised processes, and the manner in which such tasks will be undertaken;*

(ii) *an indication of the stages at which the competent authority will be consulted;*

(iii) *a description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity; and*

(iv) *particulars of the public participation process that will be conducted during the environmental impact assessment process;*

(o) *any specific information required by the competent authority; and*

(p) *any other matters required in terms of sections 24(4)(a) and (b) of the Act.*

In line with the above-mentioned legislative requirement, this Chapter therefore sets out the Plan of Study (PoS) for the EIA phase of the assessment. Consultation with DEA will be ongoing throughout this EIA. However, it is anticipated that DEA will provide relevant comment with respect to the adequacy of this Plan of Study for the EIA, as it informs the content of the EIR and sufficiency thereof.

8.1. EIA PHASE

The EIA phase has four key elements, namely:-

- **Specialist Studies:** Specialist studies identified as being necessary during the Scoping Phase, plus any additional studies that may be required by the authorities, will be undertaken during the initial phase of the EIA. Appropriately qualified and experienced specialists will be appointed to undertake the various assessments. Specialists will gather baseline information relevant to the study being undertaken and will assess impacts associated with the development. Specialists will also make recommendations to mitigate negative impacts and enhance benefits. The resulting information will be synthesised into the Environmental Impact Report (EIR), whilst the full specialist reports will be attached to the EIR as a Specialist Volume.
- **Environmental Impact Report (EIR):** The main purpose of this report is to gather and synthesise environmental information and evaluate the overall environmental impacts associated with the development, to consider mitigation measures and alternative options, and make recommendations in choosing the best development alternative. The EIR also identifies mitigation measures and management recommendations to minimise negative impacts and enhance benefits. The EIR and associated specialist reports are made available for public and authority review and comment. The availability of the report will be advertised in one Provincial and one local newspaper and the report will also be made available for public scrutiny in easily accessible locations.
- **Comments Report:** The comments report provides a detailed record of comments, issues and concerns raised by I&APs and the authorities during the review period, and also provides relevant responses to these comments.
- **Environmental Management Programme (EMPr):** The EMPr provides guidelines to the project proponent and the technical team on how best to implement the mitigation measures and management recommendations outlined in the EIR during the construction and operational phase.

In addition to the above, the **Public Participation Process** commenced during the Scoping Phase is continued, during which I&APs are afforded further opportunities to raise their issues, concerns and comments regarding the proposed project. It is possible that some of the project details may have changed in response to the preliminary findings of the ESR, and as a result of design changes made by the project proponent. I&APs and key stakeholders are given the opportunity to

review the Draft EIR before it is submitted to the authorities for consideration. Comments on the Draft EIR received from I&APs will be included and addressed in the submitted EIR.

8.2. SPECIALIST STUDIES

The following Specialist Studies are proposed for the EIA Phase of the assessment:

- Visual Impact Assessment
- Noise Impact Assessment
- Ecological Impact Assessment (incorporating flora and fauna)
- Avifauna Impact Assessment
- Heritage, Archaeological and Paleontological Impact Assessment
- Bat Impact Assessment
- Agricultural Impact Assessment

The Terms of Reference for the above-mentioned studies, which outline the information required from the specialists, are provided below and the methodology for assessing the significance of impacts and alternatives is described in the section that follows. Specialists will also be required to address issues raised by I&APs in their reports.

8.2.1. *Visual and Landscape Impact Assessment*

The size of the structures is dictated by the design, and there is little that can be done to reduce their dimensions. Therefore, the Visual and Landscape Impact Assessment (the details of which are provided below) will focus on mitigation measures. The specific Terms of Reference for the Visual and Landscape Impact Assessment will therefore include:-

1. Conduct a site reconnaissance visit and photographic survey of the proposed project site.
2. Conduct a desk top mapping exercise to establish visual sensitivity:-
 - Describe and rate the scenic character and sense of place of the area and site;
 - Establish extent of visibility by mapping the view-sheds and zones of visual influence;
 - Establish visual exposure to viewpoints; and
 - Establish the inherent visual sensitivity of the site by mapping slope grades, landforms, vegetation, special features and land use and overlaying all relevant above map layers to assimilate a visual sensitivity map.
3. Review relevant legislation, policies, guidelines and standards.
4. Preparation of a draft Visual Baseline/Sensitivity report:
 - Assessing visual sensitivity criteria such as extent of visibility, the sites inherent sensitivity, visual sensitivity of the receptor's, visual absorption capacity of the area and visual intrusion on the character of the area;
 - Prepare photomontages of the proposed development;
 - Conduct shadow flickering modelling;
 - Assess the proposed project against the visual impact criteria (visibility, visual exposure, sensitivity of site and receptor, visual absorption capacity and visual intrusion) for the site;
 - Assess impacts based on a synthesis of criteria for each site (criteria = nature of impact, extent, duration, intensity, probability and significance); and
 - Establish mitigation measures/recommendations with regards to minimizing visual risk areas.

8.2.2. *Ecological Impact Assessment*

The assessment will follow on from the initial study, which included a site visit (see Chapter 4 above) conducted during the scoping phase, and will address any key issues raised by interested

and affected parties. The study will comprise a desktop study of all available and relevant literature.

However, a detailed survey of the site will be undertaken to determine the possibility of there being listed threatened or protected ecosystems and species on the proposed project site. If any of these are found, the Environmental Management Plan will include recommended measures to remove or otherwise protect plant species found on the site that are afforded protection under the National Environmental Management: Biodiversity Act during construction.

This specialist study will therefore include but will not be limited to –

1. A detailed description of the ecological (fauna and flora) environment within and immediately surrounding the footprint of the proposed development and will consider terrestrial fauna and flora. Fauna include mammals, reptiles, amphibians, and insects but not avifauna as these will be the subject of a separate specialist. This aspect of the report will specifically include the identification of -
 - Areas of high biodiversity;
 - The presence of species of special concern, including sensitive, endemic and protected species;
 - Habitat associations and conservation status of the identified fauna and flora;
 - The presence of areas sensitive to invasion by alien species; and
 - The presence of conservation areas and sensitive habitats where disturbance should be avoided or minimised.
2. Review relevant legislation, policies, guidelines and standards.
3. An assessment of the potential direct and indirect impacts resulting from the proposed development (including the wind turbines, associated infrastructure e.g. access road), both on the footprint and the immediate surrounding area during construction and operation;
4. A detailed description of appropriate mitigation measures that can be adopted to reduce negative impacts for each phase of the project, where required; and
5. Checklists of faunal groups identified in the region to date, highlighting sensitive species and their possible areas of distribution.

8.2.3. Noise Impact Assessment

The objective of the noise impact assessment will be to:

1. Identify all potential noise sensitive sites that could be impacted upon by activities relating to the construction and operation of the proposed wind energy facility.
2. Identify all noise sources relating to the activities of the facility during the construction and operation phases that could potentially result in a noise impact at the identified noise sensitive sites.
3. Determine the sound emission, operating cycle and nature of the sound emission from each of the identified noise sources.
4. Calculate the combined sound power level due to the sound emissions of the individual noise sources.
5. Calculate the expected rating level of sound at the identified noise sensitive sites from the combined sound power level emanating from identified noise sources.
6. Display the rating level of sound emitted by the noise sources in the form of noise contours superimposed on the map of the study area.
7. Determine the existing ambient levels of noise at identified noise sensitive sites by conducting representative sound measurements.
8. Determine the acceptable rating level for noise at the identified noise sensitive sites.
9. Calculate the noise impact at identified noise sensitive sites.
10. Assess the noise impact at identified noise sensitive sites in terms of:-
 - SANS 101 SANS 10103 for “The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication”.

- Noise Control Regulations.
 - World Health Organisation - Guidelines for Community Noise.
 - World Bank - Environmental Guidelines.
11. Investigate alternative noise mitigation procedures, if required, in collaboration with the design engineers of the facility and estimate the impact of noise upon implementation of such procedures.
 12. Prepare and submit a full environmental noise impact report containing detailed procedures and findings of the investigation including recommended noise mitigation procedures, if relevant.

8.2.4. Heritage, Archaeological and Paleontological Impact Assessment

As part of the Environmental Impact Assessment (EIA) for the proposed facility, it is necessary to undertake a phase one archaeological and historical survey to fulfil SAHRA requirements in accordance with the requirements of the National Heritage Resources Act (Act No 25 of 1999) which requires that “...any development or other activity which will change the character of a site exceeding 5 000m², or the rezoning or change of land use of a site exceeding 10 000 m², requires an archaeological impact assessment”.

A heritage and archaeological impact assessment will therefore be conducted, the primary objective of which is to determine whether there are any indications that the proposed site is of archaeological significance. This will be a phase 1 assessment and will be largely desk-top although a site visit will be required to enable the specialist the opportunity to look for significant artefacts on the surface of the site. It is not expected that a more detailed Phase 2 assessment will be required but this remains to be confirmed.

The terms of reference for the Phase 1 heritage and archaeological study will be to:

1. Determine the likelihood of heritage or archaeological remains of significance on the proposed site within the study area;
2. Identify and map (where applicable) the location of any significant heritage or archaeological remains;
3. Assess the sensitivity and significance of heritage and archaeological remains in the site; and
4. Identify mitigatory measures to protect and maintain any valuable heritage and archaeological sites and remains that may exist within the proposed site.

A paleontological impact assessment will therefore be conducted, the primary objective of which is to determine whether there are any indications that the proposed site is of paleontological significance.

This will be a phase 1 assessment and will be largely desk-top although a site visit will be required to enable the specialist the opportunity to look for significant artefacts/fossils on the surface of the site. It is not expected that a more detailed Phase 2 assessment will be required but this remains to be confirmed. The terms of reference for the Phase 1 paleontological study will be to:

- Provide a summary of the relevant legislation;
- Conduct a site inspection as required by national legislation;
- Determine the likelihood of paleontological remains of significance in the proposed site;
- Identify and map (where applicable) the location of any significant palaeontological remains;
- Assess the sensitivity and significance of paleontological remains in the site;
- Assess the significance of direct and cumulative impacts of the proposed development and viable alternatives on paleontological resources; and

- Identify mitigatory measures to protect and maintain any valuable paleontological sites and remains that may exist within the proposed site.
- Prepare and submit any permit applications to the relevant authorities
-

8.2.5. Avifauna Assessment

An avifauna specialist study will be conducted. The assessment will include:

1. A desk-top review of existing literature to seek:
 - Previous means of predicting bird mortality (and other impacts) of wind turbines affecting birds in groups similar to those in the study area;
 - Accounts of mortality at wind turbines; and
 - Information on the status of bird groups most likely to be affected.
2. A site visit to identify species of special concern and assess the likely impacts of the construction and operational phases on the avifauna of the site.
 - Surveys will be conducted on the study area in line with recommended guidelines in this regard. These will be refined for the study area.
3. Conduct a review of international literature and experience relating to operational wind farms; including state of the art plants around the world;
4. Contextualize the literature and experience and relate it to the regional scenario and local avifauna;
5. Map sensitive areas in and around the proposed project site(s);
6. Describe the affected environment and determine the status quo in terms of avifauna;
7. Indicate how an avifaunal resource or community will be affected by the proposed project;
8. Discuss gaps in the baseline data with respect to avifauna and relevant habitats;
9. List and describe the expected impacts;
10. Assess and evaluate the anticipated impacts; and;
11. Make recommendations for relevant mitigation measures which will allow the reduction of negative impacts and the maximization of the benefits associated with any identified positive impacts.

Although the avifauna specialist will assess avian collision risk and provide detailed explanations and ratings of the likelihood of collisions of various species, detailed avian collision modelling i.e. quantitatively assessing the collision risk potential (i.e. birds directly colliding with rotor blades and turbine towers) of the proposed wind farm cannot be undertaken. This is because the extent to which this can formally be modelled and quantified to arrive at predicted numbers of collisions, would depend largely on the primary data collection related to flight frequencies and species, but it is unlikely that even the best possible data collection would provide much confidence in such a model, as it would require more representative data collection across a range of conditions/seasons and years etc. In addition, very often the worst bird collision ‘events’ at wind farms around the world have been found to have occurred in extreme weather conditions, when flight behaviour is abnormal.

A site specific, 12 month baseline monitoring regime is intended to be initiated in early August (along with the bat monitoring).

8.2.6. Bat Impact Assessment

A bat impact assessment specialist study will be conducted. This study will investigate the following issues:

1. The likelihood and significance of impacts with regards to bat (Chiroptera) fauna, in relation to the proposed wind energy facility;
2. Identification and mapping (where applicable) of any significant bat habitats
3. Assessment of the sensitivity and significance of the site with regards to bat (Chiroptera) fauna;

4. Assessment of the significance of direct and cumulative impacts (including foraging impacts, roost impacts and migration impacts to a certain extent) of the proposed development and viable alternatives;
5. Identification of mitigatory measures to protect and maintain any bat habitats.

As for the avifauna assessment, a specialist determined baseline monitoring programme needs to be conducted during the EIA process and beyond. The applicability of locally developed monitoring regimes to the study will be assessed and refined for implementation.

8.2.7. Agriculture Impact Assessment

An agricultural specialist study will be conducted, the key issues that will be investigated are the following:

- The extent and quality of arable land (less than 12% slope);
- The extent and quality of existing crops;
- The extent and quality of commercially unused land;
- The availability of irrigation water;
- The condition of the veld and other natural vegetation;
- The percentage of usable land that will be utilised during construction; and
- The percentage of usable land that will be utilised after construction.

Specifically, the following will be investigated:

1. Status Quo of Soils
 - Erosion Hazards - The study will identify any visible erosion hazards and record the apparent reasons therefore. It will also identify and describe any environmental hazards other than erosion.
 - Slope - Identify any areas with a slope greater than 12%.
 - Current and previous land usage - Evaluate the ratio between virgin arable land, currently cultivated crops, fallow and abandoned fields.
 - Infrastructure and Access - Note and record where improved infrastructure and access could impact negatively on the natural environment.
 - Extension Services - Note and report on incidence of industry, provincial and municipal extension and support services.
2. Water Resources
 - Surface Water - Note and record any visible water resources.
 - Groundwater - Identify and note any evidence of the presence of groundwater – springs, eyes, seepage, green patches etc.
3. Vegetation
 - Grasses, Decorative and Medicinal Veld Plants - The presence of any important or interesting medicinal or other indigenous plants will be noted. A general assessment of veld condition and condition of livestock will be made.

8.3. METHODOLOGY FOR ASSESSING THE SIGNIFICANCE OF IMPACTS

Although specialists will be given relatively free rein on how they conduct their research and obtain information, they will be required to provide their reports to the EAP in a specific layout and structure, so that a uniform specialist report volume can be produced. To ensure a direct comparison between various specialist studies, a standard rating scale has been defined and will be used to assess and quantify the identified impacts. This is necessary since impacts have a number of parameters that need to be assessed. Four factors need to be considered when assessing the significance of impacts, namely:

1. Relationship of the impact to **temporal** scales - the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.
2. Relationship of the impact to **spatial** scales - the spatial scale defines the physical extent of the impact.
3. The severity of the impact - the **severity/beneficial** scale is used in order to scientifically evaluate how severe negative impacts would be, or how beneficial positive impacts would be on a particular affected system (for ecological impacts) or a particular affected party. The severity of impacts can be evaluated with and without mitigation in order to demonstrate how serious the impact is when nothing is done about it. The word 'mitigation' means not just 'compensation', but also the ideas of containment and remedy. For beneficial impacts, optimization means anything that can enhance the benefits. However, mitigation or optimization must be practical, technically feasible and economically viable.
4. The **likelihood** of the impact occurring - the likelihood of impacts taking place as a result of project actions differs between potential impacts. There is no doubt that some impacts would occur (e.g. loss of vegetation), but other impacts are not as likely to occur (e.g. vehicle accident), and may or may not result from the proposed development. Although some impacts may have a severe effect, the likelihood of them occurring may affect their overall significance.

Each criterion is ranked with scores assigned as presented in Table 8-1 to determine the overall **significance** of an activity. The criterion is then considered in two categories, viz. effect of the activity and the likelihood of the impact. The total scores recorded for the effect and likelihood are then read off the matrix presented in Table 8-2, to determine the overall significance of the impact (Table 8-3). The overall significance is either negative or positive.

The **environmental significance** scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can either be ecological or social, or both. The evaluation of the significance of an impact relies heavily on the values of the person making the judgment. For this reason, impacts of especially a social nature need to reflect the values of the affected society.

Negative impacts that are ranked as being of **“VERY HIGH”** and **“HIGH”** significance will be investigated further to determine how the impact can be minimised or what alternative activities or mitigation measures can be implemented. These impacts may also assist decision makers i.e. lots of **HIGH** negative impacts may bring about a negative decision.

For impacts identified as having a negative impact of **“MODERATE”** significance, it is standard practice to investigate alternate activities and/or mitigation measures. The most effective and practical mitigations measures will then be proposed.

For impacts ranked as **“LOW”** significance, no investigations or alternatives will be considered. Possible management measures will be investigated to ensure that the impacts remain of low significance.

Table 8-1: Criterion used to rate the significance of an impact

| EFFECT | Temporal scale | | Score |
|--------|----------------|---|-------|
| | Short term | Less than 5 years | 1 |
| | Medium term | Between 5 and 20 years | 2 |
| | Long term | Between 20 and 40 years (a generation) and from a human perspective almost permanent. | 3 |
| | Permanent | Over 40 years and resulting in a permanent and lasting change that will always be there | 4 |
| | Spatial Scale | | |
| | Localised | At localised scale and a few hectares in extent | 1 |
| | Study area | The proposed site and its immediate environs | 2 |
| | Regional | District and Provincial level | 3 |
| | National | Country | 3 |

| | | | |
|-------------------|----------------------------------|--|--|
| | International | Internationally | 4 |
| | Severity | | Benefit |
| | Slight / Slightly Beneficial | Slight impacts on the affected system(s) or party (ies) | Slightly beneficial to the affected system(s) or party (ies) 1 |
| | Moderate / Moderately Beneficial | Moderate impacts on the affected system(s) or party(ies) | An impact of real benefit to the affected system(s) or party (ies) 2 |
| | Severe / Beneficial | Severe impacts on the affected system(s) or party (ies) | A substantial benefit to the affected system(s) or party (ies) 4 |
| | Very Severe / Very Beneficial | Very severe change to the affected system(s) or party(ies) | A very substantial benefit to the affected system(s) or party (ies) 8 |
| LIKELIHOOD | Likelihood | | |
| | Unlikely | The likelihood of these impacts occurring is slight | 1 |
| | May Occur | The likelihood of these impacts occurring is possible | 2 |
| | Probable | The likelihood of these impacts occurring is probable | 3 |
| | Definite | The likelihood is that this impact will definitely occur | 4 |

Table 8-2: The matrix that will be used for the impacts and their likelihood of occurrence

| Likelihood | | Effect | | | | | | | | | | | | | | | |
|------------|--|--------|---|---|----|----|----|----|----|----|----|----|----|----|----|--|--|
| | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | |
| 1 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | | |
| 2 | | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | | |
| 3 | | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | | |
| 4 | | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | | |

Table 8-3: The significance rating scale

| Significance | Description | Score |
|--------------|--|-------|
| Low | Acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment. | 4-7 |
| Moderate | An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment. | 8-11 |
| High | A serious impact, if not mitigated, may prevent the implementation of the project (if it is a negative impact). These impacts would be considered by society as constituting a major and usually a long-term change to the (natural &/or social) environment and result in severe effects or beneficial effects. | 12-15 |
| Very High | A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very severe effects, or very beneficial effects. | 16-20 |

8.4. ENVIRONMENTAL IMPACT REPORT

The results of the Specialist Studies given above will inform the preparation of the EIR.

In addition, the EIR will gather any comments received from I&APs and determine whether it is necessary to increase the scope of work or amend the ToR.

The EIR will also examine the option of not proceeding with the proposed development – the so-called “No Go” option.

8.4.1. Proposed structure of EIR

To avoid the EIR being excessively long and cumbersome, whilst meeting the content requirements specified in the NEMA EIA regulations, the final report will be divided into a number of volumes indicated in Table 8-4.

Table 8-4: Volumes that will be generated in the EIA phase for the proposed project

| Volume Number | Report | Contents |
|---------------|-----------------------------------|---|
| 1 | Scoping Report | As per the Draft ESR (this report) |
| 2 | Environmental Impact Report (EIR) | This volume will include - <ol style="list-style-type: none"> 1. Introduction <ul style="list-style-type: none"> • Detail of the environmental assessment practitioner who compiled the report • Expertise of the EAP to carry out an environmental impact assessment 2. Description of the Project <ul style="list-style-type: none"> • A description of the property on which the activity is to be undertaken • The location of the activity on the property • A description of the types of activities that are proposed for the development. 3. Description of the Affected Environment <ul style="list-style-type: none"> • The natural environment • The socio-economic environment • The legal, policy and planning setting 4. The Public Participation Process <ul style="list-style-type: none"> • Steps undertaken in order to notify and involve I&APs • Advertisements and media • Meetings held in the PPP • Issues and Comment Trail management 5. Summary of Comments and Response Trail <ul style="list-style-type: none"> • Summary of comments and issues raised by I&APs and responses to the issues 6. Summary of Specialist Reports <ul style="list-style-type: none"> • Summary of the findings and recommendations of all specialist studies 7. Alternatives Considered <ul style="list-style-type: none"> • Description of all alternatives considered in the EIA • Initial screening of alternatives • Description and comparative assessment of all alternatives identified during the EIA |

| | | |
|---|--|---|
| | | <p>8. The Significance of Potential Environmental Impacts</p> <ul style="list-style-type: none"> • The methodology used to determine the significance of environmental impacts • Impacts on the natural environment • Impacts on the socio-economic environment • Impacts on the legal, policy and planning setting <p>9. Environmental Impact Statement</p> <ul style="list-style-type: none"> • A summary of the key findings of the EIA • Comparative assessment of the positive and negative implications of the proposed activity and identified alternatives <p>10. Conclusions</p> <ul style="list-style-type: none"> • Opinion as to whether the activity should or should not be authorised. • Any conditions that should be made in respect to any form of authorisation. <p><i>It should be noted that the above is not the exact Table of Contents for the EIA, but is intended to indicate the major topics that will be covered in the report.</i></p> |
| 3 | Specialist Studies | <p>This volume will be a compilation of all the specialist studies undertaken in the EIA, and will include assessments of -</p> <ul style="list-style-type: none"> • Visual impacts • Heritage resources on site • Noise impacts • Ecological impacts • Avifauna and Bat impacts • Agricultural impacts |
| 4 | Comments and Response Trail | <p>This volume will include -</p> <ol style="list-style-type: none"> 1. Lists of persons, organisations and organs of state that were registered as I&APs 2. Comments and Response trail for the Scoping and EIA phases 3. Copies of any representations, objections and comments received from I&APs |
| 5 | Environmental Management Programme (EMPr) | <p>Environmental management programmes for key activities of the proposed project, which will contain the following -</p> <ol style="list-style-type: none"> 1. Introduction <ul style="list-style-type: none"> • The details of the EAP who prepared the EMPr • The expertise of the EAP to prepare an EMPr 2. Detailed description of the aspects of the activity covered by the EMPr's 3. Mitigation Measures and Actions <ul style="list-style-type: none"> • Planning and Design • Pre-construction and construction activities • Operation and undertaking of the activity • Rehabilitation of the environment 4. Responsibilities <ul style="list-style-type: none"> • Persons responsible • Time periods for implementation 5. Monitoring Programme |

8.5. PPP FOR THE EIA PHASE

The primary aims for the public participation process include the following:

- meaningful and timeous participation of I&APs;
- promoting transparency and an understanding of the proposed project and its potential environmental (social and biophysical) impacts;
- accountability for information used for decision-making;
- serving as a structure for liaison and communication with I&APs;
- assisting in identifying potential environmental (socio-economic and biophysical) impacts associated with the proposed development; and
- inclusivity (the needs, interests and values of I&APs must be considered in the decision-making process).

8.5.1. Advertising

In terms of the EIA Regulations, the availability of the Draft EIR will be advertised within newspapers in the predominant languages (English and Afrikaans) of the area. The primary aim of these advertisements will be to ensure that the widest group of I&APs possible are informed of the project. Other advertisements to be placed during the course of the EIA phase of the project will relate to the availability of reports for public review, the dates of public meetings, as well as the advertising of the environmental authorisation/decision.

8.5.2. Identification of and Consultation with Key Stakeholders

I&APs and Key Stakeholders have been identified during the Scoping phase of the project. The identification and engagement if necessary, of I&APs and Key Stakeholders will continue through into the EIA phase of the project as the public participation process is a continuous process that runs throughout the duration of an environmental investigation.

8.5.3. I&AP Database

All I&AP information (including contact details), together with dates and details of consultations and a record of all issues raised is recorded within a comprehensive database of I&APs. This database will be updated on an on-going basis throughout the project, and will act as a record of the communication/ involvement process.

8.5.4. Public Review of the Draft Environmental Impact Assessment Report

Consultation with I&APs is considered to be critical to the success of any EIA process. Therefore, one-on-one consultation, focus group meetings and public meetings with I&APs will be undertaken. The aim of this process will be to provide I&APs with details regarding the process and to obtain further comments regarding the proposed project. All of the above will be notified of the Draft EIR availability and dates and venues for the required public meetings. Minutes of all meetings held will be compiled and forwarded to all attendees. These minutes will also be included in the EIA Report. This consultation process will be on-going throughout the process. Consultation with I&APs will take place at two levels: public meetings for general I&APs who require an overview of the project; and focus group meetings for those who require more in-depth information and intensive interaction.

Public Meetings

The purpose of Public Meetings is to provide an appropriate format to enable I&APs to raise concerns related to the proposed project. The intention is that I&APs are afforded the opportunity of interacting on a one-on-one basis with technical and planning representatives of Terra Wind Energy, Middleton (Pty) Ltd as well as the environmental team. I&APs will be encouraged to complete an attendance register and a comment and registration form to assist I&APs in raising concerns and general views on the project.

Focus Group Meetings

The purpose of the Focus Group Meetings is to allow key stakeholders with specific issues to air their views and to facilitate the interaction of the key stakeholders and the project team. The meetings will allow for smaller groups of I&APs and/or representatives of larger interest groups or organisations who wish to play an active role in the process an opportunity for consultation.

Key Stakeholder Workshop

Key stakeholders will be invited by letter to attend a Key Stakeholder Workshop. The purpose is to workshop the proposed project with identified key role-players who operate at a strategic level. It is acknowledged that there are several key stakeholders and interest groups who are expected to take a keen interest in the proposed project, and it is considered to be an appropriate approach to engage these stakeholders in order to avoid potential challenges against the process at a later stage. The primary aims of the Key Stakeholder Workshop will be to:

- disseminate/transfer information on the proposed project to stakeholders (including the findings of the environmental studies);
- answer questions regarding the project and the EIA process;
- address issues and concerns raised by the key stakeholders;
- achieve a common understanding and consensus on the issues relating to the proposed project; and
- receive input regarding the public participation process and the proposed project.

Formal minutes of the key stakeholder workshop will be compiled and distributed to the attendees. These proceedings will also be included in the Final EIR.

An advert indicating the availability of this report for public scrutiny will be placed in the predominant languages of the area within local and national newspapers. I&APs registered on the project database will be notified of the availability of this report by letter.

8.5.5. Issues & Response Trail

All issues, comments and concerns raised during the public participation process of the EIA process will be compiled into an Issues Trail and incorporated and submitted as part of the Final EIR.

8.6. CONSIDERATION BY THE COMPETENT AUTHORITY FOR ENVIRONMENTAL AUTHORISATION AND APPEALS PROCESS

Once the EIR has been finalised it will be submitted to the competent authority for review and consideration for authorisation. The authority will grant authorisation, refuse authorisation or request further detail or information to clarify areas of concern. Should authorisation be granted, the decision will carry Conditions of Approval, to which the proponent is obliged to adhere.

The competent authority's decision will be advertised in the newspapers mentioned above and registered I&APs will be informed within seven days of receipt of the Decision. Once the public have been notified of the Environmental Authorisation - formerly termed Record of Decision (RoD) - anyone wishing to appeal the decision must lodge a notice of intention to appeal with the MEC within 20 days of the notification, and the appeal must be submitted, in a form prescribed by the competent authority, within 30 days of lodging the notice of appeal.

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APPENDIX A: THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The Environmental Impact Assessment process comprises two key phases – the Scoping Phase and the Environmental Impact Assessment Phase. These phases are described in detail below.

A1. THE SCOPING PHASE

Scoping is the first step in the EIA process. It allows for all role players – stakeholders and Interested and Affected Parties (I&APs) - to gain a greater understanding of the project by means of a public participation process. Scoping is also critical in as much as it facilitates the early identification of important natural and social issues that will need to be considered later in the process.

The principal objectives of the Scoping Phase are:-

- Describe the nature of the proposed project;
- Preliminary identification and assessment of potential environmental issues or impacts to be addressed in the subsequent EIA phase;
- Define the legal, policy and planning context for the proposed project;
- Describe important biophysical and socio-economic characteristics of the affected environment;
- Undertake a public participation process that provides opportunities for all I&APs to be involved;
- Identify feasible alternatives that must be assessed in the EIA phase; and
- Define the Plan of Study (PoS) for the EIA phase.

Each of the steps involved in the scoping phase is discussed in detail below.

A1.1. Project description

A description of the components of the proposed project is provided.

A1.2. Preliminary assessment of the project

Baseline data and information on the proposed development is collected, primarily from the project proponent, but also from preliminary site surveys and published literature, and from legislation, guidelines and other regulatory instruments, in order to determine the activities for which approval must be sought from the competent environmental authority.

Information sourced from the project proponent includes the proposed location and layout of the development, and the technology to be adopted. A preliminary assessment of this data and information, in the context of legal requirements and an understanding of the receiving environment, is by way of a preliminary risk assessment or fatal flaw analysis. It enables major risks to the project or to the receiving environment to be identified at an early stage in the EIA process, and informs subsequent decisions about aspects of the development identified as being potentially problematic.

A1.3. Legal context

The legislation relevant to the proposed Project is identified and reviewed.

A1.4. Identification of key bio-physical and socio-economic issues

The key biophysical and socio-economic issues related to the project are identified during the Scoping Phase. Relevant information is drawn from as wide a range of sources as possible, including local authorities, local communities, and specialists.

A1.5. Public Participation Process

A public participation process is an explicit requirement of the NEMA EIA regulations, and must take place throughout the EIA process. The approach to public consultation depends largely on the location of the proposed development, the nature of the project, the sensitivity of the receiving environment, the previous level of exposure of the public to the EIA process, and the level of education of those who will be affected by the proposed development. Among other things, involvement of the public in the EIA process is an opportunity to gather local knowledge from individuals, communities and organisations.

Key stakeholders are identified and notified of the proposed development and the ways in which they can be involved. These stakeholders include:-

- Local and regional authorities;
- Ratepayers associations;
- Ward councillors and representatives;
- Non-governmental Organisations (NGOs) and Community Based Organisations (CBOs); and
- Landowners adjacent and close to the site of the proposed development.

Stakeholders and I&APs are informed of the proposed development by means of:-

- Advertisements in newspapers
- A background information document (BID);
- Letters to key stakeholders and neighbouring landowners/occupiers; and
- Notice boards placed at the site.

All of the above must include name(s) and contact details - telephone and fax numbers, and e-mail address/es to which stakeholders and I&APs can direct written or verbal comments.

Advertisements are placed in a minimum of one local and one regional newspaper, depending on the nature and extent of the proposed development. Stakeholders and I&APs are encouraged to register by sending their names and contact details to the EAP, whereupon they are sent a copy of the BID, and are thereafter kept informed of and involved in all subsequent stages of the EIA process. The BID is a brief document that provides information on the nature and location of the proposed development, and details of how the EIA process will be undertaken. However, it is unlikely that the final design specifications of some proposed developments are known at this stage, and there may be changes to the information presented in the BID as the project progresses.

In addition, public meetings, open house meetings and/or focus group meetings may be held. In the early stages of the Scoping Phase these meetings provide an opportunity for the Environmental Assessment Practitioner (EAP) to present and discuss the information in the BID, to elicit information from local sources, and to register I&APs. Comment forms provide a further way by which comments may be submitted. In the latter stages meetings provide opportunities to discuss the draft version of the Scoping Report before it is submitted to the competent environmental authority.

A1.6. Identification of alternatives

Possible alternatives to the proposed development must be identified during the Scoping Phase. These may include fundamental alternatives, such as maintaining the current land use, or proposing a development of a different nature to the one proposed by the project proponent. Design alternatives are intended to modify certain design aspects of the proposed project, such as alternative technologies, timing of activities, or the location of infrastructure, so as to minimise negative impacts on the environment. The identification of alternatives must be reasonable and

practical.

A1.7. Plan of Study for the EIA Phase

The information and comments received and recorded during the Scoping Phase inform the larger and more comprehensive EIA Phase. This is usually achieved by the development of the Plan of Study (PoS) for the EIA. The PoS defines the actions, steps, and studies that must be undertaken in the EIA Phase.

A1.8. Scoping Reports

The data collected during the baseline data collection and public participation processes must be synthesised in a Scoping Report. In line with NEMA regulations, registered I&APs are entitled to comment, in writing, on all written submissions made to the competent authority by the applicant or the EAP managing an application. Accordingly a Draft Scoping Report is made available for public comment for a minimum period of 40 days. All comments on the draft report must be considered, and necessary changes made to the Draft before it is submitted for review to the competent authority as the final Scoping Report. This report includes the PoS discussed in A1.7 above.

A2. ENVIRONMENTAL IMPACT ASSESSMENT PHASE

The Environmental Impact Assessment (EIA) is a comprehensive evaluation and study phase that addresses all the issues raised in the Scoping Phase. It is a substantial phase that has seven key objectives:-

- Describe the biophysical and socio-economic environment that is likely to be affected by the proposed development.
- Undertake specialist studies to address the key biophysical and socio-economic issues.
- Assess the significance of impacts that may occur from the proposed development.
- Assess the alternatives proposed during the Scoping Phase.
- Provide details of mitigation measures and management recommendations to reduce the significance of impacts.
- Provide a framework for the development of Environmental Management Plans.
- Continue with the public participation process.

A2.1. Specialist Studies

Specialist studies are undertaken to provide a detailed and thorough examination of key issues and environmental impacts. Specialists gather relevant data to identify and assess environmental impacts that might occur on the specific component of the environment that they are studying (for instance waste management, air quality, noise, vegetation, water quality, pollution, waste management). Once completed, these studies are synthesised in, and presented in full as appendices to the Environmental Impact Report (EIR).

A2.2. Public Participation Process

The public participation process (PPP) initiated at the beginning of the Scoping Phase continues into the EIA Phase. Once again the PPP provides a platform from which all I&APs are able to voice their concerns and raise issues regarding the project.

A2.3. Assessment of the Significance of Impacts

It is necessary to determine the significance, or seriousness, of any impacts on the natural or social environment. It is common practice in the EIA Phase to use a significance rating scale that determines the spatial and temporal extent, and the severity and certainty of any impact occurring, including impacts relating to any project alternatives. This allows the overall significance of an impact or benefit to be determined.

The overall intent of undertaking a significance assessment is to provide the competent authority with information on the potential environmental impacts and benefits, thus allowing them to make an informed, balanced and fair decision.

A2.4. Mitigation Measures and Recommendations

Critical to any EIA is the recommendation of practical and reasonable mitigation measures and recommendations. These recommendations relate to the actions that are needed in order to avoid, minimise or offset any negative impacts from the development.

A3.5. Planning Input

An effective EIA process should actively engage and contribute to the project planning process so as to mitigate environmental impacts through improved design and layout.

A3.6. Environmental Impact Report

The above-mentioned tasks are synthesised in an Environmental Impact Report (EIR). This will allow the assessment of the relationship of environmental impacts to project actions, as well as to assess the overall significance of these impacts. The EIR will also provide sufficient information to allow the competent authority to make an informed decision.

A summary report covering key findings is prepared in a manner that is easy to read and understand. Text will be kept short and technical detail to a minimum, while information will be presented in the form of photographs and figures wherever possible.

A4. ENVIRONMENTAL MANAGEMENT PROGRAMMES

Environmental management and action plans based on the findings and recommendations set out in the EIR are prepared. An Environmental Management Programme (EMPr) consists of a set of practical and actionable mitigation, monitoring and institutional measures to be taken into account during construction and operation of the proposed development. The aim is to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. These plans include: -

- The standards and guidelines that must be achieved in terms of environmental legislation.
- Mitigation measures and environmental specifications that must be implemented at 'ground level', that is, during construction and operation.
- Provide guidance through method statements to achieve the environmental specifications.
- Define corrective action that must be taken in the event of non-compliance with the specifications of the EMPs and SMPs.
- Prevent long-term or permanent environmental degradation.

A5. ENVIRONMENTAL AUTHORISATION AND APPEALS PROCESS

On thorough examination of the EIR, the competent authority will issue an Environmental Authorisation or reject the application. Should authorisation be granted, it will carry Conditions of Approval. The proponent is obliged to adhere to these conditions.

I&APs are notified of the decision and have 20 days in which to lodge a notice of intention to appeal the decision, and a further 30 days in which to submit the appeal.

APPENDIX B: DEA ACKNOWLEDGEMENT OF RECEIPT



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447- PRETORIA - 0001- Fedasure Building - 315 Pretorius Street - PRETORIA
Tel (+ 27 12) 310 3911 - Fax (+ 27 12) 322 2682

NEAS Reference: DEA/EIA/0001307/2012

DEA Reference: 14/12/16/3/3/2/372

Enquiries: Mmatlala Rabothata

Tel: 012 395 1768/1894 Fax: 012 320 7539 E-mail: mrabothata@environment.gov.za

Ms Tarryn Martin
Coastal and Environmental Services
PO Box 934
GRAHAMSTOWN
6140

Fax: 046 622 6564

Tel: 046 622 2364

PER FACSIMILE / MAIL

Dear Ms Tarryn Martin

ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF NEW APPLICATION FOR ENVIRONMENTAL AUTHORISATION (SCOPING/EIA PROCESS) FOR THE PROPOSED TERRA WIND ENERGY, MIDDLETON, SOMERSET EAST, EASTERN CAPE PROVINCE

The Department confirms having received the application form; details of EAP and Declaration of interest; locality map; and project schedule submitted by you on 11 June 2012 and a project schedule, details of EAP and declaration of interest; and original signed Application on 2 August 2012 for environmental authorisation for the abovementioned project. You have submitted these documents to comply with the Environmental Impact Assessment Regulations, 2010. The Application is accepted.

Please include both reference numbers (NEAS Reference and DEA Reference), as listed above, on all documents and correspondence submitted to the Department.

In addition, please consider the following during compilation of reports for this application for environmental authorisation:

- All applicable Departmental Guidelines must be considered throughout the application process. These can be downloaded from the Department's website: www.environment.gov.za, Environmental Impact Management button, listed under "EIA Administration": Integrated Environmental Management Information Series link. These include, but are not limited to, the following topics: Scoping, Environmental Impact Reporting, Stakeholder Engagement, Specialist Studies, Impact Significance, Cumulative Effects Assessments, Alternatives in EIA and Environmental Management Plans.
- Please be advised that in terms of the EIA Regulations and NEMA the investigation of alternatives is mandatory. Alternatives must therefore be identified, investigated to determine if they are feasible and reasonable. It is also mandatory to investigate and assess the option of not proceeding with the proposed activity (the "no-go" option).

- Refer to the attached annexure for specific requirements for the submission of applications for environmental authorisation for solar power generation facilities.
- Should water, solid waste removal, effluent discharge, stormwater management and electricity services be provided by the municipality, you are requested to provide this office with written proof that the municipality has sufficient capacity to provide the necessary services to the proposed development. Confirmation of the availability of services from the service providers must be provided together with the reports to be submitted.
- In the reports to be submitted it must clearly be demonstrated in which way the proposed development will meet the requirements of sustainable development. You must also consider energy efficient technologies and water saving devices and technologies for the proposed development. This could include measures such as the recycling of waste, the use of low voltage or compact fluorescent lights instead of incandescent globes, maximising the use of solar heating, the use of dual flush toilets and low-flow shower heads and taps, the management of storm water, the capture and use of rainwater from gutters and roofs, the use of locally indigenous vegetation during landscaping and the training of staff to implement good housekeeping techniques.
- A detailed and complete EMPr must be submitted with the EIR. This EMPr must not provide recommendations but must indicate actual remediation activities which will be binding on the applicant. Without this EMPr the documents will be regarded as not meeting the requirements and will be returned to the applicant for correction.
- The applicant/EAP is required to inform this Department in writing upon submission of any draft report, of the contact details of the relevant State Departments (that administer laws relating to a matter affecting the environment) to whom copies of the draft report were submitted for comment. Upon receipt of this confirmation, this Department will in accordance with Section 24O(2) & (3) of the National Environmental Management Act, 1998 (Act 107 of 1998) inform the relevant State Departments of the commencement date of the 40 day commenting period, or 60 days in the case of the Department of Water Affairs for waste management activities which also require a licence in terms of the National Water Act, 1998 (Act 36 of 1998).
- Should it be necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999), please submit the necessary application to SAHRA or the relevant provincial heritage agency and submit proof thereof with the Environmental Impact Assessment Report. The relevant heritage agency should also be involved during the public participation process and have the opportunity to comment on all the reports to be submitted to this Department.

You are required to submit the final site layout plan together with the Final EIR to the Department. All available biodiversity information must be used in the finalisation of the layout plan. The site layout plan must indicate the following:

- Positions of solar/wind facilities;
- Foundation footprint;
- Permanent laydown area footprint;
- Construction period laydown footprint;
- Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible);
- Wetlands, drainage lines, rivers, stream and water crossing of roads and cables indicating the type of bridging structures that will be used;
- The location of Heritage sites;
- Sub-station(s) and/or transformer(s) sites including their entire footprint;

- Cable routes and trench dimensions (where they are not along internal roads);
- Connection routes (including pylon positions) to the distribution/transmission network;
- Cut and fill areas at solar panels/ wind turbines sites along roads and at sub-station/transformer sites indicating the expected volume of each cut and fill;
- Borrow pits;
- Spoil heaps (temporary for topsoil and subsoil and permanently for excess material);
- All existing infrastructure on the site, especially roads;
- Buildings including accommodation;
- All “no-go” areas; and
- A map combining the final layout plan must be superimposed (overlain) on the environmental sensitivity map.

The Environmental Management Programme (EMP) submitted as part of the application for environmental authorisation must include the following:

- All recommendations and mitigation measures to be recorded in the Final EIR.
- A plant rescue and protection plan which allows for the maximum transplant of conservation important species from areas to be transformed. This plan must be compiled by a vegetation specialist familiar with the site in consultation with the ECO and be implemented prior to commencement of the construction phase.
- An open space management plan to be implemented during the construction and operation of the facility.
- A re-vegetation and habitat rehabilitation plan to be implemented during the construction and operation of the facility including timeframes for restoration which must indicate rehabilitation within the shortest possible time after completion of construction activities to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.
- An alien invasive management plan to be implemented during construction and operation of the facility. The plan must include mitigation measures to reduce the invasion of alien species and ensure that the continuous monitoring and removal of alien species is undertaken.
- A storm water management plan to be implemented during the construction and operation of the facility. The plan must ensure compliance with applicable regulations and prevent off-site migration of contaminated storm water or increased soil erosion. The plan must include the construction of appropriate design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water runoff.
- An effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems.
- An erosion management plan for monitoring and rehabilitating erosion events associated with the facility. Appropriate erosion mitigation must form part of this plan to prevent and reduce the risk of any potential erosion.
- A traffic management plan for the site access roads to ensure that no hazards would result from the increased truck traffic and that traffic flow would not be adversely impacted. This plan must include measures to minimize impacts on local commuters e.g. limiting construction vehicles travelling on public roadways during the morning and late afternoon commute time and avoid using roads through densely populated built-up areas so as not to disturb existing retail and commercial operations.

- An environmental sensitivity map indicating environmental sensitive areas and features identified during the EIA process.
- Measures to protect hydrological features such as streams, rivers, pans, wetlands, dams and their catchments, and other environmental sensitive areas from construction impacts including the direct or indirect spillage of pollutants.

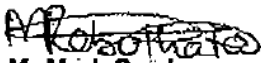
You are requested to submit two (2) electronic copies (the main report must be separated from the Appendices (each appendix saved separately) (CD/DVD) and two (2) hard copies of both the Draft and Final Report to the Department. The hard copies must be double-sided printed; double-punched and must be bound using a lever arch file (two or four holes).

The EAP must, in order to give effect to regulation 56 (2), before submitting the Environmental Impact Assessment Report to the Department give registered interested and affected parties access to, and an opportunity to comment on the report in writing.

In terms of regulation 67 of the EIA Regulations, 2010 this application will lapse if the applicant (or the EAP on behalf of the applicant) fails to comply with a requirement in terms of the Regulations for a period of six months after having submitted the application, unless the reasons for failure have been communicated to and accepted by this Department.

You are hereby reminded of Section 24F of the National Environmental Management Act, Act No 107 of 1998, as amended, that no activity may commence prior to an environmental authorisation being granted by the Department.

Yours sincerely



Mr Mark Gordon

Chief Director: Integrated Environmental Authorisations

Department of Environmental Affairs

Letter signed by: Ms Mmatlala Rabothata

Designation: Environmental Officer: Integrated Environmental Authorisations

Date: 16/08/2012

| | | | |
|-----|-----------------|-------------------------------------|-----------------------|
| CC: | Andrew de Jager | Terra Wind Energy (Pty) Ltd | Fax: 048 622 4695 |
| | Mr Leon Elo | Eastern Cape (DEDEA&T) | Fax: +27 041 009 5607 |
| | Mr M A Mene | Blue Crane Route Local Municipality | Fax: N/A |

A. EIA INFORMATION REQUIRED FOR WIND FARM APPLICATIONS

1. General site information

The following general site information is required:

- Descriptions of all affected farm portions
- 21 digit Surveyor General codes of all affected farm portions
- Copies of deeds of all affected farm portions
- Photos of areas that give a visual perspective of all parts of the site
- Photographs from sensitive visual receptors (tourism routes, tourism facilities, etc.)
- Turbine design specifications including:
 - Nacelle height
 - Blade length
 - Turbine shaft dimensions
 - Foundation dimensions
 - Laydown area dimensions (construction period and thereafter)
 - Blade rotation direction
 - Generation capacity
- Onsite measured wind parameters (speed, variability, etc.)
- Generation capacity of the facility as a whole at delivery points

This information must be indicated on the first page of any Scoping or EIA document. It is also advised that it be double checked as there are too many mistakes in the applications that have been received that take too much time from authorities to correct.

2. Site maps and GIS information

Site maps and GIS information should include at least the following:

- All maps/information layers must also be provided in ESRI Shapefile format
- All affected farm portions must be indicated
- The exact site of the application must be indicated (the areas that will be occupied by the application)
- A status quo map/layer must be provided that includes the following:
 - Current use of land on the site including:
 - Buildings and other structures
 - Agricultural fields
 - Grazing areas
 - Natural vegetation areas (natural yield not cultivated for the preceding 10 years) with an indication of the vegetation quality as well as fine scale mapping in respect of Critical Biodiversity Areas and Ecological Support Areas
 - Critically endangered and endangered vegetation areas that occur on the site
 - Bare areas which may be susceptible to soil erosion
 - Cultural historical sites and elements
 - Rivers, streams and water courses
 - Ridgelines and 20m continuous contours with height references in the GIS database
 - Fountains, boreholes, dams (in-stream as well as off-stream) and reservoirs
 - High potential agricultural areas as defined by the Department of Agriculture, Forestry and Fisheries
 - Buffer zones (also where it is dictated by elements outside the site):
 - 500m from any irrigated agricultural land

- 1km from residential areas
 - Indicate isolated residential, tourism facilities on or within 1km of the site
- A slope analysis map/layer that include the following slope ranges:
 - Less than 8% slope (preferred areas for turbines and infrastructure)
 - between 8% and 12% slope (potentially sensitive to turbines and infrastructure)
 - between 12% and 14% slope (highly sensitive to turbines and infrastructure)
 - steeper than 18 % slope (unsuitable for turbines and infrastructure)
- A map/layer that indicate locations of birds and bats including roosting and foraging areas (specialist input required)
- A site development proposal map(s)/layer(s) that indicate:
 - Turbine positions
 - Foundation footprint
 - Permanent laydown area footprint
 - Construction period laydown footprint
 - Internal roads indicating width (construction period width and operation period width) and with numbered sections between the other site elements which they serve (to make commenting on sections possible)
 - River, stream and water crossing of roads and cables indicating the type of bridging structures that will be used
 - Substation(s) and/or transformer(s) sites including their entire footprint.
 - Cable routes and trench dimensions (where they are not along internal roads)
 - Connection routes to the distribution/transmission network (the connection must form part of the EIA even if the construction and maintenance thereof will be done by another entity such as Eskom)
 - Cut and fill areas at turbine sites along roads and at substation/transformer sites indicating the expected volume of each cut and fill
 - Borrow pits
 - Spoil heaps (temporary for topsoil and subsoil and permanently for excess material)
 - Buildings including accommodation

With the above information authorities will be able to assess the strategic and site impacts of the application.

9. Regional map and GIS information

The regional map and GIS information should include at least the following:

- All maps/information layers must also be provided in ESRI Shapefile format
- The map/layer must cover an area of 20km around the site
- Indicate the following:
 - roads including their types (tared or gravel) and category (national, provincial, local or private)
 - Railway lines and stations
 - Industrial areas
 - Harbours and airports
 - Electricity transmission and distribution lines and substations
 - Pipelines
 - A visibility assessment of the areas from where the facility will be visible
 - Critical Biodiversity Areas and Ecological Support Areas
 - Critically Endangered and Endangered vegetation areas
 - Agricultural fields

- Irrigated areas
- An indication of new road or changes and upgrades that must be done to existing roads in order to get equipment onto the site including cut and fill areas and crossings of rivers and streams.

4. Important stakeholders

Amongst other important stakeholders, comments from the National Department of Agriculture, Forestry and Fisheries must be obtained and submitted to the Department. Request for comment must be submitted to:

Mrs. Anneliza Collett
Directorate: Land Use & Soil Management
Department of Agriculture, Forestry & Fisheries
Tel: 012 - 319 7508
Fax: 012 - 329 5938
e-mail: AnnelizaC@nda.agric.za
www.agis.agric.za

In addition, comments must be requested from Eskom (Mr Kevin Leask or Mr Ronald Marais (011) 8008111) regarding grid connectivity and capacity.

B. AGRICULTURE STUDY REQUIREMENTS

- Detailed soil assessment of the site in question, incorporating a radius of 50 m surrounding the site, on a scale of 1:10 000 or finer. The soil assessment should include the following:
 - Identification of the soil forms present on site
 - The size of the area where a particular soil form is found
 - GPS readings of soil survey points
 - The depth of the soil at each survey point
 - Soil colour
 - Limiting factors
 - Clay content
 - Slope of the site
 - A detailed map indicating the locality of the soil forms within the specified area,
 - Size of the site
- Exact locality of the site
- Current activities on the site, developments, buildings
- Surrounding developments / land uses and activities in a radius of 500 m of the site
- Access routes and the condition thereof
- Current status of the land (including erosion, vegetation and a degradation assessment)
- Possible land use options for the site
- Water availability, source and quality (if available)
- Detailed descriptions of why agriculture should or should not be the land use of choice
- Impact of the change of land use on the surrounding area
- A shape file containing the soil forms and relevant attribute data as depicted on the map

APPENDIX C: PUBLIC PARTICIPATION

APPENDIX C-1: EXAMPLE OF THE BACKGROUND INFORMATION DOCUMENT (BID) SENT TO LAND OWNERS AND OCCUPIERS OF LAND IMMEDIATELY SURROUNDING AND WITHIN 100m OF THE PROPOSED PROJECT DEVELOPMENT SITE. BOTH AN ENGLISH AND AFRIKAANS VERSION WERE SENT.

**BACKGROUND INFORMATION DOCUMENT & INVITATION TO REGISTER AND COMMENT
MIDDLETON WIND ENERGY PROJECT**

Background to the project: Terra Power Solutions (Pty) Ltd, a renewable energy company, is proposing the construction of a wind energy facility (wind farm) near Middleton in the Eastern Cape, South Africa. Middleton is approximately 20km south of Cookhouse, along the N10. Coastal & Environmental Services (CES) has been appointed by Terra Power Solutions (Pty) Ltd to undertake the necessary environmental investigations for the wind farm, and to apply for approval from the national Department of Environmental Affairs (DEA), for its construction and operation, as required by South Africa's environmental legislation. Details of the relevant laws, and an overview of the environmental impact assessment process, are provided on the following pages.

Project description: The Middleton wind energy facility will consist of approximately 60 turbines covering an area of approximately 24 000 ha. Each turbine has a nominal power output ranging between 2-3MW (Mega Watts). The total potential output of the wind farm would be ~180MW, and will feed into the national grid.

Dimensions: The ultimate size of the wind turbines will depend on further technical assessments but will typically consist of rotor turbines with rotor diameters up to a maximum of 120 meters. The towers will have a nacelle or transformer hub between 100 and 140 meters above ground with a blade tip height of between 160 and 200 meters above ground.

REGISTRATION



CES requests that all potential stakeholders and interested and affected parties register as participants in the EIA process

Return address for comments:

Ms. Tarryn Martin

P.O. Box 934
Grahamstown, 6140

Tel: (046) 622 2364

Fax: (046) 622 6564

Ms Tarryn Martin

Email: t.martin@cesnet.co.za

or

Email: a.jackson@cesnet.co.za

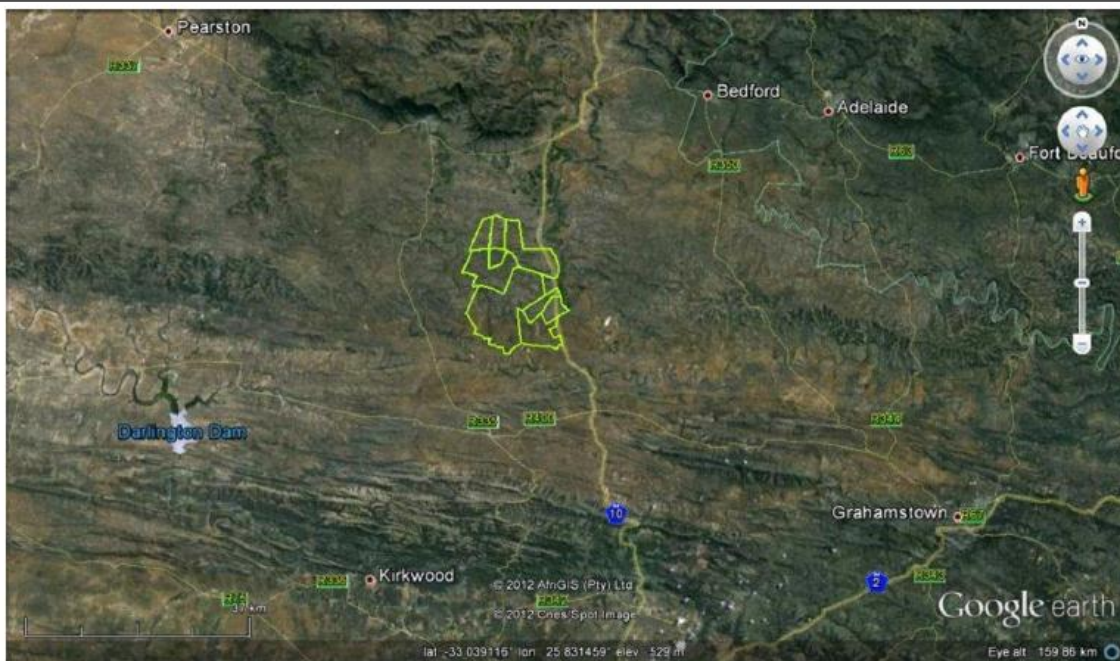


Figure 1: Location of the proposed Middleton wind energy facility.

Relevant Legislation

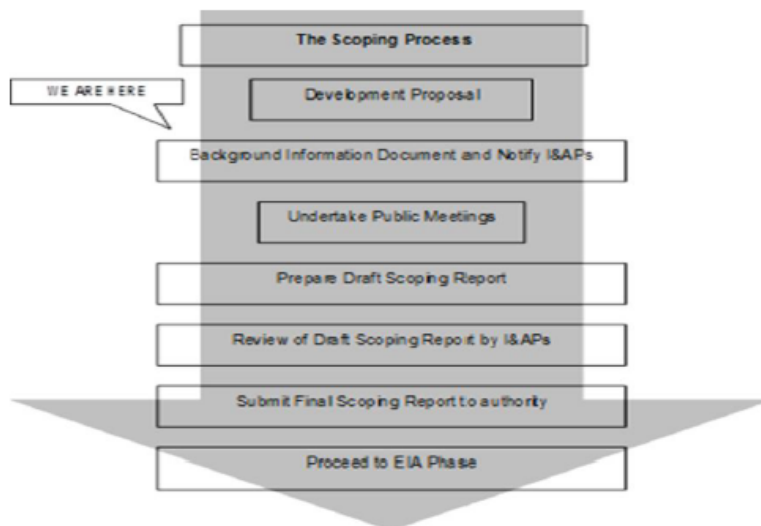
The Environmental Impact Assessment (EIA) regulations, made in terms of Section 24 of Chapter 5 of the National Environmental Management Act (Act No 107 of 1998), and the related Lists of Activities (Government Notices (GN) R.544, R.545 and R.546 of 18th June 2010) specify the activities that require either a Basic Assessment, or a full Scoping and EIA respectively. The activities triggered by the proposed development include, but are not limited to:

| Number of the relevant listing notice | Activity No(s) | Description |
|---------------------------------------|----------------|---|
| GNR R544 | (1) | The construction of facilities or infrastructure for the generation of electricity where: (i) the electricity output is more than 10 megawatts but less than 20 megawatts; or (ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare. |
| GNR R544 | (10) | The construction of facilities or infrastructure for the transmission and distribution of electricity - (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; |
| GNR 544 | (18) | The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock or more than 5 cubic metres from: (i) a watercourse; |
| GNR R545 | (1) | The construction of facilities or infrastructure for the generation of electricity where the electricity output is 20 megawatts or more. |
| GNR R545 | (8) | The construction of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex. |
| GNR R545 | (15) | Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use where the total area to be transformed is 20 hectares or more; except where such physical alteration takes place for: |
| GNR 546 | (4) | The construction of a road wider than 4 metres with a reserve less than 13,5 metres (d) In Western Cape: (i) All areas outside urban areas |
| GNR 546 | (14) | The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, |
| GNR 546 | (19) | The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. (d) Western Cape (ii) All areas outside urban areas; |

As the proposed development triggers activities in GNR 545 a full Scoping and EIA process will have to be conducted by the applicant.

The Scoping phase

The Scoping Phase is important for informing the public and relevant authorities about the nature and size of the proposed project. A critical component of the Scoping Phase is the Public Participation Process, in which Interested and Affected Parties (I&APs) are given an opportunity to raise any issues or concerns they may have about the project. The process is outlined in the figure below. The Draft Scoping Report will be made available for review by the public and all registered I&APs will be notified to the availability thereof. This report will set the scope and specialist terms of reference for the EIA Phase.

**The Environmental Impact Assessment phase**

This phase is more complex and more detailed than the Scoping phase, because it focuses on undertaking a number of specialist studies that have been identified as being necessary during the Scoping phase. These studies provide expert input into the EIA process based on scientific information. I&APs will be consulted again during this phase, and will be given an opportunity to comment on the Draft Environmental Impact Report (EIR) that will contain the specialist reports. During this phase an Environmental Management Plan must also be prepared for the project.

Environmental Authorisation phase

The final EIR is submitted to the national Department of Environment Affairs (DEA) who, after considering the report, will make a decision either authorising the project to continue under certain conditions, or requiring additional work to be undertaken.

Potential issues for investigation

The following specialist studies will be conducted within the proposed wind farm site, to ascertain any potential impacts, positive and negative, that may occur as a result of pre-construction, construction and operational phases.

- **Visual and aesthetic impacts**

A wind farm will normally have a high visibility due mainly to the height of the turbines.

- **Noise impacts**

The Noise Impact Investigation will be conducted in accordance with the South African National Standard (SANS) 10328 "Methods for environmental noise impact assessments"

- **Ecological, Wetland, and Agricultural impacts**

The location of any species of special concern will be identified, and the location noted in order to inform the mitigation and management measures. Wetlands will be delineated and where necessary, the relevant water use licences will be obtained. An agricultural assessment will investigate the impacts on agriculture of a wind farm development.

- **Avifaunal and Bat impacts**

Potential impacts to birds and bats

- **Heritage, archaeological and/or palaeontological impacts**

Potential impacts on heritage, cultural resources and/or fossils etc.

Table 1: Property Number and Portions of landowners

| Property Number | Portion |
|-----------------|-----------------------|
| 215 | Remaining Extent (RE) |
| 164 | RE |
| 165 | RE |
| 166 | RE |
| 166 | 1 |
| 166 | 4 |
| 409 | 2 |
| 381 | 5 |
| 381 | 2 |
| 160 | 1 |
| 161 | RE |
| 230 | RE |
| 230 | 2 |
| 230 | 3 |
| 220 | 1 |
| 431 | RE |
| 216 | RE |
| 166 | 1 |
| 409 | RE |
| 163 | 1 |
| 163 | 1 |
| 431 | RE |
| 220 | RE |
| 220 | RE |
| 221 | RE |
| 220 | RE |
| 220 | RE |
| 221 | RE |
| 381 | RE |
| 381 | 12 |
| 381 | RE |
| 381 | 8 |
| 212 | 2 |
| 381 | 8 |

I hereby wish to register as an Interested and Affected Party (IAP) for the Middleton Wind Farm EIA process

Name:

Organization:

Postal address:

Email:

Phone #: _____ Fax #: _____

My initial comments, issues or concerns are:

Other individuals, stakeholders, organisations or entities that should be registered are:

Name:

Organization:

Postal address:

Email:

Phone #: _____ Fax #: _____

Please return details to: **Ms Tarryn Martin:** P.O. Box 934, Grahamstown, 6140

Telephone: (046) 622 2364 Fax: (046) 622 6564 Email: t.martin@cesnet.co.za or a.jackson@cesnet.co.za

AGTERGROND INFORMASIE DOKUMENT & UITNODIGING OM TE REGISTREER EN KOMMENTAAR TE LEWER - MIDDLETON WIND ENERGIE PROJEK

Agtergrond van die projek: Terra Power Solutions (Pty) Ltd, 'n herwinbare energie maatskappy, is van voorneme vir die konstruksie van 'n wind energie fasiliteit (windplaas) in die Middleton gebied van die Oos-Kaap, Suid-Afrika. Middleton is ongeveer 20km suid van "Cookhouse", op die N10. Coastal & Environmental Services (CES) is deur Terra Power Solutions (Edms) Bpk aangestel om die nodige omgewings ondersoek te onderneem vir die wind plaas, en om aansoek te doen vir die goedkeuring deur die nasionale Departement van Omgewingsake (Department of Environmental Affairs/DEA), vir die konstruksie en bedryf, soos vereis deur die Suid-Afrikaanse omgewingswetgewing. Besonderhede van die toepaslike wette, en 'n oorsig van die omgewings impak ontledings proses, word verskaf op die volgende bladsye.

Beskrywing: Die Middleton wind energie fasiliteit sal bestaan uit ongeveer 60 turbines, met 'n area van ongeveer 24 000 ha wat gedek word. Elke turbine sal 'n opbrengs van 2 tot 3 MW uitset genereer. Die totale potensiële uitset van die windplaas sal 180MW wees en sal in die nasionale rooster in voer. Die projek ligging word aangedui in Figuur 1.

Dimensies: Die uiteindelijke grootte van die wind turbines sal afhang van die verdere tegniese ontledings, maar sal tipies bestaan uit rotor turbines met rotor diameters/deursnee tot 'n maksimum van 120 meter. Die torings sal 'n "nacelle" of transformator hub tussen 100 en 140 meter bo die grond met 'n lem punt hoogte van tussen 160 en 200 meter bo die grond

REGISTRASIE

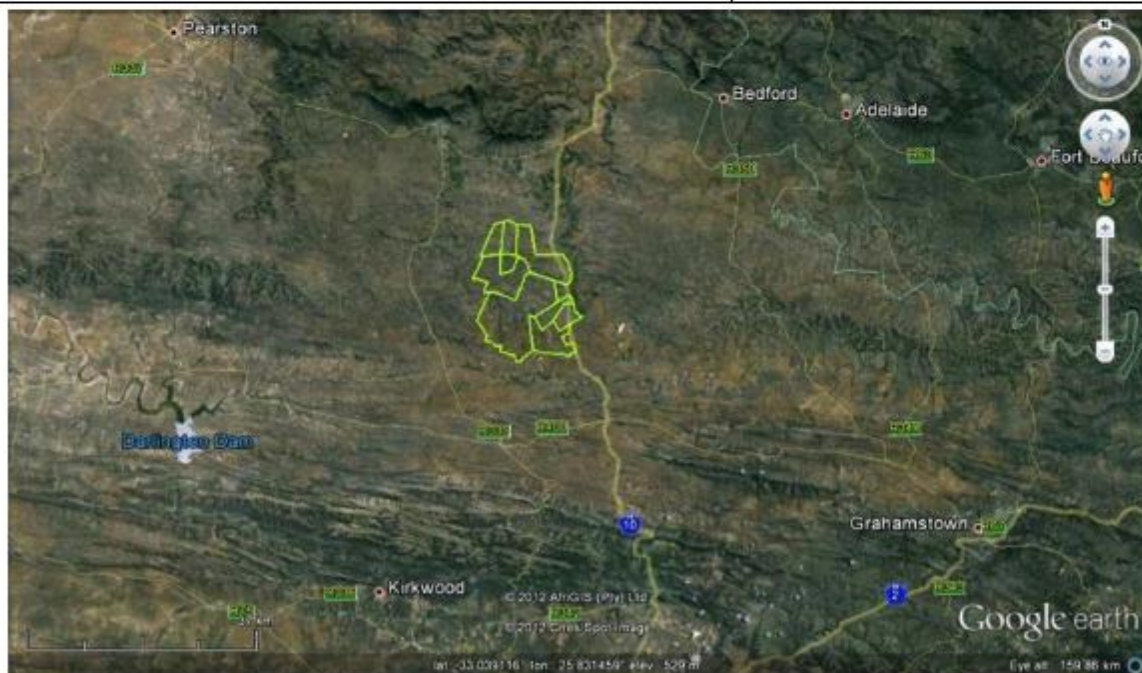


CES versoek dat alle potensiële belanghebbende en interesseerde en affekteerde partye registreer as deelnemers in die OIS (Omgewings Impak Studie) proses.

Adres vir kommentaar

Ms Tarryn Martin
Posbus 934
Grahamstad, 6140
Tel: (046) 622 2364
Faks: (046) 622 6564

Tarryn Martin
E-pos: t.martin@cesnet.co.za
of
Amber Jackson
E-pos: A.jackson@cesnet.co.za



Figuur 1: Ligging van die voorgestelde Middleton wind energie fasiliteit

Toepaslike Wetgewing

Die Omgewings Impak Studie (OIS) regulasies, in terme van Artikel 24 van Hoofstuk 5 van die Nasionale Wet op Omgewings bestuur (Wet Nr 107 van 1998), en die verwante gelyste aktiwiteite (Staats Kennisgewings R.544, R.545 en R.546 van 18 Junie 2010) spesifiseer die aktiwiteite wat vereis dat of 'n Basiese ontleding; of 'n volle omvangs en omgewingsimpak studie/evaluatie onderskeidelik gedoen word. Die aktiwiteite wat aktiveer/vereis word deur die voorgestelde ontwikkeling sluit in, maar is nie beperk tot die volgende:

| Nommer van relevante gelyste aktiwiteit | Aktiwiteit Nr(s) | Beskrywing |
|---|------------------|---|
| GNR R544 | (10) | Die konstruksie van fasiliteite of infrastrukture vir die transmissie en verspreiding van elektrisiteit - (i) buite stedelike areas of industriële komplekse wat 'n kapasiteit van meer as 33 maar minder as 275 kilovolts het |
| GNR 544 | (18) | Die opvol of deponering van enige materiaal van meer as 5 kubieke meter van: (i) "a watercourse"/ 'n waterloop; |
| GNR R545 | (1) | Die konstruksie van fasiliteite of infrastrukture vir die generering van elektrisiteit waar die elektrisiteit uitset 20 MW of meer. |
| GNR R545 | (8) | Die konstruksie van fasiliteite of infrastrukture vir die transmissie en verspreiding van elektrisiteit met 'n kapasiteit van 275 kilovolts of meer, buite 'n stedelike area of industriële kompleks. |
| GNR R545 | (15) | Fisiese verandering of onontwikkelde, vakante/loop land vir residensiele, verkoops/kleinhandel, kommersiele, rekreasie, industriële of institusionele gebruik waar die totale area wat omskep moet word 20 hektaar of meer is; behalwe waar die fisiese verandering plaas vind vir: |
| GNR 546 | (4) | Die konstruksie van 'n pad weier as 4m met 'n reserwe minder as 13.5 meters. (d) In die Wes Kaap: (i) Alle areas buite stedelike areas. |
| GNR 546 | (14) | Die skoon maak van 'n area van 5 hektaar of meer plantegroei waar 75% of meer van die plante bedekking bestaan uit inheemse plantegroei. |
| GNR 546 | (19) | Die verbreding van 'n pad ("widening of a road") met meer as 4 meter, of verlenging van 'n pad met meer as 1 kilometer. (d) In die Wes Kaap (ii) Alle areas buite stedelike areas; |

Soos wat die voorgestelde ontwikkeling, aktiwiteite aktiveer in 'GNR 545', sal 'n volledige Omvang bepaling en OIS prosesse uitgevoer moet word deur die aansoeker.



Die omvangsbepaling fase

Die omvangsbepaling fase is belangrik vir die in kennis stelling van die publiek en relevante owerhede aangaande die aard en grootte van die voorgestelde projek. 'n Kritiese komponent van die omvangsbepaling fase is die publieke deelname proses, waar interesseerde en geaffekteerde partye I&GPe die geleentheid gebied word om kwessies en vraagstukke wat hulle moontlik oor die projek het uit te lig. Die proses word hieronder uiteengesit. Die konsep omvangs verslag sal beskikbaar gemaak word vir oorsig/hersiening deur die publiek en alle registreerde I&GPe sal in kennis gestel word van beskikbaarheid daarvan. Die verslag sal die omvang stel en spesialis terme van verwysing vir die Omgewingsimpak evaluasie fase.

Die omgewings impak ontledings fase

Die fase is meer kompleks en meer breedvoerig as die omvangsbepaling fase, omdat dit fokus op onderneming van 'n aantal spesialis studies wat gedurende die omvangsbepaling fase identifiseer is as nodig. Hierdie studies voorsien insette in die omgewingsimpak proses baser op wetenskaplike informasie. Gedurende die fase sal daar weer met I&APe konsulteer word, en sal die geleentheid gebied word om kommentaar te lewer op die konsep omgewingsimpak verslag (OIV) wat die spesialis verslae bevat. Gedurende die fase word 'n Omgewings Bestuur Plan (OBP) vir die projek voorberei.

Omgewings Magtiging Plan

Die finale Omgewingsimpak Verslag (OIV) word ingedien by die Nasionale Departement van Omgewings Aangeleenthede (DEA) wat na konsiderering van die verslag, 'n besluit sal neem, om of toestemming te gee dat die projek voortgaan onderhewig sekere voorwaardes of vereis dat addisionele werk onderneem word..

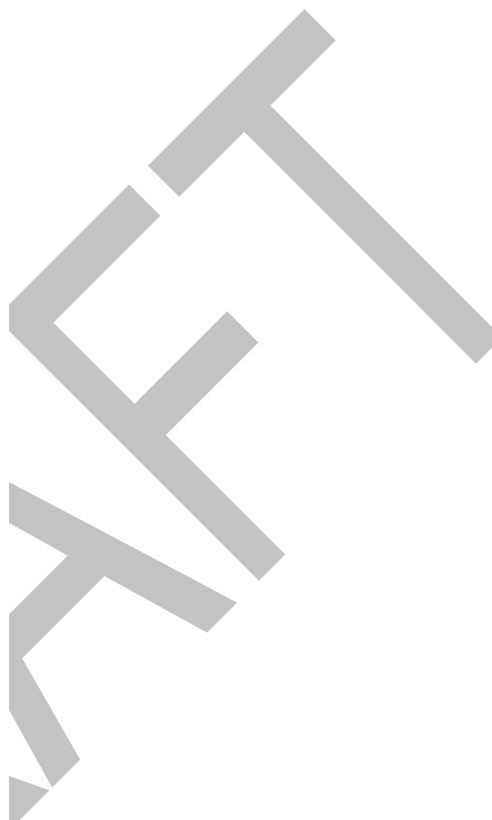
Potensiele kwessies

Die volgende spesialis studies sal onderneem word binne die voorgestelde windplaas ligging om engige potensiele impakte te bepaal; positief en negatief, wat kan voorkom as 'n gevolg van pre-konstruksie, konstruksie en bedryfs fases.

- Visuele en estetiese impakte
'n Windplaas sal normaalweg 'n hoë sigbaarheid hê as gevolg van hoogte van turbines.
- Geraas impakte
Die geraas impak ondersoek sal onderneem word in ooreenstemming met die Suid Afrikaanse Nasionale Standaard (SANS) 10328 "Metodes vir omgewings geraas impak ontledings".
- Ekologiese impakte
Die plek van enige spesies van spesiale kommer sal identifiseer word en die ligging aangeteken word om sodoende versagting en bestuurs maatstawwe informasie te verskaf.
- Voël en Vlermuise impakte
Potensiele impakte vir voëls en vlermuise.
- Erfenis, argeologiese en/of paleontologiese impakte
Potensiele impakte op erfenis, kulturele bronne en/of fossiele ens.

Tafel 1: Eiendom nommers en gedeelte

| Eiendom | Gedeelte |
|---------|-----------------------|
| 215 | Remaining Extent (RE) |
| 164 | RE |
| 165 | RE |
| 166 | RE |
| 166 | 1 |
| 166 | 4 |
| 409 | 2 |
| 381 | 5 |
| 381 | 2 |
| 160 | 1 |
| 161 | RE |
| 230 | RE |
| 230 | 2 |
| 230 | 3 |
| 220 | 1 |
| 431 | RE |
| 216 | RE |
| 166 | 1 |
| 409 | RE |
| 163 | 1 |
| 163 | 1 |
| 431 | RE |
| 220 | RE |
| 220 | RE |
| 221 | RE |
| 220 | RE |
| 220 | RE |
| 221 | RE |
| 381 | RE |
| 381 | 12 |
| 381 | RE |
| 381 | 8 |
| 212 | 2 |
| 381 | 8 |



Hiermee doen ek aansoek om te registreer as 'n Belanghebbende en Geaffekteerde Party vir die Middleton Wind Plaas

Naam:

Organisasie:

Pos adres:

E-pos adres: _____ Tel #: _____

Mobile # _____ Faks #: _____

My aanvanklike kommentaar, kwessies of kommer is:

Ander individue, belanghebbendes, organisasies of entiteite wat registreer moet word is:

Naam:

Organisasie:

Pos adres:

E-pos:

Tel #: _____ Faks #: _____

Stuur asb besonderhede terug na: **Ms Tarryn Martin**: Posbus 934, Grahamstad, 6140

Telefoon: (046) 622 2364 Faks: (046) 622 6564

E-pos: t.martin@cesnet.co.za of a.jackson@cesnet.co.za

APPENDIX C-2: CONTACT DETAILS AND EXAMPLE OF LETTER SENT TO LAND OWNERS AND OCCUPIERS OF LAND IMMEDIATELY SURROUNDING AND WITHIN 100m OF THE PROPOSED PROJECT DEVELOPMENT SITE**Contact details of Land Owners**

| NAME | Email | Address |
|---------------------------------|------------------------|--|
| MR ANTHONIE CHRISTOFFEL LOMBARD | | POS BUS 256 SOMERSET OOS 5850 Eastern Cape |
| MR JOHAN BOSCH | jbosch@jabama.co.za | P.O Box 81 SOMERSET EAST 5850 Eastern Cape |
| MR PETRUS JACOBUS LE ROUX | leroux@bosberg.co.za | P O Box 23 Middleton 5810 Eastern Cape |
| MR H.J MOOLMAN | banna@jabama.co.za | P.O. Box 237 Somerset East 5850 Eastern Cape |
| MR JOHN MOOLMAN | | P O BOX 124 SOMERSET OOS 5880 Eastern Cape |
| MR Jakkie and JACQUI NEL | jnel@jabama.co.za | P.O. Box 293 Somerset East 5850 Eastern Cape |
| MR JONATHAN STEPHANUS TROSKIE | atroskie@bosberg.co.za | P O Box 419 Somerset East 5850 Eastern Cape |
| MR ANDRIES NAUDE TROSKIE | dtroskie@bosberg.co.za | P O Box 178 Somerset East 5850 Eastern Cape |
| MR JONATHAN STEPHANUS TROSKIE | | P O Box 419 Somerset East 5850 Eastern Cape |

Example of Letter sent to Landowners

COASTAL & ENVIRONMENTAL SERVICES Environmental Management and Impact Assessment



67 African Street P.O. Box 934
Grahamstown 6140 SOUTH AFRICA
Tel: 046-622 2364 Fax: 046-622 6564
International: +27-46-622 2364
Email: info@cesnet.co.za
Website: www.cesnet.co.za

2 Marine Terrace P.O. Box 8145
East London 5210 SOUTH AFRICA
Tel: 043-722 5812 Fax: 043-742 3306
International: +27-43-722 5812
Email: cesel@cesnet.co.za
Website: www.cesnet.co.za

6 June 2012

MR ANTHONIE CHRISTOFFEL LOMBARD
POSBUS 256
SOMERSET OOS,
Eastern Cape 5850

Dear MR ANTHONIE CHRISTOFFEL LOMBARD

Attention: Owner or person in control of the land where the activity is to be undertaken

NOTIFICATION OF ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A WIND ENERGY PROJECT NEAR MIDDLETON IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

In accordance with the requirements of section 54 (2) (b) (i) of the Environmental Impact Assessment Regulations (2010) made in terms of section 24(5) of the National Environmental Management Act (Act No 107 of 1998) as amended, we are required to give written notice to the owner or person in control of the land where the activity is to take place. In accordance with this requirement, please find here-with a letter of notification for an environmental impact assessment being carried out by Coastal and Environmental Services in respect of the above-mentioned project.

Terra Power Solutions (Pty) Limited is proposing to develop a Wind Energy Project near Middleton, in the Eastern Cape Province of South Africa. The proposed project will entail the construction and operation of approximately 60 turbines each generating 2 - 3 Mega Watts (MW) of power.

- Coastal & Environmental Services (CES) of Grahamstown have been appointed by Terra Power Solutions (Pty) Limited, to conduct an environmental impact assessment for the proposed development. The activities that we believe will be triggered by the proposed development are listed in the application and the Background Information Document (BID) that is attached to this letter.
- A public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly.
- CES would highly appreciate it if you could confirm your receipt of this notification via email (t.martin@cesnet.co.za), fax, phone or post. For more information, please feel free to contact me at the CES Grahamstown office numbers shown above.

Yours sincerely,

Tarryn Martin
Environmental Consultant

Henque 1018 t/a Coastal & Environmental Services . Reg no. CK 1997/061914/23 . Vat No. 4380172835
Members: Dr AM Avis (PhD Rhodes) . Prof RA Lubke (PhD Western Ontario)
Mrs CE Avis (MA Rhodes, CAIB) . Dr P Sherman (PhD Rhodes)
Dr AR Carter (PhD Rhodes, CPDA USA) .

Proof of Registered Mail to the Current Land Owners

REGISTERED LETTER
GEREGISTREERDE BRIEF (144) 

(with an insurance option/met 'n versekeringsopsie)

Full tracking and tracing/Volledige volg en spoor

Addressed to/Geadresseer aan

S. Light

Postcode Poskode

The value of the contents of this letter is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof. Optional insurance up to R2 000.00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie brief is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering tot R2 000.00 is beskikbaar en is slegs op binnelandse geregisteerde briewe van toepassing.

Postage paid R _____ C
Service fee/Diensgeld R _____ C
Insurance/Versekering R _____ C
Total/Totaal R _____ C

Insured value of contents
Versekerde waarde van inhoud R _____ C

Enquiries/Navrae
Toll-free number
Tolvry nommer
0800 111 502

Initial of accepting officer
6140

Date stamp
GRAHAMSTOWN
5
2012-06-07
701281

Affix Track and Trace customer copy
Plak Volg-en-Spoor-kliëntafskrif

Paraaf van aanneembeampte

Datumstempel

avrae
mber
mer
502

| No | Naam en adres van geadresseerde | Versekerde bedrag | Versekeringsgeld | Posgeld | Diensgeld | Plak Volg-en-Spoor-kliëntafskrif |
|--------------|--|-------------------|------------------|---------|-----------|--|
| 1 | Mr Jonathan Stephanus Traskie, P.O. Box 419, Somerset East, E.C., 5850 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 809 ZA CUSTOMER COPY 301028R |
| 2 | Mr John Moolman, P.O. Box 124, Somerset East, E.C., 5850 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 790 ZA CUSTOMER COPY 301028R |
| 3 | Mr H.S. Moolman, P.O. Box 237, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 826 ZA CUSTOMER COPY 301028R |
| 4 | Mr Petrus Jacobus Le Roux, P.O. Box 23, Middleton, E.C., 5810 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 812 ZA CUSTOMER COPY 301028R |
| 5 | Mr Johan Bosch, P.O. Box 81, Somerset East, E.C., 5850 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 843 ZA CUSTOMER COPY 301028R |
| 6 | Mr Anthonie Christoffel Lombard, P.O. Box 256, Somerset East, E.C., 5850 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 830 ZA CUSTOMER COPY 301028R |
| 7 | Mr Andries Naude Traskie, P.O. Box 178, Somerset East, E.C., 5850 | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 786 ZA CUSTOMER COPY 301028R |
| 8 | Mr Jakkie d Jacqui Nel P.O. Box 293, Somerset East, E.C., 5850. | | | | | REGISTERED LETTER (with a domestic insurance option) ShareCall 0800 111 502 www.sapo.co.za RD 753 484 772 ZA CUSTOMER COPY 301028R |
| 9 | | | | | | |
| 10 | | | | | | |
| Total Totaal | | R | R | R | R | |

Number of letters posted
Getal briewe gepos *8 / Eight*

Signature of client
Handtekening van klient *[Signature]*

Signature of accepting officer
Handtekening van aanneembeampte *[Signature]*

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binnelandse geregisteerde briewe van toepassing.



701248

List of the Neighbours notified of the proposed development

| |
|------------------------------------|
| Elizabeth Isabel Benade |
| Johannes Botha |
| Andries Botha |
| Pieter Botha |
| Albert Botha |
| Ernst Conradie |
| Johan Conradie |
| Tess de Bruin |
| Kenneth Diedricks |
| Philip Erasmus |
| A Starkey |
| Johannes Gillmer |
| Mervin Gowar |
| Chris and Tracey Greeff |
| Esaias Greeff |
| Isaac Keevy |
| Sholte Kroon |
| Jan Lapere |
| Adriaan Cornelius Johannes Lombard |
| Mandisa Mondl |
| Brandon Polley |
| Alwyn Raubenheimer |
| Theo Schneider |
| Sarie Schoeman |
| Rodney Taai |
| Johan Troskie |
| John Truter |
| Jan van der Vyfer |
| Carel van Gend |
| Colin van Niekerk |
| Anton Vermeulen |
| Charl Wilke |
| Sidney Birch |
| Louw and Lucia Froelich |

Example of Letter sent to Neighbours

COASTAL & ENVIRONMENTAL SERVICES Environmental Management and Impact Assessment



67 African Street, P.O. Box 934
Grahamstown 6140, SOUTH AFRICA
Tel: 046-622 2364 Fax: 046-622 6564
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Email: info@cesnet.co.za
Website: www.cesnet.co.za

2 Marine Terrace P.O. Box 6146
East London 5210, SOUTH AFRICA
Tel: 043-722 5812 Fax: 043-742 3306
International: +27-43-722 5812
Email: cesel@cesnet.co.za
Website: www.cesnet.co.za

20 July 2012

Elizabeth Isabel Benade
P.O.Box 197
Somerset East, Eastern Cape 5850

Dear Elizabeth Isabel Benade,

NOTIFICATION OF ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF MIDDLETON WIND FARM AT MIDDLETON IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

In accordance with the requirements of the National Environmental Management Act (Act No. 107 of 1998) and relevant Environmental Impact Assessment (EIA) regulations made in terms of this Act, (Government Notice Number R.543) dated 18 June 2010, notification is hereby given in terms of Regulation 54 (b): "Written notice to – owners or occupiers of land adjacent to the site where the activity is to be undertaken..". In accordance with this requirement, please find here-with a letter of notification for an environmental impact assessment being carried out by Coastal and Environmental Services in respect of the above-mentioned project.

Terra Power Solutions (Pty) Limited is proposing to develop a Wind Energy Project near Middleton, in the Eastern Cape Province of South Africa. The proposed project will entail the construction and operation of approximately 60 turbines each generating 2 - 3 Mega Watts (MW) of power and will cover an area of approximately 24 000 ha.

- Coastal & Environmental Services (CES) of Grahamstown have been appointed by Terra Power Solutions (Pty) Ltd, to conduct an environmental impact assessment for the proposed development. The activities that we believe will be triggered by the proposed development are listed in the application and the Background Information Document (BID) that is attached to this letter.
- A public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly.
- CES would highly appreciate it if you could confirm your receipt of this notification via email, fax, phone or post. For more information, please feel free to contact me at the CES Grahamstown office numbers shown above.

Yours sincerely,

Tarryn Martin
Environmental Consultant

Memorandum of Understanding Coastal & Environmental Services - Reg no. CK 1997/062914/23 - Vat No. 4380172835
Members: Dr AM Ault (PhD Rhodes), Prof RA Lubke (PhD Western Ontario)
Mrs CE Ault (MA Rhodes, CAIB), Dr P Sherman (PhD Rhodes)
Dr AR Carter (PhD Rhodes, CPDA USA).

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
 (with an insurance option/met 'n versekeringsopsie)

144



Full tracking and tracing/Volledige volg en spoor

Name and address of sender:
 Naam en adres van afsender: CES
67 African Street, Grahamstown, 6139

Enquiries/Navrae
 Toll-free number
 Tolvry nommer
0800 111 502

| No | Name and address of addressee Naam en adres van geadresseerde | Insured amount Versekerde bedrag | Insurance fee Versekeringsgeld | Postage Posgeld | Service fee Diensgeld | Affix Track and Trace customer copy Plak Volg-en-Spoor-kliëntekopie |
|----|---|-------------------------------------|-----------------------------------|--------------------|--------------------------|--|
| 1 | Philip Erasmus, Box 101, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 484 145 ZA CUSTOMER COPY 3102R |
| 2 | Theo Schneider, Box 153, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 483 998 ZA CUSTOMER COPY 3102R |
| 3 | Alberic Philip Botha, Box 422, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 484 171 ZA CUSTOMER COPY 3102R |
| 4 | Anchines Botha, Box 440, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 484 199 ZA CUSTOMER COPY 3102R |
| 5 | Elizabeth Isabel Berwick, Box 197, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 484 211 ZA CUSTOMER COPY 3102R |
| 6 | Einst Conrode, Box 260, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 484 242 ZA CUSTOMER COPY 3102R |
| 7 | Adriaan Cornelius Johannes Lombard, Box 197, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 484 625 ZA CUSTOMER COPY 3102R |
| 8 | Colin van Niekerk, Box 260, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 483 920 ZA CUSTOMER COPY 3102R |
| 9 | Carel van Gend, Box 211, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 483 936 ZA CUSTOMER COPY 3102R |
| 10 | San Antonie van der Water, Box 277, Somerset East, E.C. 5850 | | | | | REGISTERED LETTER With a guaranteed insurance option Amount of R20 000,00 (R20 000,00) RD 753 483 967 ZA CUSTOMER COPY 3102R |
| | Total Totaal | R | R | R | R | |

Number of letters posted
 Getal briewe gepos 10/TEN

Signature of client
 Handtekening van klient

Signature of accepting officer
 Handtekening van aanneembeampte

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R1 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binne-landse geregistreerde briewe van toepassing.



791248

LEBONE LITHO PRINTERS (PTY) LTD.

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
 (with an insurance option/met 'n versekeringsopsie)
 Full tracking and tracing/Volledige volg en spoor

144



Name and address of sender:
 Naam en adres van afsender: CES
67 African Street, Grahamstown
6139

Enquiries/Navrae
 Toll-free number
 Toevry nommer
0800 111 502

| No | Name and address of addressee Naam en adres van geadresseerde | Insured amount Versekerde bedrag | Insurance fee Versekeringsgeld | Postage Posgeld | Service fee Diensgeld | Affix Track and Trace customer copy Plak Volg-en-Spoor-klientafskrif |
|----|--|-------------------------------------|-----------------------------------|--------------------|--------------------------|---|
| 1 | Sholte Kroon, Box 357, Graaf-Reynal, E.C. 6280 | | | | | REGISTERED LETTER RD 753 484 052 Z.A. CUSTOMER COPY 301008 |
| 2 | Sahannes Ruben Gillemer, Box 79, Sarsensville, E.C. 6265 | | | | | REGISTERED LETTER RD 753 484 153 Z.A. CUSTOMER COPY 301008 |
| 3 | Sohn Truter, Box 13, Komaggas, E.C. 5800 | | | | | REGISTERED LETTER RD 753 483 953 Z.A. CUSTOMER COPY 301008 |
| 4 | Melvin Goniwe, Box 22, Komaggas, E.C. 5800 | | | | | REGISTERED LETTER RD 753 484 897 Z.A. CUSTOMER COPY 301008 |
| 5 | M. A. Skuyler, Private Bag X7485, King Williams Town, E.C. 5600 | | | | | REGISTERED LETTER RD 753 484 118 Z.A. CUSTOMER COPY 301008 |
| 6 | Brandon Kelly, Box 3755, North End P.F., E.C. 6102 | | | | | REGISTERED LETTER RD 753 484 818 Z.A. CUSTOMER COPY 301008 |
| 7 | Rodney Tani, Private Bag X 3913, North End, P.E. E.C. 6056 | | | | | REGISTERED LETTER RD 753 483 875 Z.A. CUSTOMER COPY 301008 |
| 8 | Alwyn Johannes Rouwenheimer, Box 2, Golden Valley, E.C. 5821 | | | | | REGISTERED LETTER RD 753 484 821 Z.A. CUSTOMER COPY 301008 |
| 9 | Sahannes Botha, P.O. Box 43, Golden Valley, E.C. 5821 | | | | | REGISTERED LETTER RD 753 484 555 Z.A. CUSTOMER COPY 301008 |
| 10 | Pieter Botha, Box 43, Golden Valley, E.C. 5821 | | | | | REGISTERED LETTER RD 753 484 208 Z.A. CUSTOMER COPY 301008 |

Number of letters posted
 Getal briewe gepos: 10/TEN
 Total
 Totaal: R R R R

Signature of client
 Handtekening van klient: *[Signature]*

Signature of accepting officer
 Handtekening van aanneembeampte: *[Signature]*

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedel en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binelandse geregistreerde briewe van toepassing.



List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
 (with an insurance option/met 'n versekeringsopsie)



Full tracking and tracing/Volledige volg en spoor

Name and address of sender:
 Naam en adres van afsender: CES
67 African Street, Grahamstown
6139

Enquiries/Navrae
 Toll-free number
 Tovy nommer
0800 111 502

| No | Name and address of addressee Naam en adres van geadresseerde | Insured amount Versekerde bedrag | Insurance fee Versekeringsgeld | Postage Posgeld | Service fee Diensgeld | Affix Track and Trace customer copy Plak Volg-en-Spoor-klantafskrif |
|----|---|-------------------------------------|-----------------------------------|--------------------|--------------------------|--|
| 1 | Isaac Keely, Box 56, Golden Valley, E.C. 5821 | | | | | REGISTERED LETTER Affix a postage stamp and cancel Postcode 611 000 RD 753 484 083 ZA CUSTOMER COPY 304389 |
| 2 | Samuel Romain Lapere, Box 1148 Helderand 6511 | | | | | REGISTERED LETTER Affix a postage stamp and cancel Postcode 611 000 RD 753 484 066 ZA CUSTOMER COPY 300346 |
| 3 | Mandisa Mond, Private Bag 2417, Johannesburg, Gauteng 2017 | | | | | REGISTERED LETTER Affix a postage stamp and cancel Postcode 611 000 RD 753 484 049 ZA CUSTOMER COPY 304992 |
| 4 | Kenneth Diedericks, Private Bag 2417, Johannesburg, Gauteng, 2017 | | | | | REGISTERED LETTER Affix a postage stamp and cancel Postcode 611 000 RD 753 484 137 ZA CUSTOMER COPY 300305 |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

Number of letters posted
 Getal briewe gepos 4/FOUR Total Totaal R R R R

Signature of client
 Handtekening van klient

Signature of accepting officer
 Handtekening van aanneembeampte

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100,00. No compensation is payable without documentary proof. Optional insurance of up to R2 000,00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100,00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000,00 is beskikbaar en is slegs op binelandse geregistreerde briewe van toepassing.



701240

LERONE LITHO PRINTERS (PTY)LTD.

| | | | |
|--|--|---|--|
| REGISTERED LETTER GEREGISTREERDE BRIEF | | Postage paid R _____ c Service fee / Diensgeld R _____ c Insurance / Versekering R _____ c Total / Totaal R _____ c | |
| (with an insurance option/met 'n versekeringsopsie) | | Insured value of contents Versekerde waarde van inhoud R _____ c | |
| Full tracking and tracing/Volledige volg en spoor | | Enquiries/Navrae Toll-free number Tolvry nommer 0800 111 502 | Initial of accepting officer Date Stamp 2012-07-25 6740 |
| Addressee to/Geadresseer aan Shelley Birch P.O. Box 20 Middleton 5810 Postcode Poskode | | Affix Track and Trace REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 753 483 896 ZA CUSTOMER COPY 301028R | |
| The value of the contents of this letter is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof. Optional insurance up to R2 000.00 is available and applies to domestic registered letters only. Die waarde van die inhoud van hierdie brief is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering tot R2 000.00 is beskikbaar en is slegs op binnelandse geregistreerde briewe van toepassing. | | Paraaf van aaneem-beampte Datumstempel | |

DRAFT

APPENDIX C-3: CONTACT DETAILS AND EXAMPLE OF THE LETTERS SENT TO GOVERNMENT DEPARTMENTS, MUNICIPALITIES AND OTHER KEY STAKEHOLDERS**Table C-3.1: Organisation and the contact that letters of notification were sent to**

| Organisation | Contact |
|--|------------------------|
| AgriLand Liaison office (DAFF) | Thoko Buthelezi |
| Blue Crane District Municipality | Patrick Dreyer |
| Blue Crane District Municipality | Lusuko Stuko |
| Blue Crane Tourism | Ros Turner |
| Blue Crane Tourism | Alan Hobson |
| Cacadu Environment | Howard Sikweza |
| Civil Aviation Authority | Lizelle Stroh |
| DEDEAT Regional Manager for the Cacadu District | Jeff Govender |
| Delegate of the Minister (DAFF) | Mashudu Marubini |
| Department of Water Affairs, Water Use Authority Section | Lizna Fourie |
| Dept of Energy | M Mathekgana |
| Eastern Cape Dept of Agriculture | JA Armstrong |
| ECD Mineral and Resources | Sam van den Berg |
| ESKOM | Xolani Wana |
| Farming and Agricultural Association | Greg and Fiona Brown |
| SACAA | Lizelle Stroh |
| SAHRA | Mariagrazia Galamberti |
| SAHRA Heritage Authority | Colette Scheermeyer |
| SAHRA Heritage Authority | Sonja Warnich-Stemmet |
| SANRAL Transport Authority | Colene Runkel |
| Urban Dynamics | Royan Vangent |
| WESSA - EASTERN PROVINCE REGION | Marthe Anne |

COASTAL & ENVIRONMENTAL SERVICES
Environmental Management and Impact Assessment



67 African Street P.O. Box 934
Grahamstown 6140 SOUTH AFRICA
Tel: 046-622 2364 Fax: 046-622 6564
International: +27-46-622 2364
Email: info@cesnet.co.za
Website: www.cesnet.co.za

2 Marine Terrace P.O. Box 8145
East London 5210 SOUTH AFRICA
Tel: 043-722 5812 Fax: 043-742 3306
International: +27-43-722 5812
Email: cesel@cesnet.co.za
Website: www.cesnet.co.za

17 July 2012

To Whom it may concern

ATTENTION: Mashudu Marubini

NOTIFICATION OF ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A WIND ENERGY PROJECT NEAR MIDDLETON IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

In accordance with the requirements of section 54 (2) (b) (vi) of the Environmental Impact Assessment Regulations (2010) made in terms of section 24(5) of the National Environmental Management Act (Act No 107 of 1998) as amended, we are required to, "give written notice to any organ of state having jurisdiction in respect of any aspect of the activity". In accordance with this requirement, please find here-with a letter of notification for an environmental impact assessment being carried out by Coastal and Environmental Services in respect of the above-mentioned project.

Terra Power Solutions (Pty) Limited is proposing to develop a Wind Energy Project near Middleton, in the Eastern Cape Province of South Africa. The proposed project will entail the construction and operation of approximately 60 turbines each generating 2 - 3 Mega Watts (MW) of power and will cover an area of approximately 24 000 ha.

- Coastal & Environmental Services (CES) of Grahamstown have been appointed by ..., to conduct an environmental impact assessment for the proposed development. The activities that we believe will be triggered by the proposed development are listed in the application and the Background Information Document (BID) that is attached to this letter.
- A public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly.
- CES would highly appreciate it if you could **confirm** your **receipt** of this notification via email, fax, phone or post. For more information, please feel free to contact me at the CES Grahamstown office numbers shown above.

Yours sincerely,

Tarryn Martin
Environmental Consultant

APPENDIX C-4: CONTACT DETAILS AND EXAMPLE OF THE LETTERS SENT TO REGISTERED I&AP’S FROM THE PREVIOUS STUDY IN MIDDLETON

| CONTACT NAME |
|---|
| PJ Le Roux (Rockvale) |
| GS Schoombie (klipfontein) |
| Bernard Goosen (Rietfontein) |
| Wayman Kritzinger (Peninsula) |
| Tanya Schneider |
| Mnr Francois du Preez |
| Mnr Francois & Mev Louise du Preez (Klipkrantz Farming Trust) |
| Christo Els |
| Jannie du Plessis |
| Neil Jeppe |
| Stefan deKlerk |
| Jacqui Troskie |
| Abdul Botha |
| Andries Botha |
| Blue Crane Development Agency |
| Blue Crane Local Municipality |
| Cacadu District Municipality |
| Department of Agriculture |
| Eskom Holding Ltd |
| Patrick Cull |
| DEDEA (Department of Economic Development & Environmental Affairs) |
| Mr Mervin Gowar |
| Mr Patrick Cull |
| Mr Gert Schoonbee |
| Mr Ziyanda Mdikene |
| Mr Brandon Polley |
| Mr Nico Lombard |
| Dr. Paul Martin |
| Mr I. Du Preez |
| Mr Johan van Zyl |
| Mr Christo Els |
| MR Niel Jeppe |
| Mr A. Hobson |
| Mr Jacquie Nel |
| Mr Christo (AC) Lombard |
| Mr PJ Leroux |
| Ms Cebisa Goboza |
| Mr Moonshine Blouw |
| Charl Wilke |
| Mr Murray Gardiner |
| Ms Linda Pampallis |
| Mr Andre van der Spuy |

| |
|---------------------------|
| Mr Nick Fox |
| Mr Andrew Muir |
| Mr Jon Smallie |
| Dr Mariagrazia Galimberti |
| Mrs Nonofpho Ndobochani |
| Ms Katherine Degenaar |
| Junaid Moosajee |
| Hein Reyneke |
| Duncan Ayling |
| Andre van der Spuy |

DRAFT

COASTAL & ENVIRONMENTAL SERVICES

Environmental Management and Impact Assessment



67 African Street P.O. Box 934
Grahamstown 6140 SOUTH AFRICA
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Tel: 043-722 5812 Fax: 043-742 3306
International: +27-43-722 5812
Email: cesel@cesnet.co.za
Website: www.cesnet.co.za

27 July 2012

To Whom it may concern

NOTIFICATION OF ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A WIND ENERGY PROJECT NEAR MIDDLETON IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

In 2010 CES conducted an Environmental Impact Assessment for a Wind Energy Facility near Middleton, in the Eastern Cape Province of South Africa. The proposed project was planned to host up to 200 turbines, each with a nominal power output ranging between 2-3 Mega Watts (MW). The total potential output of the wind farm would have been 500MW and was to cover an area of approximately 30 000 hectares (ha).

Currently, Terra Power Solutions (Pty) Limited is proposing to redo this assessment, however at a much smaller scale. It is proposed to construct approximately 60 turbines each generating 2 - 3 Mega Watts (MW) of power and over an area of approximately 24 000 ha. The site for this development partially overlaps the previous site that was assessed in 2010. A new application has been submitted to the DEA for this facility.

It is hereby requested that as a registered interested and affected party for the previous EIA undertaken by CES in 2010 that you take cognisance of the following:

- Coastal & Environmental Services (CES) of Grahamstown have been appointed by Terra Power Solutions (PTY) Ltd, to conduct an environmental impact assessment for the proposed development. The activities that we believe will be triggered by the proposed development are listed in the application and the Background Information Document (BID) that is attached to this letter.
- A public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly.
- CES would highly appreciate it if you could **confirm** your **receipt** of this notification via email, fax, phone or post. For more information, please feel free to contact me at the CES Grahamstown office numbers shown above.

Yours sincerely,

Tarryn Martin
Environmental Consultant

APPENDIX C-5: COPY OF NEWSPAPER ADVERTISEMENT NOTIFYING I&APS OF THE PROPOSED MIDDLETON WIND ENERGY PROJECT

DIE BURGER (PROVINCIAL) – 14 June 2012

DIE BURGER Donderdag 14 Junie 2012



WERK met Pieter Rademeyer Jr

14 Junie 2012

lees is 'n kuns

Die arme tandarts moes na die tyd seker gedink het ek is een van haar vreemdste pasiënte ooit – maar ek was net só beïndruk dat iemand 'n ongemaklike situasie so mooi kon bestuur'.
Toe ek en my vrou in 2010 swanger geraak het, het die dame wat die aanvanklike scans by St. Georges Hospitaal gedoen het, ons ongelooflik spesiaal laat voel. Dit sal ons altyd bybly hoe sy ons laat voel het soos die heel eerste ouerpaar op aarde wat so 'n besondere baba verwag het. Ons het die wonderlike voorreg gehad om haar so drie of vier keer te besoek. En elke keer het sy met die mooiste, sagste geaardheid opgetree en haar belangstelling was opreg.
Sy het elke keer wanneer sy met die skandeerder oor my vrou se maag beweeg en iets op die skerm gesien het, nie noodwendig met ons gepraat en 'n groot bohaai oor 'n been of 'n arm of 'n kop gemaak nie. Nee, sy het amper eerder met haarself gepraat. "Ag, kyk die armpie. My moeder, kyk die beentjie..." sou sy amper prewel. En natuurlik met al die sagte, deernisvolle byklanke wat met baba-kloek gepaard gaan. Sy het ons wêreld laat voel dat dit die eerste keer was dat sy iets so besonders gesien het – en dit is haar werk om talle sulke ouers op 'n daaglikse basis te sien. Elke keer by haar spreekkamer, was soos 'n eerste keer.
Hierdie twee vroue sal my altyd bybly omdat hulle die kuns bemeester het om die mense met wie hulle werk, te lees. Hulle weet wanneer en hoe om te lag en wanneer en hoe om saam verwonderd te wees oor dinge wat saak maak.

Pieter is Afrikaans-ondewysers by die Hoërskool Grey en eienaar van die funksielekaal, Elizabeth Place, in Port Elizabeth.



ClareMart AUCTION GROUP

HARTENBOS ONMIDDELLIKE BEVESTIGING

DUBBELVERDIEPHUIS MET SEE-UIJSIG
NA BEHORE GELAS PER SPESIALE PROKURERSVOLMAG



35 TUSCAN VILLAGE, HARTENBOS HEUWELS

Grootte: 335m² | 2 Slaapkamers (H.E.S.) | Oop plan
Binnebraaiplek | Dubbelmotorhuis (toegang tot huis)

ON SHOW: Sondag 17 Junie, 2-5pm

DONDERDAG 21 JUNIE AT 14HO0
Venue: On site

MC DU TOIT 082 563 3275 WEB REF: 5045

Die nuwe Wet op Verbruikersbeskerming vereis dat alle kliënte wat aan verkoopte deelneem, die volgende moet saambring: 1) Gewaarsemde afskrif van hul Identiteitskaart 2) Bewys van woonadres. Die ofisers mag namens die verkoper nie tot op die marktoesprekings. VIR VERDERE INLIGTING, KYN ASSEMBLIEF BY WWW.CLAREMART.CO.ZA

OMGEWINGSIMPAKSTUDIE-PROSES

VOORGESTELDE ONTWIKKELING VAN DIE MIDDLETON WINDPLAASPROJEK

Kennis word hiermee gegee, kragtens Regulasie 54(2) soos gepubliseer in die Staatskoerant Nr. 543 Omgewingsimpakstudie (OIS)-regulasies van die Wet op Nasionale Omgewingsbestuur (Wetnr. 107 van 1998) vir die voorgenomde OIS-proses te onderneem.
Terra Power Station (Edms) Bpk. stel 'n wind-energie-fasilititeit (windplaas) voor om opgerig te word in die Middleton-area van die Provinsie Oos-Kaap van Suid-Afrika. Die voorgestelde projek sal geleë wees aan die westekant van die N10, ongeveer 20 km suid van Cookhouse.
Die voorgestelde projek behels die konstruksie en bedryf van tot 60 windturbines, wat elk 2-3 MW krag sal genereer met 'n totale opwekkingskapasiteit van ongeveer 180 MW.
Kragtens die OIS-regulasies sal die voorgestelde ontwikkeling vereis dat 'n volle omvangs-en-impak-ontledingsproses gevolg word. Terra Power Solutions (Edms) Bpk. het Coastal & Environmental Services (CES) aangewys om die proses te onderneem. Die vereiste aansoek is ingedien by die Nasionale Departement van Omgewingsake wat die besluitnemingsliggaam vir die aansoek sal wees.

U word hiermee uitgenooi om te registreer as 'n Belanghebbende en Geaffekteerde Party
Kontakpersoon: Me. Tarryn Martin, Posbus 934, Grahamstad 6140
Tel. 046 622 2364 - Faks. 046 622 6564
E-pos: t.martin@cesnet.co.za

448 1835 (SJM/MS) 146 (180)

KENNISGEWING

AANSOEK VIR 'N LISENSIE KRAGTENS DIE WET OP PETROLEUMPRODUKTE, 1977 (WETNR. 120 VAN 1977)

Belanghebbende of geaffekteerde partye word met hierdie kennisgewing in kennis gestel dat The Diesel Inn CC, hierin later verwys na as "die applikant", aansoeknommer B/2011/06/22/0003, 'n aansoek ingedien het vir 'n Perseelensensie ten opsigte van die perseel geleë by:
Erf 6526 Lootspark Jeffreysbaai, Lootsparkringel 19, Lootspark, Jeffreysbaai.

Die doel van die aansoek is dat 'n lisensie aan die applikant toegeken word vir die bedryf van petroleum-kleinhandelsaktiwiteite, soos na verwys in die aansoek. Reëlings vir die inspeksie van die aansoekdokumentasie kan getref word deur die Kontroleur van Petroleumprodukte te kontak by:
* Telefoon 041 396 3948/041 396 3925
* Faks 086 5356548/086 5921636
* E-pos: lilhe.mdungwana@energy.gov.za of yolisa.sunduzwayo@energy.gov.za

Enige besware teen die uitreiking van 'n lisensie ten opsigte van die aansoek moet 'n duidelike verwysing na die bogenoemde aansoeknommer bevat en moet by die Kontroleur van Petroleumprodukte ingedien word binne 'n tydperk van (20) werksdae vanaf die datum van publikasie van hierdie kennisgewing. Besware moet ingedien word by die volgende straat- of posadres:

| | |
|--------------------------------------|--------------------------------------|
| Stratiedraes: | Posadres: |
| Die Kontroleur van Petroleumprodukte | Die Kontroleur van Petroleumprodukte |
| Departement van Energie | Departement van Energie |
| iv Mount & Duizend | Privaatbak 30913 |
| Mount Cook | Port Elizabeth |
| Port Elizabeth | 6000 |
| 6000 | |
| 8902 3821 (SJJ/QTK) | 146 (180) |

KENNISGEWING

AANSOEK VIR 'N LISENSIE KRAGTENS DIE WET OP PETROLEUMPRODUKTE, 1977 (WETNR. 120 VAN 1977)

Belanghebbende of geaffekteerde partye word met hierdie kennisgewing in kennis gestel dat The Diesel Inn CC, hierin later verwys na as "die applikant", aansoeknommer B/2011/06/22/0004, 'n aansoek ingedien het vir 'n Kleinhandelsinsensie ten opsigte van die perseel geleë by:
Erf 6526 Lootspark Jeffreysbaai, Lootsparkringel 19, Lootspark, Jeffreysbaai.

Die doel van die aansoek is dat 'n lisensie aan die applikant toegeken word vir die bedryf van petroleum-kleinhandelsaktiwiteite, soos na verwys in die aansoek. Reëlings vir die inspeksie van die aansoekdokumentasie kan getref word deur die Kontroleur van Petroleumprodukte te kontak by:
* Telefoon 041 396 3948/041 396 3925
* Faks 086 5356548/086 5921636
* E-pos: lilhe.mdungwana@energy.gov.za of yolisa.sunduzwayo@energy.gov.za

Enige besware teen die uitreiking van 'n lisensie ten opsigte van die aansoek moet 'n duidelike verwysing na die bogenoemde aansoeknommer bevat en moet by die Kontroleur van Petroleumprodukte ingedien word binne 'n tydperk van (20) werksdae vanaf die datum van publikasie van hierdie kennisgewing. Besware moet ingedien word by die volgende straat- of posadres:

| | |
|--------------------------------------|--------------------------------------|
| Stratiedraes: | Posadres: |
| Die Kontroleur van Petroleumprodukte | Die Kontroleur van Petroleumprodukte |
| Departement van Energie | Departement van Energie |
| iv Mount & Duizend | Privaatbak 30913 |
| Mount Cook | Port Elizabeth |
| Port Elizabeth | 6000 |
| 6000 | |
| 8902 3821 (SJJ/QTK) | 146 (180) |



THE HERALD (PROVINCIAL) – 14 JUNE 2012

The Herald CLASSIFIEDS

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| 12020 | 12020 | 12020 | 12020 | Emergency Phone No's |
| Appointment | Appointment | Appointment | Appointment | |

VACANCY

CCC Driving Instructors

The Coega Development Corporation (CDC) is a state-owned entity formed in 1996 and mandated to develop and operate the Coega Industrial and Development Zone (CIDZ) which is located adjacent to Port of Ngqura. The CIDZ under an approved Special Investment Incentive is inviting the CDC Accelerated Training Programme (ATP) across the province for test sites and un/unemployed graduates. The Programme has now been extended to include semi-unemployed youth learners. The organisations looking for driving instructors based in the following areas:

PORT ELIZABETH, QUENSTOWN, UMSHATA

Responsibilities

- Assume the responsibilities of the driving school which will include the following:
 - Ensure that all learner drivers have a valid learners license prior to starting their driving lessons
 - Ensure that all learner drivers have the relevant traffic clearances
 - Ensure that all the necessary documentation is prepared in advance for the issuing services - learner and driving license
 - Accompany the learner drivers to the Traffic Department on the test dates
 - Provide driving lessons to the learner drivers as per allocation and organisational targets
 - Provide weekly progress reports on the status of readiness of the learner drivers
 - Be willing to travel to the 16 provinces to fulfil programme requirements.

Requirements

- At least Grade 11 - Basic certificate will be advantageous
- A valid driving instructor certificate - valid for at least the next 12 months
- Valid RDP - valid for at least the next 12 months
- Sound and up to date understanding of traffic regulations regarding driving
- Fluency in Afrikaans and English
- At least one year's instructor experience
- Support driving sites and
- Strong communication and interpersonal skills.

Preference will be given to candidates who meet the Employment Equity requirements of the Coega Development Corporation. The package for this position is negotiable.

All applications and queries must be directed to Bongwe Msimbini (041 404 7337 / Havelock Bingham (041 404 7334). Fax: 041 404 7001. Your CV should be sent to www.cdc.co.za or apply alternatively via email: apply@cdc.co.za please send your application to R102 Old Coega Road, Ngqura Industrial Centre, Mankwani Industrial Area, Port Elizabeth, 6111.

Applicants must be received before 19 June 2012.

R102 Old Coega Road, Ngqura Industrial Centre, Mankwani Industrial Area, Port Elizabeth, 6111, South Africa

COEGA
CORPORATION
FIGHT POVERTY • FIGHT TIME • FIGHT CHOICE

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| 11020 | 11020 | 11020 | 12020 | 12020 |
| Official Notices | Official Notices | Official Notices | Appointment | Appointment |

St Andrew's College
GRAHAMSTOWN

St Andrew's Prep
GRAHAMSTOWN

CALL FOR PROPOSALS FOR THE MANAGEMENT OF THE SCHOOLS' CATERING SERVICES/KITCHENS

Proposals are hereby invited for the management of the schools' catering facilities effective 1 January 2013. These should include separate proposals for the management of the Senior and Junior school dining halls.

All parties submitting proposals must have the necessary expertise to provide catering services and be able to manage an undertaking of this size.

Details relating to the contract can be collected on request from Jessu Ranshoff at St Andrew's College or obtained by email from jranshoff@stac.school.za.

A site visit will be arranged for interested parties on Wednesday 20 June 2012 commencing at 10h00.

The proposals should be delivered to:

The Business Manager,
St Andrew's College
Somerset Street
GRAHAMSTOWN

Proposals should be in a sealed envelope marked "Catering Proposal" and must reach the school by no later than 12h00 Friday, the 29th June 2012. St Andrew's College does not bind itself to accept the lowest or any proposals and late proposals will not be accepted.

Further information may be obtained from the Business Manager at St Andrew's College, PO Box 182, Grahamstown, 6140. Tel: 046 603 2300

www.stacschool.com www.saprep.school.za

bayquest
COMMUNITY LIAISON OFFICER

Bay West Mail Pty Ltd the developer, of the new super regional mall in Port Elizabeth, requires the services of an articulate person fluent in Afrikaans and English to fill the role of Community Liaison Officer for a period of 6 months.

The minimum qualifications that will be considered will be a matriculation certificate, although tertiary education would be an advantage.

The candidate should be a reliable and responsible person and will need to demonstrate a high degree of initiative and will be involved in labour relations management, community relations and general management, commercial and general management.

Please submit a CV/SAAP form not later than 20 June 2012 to **BHAW TAYOB KHAN MATUDA** QUANTITY SURVEYOR Tel: 021 4231610 Fax: 021 423 9727 and e-mail address: christian@baywest.co.za It is anticipated that the position will be available on 1 August 2012.

There are lots of reasons to buy and sell faster, plus, like buyers and sellers meet to take up the merchandise (and each other). Best of all your name will be in the newspaper.

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Don't delay, pop in today and place your ad

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| Official Notices | Official Notices | Official Notices | Official Notices | Official Notices |

KOUKAMMA MUNICIPALITY

AUCTION OF VEHICLES AND OTHER REDUNDANT ASSETS

Koukamma Municipality will sell by public auction the following vehicles and other redundant assets:

1988 City Golf, VW Polo, 2x 2003 Mazda truck, 1998 Nissan Safari, 2004 Nissan LDV, 1987 Ford Courier, 2x Mercury Freomover Tractor, 1978 Mercedes Benz Tancar, 1982 Isuzu Sewage Truck, 1987 Coak LDV, Ford Tractor, Toyota Hi-Ace, Ford Bantam, John Deere Grader, Fiat Hi-Tech, Uggir Loader, 2004 Toyota Dyna, Vehicle Trailer, Slatier F80-160, Corrugated iron and more.

Venue: Kemp Motors, Van Riebeeck Street on R62 road, Karoovallei
Date: 22 June 2012
Time: 10h30

Assets will be on display for public viewing at the above mentioned venue as from 14 June 2012.

Enquiries pertaining to the auction can be directed to Vincent Moss of Asaar Auctioneers at 0434599377 / 0413491089 / mandy@asaar.com or Harry Tamber at 042 288 7257 Terms and conditions are available on www.asaar.com (Port Elizabeth) Refundable registration fee of Two Thousand rand is payable on day of Auction.

NB: BUYERS MUST PRODUCE COPY OF IDENTITY DOCUMENT AND COPY OF PROOF OF RESIDENTIAL ADDRESS.

TERMS: CASH ON DELIVERY GUARANTEED CHEQUE ON DAY OF AUCTION. RIGHT IS RESERVED TO WITHDRAW ANY ITEM PRIOR TO AUCTION.

8 Ntshu
Municipal Manager

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED DEVELOPMENT OF THE MIDDLETON WIND FARM PROJECT

Notice is given in terms of regulation 54(2) as published in the Government Gazette No 543 Environmental Impact Assessment (EIA) Regulations of the National Environmental Management Act (Act No 107 of 1998) for the intent to undertake an EIA process.

Terra Power Solutions (Pty) Limited is proposing to construct a wind energy facility (wind farm) in the Middleton area of the Eastern Cape Province of South Africa. The proposed project will be located on the west of the N10, approximately 20km south of Clobhouse. The proposed project will entail the construction and operation of up to 60 wind turbines, each generating 1.5-3 MW of power with a total generating capacity of approximately 180 MW.

In terms of the EIA regulations, the proposed development will require a full Scoping and EIA process. Terra Power Solutions (Pty) Limited has appointed Coastal and Environmental Services (CES) to undertake the process. The required application has been submitted by the National Department of Environmental Affairs (DEA) who will be the decision making authority for this application.

You are invited to register as an Interested and Affected Party (I&AP).

Please contact: Ms Taryn Martin, 6140
PO Box 534, Grahamstown, 6140
Tel: 046-622 2664
Fax: 046-622 6554
Email: Tmartin@cesnet.co.za

The Herald SPORT

Thursday June 14, 2012 **19**

Top golfers facing Olympic challenge

US Open course features longer holes and firmer, faster greens

GOLF

Rebecca Bryan and Sapa

A YEAR after Rory McIlroy took Congressional Country Club by storm, the Olympic Club in San Francisco is ready to remind the world's best golfers what a grind the US Open is. "This is probably the hardest test that we play all year," said Tiger Woods, whose 14 major titles include three US Opens.

The US Golf Association (USGA) likes it that way, and in Olympic they have a venue that seems sure to erase the memory of McIlroy's 16-under par winning total last year.

The first six holes are going to be just brutal," USGA executive director Mike Davis promises.

Since Olympic last hosted the US Open, the course has been lengthened by 341m. Each green has been raised and will also be firmer and faster.

In the four prior Opens here, the 475m downhill first hole played as a par-7. This time, it's a par-four. Four of the next five are par-fours that measure an average of 422m.

The 26th par-four seventh is reckoned the first chance for players to catch their breath, but American Steve Stricker said there is really little to choose from in terms of difficulty.

"To me, they're all that difficult," Stricker said. "No 1 is really no different than No 12. They're long, they're hard."

Even the short ones, if you don't get in play off the tee you're going to make them difficult. The only two par-3s on the 7,000-yard course are 16 and 17, with 18 a 340m par-four.

"I believe you play 15 holes of really tough, tough golf," said Phil Mickelson, a four-time major champion and a five-time US Open runner-up.

No 17, Mickelson says, provides an opportunity for an angle – with the risk of a bogey or worse. "You think nothing but, but you hook it in the rough and you make double (bogey) and you lose the hole."

World No 2 McIlroy knows that "last year was a little bit of an exception." In addition, his build-up to the defence of his first major title included three missed cuts.

That shaky spell, coupled with a victory for Woods at the PGA Tour's Memorial two weeks ago, put the spotlight firmly on the American superstar and his bid for his first major title since the 2008 US Open.

Luke Donald, who regained the world No 1 spot with a victory in the European Tour's PGA at Wentworth, will try to parlay his recent strong form into its first major title. Recent history is on the side of those seeking to break into the ranks of major winners. Golf's last seven grand slam titles have gone to first-time major winners.

"It is a challenge," Donald said. "You're not going to be able to hook it around this course. You've just to stand up there and play really well."

Meanwhile, after missing out on The Masters, Ernie Els is back and ready to win at the second major of the year.

"I'm just really excited about the challenge of trying to win my third US Open," the 42-year-old said on his website.

The three-time major champion, who won the US Open in 1994 and 1997, said although he had based on the course at times, he hoped to draw on his positive experiences in the past.

It has been 18 years since his first major triumph and, after missing out on a trip to Augusta in April, as his world ranking was too low, Els will fancy his chances with an improved game in the last few events. He is now 43rd in the world.

The former world No 1 highlighted what those initial major successes did for his career. "Winning my first US Open back in 1994, when I was just 24, was a big boost to my confidence. Winning a second US Open while I was still in my 20s... well, that was really something."

Of this week's event, he says: "It's a tough, tough test of your game and your temperament, but I feel confident about my chances every time I tee it up in one of these things."

Looking at the layout, Els said driving the ball in the short grass would be key.

"Basically, the course is on the side of a hill so the fairways slope, sometimes quite severely, and often in a reverse counter to the direction of play."

Other South Africans in the field include US Open debutant George Coetzee.

He played his first major at the 2011 British Open, where he finished as the top SA player in 15th position. Retief Goosen, another two-time US Open winner, will be hoping for difficult scoring conditions and tight fairways which suit his game.

Tim Clark makes a return to major competition after battling at the Masters and missing the cut, following an elbow injury.

He will come into the tournament off three cuts made as he seems to be back on the way up. The gritty player from Unkomakwas will be hoping to grind it out and finish well on Sunday.

Trevor Immelman, a major champion with his Masters triumph in 2008, will join three-time European tour winner this season Branden Grace in the field.

Chad Schwartz and Louis Oosthuizen both tee off today and would like to add an elusive US Open title to their major tallies.



FULL SWING: Northern Ireland's Rory McIlroy during a practice round for the 2012 US Open golf tournament. Picture: REUTERS

You're not going to be able to fluke it around... You've just got to stand up there and play very well

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Hi-tech teenager making history

Allan Kelly

The march of technology and the growth of golf will mean that 16-year-olds, like China prodigy Andy Zhang, may become commonplace in the next few years, according to Tiger Woods.

The Beijing-born, but Florida-based Zhang has made history at this year's US Open at San Francisco's Olympic Club even before the tournament gets under way.

Having narrowly failed to qualify into the tournament due to last-minute entry adjustments and injury withdrawals.

At 14 years and six months, he is the youngest player in US Open history and certainly the youngest since World War 2.

Tedd Fujikawa, who was 15 at the 2006 US Open at Winged Foot, is the previous youngest player of the tournament.

Asked for his reaction to such a young player competing in the Open, Woods said technological advances were playing a key role.

"These kids are now bringing out iPads to the range and watching their swing and breaking it down on the TV [video analysis software]. That's totally different," he said.

"Like [Ben] Hogan said, if he had a video camera the changes would go so much faster. These kids are now being introduced when they first start."

"I saw a few kids over in Korea who have only been playing the game for a year. And six months of it was all indoors hitting golf balls. All they did was put the club in the correct position to hit the ball, hit balls, hit balls, and that's it. They come out and they have perfect golf swings."

"That's the new generation. The swings are all going to look very similar, and all these kids are going to have to power."

Zhang has lived in the US since he was 10, having taken up golf at six. On leaving of his lucky breaks in getting into the tournament, Zhang wasted no time in going to grips with the tough Olympic Club.

He played his first practice round on Tuesday morning with Bubba Watson, and the Masters champion said he had been impressed by the youngster's focus and personality.

"He's a big boy for 14, and he can hit it good. Obviously at 14 he's got a lot of growing up to do with his game. Obviously he can play."

"He's in the US Open. It's not like it just happened. He played to get in here."

Zhang was fifth on the original list, but moved up when three players were called in after the publication of the world's top 60 this week. He then became first alternate when Brandt Snedeker pulled out with a rib problem.

Englishman Paul Casey's injury withdrawal on Monday finally opened the door for him to make his majors debut and US Open history.

Asked what advice he could hand to elite Zhang, Rory McIlroy, a teenage prodigy himself when he turned pro at 18, said: "Just get to go out there and enjoy it. It's an unbelievable experience for someone so young." – Sapa-APP



ANDY ZHANG

McGuigan off to Zambia to defend title

Johannesburg's Doug McGuigan will defend his title at the 608th parklands layout, which last hosted the Zambia Open eight years ago.

"We played here a while ago, and I'm stretching my memory to see what's going on. Nothing looks familiar, and trees can grow in eight years," he said.

The 31-year-old has plenty of momentum coming into the week after his second-place finish at the Vodacom Origins of Golf Zebula tournament a week ago.

The prize on offer at the 14-man event, which has a cut to 65 players and those tied on the number after 36 holes, is R1.2-million.

At last year's Zambia Open, McGuigan had to fend off Leon Hugo in a sudden-death playoff after both tied at 16-under-par.

Trevor Easton, last week's winner, is a danger man in the field. In May he took his maiden victory when he eagled the 18th at Lost City during the first hole of a sudden-death playoff for the Sun City Challenge title.

Last week he cruised to a three-stroke win at Vodacom Origins of Golf Zebula, marking his second victory in three tournaments.

Andrew Georgiou also heads to Lusaka on a superb run. He tied second at the Sun City Challenge, finished sole third at the Lombard Insurance Classic and then took fifth at the Vodacom Origins of Golf Zebula last week.

THE CRADOCK COURANT, MIDDLEBURG COURANT, SOMERSET BUDGET, WINTERBERG NUUS, FORT BEAUFORT ADVOCATE (LOCAL) – 14 JUNE 2012

Cradock Courant, Middelburg Courant, Somerset Budget, Winterberg Nuis, Fort Beaufort Advocate

Donderdag / Thursday 14 Junie/June 2012

A 2012 Month ramme erway

...also promoted. The Youth Express train an initiative of the NYDA in partnership with the Passenger Rail Agency of South Africa (PRASA) left Johannesburg on 01 June 2012 travelling to rural areas of the country throughout June delivering key youth empowerment information using exhibitions, industrial theatre and various other activities. The train will ultimately arrive in Port Elizabeth on 16 June. The NYDA has formed strategic partnerships with the public and private sector in an effort to strengthen initiatives targeted at the development of young people. In honour of the 36th ...

Every Blood Donor is Honoured as a Hero in June – National Blood Donor Month

On 14 June 2012, blood transfusion services worldwide will celebrate World Blood Donor Day. This year's theme "Every Blood Donor is a Hero" is also celebrated by the South African National Blood Service for National Blood Donor Month in June. "We will be honouring the many heroic donors, who continue saving the lives of patients through blood donation. So, become a HERO to someone and discover the HERO within you. If you are in good health and between the ages of 16 and 65, weigh more than 50 kg, and lead a sexually safe lifestyle, make your way to your nearest donor centre. To find out more about World Blood Donor Day and Blood Donor Month visit us on www.SANBS.org.za or call 0800 11 9031.

Museum and the Hector Pieterse Memorial in Soweto. Learners will also learn about the NYDA, its products and services. Within the month of June, NYDA will be encouraging inter-schools debates on issues affecting youth. • Youth Day National Event On 16 June 2012, the NYDA will commemorate the Youth Day through hosting an Exhibitions Galore Youth Fair that will

flagship in Gauteng. These will be walk-in shops that will be open to the public operating within business hours creating a strategically placed, localised home for youth enterprise and interaction during Youth Month. The lay out will accommodate the Public sector, Private sector and Civil society. • Youth Pledge: July 2012 will kick off with a national

OMGEWINGS IMPAK STUDIE PROSES VOORGESTELDE ONTWIKKELING VAN DIE MIDDLETON WINDPLAAS PROJEK

Kennis word hiermee gegee in terme van Regulasie 54(2) soos gepubliseer in die Staatskoerant No 543 Omgewings Impak Studie (OIS) Regulasies van die Wet op Nasionale Omgewingsbestuur (Wet No 107 van 1998) vir die voorneme om die OIS proses te onderneem.

Terra Power Solutions (Edms) Bpk stel 'n wind energie fasiliteit (windplaas) voor om opgerig te word in die Middleton area van die Oos Kaap Provinsie van Suid Afrika. Die voorgestelde projek sal geleë wees op die westekant van die N10, ongeveer 20km suid van Cookhouse.

Die voorgestelde projek behels die konstruksie en bedryf van tot 60 wind turbines, wat elk 2-3 MW krag sal genereer met 'n totale genererings kapasiteit van ongeveer 180 MW.

In terme van die OIS regulasies sal die voorgestelde ontwikkeling vereis dat 'n volle omvangs- en impakontledings proses gevolg word. Terra Power Solutions (Edms) Bpk het Coastal & Environmental Services (CES) aangewys om die proses te onderneem. Die vereiste aansoek is ingedien by die Nasionale Departement van Omgewings Aangeleenthede wat die besluitnemingsliggaam vir die aansoek sal wees. U word hiermee uitgenooi om te registreer as 'n Belanghebbende en Geaffekteerde Party

Kontak persoon: Ms Tarryn Martin, Posbus 934, Grahamstad, 6140
Tel: 046-622 2364
Faks: 046-622 6564
Epos: t.martin@cesnet.co.za

Government declared June as Youth Month to pay special tribute to the youth of South Africa who laid down their lives in pursuit of a just and democratic society. This is the month when the whole country meaningful economic transformation and inclusive growth. For the year 2012 and beyond, the focus remains on job creation and the President has invited the nation to join government in a massive

JW NATIONAL DEALER

Posbus 549

MAZDA

DEMONSTRATION

2012 Ford Focus 1.6 Ti
2012 Ford Kuga 2.5 Tn
2012 Mazda 3 1.6 Origi
2012 Mazda 3 1.6 Origi
2012 Ford Figo 1.4 Amb
2012 Ford Figo 1.4 TDC
2012 Mazda BT-50 3.0
2012 Ford FIGO 1.4 AMBIE
2012 Ford FIGO 1.4 AMBIE
2011 Ford Bantam 130
2011 Ford Figo 1.4 TDC
2011 Ford Focus 1.8 Si
2011 VW Vwo 1.4 Trendline
2011 Toyota Hilux 3.0
2010 Mazda 2 1.3 Active A
2010 Mazda 3 1.6 Sport
2010 FORD RANGER 3.0
2010 Ford Focus 1.8 Si
2010 Mazda 3 2.3 5-DF
2010 Fiat Linea 1.4 Emotion
2010 GWM Hover 2.4 4
2009 Mazda MX-5 Roadste
2009 Ford Ranger 3.0
2009 Ford Focus 2.0 Si
2009 Ford Focus 1.8 Am
2009 Mazda CX-7 2.3 DI
2009 Ford Fiesta 1.6i An

GEBRUIK



DANKIE / THANK YOU

Hiermee wil ek almal bedank vir al die liefde, hulp, kos, sms'e, oproepe, besoeke, blomme en ondersteuning na Louise se onverwagte heengaan. Dit word opreg waardeur.
Elmarie Erasmus
Somerset-Oos

TE KOOP / FOR SALE

Geelmeelies in sakke.
Kontak Isak Keevy by 071 484 0540
Somerset-Oos

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Damesfiets 18 sp - R450
Voorhuis Oregon Pine tafel - R650
Kombuistafel, bruin - R450
Antieke vertoonkas, Meranti - R650
Kombuskas - R650
Houttoonbank vir winkel x 2 - R650 elk
Rekenaarstaander - R250
Stoof, 3 plaat met oond - R450
Speelkas - R650
Mikrofoon - R350
Stoof, 4 plaat, elektries, Kelvinator - R950
Spiraalplaat kragstoof, Dely - R950
Sitkamerstel - R750
DVD speler x 2 - R350, R450
Wasmasjien - R650
Edelehoutbed, antiek - R550
Babakot - R450
Baba eetstoel - R170
Braaftafel - R350
Stoel, kombuis, antiek - R250
Stoofsuier, Aqua plus R350
T.V. Draagbaar, swart en wit - R390
Riet Bababed - R350
Baba draadbed - R190
Baba kartoeltjie - R150
Antieke Speelkas R750
Tweeplaatstofie - R80
Radio, band, platespeler - R450

BETREKING / ANGEBOD / VACANCY OFFERED

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Audi 100 - 5 silinder - 1983 model, grys, papiere, voetstoots (as is) Prys R5000
Sleepwaentjie - 6wt, wit, padwaardig, gelisenseer. Was R11 900 nou R9500
Austin of England - 1953 model, grys, versamel-aarsroon - R25 000
Skakel Chrys benodig sel 076 161 1705 of besigtig by 6 Hospitaal str. Cradock

TROETELDIERE / PETS

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Kontak Charman op sel 076 161 1705 of besigtig by 6 Hospitaal str. Cradock

Kontak Somerset Budget vir: VERSKEIDENHEID KARTON / PAPIER LAMINERING

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Veeverwyderingsboeke R50
Salarisboeke R175/R150
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Ou Drukkersplate @ R5 elk
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Eenslaapkamerwoning te huur. Privaat, gerieflik, veilig. Met of sonder meubels. Pre-paid kragboeke. Onmiddellik beskikbaar. Kontak Celeste du Plessis 082 327 2109 / 042 243 3373 of Jean du Plessis 084 240 5235
Somerset-Oos 21/7/14

Kantoorpasia te huur. 2 Kantore met badkamer. Middel van dorp. Boonste verdieping. Binne sakesentrum. 1 Aderley str. Prys op aanvraag. Skakel Juan gedurende werksure by 043 881 5202 of nare by 049 881 3483. Onmiddellik beskikbaar. Cradock

EIENDOM TE KOOP / PROPERTY FOR SALE

* Bedford house, Main Road, 2 Kitchens, 2 Bathrooms, 3 Bedrooms, Lounge. R290 000 neg. (B&B positions)
* Bedford - Antique business in main street. Fully stocked. Price: R290 000 Neg. Phone 071 3411 741

BETREKING / ANGEBOD / VACANCY OFFERED

Man wat plaaswerk kan doen met vrou wat huiswerk kan doen op plaas 30km buite Cradock.

MOTORMARK / VEHICLES

Mercedes Benz 230 E - 1992 Model - liggroen, padwaardig, 252 447 km. Prys was R29 900 nou R24 950
Audi 100 - 5 silinder - 1983 model, grys, papiere, voetstoots (as is) Prys R5000
Sleepwaentjie - 6wt, wit, padwaardig, gelisenseer. Was R11 900 nou R9500
Austin of England - 1953 model, grys, versamel-aarsroon - R25 000
Skakel Chrys benodig sel 076 161 1705 of besigtig by 6 Hospitaal str. Cradock

TROETELDIERE / PETS

KEPLIE X BORDER KOLLIE skaaphondjies, 4 Pragtige hondjies. Ouers uitstekend! Gebore 21 Mei 2012. Prys R700. Ingeent en ontworm. Sel: 0829368887 Adelaide

BAIE LOSGOED TE KIES EN TE KEUR.

Kontak Charman op sel 076 161 1705 of besigtig by 6 Hospitaal str. Cradock

TO LET / TE HUUR

Prime Business / Office Premises

Main Street Access

* Long or Short Term Lease
* Separate electricity meter

Contact Dave 082 472 9663 or 042-243 1925 Somerset East

PSG KONSULT

ALLE KLIENTE VAN PSG KONSULT ADELAIDE

Let asseblief daarop dat die kantoor GESKUIJ het na Markstraat 29, Adelaide. Telefoonnommers bly onveranderd

Baie dankie vir u ondersteuning
David Louw 082 773 6857 / 046-684 0308

DIENTE GELEWER / SERVICES RENDERED

Kitaarlesse vir enige mand wat sou belangstel om te leer of te verbeter. Akoesties of elektries. Herstel en diens ook kitare. Kontak Guillaume Schoon Tel: 072 5811 408 Somerset-Oos

SOMERSET-OOS "Fontein van Nuwe Lewe Bediening"

Dienste: Sondag - oggenddiens: 09:30 - aanddiens: 18:00
Woensdag - Vroue wat bid: 08:00 - Biduur: 19:00
Herderspaar: Pastoor Hennie en Charlotte Malan Tel: 042 243 3602 Somerset East

295/193/173/11428/1208 etc.

Vadersdagte / Father's Day Lunch

Sondag 17 June 2012 / Lunch served from 12:00
Adults: R95 / Children under 15: R38,50

BUFFET: Smoked Gammon & Mustard; Deep Fried Chicken portion; Venison strips; Baked Potatoes; Vegetable Dish; Cinnamon Pumpkin; Couscous;
SALAD: Greek salad / Curry Noodle Salad
DESSERT: Swiss Roll with Caramel Condensed Milk and Custard

Cash Bar / Corkage Fee = R20/Bottle Bookings before Saturday 12:00

Kom geniet u by die kaggelvuur

AFRIQ DREAM RESTAURANT

Tel: 042-243 0140 Somerset East

Toys & Gifts 4 All

TOYS FOR BOYS AND GIRLS OF ALL AGES

GAMES, EDUCATIONAL TOYS
LADIES & GENTS GIFTS, KITCHEN WARE, NOVELTY STATIONERY AND MUCH MORE

120 Najoli Street (Handy House)
Bernadette Olivier - 071 136 6163
Somerset East

the Butcherbird Restaurant

will be open for a

FATHER'S DAY LUNCH

Sunday 17 June 2012

BOOKINGS ESSENTIAL 082 359 7002
(Should anyone wish to be on our emailing list, please email your email address to karenn@ntekom.co.za or sms your number to 082 359 7002)

GOLDFLOW

Branches
East London: Gonubie 43 Main rd (Opposite Davina Prop) - Vincent 21 Vincent rd Cradock, Shop 7, 5 High str., Tams Centre (Next to SA Multi Loans)

CASH PAID!!!

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SILVER Jewellery, silverware, etc
DIAMONDS OLD SA COINS
FOREIGN CURRENCY POLICE & WAR MEDALS

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Tanya 071 362 1723
Email: tanya@goldflowsa.co.za - Fax: 086 514 8700

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MOENIE UITSTEL NIE!

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Blouvoël Kuierplek & Restaurant

042-2433 552 Somerset East

14/06/2012 - 16/06/2012

BIRTHDAY SPECIALS

ONS WAS DIE 11^{de} JUNIE 1 JAARTJIE OUD!!!

DRINKS

DBL WELLINGTON & COKE R15
DBL OLOF BERGH & COKE R20
DBL RICHELIEU & COKE R20
CASTLE R11
BLACK LABEL R11
PIENK MELKIES R5
LEIDU R8
SOURS R8
ARCHERS R8
AMARULA R8
COFFEE LIQUEUR R8

FOOD SPECIALS!!

ANY 2 VANDING NOG VIR N HUIWATASIE, DIT NOS JOU NIKS!
STEAKE, EGG AND CHIPS.....R55
GIANT BURGER & CHIPS.....R30

ASK FOR OUR SEAFOOD MENU!!
DJ Teejay maak Vrydagaand lekker dansmusiek
Sien uit om julle hier te sien!!

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS PROPOSED DEVELOPMENT OF THE MIDDLETON WIND FARM PROJECT

Notice is given in terms of regulation 54(2) as published in the Government Gazette No. 543 Environmental Assessment (EIA) regulations of the National Environmental Management Act (Act No. 107 of 1998) for the intent to undertake an EIA process.

Terra Power Solutions (Pty) Limited is proposing to construct a wind energy facility (wind farm) in the Middleton area of the Eastern Cape Province of South Africa. The proposed project will be located on the west of the N10, approximately 20km south of Cookhouse. The proposed project will entail the construction and operation of up to 60 wind turbines, each generating 1.5-3 MW of power with a total generating capacity of approximately 180 MW.

In terms of the EIA regulations, the proposed development will require a full Scoping and EIA process. Terra Power Solutions (Pty) Limited has appointed Coastal and Environmental Services (CES) to undertake the process. The required application has been submitted by the National Department of Environmental Affairs (DEA) who will be the decision making authority for this application.

You are invited to register as an Interested and Affected Party (I&AP).
Please contact: Ms Taryn Martin,
P.O. Box 934, Grahamstown, 6140
Tel: 046-522 2364
Fax: 046-522 6564
Email: T.martin@cesnet.co.za

KENNISGEWING / NOTICE

Voel jy alleen en die las is te swaar? Het jy 'n oordrag nodig om te luister? 'n Skouer om op te leun? Dan wil ek vir jou 'n steunpunt wees deur gebed en bemoediging. Kondensiesiel en gratis. Ek doen berading. Skakel Charlotte by 081 401 7849 Somerset-Oos
025/193/01173/11428/1208/13
2395204/19/15/29/13

Keep our town clean

Tenderdokument: Uniestraat Pastorie (Uniestraat 18), Somerset-Oos

Die Kerkrad van die NG Kerk, Somerset-Oos, bied per tender, die volgende eiendom te koop aan:

Beskywing : Erf 4331
Grootte : 3241 m²
Ligging : Uniestraat 18, Somerset-Oos

Besigtiging kan geskied op Donderdag 14, 21 en 28 Junie 2012 tussen 16:00 en 18:00.
Afsprake kan gereël word by die kerkkantoor, 042-243 2080

Tenders, gemerk "Koop van Pastorie" moet voor of op Vrydag 29 Junie 2012 gerig word aan:
Die Saakgelastigde, NG Kerk, Somerset-Oos.

Die tenderproses word deur Gerber, Botha en Gowar hanteer.

Die Kerkrad is nie verplig of gebonde om die hoogste, die enigste of enige tender te aanvaar nie.

APPENDIX C-6: COPY OF SITE NOTICE TEXT AND PHOTOGRAPHS PLACED AT VARIOUS POINTS NOTIFYING I&APS OF THE PROPOSED ENERGY IPP WIND ENERGY PROJECT

**PROPOSED DEVELOPMENT OF THE MIDDLETON WIND ENERGY PROJECT IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA
NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

Notice is given in terms of Regulation 54 of the Environmental Impact Assessment (EIA) Regulations published in Government Notice R.543 in Government Gazette No 33306 of 02 August 2010, under Section 24(5) of the National Environmental Management Act 1998 (Act No 107 of 1998), as amended, that a wind energy project is proposed for construction at Middleton in the Eastern Cape Province.

The proposed project will entail the construction and operation of 60 turbines each generating 2- 3 Mega Watts (MW) of power with a total generation capacity of approximately 180 MW. The project will cover an area of approximately 24 000 ha

In terms of the EIA regulations, the proposed development will require a full scoping and Environmental Impact Assessment (EIA). Terra Power Solutions (Pty) Limited has appointed Coastal and Environmental Services (CES) to undertake the EIA. The application will be submitted to the the Department of Environmental Affairs (DEA).

You are invited to register as an interested and affected party. If you have any comments or queries, or if you require further information, please contact Tarryn Martin at:-
Tel: 046 622 2364; or Fax: 046 622 6564; or
Email: t.martin@cesnet.co.za



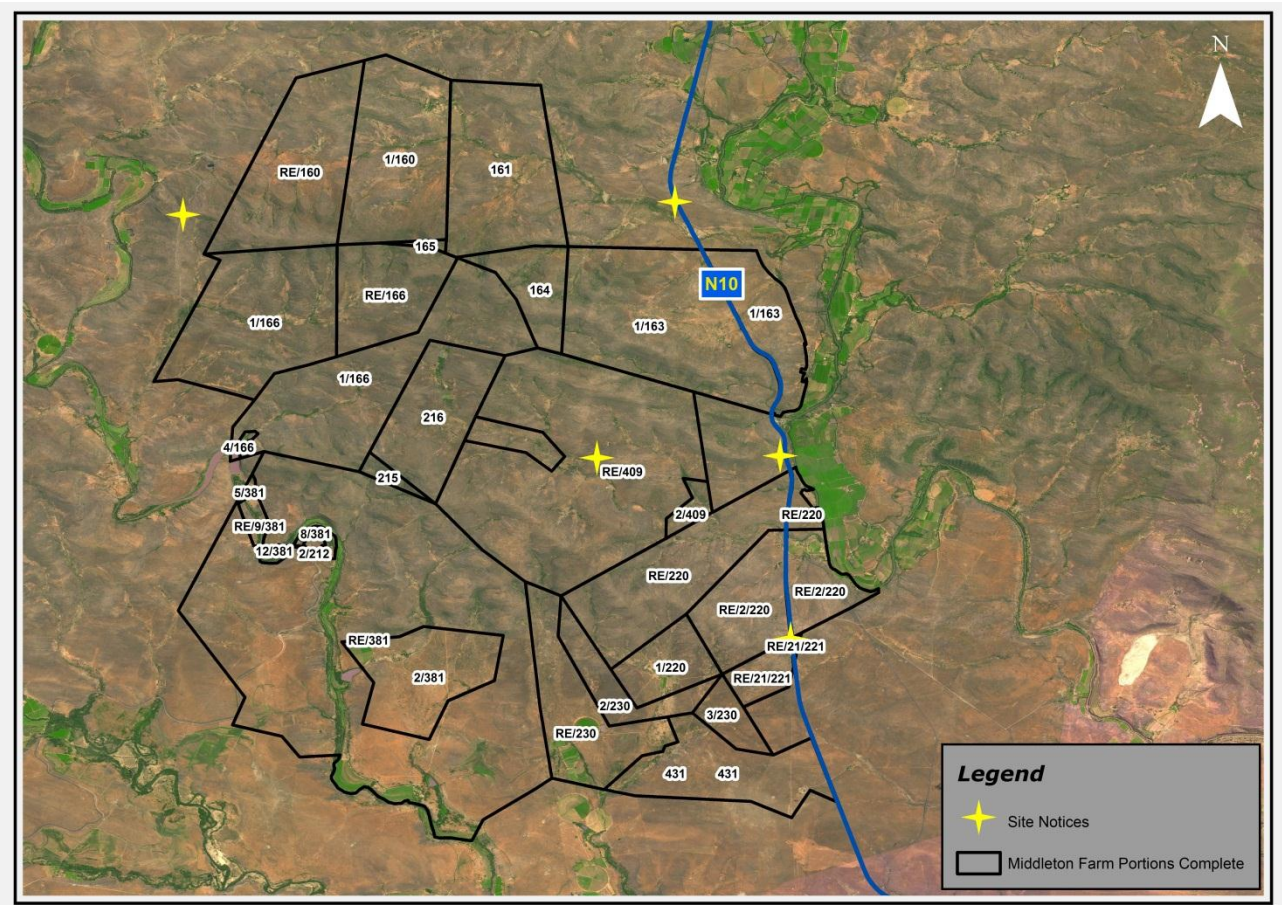


Figure 5-1: Location of site notices placed at the study site

DR



Plate C6 – 1: Site notice 1 erected along the N10, north of the study site



Plate C6 – 2: Site notice 2 erected at the N10/Bloemhof Junction



Plate C6 – 3: Site notice 3 erected at the N10/Sheldon road junction



Plate C6 – 4: Site notice 4 erected at the entrance to Wilton and Wellington Grove Farm



Plate C6 – 5: Site notice 5 erected at the entrance to Aalwynberg Farm

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APPENDIX C-7: COPY OF POSTER PLACED AT VARIOUS POINTS NOTIFYING I&APS OF THE PROPOSED ENERGY IPP WIND ENERGY PROJECT

Posters were left at the following locations:
 McCaughey’s Chemist, Somerset East
 Tourist Information Office, Somerset East
 Hanna’s Road Runner Restaurant, Cookhouse

**BACKGROUND INFORMATION DOCUMENT & INVITATION TO REGISTER AND COMMENT
 MIDDLETON WIND ENERGY PROJECT**

Background to the project: Terra Power Solutions (Pty) Ltd, a renewable energy company, is proposing the construction of a wind energy facility (wind farm) near Middleton in the Eastern Cape, South Africa. Middleton is approximately 20km south of Cookhouse, along the N10. Coastal & Environmental Services (CES) has been appointed by Terra Power Solutions (Pty) Ltd to undertake the necessary environmental investigations for the wind farm, and to apply for approval from the national Department of Environmental Affairs (DEA), for its construction and operation, as required by South Africa’s environmental legislation. Details of the relevant laws, and an overview of the environmental impact assessment process, are provided on the following pages.

Project description: The Middleton wind energy facility will consist of approximately 60 turbines covering an area of approximately 24 000 ha. Each turbine has a nominal power output ranging between 2-3MW (Mega Watts). The total potential output of the wind farm would be ~180MW, and will feed into the national grid.

Dimensions: The ultimate size of the wind turbines will depend on further technical assessments but will typically consist of rotor turbines with rotor diameters up to a maximum of 120 meters. The towers will have a nacelle or transformer hub between 100 and 140 meters above ground with a blade tip height of between 160 and 200 meters above ground.

REGISTRATION



CES requests that all potential stakeholders and interested and affected parties register as participants in the EIA process

Return address for comments:
 Ms. Tarryn Martin

P.O. Box 934
 Grahamstown, 6140

Tel: (046) 622 2364
 Fax: (046) 622 6564

Ms Tarryn Martin
 Email: t.martin@cesnet.co.za
 or
 Email: a.jackson@cesnet.co.za

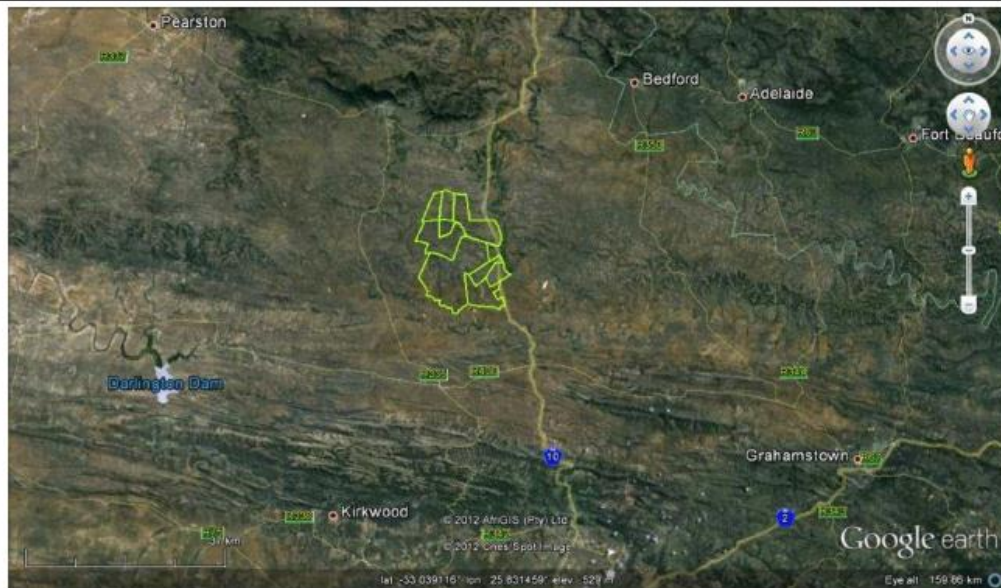


Figure 1: Location of the proposed Middleton wind energy facility.

APPENDIX C-7: REGISTER OF INTERESTED AND AFFECTED PARTIES

| ORGANISATION | NAME |
|---|-----------------------------|
| African Crane Conservation Programme, Endangered Wildlife Trust | Bradley Gibbons |
| Andre van der Spuy environmental Consultants | Andre van der Spuy |
| Blue Crane Development Agency | Nico Lombard |
| CIP [CABLE INSTALLATION PRODUCTS Pty Ltd] | Pierre and Cheryl Jonker |
| Coastal and Environmental Scientist - Afri-Coast Engineers SA (Pty) Ltd | Dylan Anderson |
| EP Herald | Patrick Cull |
| ERM | Junaid Moosajee |
| Giltedge Travel | Murray Gardiner |
| Glentana | Charl Wilke |
| Greenminded environmental | Daryn Price |
| Klipfontein | Gert Schoonbee |
| Mainstream Renewable Power South Africa | Hein Reyneke Hein Reyneke |
| Pruim Plaas | Mervin Gowar |
| RES Southern Africa Development Manager | Duncan Ayling Duncan Ayling |
| Sibuya Game Reserve | Nick Fox |
| Surrounding landowner (Klipkraantz Farming Trust) | I Du Preez |
| Surrounding landowner to Peninsula (Wilgerfontein) | Christo Els |
| Surrounding landowner to Pruiim plaas & Wellington Grove (Rockdale) | PJ Leroux |
| Thompsons Africa | Linda Pampallis |
| Wilderness Foundation | Andrew Muir |
| Windlab | Katherine Degenaar |
| Zuurberg Farmer's Association | |
| | Paul Martin |
| | Niel Jeppe |
| | Anneliza Hobson |

APPENDIX C-8: COMMENTS REPORT (ISSUES AND RESPONSE TRAIL) INCORPORATING COMMENTS RECEIVED SINCE THE START OF THE SCOPING PHASE

| RAISED BY: | EVENT & DATE | ISSUE, CONCERN, COMMENT | RESPONSE |
|--------------------|---------------------|--|--|
| Andre van der Spuy | 2 -08-2012 EMAIL | Separate bird and bat specialist studies required | The potential impact on birds and bats will be addressed in two separate studies, each one specialising on one of these two animal groups. The initial EIA phase assessment, will seek to identify existing bird and bat habitats and will review relevant literature to indicate the sensitivity of the project site. Before construction of the facility, 12 months of on site measurements need to be obtained. This is referred to as pre-construction monitoring. This long term monitoring phase will supplement the sensitivities and mitigation strategies suggested in the EIA phase reports. |
| Andre van der Spuy | 2 -08-2012 EMAIL | Many other well known potential impacts require specialist investigation including: electromagnetic impacts | This will be addressed in the EIR using relevant literature, however no specific specialist study is deemed necessary at this stage. |
| | | Socio-economic study (parity; compensation for affected land-owners (non-participant)) | A short socio-economic profile has been included in the draft scoping report (Chapter 4.2) and will be expanded on in the EIR. |
| | | land values | The impact of wind turbines on surrounding property values, and the potential slowdown of economic activity remains untested in the South Africa context. |

| | | | |
|--|--|--|---|
| | | <p>Noise and Low frequency</p> | <p>A noise impact assessment will be undertaken during the EIA phase of the project. The specialist will be notified of all these concerns and asked to address them where possible. The study will model the suggested turbine type, and use topographical and climatic data to indicate the noise impact on the surrounding areas.</p> |
| | | <p>Micro climatic changes</p> | <p>This will be addressed in the EIR using relevant literature, however no specific specialist study is deemed necessary at this stage</p> |
| | | <p>Proposal is conceptual (excludes powerlines too) and therefore insufficient to conduct required EIA</p> | <p>The purpose of the Background Information Document is to notify Interested and Affected Parties of the proposed development by giving them a brief background to the study and to explain the EIA process. The draft scoping report, which has not yet been released, provides further details on the project. The turbine layout and positioning of associated infrastructure will change as the EIA process progresses. A final layout showing all relevant infrastructure will be available in the Draft EIR.</p> |

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