ENVIRONMENTAL BASIC ASSESSMENT PROCESS DRAFT BASIC ASSESSMENT REPORT

PROPOSED RIVERBANK WIND MONITORING MAST NEAR WESLEY EASTERN CAPE

(DEA Ref No: 12/12/20/1817)

DRAFT FOR PUBLIC REVIEW March - April 2010

Prepared for: Just Energy in assocation with the Uncedo Lwethu Farmers Cooperative 27 Buitekant Street Cape Town 8000



In association with the Uncedo Lwethu Farmers Cooperative & Oxfam UK

Prepared by:

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| | (For offic | ial use only |) | | |
|------------------------|------------|--------------|---|--|--|
| File Reference Number: | | | | | |
| Application Number: | | | | | |
| Date Received: | | | | | |

Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2006

PROJECT DETAILS

| DEA Reference No. | : | 12/12/20/1817 |
|-------------------|---|---|
| Title | : | Environmental Basic Assessment Process Draft Basic Assessment Report: Proposed Riverbank Wind Monitoring Mast on a site near Wesley, Eastern Cape |
| Authors | : | Savannah Environmental (Pty) Ltd Tammy Kruger Karen Jodas |
| Sub-consultants | : | MetroGIS Sustainable Futures ZA |
| Client | : | Just Energy in association with Uncedo Lwethu Farmers Cooperative and Oxfam UK |
| Report Status | : | Draft Basic Assessment Report for public review |
| Review Period | : | 29 March 2010 - 29 April 2010 |

When used as a reference this report should be cited as: Savannah Environmental (2010) Draft Basic Assessment Report: Proposed Riverbank Wind Monitoring Mast on a site near Wesley, Eastern Cape.

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APPENDICES

Appendix A: Site Plan

Appendix B: Photographic Record

Appendix C: Facility Illustration

Appendix D: Specialist Reports

The following specialist reports have been included and attached as Appendix D:

Visual Impact Assessment

Appendix E: Record of Public Involvement Process

The following documentation has been included and attached as Appendix E:

- E1 Newspaper Advert
- E2 Site Notice
- E3 Stakeholder Letter
- E4 Reply Form
- E5 I&AP Database

Appendix F: Information in support of Applications for Exemption

Not Applicable

Appendix G: Other Information

Draft Environmental Management Plan

SUMMARY AND OVERVIEW OF THE PROJECT

The primary applicant, Just Energy is a South African based organisation established by the not-for-profit company Oxfam UK. In order to assess the suitability of a site near Wesley in the Eastern Cape Province for the operation of a wind energy facility, Just Energy in association with the Uncedo Lwethu Farmers Cooperative propose the erection of a wind monitoring mast for the purpose of recording wind measurements. Wind measurement monitoring forms part of the feasibility study and evidence base required to measure wind potential in an area, thereafter the data is used to assess the optimal position and design of a wind energy facility.

Overview of the Proposed Project

Just Energy has identified a potential site located near Wesley in the Eastern Cape Province for the establishment of a wind energy facility with an envisaged first phase of approximately 35 MW on community owned properties and a potential second phase of a further 35 MW. The project intends to follow a community based independent power generation model developed with Oxfam Therefore, for the purpose of wind measurement monitoring which is UK. required prior to the establishment of a wind energy facility, Just Energy propose the erection of one wind monitoring mast on a site located approximately 4 km north east of Wesley within the Ngqushwa Local Municipality within the Amatole District Municipality on the farm Sandflat 149 portion 2 (refer to Appendix A).

The proposed mast will consist of a tubular structure of up to 60 m high and 203 - 250 mm wide. The mast will be constructed upon a galvanised steel base plate of 0.71 m^2 and will be anchored to the ground by 24 guy wires at four points. The **construction footprint** will include the base plate and the points at which the guy wires anchor; this will cover an area of approximately 7 850 m^2 . The total area that will be disturbed by the **development footprint** will be less than 10 m². The mast will need to be in compliance with colour and lighting specifications as required by the Civil Aviation Authority (CAA). The proposed design and dimensions of the proposed mast structure are indicated in Appendix C.

The utilisation period of the proposed wind monitoring mast will be of a shortterm nature, anticipated to be up to 48 months. The mast and the associated baseplate and guy wires will be decommissioned, dismantled and removed from site once wind measurements in the area are complete.

Assessment of Alternatives

The Basic Assessment process requires the consideration of feasible alternatives for a proposed development where each alternative should each be assessed in equal measure. However, no alternatives have been assessed for the proposed project as the proposed mast location has been selected on a fit-for-purpose basis. A bankable wind monitoring strategy requires adherence to strict standards with respect to location and therefore the proposed location has limited flexibility. This specific location is required to gather representative measurements of the wind resource at the site proposed for the establishment of a future wind energy facility. There are also constraints on the type of wind monitoring mast which include the availability of mast technologies, particularly those that meet high quality design safety standards.

Environmental Basic Assessment Process

In terms of sections 24 and 24D of the National Environmental Management Act (Act No. 107 of 1998), as read with Government Notices R385 (Regulations 22 – 26) and R386, a Basic Assessment process is required for the construction of facilities or infrastructure, including associated structures or infrastructure for:

- Item 14: The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding -
 - (a) masts of 15 metres and lower exclusively used
 - (i) by radio amateurs; or
 - (ii) for lighting purposes.
 - (b) flag poles; and
 - (c) lightning conductor poles.

Just Energy requires authorisation from the National Department of Environmental Affairs (DEA), in consultation with the Eastern Cape Department of Economic Development and Environmental Affairs (DEA) for the undertaking of the proposed project. This project has been registered with National DEA under application reference number 12/12/20/1817.

Just Energy has appointed **Savannah Environmental (Pty) Ltd** as the independent environmental consultants to undertake the Basic Assessment process for the proposed wind monitoring mast in order to identify and assess all potential environmental impacts associated with the proposed project. As part of these environmental studies, all interested and affected parties (I&APs) have been actively involved through a public participation process undertaken by **Sustainable Futures ZA**.

SECTION A: APPLICATION FOR EXEMPTION

The relevant parts of this section must be completed if the environmental assessment practitioner (EAP) on behalf of the applicant wishes to apply for exemption from completing or complying with certain parts of this basic assessment report.

1. APPLICATION FOR EXEMPTION FROM ASSESSING ALTERNATIVES

At least two alternatives (site or activity) should be assessed. If that is not possible, the applicant should apply for exemption from having to assess alternatives. Such exemption will, however, not apply to the no-go alternative that must be assessed in all cases.

Provide a detailed motivation for not considering alternatives including an explanation of the reason for the application for exemption (supporting documents, if any, should be attached to this report):

Just Energy, in association with the Uncedo Lwethu Farmers Cooperative, has identified a site near Wesley in the Eastern Cape for the erection of a wind monitoring mast. This mast will be used for the in-situ monitoring of wind resources for the ultimate establishment of a wind energy facility. This facility would form part of a community development initiative through which a monthly rental would be generated for the local community on whose land the facility would be sited. No alternative sites are considered within this Draft Basic Assessment report as the proposed mast location has been selected on a fit-for-purpose basis. A bankable wind monitoring strategy requires adherence to strict standards with respect to location and therefore the proposed site has limited flexibility. Furthermore, industry best practise dictates that wind monitoring masts should be located within a certain distance of proposed wind turbine locations, with this distance dictated by the terrain type and complexity. Therefore, the proposed mast position is considered optimal from a monitoring perspective and to this effect there are no other preferred sites. Additionally there are constraints on the type of wind monitoring mast selected for the site, which include the availability of mast technologies, particularly those that meet high quality, design safety standards. Just Energy has selected the wind monitoring mast based on best practice guidelines regarding the most appropriate type of mast to enable the collection of reliable wind data.

I declare that the above motivation is accurate and, hereby apply for exemption in terms of regulation 51 of the Environmental Impact Assessment Regulations, 2006, from having to assess alternatives in this application as required in section 24(4)(b) in the National Environmental Management Act, 1998 (Act No. 107 of 1998).

Signature of the EAP

Date: March 2010

2. APPLICATION FOR EXEMPTION FROM COMPLYING WITH PARTS OF REGULATION 23(2) REGARDING THE CONTENT OF THIS BASIC ASSESSMENT REPORT

Application for exemption from certain parts of regulation 23(2) regarding the completion of certain parts of this basic assessment report may be made by completing the relevant sections below.

Indicate the numbers of the sections of this report for which exemption is applied for:

| Indicace | indicate the numbers of the sections of this report for which exchiption is upplied for | | | | | | | | | | | | | |
|---|---|----------|----------|----------|---------|---------|----------|-----------|-----------|-------------|-----------|-----------|----------|------|
| Section | 7(a) | 7(b) | 7(c) | 7(d) | 8 | 9 | 10(c) | 10(e) | 10(f) | 10(g) | 10(h) | 10(j) | 10(k) | 12 |
| В: | | | | | | | | | | | | | | |
| Section | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | |
| C: | | | | | | | | | | | | | | |
| Section | 1(a) | 1(b) | 1(c) | 1(d) | 1(f) | 1(g) | 3 | | | | | | | |
| D: | | | | | | | | | | | | | | |
| Provide a | a detaile | ed motiv | vation i | ncluding | an ex | planati | on of th | ie reasoi | n for the | applicatio | n for exe | emption | (suppor | ting |
| documen | nts, if ar | ny, shou | Id be at | tached | to this | report |): | | | | | | | |
| | | | | | | | | | | | | | | |
| I declare | e that th | ne abov | e motiv | ation is | accur | ate and | l, hereb | y apply | for exem | ption in te | erms of | regulatio | on 51 of | the |
| EIA Regulations, 2006, from having to complete the indicated sections of the Basic Assessment Report. | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Signatur | Signature of the EAP: Date: | | | | | | | | | | | | | |

SECTION B: ACTIVITY INFORMATION

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for in detail:

The primary applicant, Just Energy is a South African based organisation established by the not-for-profit company Oxfam UK. Just Energy, in association with the Uncedo Lwethu Farmers Cooperative, is investigating the potential for a community based wind energy facility on a site near Wesley in the Eastern Cape Province. The first step involves the erection of a wind monitoring mast which will be used for the purpose of wind data measurement for up to 48 months. The collected data will be used to determine the optimum wind energy facility layout in order to ensure maximum energy production, taking environmental, technical and construction constraints into consideration.

The proposed project entails the erection of a tubular wind monitoring mast on portion 2 of the farm Sandflat 149, approximately 4 km north east of Wesley in the Eastern Cape and approximately 70 km south west of the East London airport (refer to Appendix A). The proposed site is situated east of the R72 within the Ngqushwa Local Municipality.

The mast will consist of a tubular structure of up to 60 m high and 203 - 250 mm wide. The mast will be constructed upon a galvanised steel base plate of 0.71 m^2 and will be anchored to the ground by 24 guy wires at four anchor points. The total **construction footprint** for the base plate and the points at which the guy wires anchor will cover an area of approximately 7 850 m². The total area that will be disturbed by the **development footprint** will be less than 10 m².

The mast will house three anemometers, a wind vane, a temperature sensor and a 15 channel internet-enabled micro power wind energy data logger which is used for wind resource assessment and turbine power performance verification. The data logger will be powered through two 1.5 Volt D-Cell batteries. The recorded information will be remotely delivered once a day in the form of a binary file via e-mail to a designated address. No access is required to the mast on a regular basis.

The mast will need to be in compliance with the colour and lighting specifications as required by the Civil Aviation Authority (CAA), which dictates that masts need to be painted white and red in alternating segments with each segment being one seventh of the total height and with the top and bottom segments being painted red. Additionally, CAA specified lighting will be required on the mast.

The operational phase or period of utilisation will be of a short-term nature, anticipated to be up to 48 months. The mast and its accompanying infrastructure will be decommissioned, dismantled and removed once wind monitoring in the area is complete.

2. **ALTERNATIVES**

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

2(a) Site alternatives:

No site alternatives are being considered; refer to section 1 of this report.

(2)(b) Activity alternatives:

No activity alternatives are being considered; refer to section 1 of this report.

| Describe activity alternative 2 (A2), if any, for any or all of the site alternatives as appropriate: | |
|---|--|
| N/A | |
| Describe activity alternative 2 (A2), if any, for any or all of the site alternatives as appropriate: | |
| N/A | |
| Describe activity alternative 2 (A2), if any, for any or all of the site alternatives as appropriate: | |
| N/A | |

3. **ACTIVITY POSITION**

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

| | Latitude (S): | | Longitu | de (E): |
|---|---------------|----------|---------|----------|
| Proposed wind monitoring mast on Portion 2 of the farm Sandflat 149 | 33° | 17′42.8″ | 27° | 22′53.6″ |

In the case of linear activities:

| | | | e (S): | Longitu | de (E): |
|----------------|--------------------------------|--|--------|---------|---------|
| Alternative S2 | | | | | |
| • | Starting point of the activity | | | | |
| • | Middle point of the activity | | | | |
| • | End point of the activity | | | | |
| Alternative S3 | | | | | |
| • | Starting point of the activity | | | | |
| • | Middle point of the activity | | | | |
| • | End point of the activity | | | | |

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4 **PHYSICAL SIZE OF THE ACTIVITY**

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

| | Component: | Size of the activity: |
|---------------|--|-----------------------|
| Proposed wind | Footprint of the mast structure: | 0.71 m ² |
| monitoring | Construction footprint: | 7 850 m ² |
| mast | Final development footprint (including baseplate | $\sim 10 m^2$ |
| | and guy wires): | ·~ 10 III |

Or, for linear activities:

| Alternative: | Length of the activity: |
|-------------------------|-------------------------|
| Pipeline Alternative A2 | |
| Pipeline Alternative A3 | |

Indicate the size of the alternative servitudes (within which the above footprints will occur):

| Footprint of construction: | Size | of | the |
|----------------------------|------------|-------|-----|
| | site/servi | tude: | |
| Pipeline Alternative A2 | | | |
| Pipeline Alternative A3 | | | |
| Final Footprint: | Size | of | the |
| | site/servi | tude: | |
| Pipeline Alternative A2 | | | |
| Pipeline Alternative A3 | | | |

5. SITE ACCESS

| Does ready access to the site exist, or is access directly from an existing road? | YES ✓ | |
|---|-----------|--------|
| The site for the proposed mast can be accessed by the R72 national road | d and the | en via |
| DR 07491 which is an existing farm road. No additional access roads are | required | to be |
| cleared to access the mast position. | | |
| If NO, what is the distance over which a new access read will be built | 200 | |

| If NO, what is the distance over which a new access road will be built | m | | | |
|--|---|--|--|--|
| Describe the type of access road planned: | | | | |
| N/A | | | | |

Include the position of the access road on the site plan.

6. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

6(a) Solid waste management

| Will the activity produce solid construction waste during the construction/initiation | | NO √ |
|---|----------------|------|
| phase? | | |
| If yes, what estimated quantity will be produced per month? | | |
| How will the construction solid waste be disposed of (describe)? | | |
| N/A | | |
| Where will the construction solid waste be disposed of (describe)? | | |
| N/A | | |
| Will the activity produce solid waste during its operational phase? | | NO ✓ |
| If yes, what estimated quantity will be produced per month? | m ³ | |

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| How will the solid waste be disp | How will the solid waste be disposed of (describe)? | | | | | |
|--|---|--------------|------------------|-------------------|---------------|--|
| N/A | | | | | | |
| Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)? | | | | | | |
| N/A | | | | | | |
| If the solid waste (construction | n or operational pha | ases) will n | ot be disposed | l of in a registe | ered landfill | |
| site or be taken up in a munic | cipal waste stream, | the applica | ation should co | onsult with the | competent | |
| authority to determine whether | it is necessary to c | hange to ar | n application fo | r scoping and I | EIA. | |
| Can any part of the solid wast | e be classified as h | azardous ii | n terms of the | relevant | NO 🗸 | |
| legislation? | | | | | NO V | |
| If yes, inform the competent au | uthority and request | a change t | o an applicatio | on for scoping a | ind EIA. | |
| Is the activity that is being app | lied for a solid wast | e handling (| or treatment fa | acility? | NO ✓ | |
| If yes, the applicant should cor | sult with the compe | etent autho | rity to determi | ne whether it i | s necessary | |
| to change to an application for | scoping and EIA. | | | | | |
| Describe the measures, if any, | that will be taken to | ensure the | e optimal reuse | e or recycling o | f materials: | |
| N/A | | | | | | |
| Has a specialist been consulted | to assist with the c | ompletion o | of this section? | | NO √ | |
| If YES, please complete: | | | | | | |
| Name of the specialist: | | | | | | |
| Qualification(s) of the | | | | | | |
| specialist: | | | | | | |
| Postal address: | | | | | | |
| Postal code: | | | | | | |
| Telephone: | | Cell: | | | | |
| E-mail: | | Fax: | | | | |
| Are any further specialist studie | es recommended by | the special | list? | YES | NO | |
| If YES, specify: | | | | | | |
| If YES, is such a report(s) attac | ched? | | | YES | NO | |
| | | | | • | | |
| Signature of specialist: | | Date: | | | | |

6(b) Liquid effluent

| Will the activity p | | | | | |
|--|--|----------------|---------|--|--|
| in a municipal sev | | NOV | | | |
| If yes, what estim | ated quantity will be produced per month? | m ³ | | | |
| Will the activity p | roduce any effluent that will be treated and/or disposed of on site? | | NO √ | | |
| If yes, the applica | nt should consult with the competent authority to determine whether | er it is ne | cessary | | |
| to change to an a | pplication for scoping and EIA. | | | | |
| Will the activity p | roduce effluent that will be treated and/or disposed of at another | VES | NO | | |
| facility? | | TLO | NO | | |
| If yes, provide the particulars of the facility: | | | | | |
| Facility name: | | | | | |
| Contact person: | | | | | |
| Postal address: | Postal address: | | | | |
| Postal code: | | | | | |
| Telephone: | Cell: | | | | |
| E-mail: Fax: | | | | | |
| Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if | | | | | |
| any: | | | | | |
| N/A | | | | | |
| Has a specialist be | Has a specialist been consulted to assist with the completion of this section? NO \checkmark | | | | |
| If YES, please con | nplete: | | | | |

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| Name of the | | | | | |
|---------------------------|--|-------|-----|-----|----|
| specialist: | | | | | |
| Qualification(s) of the | | | | | |
| specialist: | | | | | |
| Postal address: | | | | | |
| Postal code: | | | | | |
| Telephone: | | Cell: | | | |
| E-mail: | | Fax: | | | |
| Are any further specialis | t studies recommended by the specialist? | | st? | YES | NO |
| If YES, specify: | | | | | |
| If YES, is such a report(| s) attached? | | | YES | NO |
| | | | | | |
| Signature of specialist: | | Date: | | | |

6(c) Emissions into the atmosphere

| Will the activity release emissions into the atmosphere? | | | | |
|--|---|----------|------|--|
| The construction, operation and decommissioning of the proposed wind | | | | |
| monitoring mast will | not release any emissions apart from negligible dust | | NO √ | |
| and vehicle emissio | ns during the construction and decommissioning | | | |
| phases. | | | | |
| If yes, is it controlled by | any legislation of any sphere of government? | YES | NO | |
| If yes, the applicant s | nould consult with the competent authority to determine | | | |
| whether it is necessary t | o change to an application for scoping and EIA. | | | |
| If no, describe the emiss | ions in terms of type and concentration: | | | |
| Has a specialist been co | nsulted to assist with the completion of this section? | | NO √ | |
| If YES, please complete: | | | | |
| Name of the specialist: | | | | |
| Qualification(s) of the | | | | |
| specialist: | | | | |
| Postal address: | | | | |
| Postal code: | | | | |
| Telephone: | Cell: | | | |
| E-mail: | Fax: | | | |
| Are any further specialist studies recommended by the specialist? YE | | | 10 | |
| If YES, specify: | · · · · | | | |
| If YES, is such a report(| s) attached? YES | 5 1 | 10 | |
| | | <u> </u> | | |
| Signature of specialist: | Date: | | | |

6(d) Noise generation

| Will the activity generate noise? | | | | | |
|--|--|------|--|--|--|
| Negligible noise will be generated during the construction and | | NO. | | | |
| decommissioning phases of the proposed wind monitoring mast. However, | | NO V | | | |
| no noise will be generated during the operational phase. | | | | | |
| If yes, is it controlled by any legislation of any sphere of government? YES | | | | | |
| If yes, the applicant should consult with the competent authority to determine | | | | | |
| whether it is necessary to change to an application for scoping and EIA. | | | | | |
| If no, describe the noise in terms of type and level: | | | | | |
| | | | | | |

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| Has a specialist been consulted to assist with the completion of this section? YES NO | | | | | NO | |
|---|--|-------|--|----|----|--|
| If YES, please complete: | | | | • | | |
| Name of the specialist: | | | | | | |
| Qualification(s) of the | | | | | | |
| specialist: | | | | | | |
| Postal address: | | | | | | |
| Postal code: | | | | | | |
| Telephone: | | Cell: | | | | |
| E-mail: | | Fax: | | | | |
| Are any further specialist studies recommended by the specialist? YES NO | | | | NO | | |
| If YES, specify: | | | | | | |
| If YES, is such a report(s) attached? YES NO | | | | | NO | |
| | | | | | | |
| Signature of specialist: | | Date: | | | | |

7. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(s).

| Municipal | water board | groundwater | river, stream, dam | other | the activity | will not use |
|---|-----------------|--------------|-------------------------|----------|--------------|------------------|
| | | | or lake | | water 🗸 | |
| If water is | to be extracted | from groundw | ater, river, stream, da | ım, lake | or any other | natural feature, |
| please indic | cate: | | | | | |
| The volume that will be extracted per month: | | | | | | |
| Does the activity require a water use permit from the Department of Water Affairs $NO \checkmark$ | | | | | | |
| and Forestry? | | | | | | |
| If yes, please submit the necessary application to the Department of Water Affairs and Forestry and | | | | | | |
| attach proof thereof to this application if it has been submitted. | | | | | | |

8. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

No alternate power source is required for the mast as the data logger will be powered through two 1.5 Volt D-Cell batteries.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Alternative energy sources have not been built into the design of the proposed mast which will be sourced from NRG Systems, an American based company whose core business involves products and customer service for the global wind energy industry.

9. SITE OR ROUTE PLAN

A detailed locality map has been included in Appendix A and indicates the following:

- » The scale of the plan;
- » The property boundaries and numbers of all the properties within 50 m of the site;
- » The current land use of each of the properties adjoining the site or sites;
- » The exact position of each element of the application;
- » The position of services, including existing roads, transmission and distribution overhead power lines, other water supply pipelines, etc.;
- » Sensitive environmental elements within 100 m of the site/s; and
- » Contours.

10. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It should be supplemented with additional photographs of relevant features on the site, if applicable.

Colour photographs taken from the centre of the proposed wind monitoring mast, in the eight major compass directions, are attached within Appendix B.

11. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

A detailed schematic of the proposed wind monitoring mast is provided in Appendix C.

March 2010

12. ACTIVITY MOTIVATION

12(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure or is it a public amenity?

How many new employment opportunities will be created in the development phase of the activity?

What is the expected value of the employment opportunities during the development phase?

What percentage of this will accrue to previously disadvantaged individuals? How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

12(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The advancement of renewable energy is a priority for South Africa as the government has set a 10-year target of 10 000 GWh by 2013, as part of its White Paper on Renewable Energy. Furthermore, recent policy highlights the desirability of clean; green energy and wind generated energy will play a significant role in reaching these quotas. The wind monitoring data collected at the site near Wesley will contribute to proving the feasibility and viability of a wind energy facility which will provide a valuable contribution towards government renewable energy generation targets and the provision of local socio-economic benefits.

The proposed wind monitoring mast will be used to record on-site wind speed and direction data for a period of up to 48 months. This information will be used to calculate the wind potential for the site which will, in turn, be used to determine the viability of the site for a future wind energy facility as part of a bankable feasibility study. The selected position of the wind monitoring mast is considered by wind technicians as the optimal position as it is located in an area representative of the proposed future layout of the site. If the location for the mast is not approved, then there will not be robust evidence of continual wind data in order to develop the wind energy facility. This will mean that the wind energy facility at Wesley will not be able to be financed and constructed.

Indicate any benefits that the activity will have for society in general:

The wind monitoring data will contribute towards informing investment in the proposed wind energy facility in Wesley, thereby contributing to South Africa's renewable energy goals and meeting wider societal goals of increased access to green energy resources.

| R150 000.00 | | | |
|---|--|--|--|
| A once-off lease payment will be paid to the landowner; the sum is yet to be negotiated. | | | |
| NO ✓ | | | |
| There will be limited local employment opportunities at the construction phase; number to be determined. | | | |
| To be determined | | | |
| To be determined | | | |
| None | | | |
| N/A | | | |
| N/A | | | |

It is yet to be determined whether the company commissioned by Just Energy to operate, monitor or decommission the wind monitoring mast will employ local labour resources, but it will form part of the evaluation criteria during the procurement process. Just Energy is committed to encouraging local employment opportunities in and around Wesley wherever possible.

Long-term societal benefits will be realised should the site prove viable for the development of a wind energy facility since the land upon which the facility will be located will be rented on an annual basis from the landowners. Just Energy's partnership with the Uncedo Lwethu Farmers Cooperative during the project development phase will enable them to participate in the process of value creation. Through this role in project development, particularly in the area of building social and political acceptance for the project, the community will gain shareholding in the developed project. This shareholding, of typically 10%, will yield dividends which can be applied to a range of social and economic development, health care, education and energy efficient housing.

Furthermore, a wind energy facility will provide unskilled employment opportunities during the construction, operation and decommissioning phases.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

There may be benefits for the local population during the construction and/or decommissioning phase as the erection/decommissioning of the monitoring mast may be carried out with the assistance of locally sourced labour. Once the proposed wind monitoring mast has been erected it will not require any additional labour apart from unscheduled maintenance which will be conducted by skilled individuals. However, long-term benefits for the local communities will realised should the site prove viable for the development of a wind energy facility. The local community would benefit through the income generated from the monthly rental of the land upon which the facility would be sited, as well as the equity share in the revenues created by the wind energy facility.

13. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable.

| Title of Legislation: | Administering Authority: | Date: |
|--|--------------------------|------------|
| National Environmental Management Act (Act | Department of | 1998 |
| No 107 of 1998) | Environmental Affairs | |
| Aviation Act, 1962 (Act No 74 of 1962) and | Civil Aviation Authority | 1962, 1997 |
| Civil Aviation Regulations (CAR's), 1997 | (CAA); Commissioner for | |
| | Civil Aviation | |

| Title of Policy, Guidelines or Plan: | Administering authority: | | |
|--|---|--|--|
| Guideline on the Environmental Impact | Department of Environmental Affairs (DEA) | | |
| Assessment Regulations | | | |
| Guideline on Public Participation | Department of Environmental Affairs (DEA) | | |
| Eastern Cape Province Environmental | Eastern Cape Department of Economic | | |
| Implementation Plan 2003 | Development and Environmental Affairs | | |
| Amatole District Municipality Integrated | Amatole District Municipality | | |
| Development Plan | | | |
| Amatole District Municipality Local Economic | Amatole District Municipality | | |
| Development Strategy | | | |
| Ngqushwa Local Municipality Integrated | Ngqushwa Local Municipality | | |
| Development Plan 2007 - 2012 | | | |
| Ngqushwa Local Municipality Local Economic | Nagushwa Local Municipality | | |
| Development Strategy 2008 | | | |

SECTION C: SITE/AREA DESCRIPTION

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

| Flat ✓ | 1:50 - | 1:20 - | 1:15 - 1:10 | 1:10 - | 1:7,5 - 1:5 | Steeper than |
|--------|--------|--------|-------------|--------|-------------|--------------|
| | 1:20 | 1:15 | | 1:7,5 | | 1:5 |

2. LOCATION IN LANDSCAPE

The proposed site is located within an undulating landscape situated approximately 4 km north east of Wesley.

| Indicate | tho | landform(s) | that hest | describes | the site |
|----------|-----|---------------|-----------|-----------|-----------|
| muicate | uie | ianui orin(5) | that best | uescilbes | the site. |

| Ridgeline | Plateau | Side slope of | Closed | Open | Plain | Undulating | Dune | Sea- |
|-----------|---------|---------------|--------|--------|-------|------------|------|-------|
| | | hill/mountain | valley | valley | | plain/low | | front |
| | | | | | | hill ✓ | | |

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

| Shallow water table (less than 1.5m deep) | NO ✓ |
|--|------|
| Dolomite, sinkhole or doline areas | NO ✓ |
| Seasonally wet soils (often close to water bodies) | NO ✓ |
| Unstable rocky slopes or steep slopes with loose soil | NO ✓ |
| Dispersive soils (soils that dissolve in water) | NO ✓ |
| Soils with high clay content (clay fraction more than 40%) | NO ✓ |
| Any other unstable soil or geological feature | NO ✓ |
| An area sensitive to erosion | NO √ |

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

| Has a specialist been consulted | to assist with the completion of this section? | | NO √ |
|-------------------------------------|--|-----|------|
| If YES, please complete: | | - | |
| Name of the specialist: | | | |
| Qualification(s) of the specialist: | | | |
| Postal address: | | | |
| Postal code: | | | |
| Telephone: | | | |
| E-mail: | | | |
| Are any further specialist stud | es recommended by the specialist? | YES | NO |
| If YES, specify: | | | |
| If YES, is such a report(s) atta | ched? | YES | NO |
| Signature of specialist: | Date: | | |

4. **GROUNDCOVER**

The site for the proposed wind monitoring mast falls within the Albany thicket biome of South Africa. This biome ranges from the west coast through to KwaZulu Natal, with most of the biome being found in the Eastern Cape. It makes up 2.5 % of the area of South Africa or nearly 31 500 km2. The vegetation ranges from shrub-land to low forest including numerous evergreens; succulent trees and shrub species.

According to the Eastern Cape Biodiversity Conservation Plan the study area is categorised as CBA 2, which means that it is a 'near natural state'. However, the groundcover of the proposed site has been heavily impacted on through extensive grazing activities. Characteristic of this, the proportion of trees species is much lower than in surrounding areas and the growth of said trees as well as grass species has been severely stunted due to grazing. According to the Subtropical Thicket Ecosystem Project the study site is categorised as 'Not Vulnerable' and according to the National Spatial Biodiversity Assessment the area is regarded as being 'Least Threatened'.

| Tick the types of groun | nucover present on t | ile site. | | |
|-------------------------|----------------------|----------------------------|------------------|-----------|
| Natural vold good | Natural vold with | Natural veld with | Veld dominated | |
| | | heavy alien | by alien species | Gardens |
| condition | scattered allens | infestation ^E √ | E | |
| Sport field | Cultivated land | Paved surface | Building or | Bare soil |
| Sport field | Cultivated land | | other structure | Dare soli |

Tick the types of groundcover present on the site.

If any of the boxes marked with an " E " is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

| Has a specialist been consulted | !? | | | | | NO √ |
|-----------------------------------|-----------------------------|----------|------------|--------|-----|------|
| If YES, please complete the fol | lowing: | | | | | |
| Name of the specialist: | | | | | | |
| Qualification(s) of the | | | | | | |
| specialist: | | | | | | |
| Postal address: | | | | | | |
| Postal code: | | | | | | |
| Telephone: | | Ce | 1: | | | |
| E-mail: | | Fax | <: | | | |
| Are there any rare or endang | ered flora or fauna speci | es (inc | luding red | data | | NO √ |
| species) present on any of the | alternative sites? | | | | | |
| If YES, specify and explain: | | | | | | |
| Are there any special or sensit | tive habitats or other natu | ıral fea | tures pres | ent on | | NO 🗸 |
| any of the alternative sites? | | | | | | NO V |
| If YES, specify and explain: | | | | | | |
| Are any further specialist studie | es recommended by the sp | ecialist | ? | | | NO √ |
| If YES, specify: | Yes | | | | | |
| If YES, is such a report(s) attac | ched? | | | | YES | NO |
| Signature of specialist: | | Date: | | | | |

5. LAND USE CHARACTER OF SURROUNDING AREA

The proposed site and the surrounding farm portions have been historically used for subsistence agriculture. There are also several scattered homesteads and empty buildings/shacks in the surrounding area, though there are no buildings on the proposed site. Additionally there are also several scattered and isolated diggings / superficial borrow pits, presumably used to collect sand for the purpose of informal road construction/stabilisation.

| Natural area 🗸 | Low density residential | Medium density residential | High density residential | Informal residential ^A |
|---|---|---|--|--|
| Retail | Commercial & warehousing | Light industrial | Medium industrial ^{an} | Heavy industrial ^{AN} |
| Power station ^A | Office/consulting room | Military or police base/station/compound | Casino/entertainment complex | Hospitality facility |
| Open cast mine | Underground mine | Spoil heap or slimes dam ^A | Quarry, sand or borrow pit | Dam or reservoir |
| Hospital/medical centre | School | Tertiary education facility | Church | Old age home |
| Sewage treatment plant A | Train station or shunting yard ^N | Railway line $^{\rm N}$ | Major road (4 lanes or more) [№] | Airport ^N |
| Harbour | Sport facilities | Golf course | Polo fields | Filling station |
| Landfill or waste treatment site ^A | Plantation | Agriculture ✓ (Subsistence grazing) | River, stream or wetland | Nature conservation area ^{**} |
| Mountain, koppie or ridge | Museum | Historical building | Graveyard | Archaeological site |
| Other land uses (describe): | | | | |

| Black out land uses and/or | r prominent features | s that do not currentl | y occur within | a 500m radius | of the |
|----------------------------|----------------------|------------------------|----------------|---------------|--------|
| site. | | | | | |

If any of the boxes marked with an "" "are ticked, please consult an appropriate noise specialist to assist in the completion of this section.

| Has a specialist been consulted | ? | | | | NO √ |
|-----------------------------------|-------------------------|--------------|---------------|-----|------|
| If YES, please complete the fol | lowing: | | | | |
| Name of the specialist: | | | | | |
| Qualification(s) of the | | | | | |
| specialist: | | | | | |
| Postal address: | | | | | |
| Postal code: | | | | | |
| Telephone: | Ce | 211: | | | |
| E-mail: | Fai | X: | | | |
| Will the ambient noise level ha | ve a negative impact on | the propo | sed activity? | | NO √ |
| If YES, specify and explain: | | | | | |
| Are any further specialist studie | es recommended by the | e specialisť | ? | YES | NO |
| If YES, specify: | | | | | |
| If YES, is such a report(s) attac | ched? | | | YES | NO |
| Signature of specialist: | | Date: | | ÷ | • |

If any of the boxes marked with an "A" are ticked, please consult an appropriate air quality specialist to assist in the completion of this section.

| Has a specialist been consulted | 1? | | | | | NO √ |
|-----------------------------------|-----------------------|-----------------|----------|------|-----|------|
| If YES, please complete the fol | lowing: | | | | | |
| Name of the specialist: | | | | | | |
| Qualification(s) of the | | | | | | |
| specialist: | | | | | | |
| Postal address: | | | | | | |
| Postal code: | | | | | | |
| Telephone: | | Cell: | | | | |
| E-mail: | | Fax: | | | | |
| Will the ambient air pollution | level have a negation | tive impact on | the prop | osed | | NO √ |
| activity? | | | | | | |
| If YES, specify and explain: | | | | | | |
| Are any further specialist studie | es recommended by | the specialist? |) | | YES | NO |
| If YES, specify: | | | | | | |
| If YES, is such a report(s) attac | ched? | | | | YES | NO |
| | | | | | | |
| Signature of specialist: | | Date: | | | | |

If any of the boxes marked with an "H" are ticked, please consult an appropriate health assessment specialist to assist in the completion of this section.

| Has a specialist been consulted | l? | | NO ✓ |
|---|---|-------|------|
| If YES, please complete the fol | lowing: | | |
| Name of the specialist: | | | |
| Qualification(s) of the | | | |
| specialist: | | | |
| Postal address: | | | |
| Postal code: | | | |
| Telephone: | Cell: | | |
| E-mail: | Fax: | | |
| | | | |
| Will the surrounding land us | se pose any unacceptable health risk or | n the | NO 🗸 |
| Will the surrounding land us proposed activity? | se pose any unacceptable health risk or | the | NO ✓ |
| Will the surrounding land us proposed activity? If YES, specify and explain: | se pose any unacceptable health risk or | n the | NO ✓ |
| Will the surrounding land us proposed activity? If YES, specify and explain: | se pose any unacceptable health risk or | n the | NO √ |
| Will the surrounding land us proposed activity? If YES, specify and explain: Are any further specialist studi | se pose any unacceptable health risk or es recommended by the specialist? | YES | NO 🗸 |
| Will the surrounding land us proposed activity? If YES, specify and explain: Are any further specialist studi If YES, specify: | se pose any unacceptable health risk or es recommended by the specialist? | YES | NO ✓ |
| Will the surrounding land us proposed activity? If YES, specify and explain: Are any further specialist studi If YES, specify: If YES, is such a report(s) attac | se pose any unacceptable health risk or es recommended by the specialist? ched? | YES | NO ✓ |
| Will the surrounding land us proposed activity? If YES, specify and explain: Are any further specialist studi If YES, specify: If YES, is such a report(s) attac | se pose any unacceptable health risk or es recommended by the specialist? ched? | YES | NO ✓ |

6. CULTURAL/HISTORICAL FEATURES

| Are there any si | gns of culturally or historically significant elements, as defined | NO ✓ |
|-------------------|---|-----------|
| in section 2 of | the National Heritage Resources Act, 1999, (Act No. 25 of | |
| 1999), including | archaeological or palaeontological sites, on or close (within | |
| 20m) to the site | ? | |
| If YES, | | |
| explain: | | |
| If uncertain, co | nduct a specialist investigation by a recognised specialist in the field to | establish |
| whether there is | such a feature(s) present on or close to the site. | |
| Briefly explain | | |
| the findings of | | |
| the specialist: | | |
| Will any building | or structure older than 60 years be affected in any way? | NO √ |
| Is it necessary | to apply for a permit in terms of the National Heritage | |
| Resources Act, 1 | .999 (Act No 25 of 1999)? | |

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

Site notices, an advertisement and stakeholder letters advertising the proposed project and notifying interested and affected parties (I&APs) of Just Energy's intention to submit an application to DEA were placed and/or distributed as follows:

A site notice was erected on the boundary fence of the proposed property where it is intended to undertake the activity. Additional site notices were placed in two shop windows in the vicinity of the site; one in Wesley and one in Gcinisa (refer to Appendix B).

Stakeholder letters were distributed to:

- Landowners and occupiers of land adjacent to the proposed site;
- The Ngqushwa Local Municipality and the Amatole District Municipality;
- Relevant organs of state that may have jurisdiction over any aspect of the proposed activity, these included the Eastern Cape Department of Economic Development and Environmental Affairs and the Eastern Cape Department of Land Affairs.

An advertisement was placed in the Daily Dispatch, a daily newspaper to advertise the availability of the Draft Basic Assessment Report as well as the means by which I&APs could make comments, raise questions or register on the database for the proposed project.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

Advertisements and notices must indicate that an application will be submitted to the competent authority in terms of the EIA regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made.

The advertisement, site notices and stakeholder letters detailed the intent to undertake the Basic Assessment process, the nature and location of the proposed activity, where further information on the proposed activity could be obtained and the manner in which representations on the application could be made. Copies of the advertisement; site notice and stakeholder letter are included within Appendix E.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

An advertisement was placed in the Daily Dispatch. A site notice was placed on the boundary of the property and additional site notices were placed in two shop windows in the vicinity of the site, one in Wesley and one in Gcinisa. Proof of the advertisement and site notice placement is included within Appendix E.

4. DETERMINATION OF APPROPRIATE MEASURES FOR PUBLIC PARTICIPATION

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

Stakeholder letters which provided information regarding the project, as well as a reply form and a locality map were used to disseminate information and provide the opportunity for feedback. This mechanism was deemed appropriate due to the small scale of the proposed project and the low population density of the project development area; refer to Appendix E.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

No issues, comments and/or concerns have been raised to date regarding the proposed project. Should any issues, comments and/or concerns be raised during the review period of the Draft Basic Assessment Report of 29 March 2010 - 29 April 2010, these issues as well as responses provided will be captured and recorded within a Comments and Response Report which will be included in the Final Basic Assessment Report

6. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

The Ngqushwa Local Municipality and the Amatole District Municipality, within whose jurisdiction the proposed project falls, have been consulted. No comments have been received to date however should any be received they will be included in the Comments and Response which will be submitted with the Final Basic Assessment Report.

| Has any comment been received from the local authority? | | NO ✓ |
|--|---------|----------|
| If "YES", briefly describe the feedback below (also attach any correspondence to and | from th | ne local |
| authority to this application): | | |

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Potentially affected stakeholders have been identified and consulted regarding the proposed project through the use of advertisements and site notices. A database of stakeholders and interested and affected parties is attached in Appendix E.

Has any comment been received from stakeholders?

Copies of correspondence to the stakeholders to this application are included in Appendix E. Comments have been requested from the following stakeholders:

- Department of Water Affairs
- Department of Minerals and Energy
- Department of Agriculture
- Department of Economic Development and Environmental Affairs
- Eastern Cape Department of Transport
- South African Heritage Resources Agency
- Wildlife and Environmental Society of South Africa
- Endangered Wildlife Trust Karoo Crane Conservation Project

However no comments have been received to date, should any be received they will be included in the Comments and Response Report of the Final Basic Assessment Report.

NO √

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2006, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. **ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES**

List the issues raised by interested and affected parties. Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

No issues have been raised to date. The Draft Basic Assessment report is currently in the public review period. Should any issues be raised they will be incorporated into the Final Basic Assessment Report.

2. METHODOLOGY FOR ASSESSING IMPACTS

The following methodology was used in assessing impacts related to the proposed project for the planning/design, construction, operational and decommissioning phases: The potential impacts are assessed according to the following criteria:

- The **nature** of the impact refers to the cause of the impact, what will be affected and ≫ how it will be affected.
- The **extent** of the impact refers to its location; whether the impact will be local (limited to the immediate area or site of development), regional, national or international. A score of between 1 and 5 is assigned as appropriate (with a score of 1 being low and a score of 5 being high).
- The **duration** of the impact refers to its lifetime and whether it will be of a: >>
 - * Very short duration (0-1 years) - assigned a score of 1;
 - Short duration (2-5 years) assigned a score of 2; *
 - Medium-term (5-15 years) assigned a score of 3;
 - Long term (> 15 years) assigned a score of 4; or *
 - Permanent assigned a score of 5.
- The **magnitude** of the impact is quantified on a scale of 0-10 and refers to: »
 - 0 small and will have no effect on the environment;
 - 2 minor and will not result in an impact on processes;
 - 4 low and will cause a slight impact on processes;
 - 6 moderate and will result in processes continuing but in a modified way;
 - 8 high (processes are altered to the extent that they temporarily cease); and
 - 10 very high and results in complete destruction of patterns and permanent cessation of processes.
- The probability of occurrence which describes the likelihood of the impact actually occurring is estimated on a scale and is assigned a score:
 - * 1- very improbable (probably will not happen);
 - 2 improbable (some possibility, but low likelihood); *
 - 3 probable (distinct possibility);
 - 4 highly probable (most likely); and
 - 5 definite (impact will occur regardless of any prevention measures).

- The **significance** of the impact which is determined through a synthesis of the characteristics described above (refer to the formula below), can be assessed as low, medium or high.
- » The **status** of the impact is described as positive, negative or neutral.
- » The degree to which the impact can be **reversed**.
- » The degree to which the impact may cause irreplaceable loss of resources.
- » The degree to which the impact can be **mitigated**.

The **significance** of the impact is determined by combining the criteria in the following formula:

- S = (E+D+M)*P; where
- S = Significance weighting
- E = Extent
- D = Duration
- M = Magnitude
- P = Probability

The **significance weightings** for each potential impact are as follows:

- > < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),</p>
- » **30-60 points:** Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

3. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, including impacts relating to the choice of site alternatives.

There will be no impacts resulting from the planning and design phase for the proposed project as no excavation/exploratory work which may impact on the environment is anticipated to be required on-site.

No-Go Alternative Impacts (Compulsory) N/A

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above: N/A

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase:

N/A

| No-Go Alternative Impacts (Compulsory) | |
|---|--|
| N/A | |
| Indicate mitigation measures that may eliminate or reduce the potential impacts listed above: | |

N/A

4. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase.

Nature of Ecological Impact:

The vegetation of the study area has largely been impacted on by subsistence grazing activities. Furthermore, the site can be accessed through the R72 and the DR07491 gravel road which will limit potential ecological impacts outside of the development footprint. The proposed mast will have a small construction footprint in the order of 7 850 m^2 in extent. Temporary disturbances may result from the transportation of the mast components to the site using a 4x4 vehicle; the activities of the construction crew; and from inappropriate use/disposal of materials to construct the steel base plate and the areas where the guy wires are to anchor to the ground

| Extent | Local (1) |
|----------------------------|--------------|
| Duration | Short (2) |
| Magnitude | Minor (2) |
| Probability | Probable (3) |
| Significance | 15 (Low) |
| Status (positive or | Negative |
| negative) | |
| Reversibility | Reversible |
| Irreplaceable loss of | No |
| resources? | |
| Can impacts be mitigated | Yes |
| during construction phase? | |

Mitigation:

Construction activities must be confined to a clearly demarcated area and may not deviate from this footprint. The vehicles transporting the mast components materials may only use the existing access road/track. Any waste/spoil material should be removed and taken off-site to a licensed disposal facility.

No-Go Alternative Impacts (Compulsory)

Should the wind monitoring mast not be constructed on the proposed site, there will be no resultant impacts of any significance on the biophysical environment. However, no reliable wind measurements would be recorded for use as direct on-site data. Subsequently, the initiative to determine the viability of the site for the future development of a wind energy facility will be compromised and the potential contribution to the local community and to South Africa's renewable energy targets will not be realised.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above: Refer to the proposed mitigation measures in the above table. List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

There are no activity/technology alternatives and therefore no potential impacts for the construction phase.

No-Go Alternative Impacts (Compulsory)

Should the wind monitoring mast not be constructed as per the proposed design, the wind monitoring regime will be compromised. Subsequently, the initiative to determine the viability of the site for the future development of a wind energy facility will be compromised and the benefits of this renewable energy facility would not be realised.

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

There are no mitigation measures that could be employed to mitigate the impacts that may result from the No-Go Alternative.

5. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase.

The predominant impact relating to the operational phase of the proposed project is the potential **visual impact**. The proposed wind monitoring mast will be ~ 60 m in height and despite the fact that it is not as bulky as other comparable masts (e.g. telecommunication masts which are much lower); it is visible from a distance. Any potential visual impact associated with the mast is temporary in nature, due to the short term operational phase. All visual impacts associated with the mast will be negated following its removal. The impact of the **potential visual exposure** is determined by the existence of potential observers and their perception of the wind monitoring mast. If there are no observers or if the visual perceptions of the structures are favourable to potential observers, there is no visual impact. Alternatively, if there are observers, the visual impact would be determined by the **observer proximity** (i.e. the reasonable distance from which a viewer would be impacted by the proposed infrastructure). The principle of reduced impact over distance is applied in order to determine the core area of visual influence. A viewshed analysis (undertaken by MetroGIS) of the proposed mast based on a 20 m contour interval digital terrain model of the study area indicate the potential visual exposure. The visibility analysis was undertaken at an offset of 60 m above average ground level (i.e. the proposed maximum height of the mast) in order to simulate a worst-case scenario. The viewshed analysis does not include the visual absorption capacity of the vegetation for the study area, as the natural vegetation cover is not expected to influence the results of the analyses. The proximity radii for the proposed mast are discussed below and are indicated in Figure 1 in order to indicate the scale and viewing distance of the structure and to determine their prominence in relation to the environment.

- » 0-250 m: Short distance view where the mast could potentially dominate the frame of vision and constitute a very high visual prominence.
- » 250-500 m: Short to medium distance view where the mast could potentially be easily and comfortably visible and constitute a high visual prominence.
- » 500-1000 m: Medium distance view where the mast would become part of the visual

environment, but could still be visible and recognisable. This zone constitutes a medium visual prominence.

- » 1000-2000 m: Medium to long distance view of the mast where it will become increasingly difficult to view or recognise the structure. This zone constitutes a medium to low visual prominence.
- » > 2000m: Long distance view of the mast where the structure would more than likely not be visible or recognisable. This zone constitutes a low to negligible visual prominence.



Figure 1: Observer proximity radii to the proposed wind monitoring mast and areas of high viewer incidence

It is necessary to identify areas of high viewer incidence and to classify certain areas according to the observer's potential visual sensitivity towards the proposed mast.

The analyses of cumulative visual exposure, the observer proximity and the viewer incidence/perception of the proposed mast were merged in order to determine a combined weighted **visual impact index** where the areas of likely visual impact would occur. These areas were further analysed in terms of the previously mentioned issues (related to the visual impact) and in order to judge the severity of each impact. An area with short distance visual exposure to the proposed infrastructure, a high viewer incidence and a predominantly negative perception would therefore have a higher value (greater impact) on the index. The result of the combination of the above criteria gives an indication of the likely area of visual impact. This helps in focussing the attention to the critical areas of potential impact when evaluating the issues related to the visual impact.



The potential visual impacts are rated in terms of their **Significance** which was reached using the Methodology as explained in Section 2 of this report; however the extent is calculated differently as follows:

• **Extent** - site only (very high = 5), local (high = 4), regional (medium = 3), national (low = 2) or international (very low = 1).

Nature of Visual Impact:

Potential visual impact on users of major roads (predominantly the R72 arterial road).

| Extent | Local (4) |
|---------------------------|------------------------|
| Duration | Short (1) |
| Magnitude | Low (2) |
| Probability | Medium probability (3) |
| Significance | Low (24) |
| Status (positive or | Negative |
| negative) | |
| Reversibility | Reversible |
| Irreplaceable loss of | No |
| resources? | |
| Can impacts be mitigated | No |
| during operational phase? | |

Mitigation:

Decommissioning: removal of the wind monitoring mast after approximately 48 months, or once no longer required for monitoring. The potential lighting impact associated with the wind monitoring mast pertains to the fitting of an aircraft warning light on the mast, as prescribed by the CAA. The light in question is a relatively toned-down red light that is not expected to cause significant visual impacts in terms of glare, light trespass or sky glow.

Cumulative impacts:

No major cumulative visual impacts are expected.

Residual impacts:

N/A

Nature of Visual Impact:

Potential visual impact on observers residing at identified residences, settlements and homesteads (primarily within a 1 km radius of the proposed mast).

| Extent | Local (4) |
|-----------------------|----------------|
| Duration | Short term (1) |
| Magnitude | High (4) |
| Probability | Probable (3) |
| Significance | Low (18) |
| Status (positive or | Negative |
| negative) | |
| Reversibility | Reversible |
| Irreplaceable loss of | No |
| resources? | |

| No |
|---|
| |
| |
| the wind monitoring mast after approximately 48 |
| ed for monitoring. |
| |
| cts are expected. |
| |
| |
| |

Apart from visual impacts, **avifauna species** may be impacted on during the operational phase. According to SABAP 2 avifauna species which may be present in the area include Blue Cranes; Grey Crowned Cranes; Denham's Bustard; Secretary Birds and Peregrine Falcons. These larger species may be susceptible to collision with the proposed mast and the required guy wires. Collision impacts are proportional to the mast height and therefore since the proposed mast will be approximately 60 m high, the collision related impacts may be lessened when compared to mast heights of up to 80 m high. However, collision impacts are also generally proportional to the use of night lighting and strong wind conditions which, in the case of the proposed mast, may lend themselves to a higher incidence of collisions.

Nature of Avifaunal Impact:

The proposed mast may cause avian mortalities through collisions with the mast itself and the guy wires. However the nature of the site suggests a low density of avifaunal species which lowers the probability of collision related impacts

| Extent | Local (1) |
|---------------------------|--------------|
| Duration | Short (1) |
| Magnitude | Low (2) |
| Probability | Probable (3) |
| Significance | Low (12) |
| Status (positive or | Negative |
| negative) | |
| Reversibility | Reversible |
| Irreplaceable loss of | No |
| resources? | |
| Can impacts be mitigated | Yes |
| during operational phase? | |

Mitigation:

Through the monitoring process, should collisions be noted then mitigation measures can be implemented. These would include reducing lighting to the absolute minimum as required by the CAA, and marking guy wires with bird diverters as used on power lines

Cumulative impacts:

No major cumulative visual impacts are expected.

Residual impacts:

N/A

No-Go Alternative Impacts (Compulsory)

Should the wind monitoring mast not be operated on the proposed site, there will be no resultant impacts of any significance on the biophysical and social environment. However, no reliable wind measurements would be recorded for use as direct on-site data. Subsequently, the initiative to determine the viability of the site for the future development of a wind energy facility will be compromised and the potential contribution to the local community and South Africa's renewable energy targets will not be realised.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

There are no activity/technology alternatives and therefore there are no potentially associated impacts for the operational phase.

No-Go Alternative Impacts (Compulsory)

Should the wind monitoring mast not be operated as per the proposed technological designs at the proposed site, there will be no resultant impacts of any significance on the biophysical and social environment. However, no reliable wind measurements, taken at turbine hub height, would be recorded for use as direct on-site data. Subsequently, the initiative to determine the viability of the site for the future development of a wind energy facility will be compromised and the potential contribution to the local community and South Africa's renewable energy targets will not be realised.

6. IMPACTS THAT MAY RESULT FROM THE DECOMISSIONING AND **CLOSURE PHASE**

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning or closure phase:

This phase will entail the decommissioning and removal of the mast following the period of utilisation (anticipated to be up to 48 months in duration). The only anticipated impacts are those related to the physical removal of the mast components from the site.

Nature of Ecological Impact:

The study site is used for subsistence grazing activities therefore the potential for ecological impacts is low. However, impacts on remaining vegetation may occur through the removal of the mast components from the site using a 4x4 vehicle; through the presence and activities of the decommissioning crew; and through lack of or incorrect disposal of any materials remaining following the removal of the mast.

| Extent | Local (1) |
|---------------------|--------------|
| Duration | Short (2) |
| Magnitude | Minor (2) |
| Probability | Probable (3) |
| Significance | 15 (Low) |
| Status (positive or | Negative |
| negative) | |
| Reversibility | Reversible |

| The proposed mitigation measures include confining decommissioning activities to a | |
|--|--|
| transporting the mast | |
| | |
| | |
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| | |
| | |

No-Go Alternative Impacts (Compulsory)

If the wind monitoring mast is not constructed on the proposed sites no decommissioning and associated impacts would occur.

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning and closure phase:

There are no activity/technology alternatives and therefore there are no potentially associated impacts for the decommissioning and closure phase.

7. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION MEASURES

Indicate how identified impacts and mitigation will be monitored and/or audited.

Construction and Decommissioning Phases

Any potential negative ecological impacts during the construction and decommissioning phases of the development of the mast can be prevented or minimised by implementing the following mitigation measures:

- » The construction/decommissioning areas should be clearly defined and demarcated prior to erection/removal of the mast.
- » Vehicles should use existing access roads only.
- » Spoil/waste material should be removed from the site and disposed of appropriately.

Operational Phase

The potential for the mitigation of visual impacts of the wind monitoring mast during the operational phase is very low. The functional design of the proposed mast and the CAA requirements which dictate the mast appearance do not leave room for deviation. The mast height is a strict requirement which also nullifies the effectiveness of attempting to shield it using vegetation cover or landscaped berms. However, the potential visual impacts will be completely reversed once the mast is removed following the period of utilisation, approximately 48 months. The potential lighting impact associated with the wind monitoring mast pertains to the fitting of an aircraft warning light on the mast, as prescribed by the CAA. The light in question is a relatively toned-down red light that is not expected to cause significant visual impacts in terms of glare, light trespass or sky glow.

Additional illumination of the mast, such as the use of flood lights, is strongly inadvisable.

Should it be deemed necessary, avian impacts can be mitigated by reducing the lighting requirements to the minimum (as required by the CAA) and by installing bird diverters to the mast structure and the guy wires.

A **Draft Environmental Management Plan is attached in Appendix G** that provides mitigation measures to prevent or minimise adverse environmental impacts.

Activity Alternatives

There are no activity alternatives.

8. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

The environmental impacts that may arise through the erection of a wind monitoring mast near Wesley in the Eastern Cape are associated with ecology and visual impacts. According to the Subtropical Thicket Ecosystem Project, the study site is categorised as 'Not Vulnerable' and according to the National Spatial Biodiversity Assessment the area is regarded as being 'Least Threatened'.

The **ecological impacts** will include those on the existing vegetation through the establishment of the construction footprint. However, the significance will be **low** as the site is historically heavily grazed and is not considered as sensitive or of having a high biodiversity or conservation value.

Avian impacts will be **low** and will only last during the short-term operational phase. Should it be deemed necessary, these impacts can be mitigated by installing bird diverters and by reducing the lighting to the absolute minimum (as required by the CAA).

There is the potential for **visual impacts** on sensitive viewers who perceive the mast in a negative light. The visual impact assessment suggests that the overall significance of the visual impact would be primarily **low** (along some sections of road) and **low** (at some residences and facilities within a 1km radius of the mast). The land use of the area is primarily subsistence agriculture and therefore the nature of the receptors is limited to scattered homesteads. The temporary nature of the wind monitoring mast and the high level of reversibility would mitigate the potential long-term visual impacts.

Therefore, due to the localised nature and short-term duration of the proposed project and the nature of the environment in which the site falls, the erection of the proposed wind monitoring mast is considered environmentally acceptable.

No-Go Alternative Impacts (Compulsory)

Should the wind monitoring mast not be constructed and operated on the proposed site, no reliable wind measurements would be recorded for use as direct on-site data. Without this data, the initiative to determine the viability of a site for the future development of a wind energy facility will be compromised. The benefits of developing a wind energy facility would not be realised and there would be no impacts on the environment.

9. **RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?



If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

It is the recommendation of the Environmental Assessment Practitioner that the proposed mast position and the potential impacts associated with the proposed mast are considered acceptable from an environmental perspective and can be mitigated to acceptable levels.

Construction and Decommissioning activities will be limited to a designated footprint; therefore the small patches of remaining, albeit overgrazed, vegetation are unlikely to be significantly impacted upon.

The potential for the mitigation of visual impacts of the wind monitoring mast is very low; however, the Significance Rating for said impacts throughout the project will be Low. The potential visual impacts can only be completely mitigated once the mast is removed after the utilisation/operation period which will last for up to 48 months.

Relevant Conditions to be adhered to:

The construction and operation of the wind monitoring mast should be implemented according to the following conditions in order to adequately mitigate and manage the identified low to moderate impacts.

Construction Phase:

The following mitigation and management measures should be implemented during the construction phase in order to minimise potential environmental impacts:

- » Construction activities should be limited to between 06:00 and 18:00; in terms of the requirements of the Environment Conservation Act.
- » Construction vehicles should use existing access roads only.
- » The construction area should be clearly defined and demarcated prior to erection of the mast.
- » Spoil material should be removed from the site for disposal.
- » Responsible construction practices should be adopted which aim to containing the construction activities to specifically demarcated areas thereby limiting the disturbance to the minimum should be adopted.
- » Soil must be exposed for the minimum time possible once cleared of vegetation to avoid prolonged exposure to wind and water erosion and to minimise dust generation.

Operational Phase:

The following mitigation and management measures should be implemented during the operation phase in order to minimise potential environmental impacts:

- » Access to the mast site must be limited to existing access roads.
- » Additional illumination by means of flood lights (apart from the aircraft warning light as prescribed by the CAA) is strongly inadvisable.

Decommissioning Phase:

The following mitigation and management measures should be implemented during the decommissioning phase in order to minimise potential environmental impacts:

- » Decommissioning activities should be limited to between 06:00 and 18:00 (in terms of the requirements of the Environment Conservation Act).
- » Vehicles should use existing access roads only.
- » The decommissioning area should be clearly defined and demarcated prior to erection to the mast.
- » Spoil material should be removed from the site for disposal.
- Responsible practices should be adopted which aim to contain the decommissioning activities to specifically demarcated areas thereby limiting potential disturbance.
- » Soil must be exposed for the minimum time possible to avoid prolonged exposure to wind and water erosion and to minimise dust generation.

SECTION F: APPENDICES

Appendix A: Site Plan

Appendix B: Photographic Record

Appendix C: Facility Illustration

Appendix D: Specialist Reports

The following specialist reports have been included and attached as Appendix D:

• Visual Impact Assessment

Appendix E: Record of Public Involvement Process

The following documentation has been included and attached as Appendix E:

- E1 Newspaper Advert
- E2 Site Notice
- E3 Stakeholder Letter
- E4 Reply Form
- E5 I&AP Database

Appendix F: Information in support of Applications for Exemption

Not Applicable

Appendix G: Other Information

Draft Environmental Management Plan