

JULY 2011

ENVIRONMENTAL BASIC ASSESSMENT PROCESS

PROPOSED

**KOINGNAAS WIND ENERGY FACILITY**

NORTHERN CAPE PROVINCE  
12/12/20/2154

BACKGROUND INFORMATION DOCUMENT  
A JUST PALM TREE POWER PROJECT



Just Palm Tree Power has identified a site near the town of Koingnaas within a De Beers mining area for the establishment of a commercial wind energy facility. The facility is proposed to accommodate up to 24 appropriately spaced turbines over an extent of approximately 160 hectares for the purpose of electricity generation under 10 MW. The facility is to be referred to as the Koingnaas Wind Energy Facility.

## AIM OF THIS BACKGROUND INFORMATION DOCUMENT

This document aims to provide you, as an interested and/or affected party (I&AP), with:

- » An overview of the proposed project.
- » An overview of the Basic Assessment Process and the relevant specialist studies being undertaken to assess the potential impacts associated with the project.
- » Details of how you can become involved in the EIA process, receive information, or raise issues, which may concern and/or interest you.

## OVERVIEW OF THE PROJECT

The identified site is regarded as favourable due to the wind resource, the disturbed nature of the site due to mining activities, and proximity to a suitable electricity connection point. A larger study area comprises the following farm portions:

- » Koingnaas 745;
- » Somnaas 474; and
- » Zwart Lintjes Rivier 484.

The facility is proposed to be established within an area of ~160ha in extent on the farm Koingnaas 745. The facility will utilise small turbines with a generating capacity of 300 kW (0.3 MW), each with a hub height of 32m and a rotor diameter of 32m (i.e. each blade up to 16 m in length). The facility would have a capacity of less than 10MW.

Other infrastructure associated with the wind energy facility is proposed to include:

- » Cabling between the turbines, to be laid underground where practical, which will connect to the existing on-site substation);
- » A short power line (of between 11kV and 66kV) to connect the facility to the Koingnaas Substation;
- » Existing roads will be used as far as possible. However, where required, internal access roads of approximately 6m wide will be constructed between the turbines and the on-site substation;

and

- » Workshop area for maintenance and storage purposes.

The project intends to make use of South African designed and built wind turbine generators, and provides an opportunity for South Africa to take a market share in the renewable industry. Just Palm Tree Power is a South African turbine manufacturing company.

The facility is proposed to take approximately 6 months to construct and commission, and will require a small workforce comprising low, semi skilled and highly skilled staff. The operational phase is estimated at approximately 20 years. Each turbine is designed to operate continuously and with low maintenance.

Site-specific studies and assessments are currently being undertaken through the Basic Assessment process in order to confirm the environmental feasibility of the proposed project and to delineate any areas of environmental sensitivity within the study area. The exact positioning or detailed layout of the components of this proposed wind energy facility will be developed by taking cognisance of the wind resource on the site as well as the environmental sensitivities and mitigation measures identified through the EIA process. A final layout of the turbines within the facility would be prepared prior to construction.

## WHY WIND ENERGY?

The need to expand electricity generation capacity in South Africa is based on national policy and informed by on-going strategic planning undertaken by the Department of Energy (DoE), the National Energy Regulator of South Africa (NERSA) and Eskom. In order to meet the long-term goal of a sustainable renewable energy industry, the South African Government has set a target of 10 000 GWh renewable energy contribution to final energy consumption by 2013. This is to be produced mainly from biomass, wind, solar and small-scale hydro. The proposed Koiingnaas Wind Energy Facility will assist government in meeting this goal.

Wind turbines use the energy from the wind to generate electricity. In essence, the blades of the turbine are turned by the wind and the energy captured is converted into electrical energy and supplied to the electricity grid for use in homes and elsewhere. Wind power is regarded as a non-consumptive use of a natural resource, which produces an insignificant quantity of greenhouse gases in its life cycle. Wind power consumes no fuel for continuing operation, and has no emissions directly related to electricity production.

A wind turbine typically consists of three rotor blades and a nacelle mounted at the tip of a tapered

tower (refer to Figure 1). The rotational power generated by the turbine blades is transmitted to the generator housed within the nacelle via a gearbox and drive train. This facility proposes to make use of turbines with a hub height of 32 m and a rotor diameter of 32m (i.e. each blade up to 16 m in length).

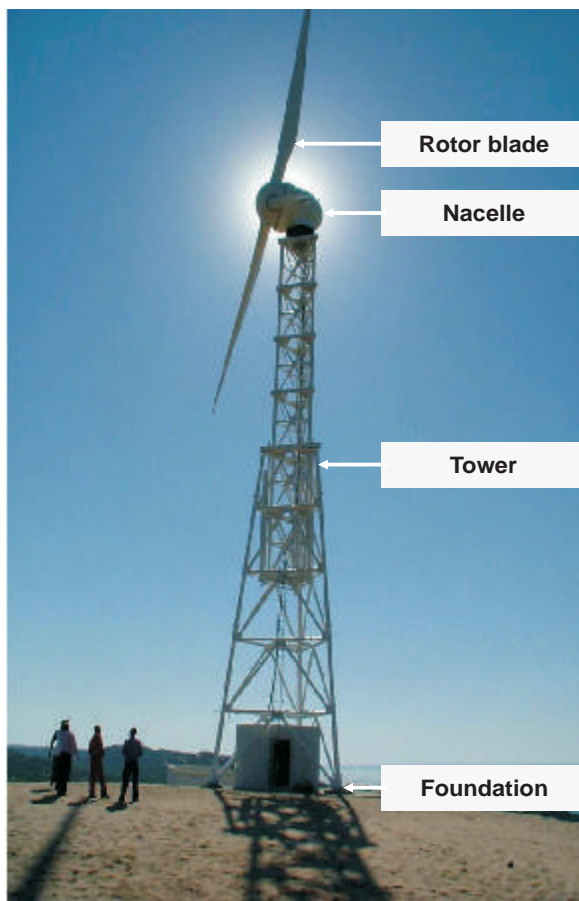


Figure 1: Illustration of the main components of a small wind turbine, as proposed for the Koingnaas site

## BASIC ASSESSMENT PROCESS

Just Palm Tree Power requires authorisation from National DEA (in consultation with the Northern Cape Department of Environmental Affairs and Nature Conservation (DENC) as a commenting authority) for the undertaking of the proposed project. In order to obtain authorisation for this project, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations.

In terms of the Environmental Impact Assessment Regulations published in Section 24(5) of the National Environmental Management Act (NEMA, No 107 of 1998), it is a legal requirement that environmental impacts be investigated and assessed for any activity which may have a potentially detrimental impact on the environment. The construction of a wind energy facility with a generating capacity of <20 MW is listed as such an activity. A development of >20ha may require a Scoping and EIA Process to be undertaken. However, due to the siting of this facility within a disturbed diamond mining area (i.e. land which is disturbed and/or transformed), activity 15 of Listing Notice 2 (GN R545) does not apply, and a Basic Assessment Process is applicable.

## POTENTIAL IMPACTS ASSOCIATED WITH THE ESTABLISHMENT OF A WIND ENERGY FACILITY

Although a wind energy facility utilises a renewable resource to generate electricity, the construction and operation of such a facility has the potential to impact on the environment both negatively and positively. The following impacts are typically associated with wind energy facilities:

- » Visual impacts - due to their height, wind turbines have the potential to visually impact on the surrounding area.
- » Noise impacts - the low frequency noise associated with the rotation of the blades as well as the noise associated with the generator may result in noise emissions which could affect sensitive receptors.
- » Impacts on avifauna – bird and bat species may be affected through collisions with the turbine blades, electrocution with the power line, and through habitat disturbance during the construction phase.
- » Impacts on ecology - the construction of the wind energy facility and the associated habitat disturbance and transformation may result in impacts on the biodiversity of the area. However, with the siting of the turbines in disturbed areas this impact is likely to be lessened.
- » Impacts on heritage sites - disturbance to or destruction of heritage sites may result during the construction of the wind energy facility. However, as the site has already been extensively disturbed it is unlikely that there are any remaining heritage sites.
- » Impacts associated with erosion potential - the construction of the wind energy facility may result in increased erosion potential on the site.
- » Impacts on the social environment - the construction and operation of the facility may result in limited job opportunities and the generation of additional capacity will have an indirect but positive impact through the generation of electricity by means of renewable technology.

Potential impacts will be assessed through the specialist studies which are required by EIA Regulations to be undertaken as part of the process. The specialist studies will assess potentially significant impacts associated with the proposed project, and recommend practical and achievable

mitigation measures in order to minimise the significance of the impacts. These recommendations will be included within a project-specific Environmental Management Programme (EMP). Specialist studies will consider a preliminary layout of the facility and will be informed by existing information, field observations and input from the public participation process.

## PUBLIC PARTICIPATION PROCESS

The sharing of information forms the basis of the public participation process and offers I&APs the opportunity to become actively involved from the outset. This aims to ensure that:

- » Information containing all relevant facts in respect of the application is made available to I&APs for review.
- » Participation by potential I&APs is facilitated in such a manner that I&APs are provided with a reasonable opportunity to comment on the application.
- » Adequate review periods are provided for I&APs to comment on the findings of the Draft Basic Assessment Report.

## YOUR RESPONSIBILITIES AS AN I&AP

In terms of the EIA Regulations, your attention is drawn to your responsibilities as an I&AP:

- » In order to participate, you must register yourself on the project database.
- » You must ensure that any comments regarding the proposed project are submitted within the stipulated timeframes.
- » You are required to disclose any direct business, financial, personal or other interest which that you may have in the approval or refusal of the application for the proposed project.

## HOW TO BECOME INVOLVED

- » By responding (by phone, fax, or e-mail) to our invitation for your participation which has been advertised.
- » By returning the attached reply form to the relevant contact person.
- » By attending the meetings to be held during the course of the project. As a registered I&AP you will automatically be invited to attend these meetings. Dates for public meetings will also be advertised in local and regional newspapers.
- » By contacting the consultants with queries or comments.

If you consider yourself an I&AP for this proposed project, we urge you to make use of the opportunities created by the public participation process to provide comment, or raise those issues and concerns which affect and/or interest you, and about which you would like more information.

## COMMENTS AND QUERIES

Direct all comments, queries or responses to:

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To view project documentation, visit

[www.savannahSA.com](http://www.savannahSA.com)



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# Koingnaas Wind Energy Facility

## Layout Map

### Legend

- Wind Turbine
- Secondary Road
- Perennial River
- - - Non-perennial River
- +— Power Line

