

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

BACKGROUND INFORMATION DOCUMENT

EXXARO WEST COAST WIND FARM

NORTH WEST OF VREDENDAL IN
THE WESTERN CAPE PROVINCE

JUNE 2010



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POWERING POSSIBILITY


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Exxaro Resources is proposing to establish a commercial wind energy facility and associated infrastructure of up to 100 MW on a site located in the Matzikama Local Municipal area. The proposed wind energy facility will be known as the **Exxaro West Coast Wind Farm** and is proposed to be constructed on land owned by Namakwa Sands, north-west of Vredendal in the Western Cape Province. The wind energy facility is proposed to accommodate up to **50 turbines**, spaced to make use of the wind resource on the sites. The area in which the wind turbines would be situated is an area of approximately 3817 hectares (ha). Associated infrastructure proposed includes a substation, access roads and a power line.

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 wind energy facility project.
- » an overview of the Environmental Impact Assessment (EIA) process and studies being undertaken to assess 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 PROPOSED EXXARO WEST COAST WIND FARM

Exxaro Resources has identified the property to the north of Namakwa Sands as an ideal location for a wind energy facility due to the favourable wind, land tenure and suitable existing infrastructure of the area, as well as initiatives taken by the Western Cape to pilot renewable energy. Exxaro therefore proposes the development known as the Exxaro West Coast Wind Farm. The study area for the establishment of the wind energy facility comprises of the following farm portions (refer to attached map):

- » Remaining portion of the farm Rietfontein 151
- » Rietfontein extension 151, portion 1
- » Rietfontein extension 151, portion 2
- » Hartebeeste Kom 156, portion 1
- » Graauw Duinen 152, portion 1

The above farm portions are owned by Exxaro, and lie immediately north of the Namakwa Sands Mine. The site is located in the Western Cape Province near Brandse-Baal (on the Atlantic sea board) that is situated approximately 75 km north-west of Vredendal.

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

- » **foundations** to support the turbine towers
- » underground **cables** between turbines
- » a **substation**
- » overhead **power lines** (132 kV distribution lines) feeding into the electricity distribution network/grid
- » an **access road** to the site from the main road/s within the area
- » **internal access roads** to each wind turbine

Site-specific studies and assessments are currently being undertaken through the EIA process in order to delineate areas of sensitivity within the broader area. Once environmental constraining factors have been determined through the EIA process, the layout of the wind turbines and associated infrastructure can be appropriately planned.

WHY WIND ENERGY?

Wind power is the conversion of wind energy into a useful form, such as electricity, using wind turbines. Wind energy is one of the fastest growing electricity generating technologies and features in energy plans worldwide. Use of wind for electricity generation is essentially a non-consumptive use of a natural resource, and 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.

MORE ABOUT WIND TURBINES

The kinetic energy of wind is used to turn a wind turbine to generate electricity. A wind turbine consists of **three rotor blades** and a **nacelle** mounted at the top of a tapered **tower**. The mechanical power generated by the rotation of the blades is transmitted to the generator within the nacelle via a gearbox and drive train.

Turbines are able to operate at varying speeds. Wind turbines can start generating at wind speeds of between 10 to 15 km/hour, with nominal wind speeds required for full power operation varying between ~45 and 60 km/hour.

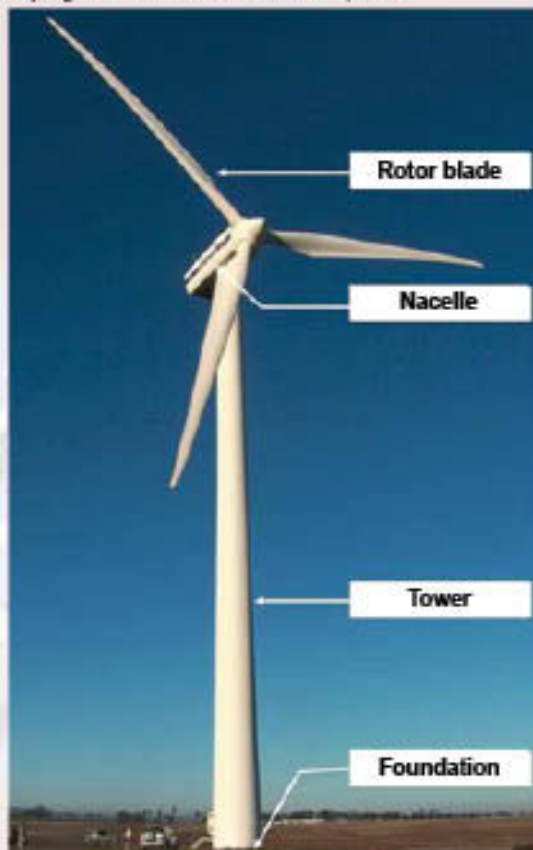


Figure 1: Illustration of the main components of a wind turbine

The amount of energy a turbine can harness depends on both the wind velocity and the length of the rotor blades. The turbines being considered for use at the proposed Exxaro West Coast Wind Farm will be up to 3 MW in capacity. The turbines will have a hub height of up to 80m, and a rotor diameter of up to 90m (i.e. each blade up to 44m in length).

A facility consisting of up to 50 turbines will take approximately 12 months to construct and commission, and will require a low skilled; semi skilled and skilled workforce. A turbine is designed to operate continuously, with low maintenance, and has a typical lifespan of about 20 years.

TYPICAL ACTIVITIES ASSOCIATED WITH THE OPERATIONAL PHASE OF THE WIND ENERGY FACILITY

Typical activities associated with the operational phase of the Wind Energy Facility

- » Maintenance of roads, storm water drainage and crane pads
- » Regular inspection and maintenance of transformers, substation and switchgear
- » Regular inspection and maintenance of collector and transmission systems
- » General maintenance of wind turbines, taking instructions from Wind Turbine Generator supplier

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of the EIA Regulations published in terms of 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 farm and associated infrastructure is listed as such an activity. Therefore, Exxaro Resources (the project proponent) requires authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) 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. This project has been registered with National DEA under Application Reference number **12/12/20/1932**.

An EIA is an effective planning and decision-making tool. It allows the environmental consequences resulting from a technical facility during its establishment and its operation to be identified and appropriately managed. It provides the opportunity for the developer to be fore-warned of potential environmental issues, and allows for resolution of the issue(s) reported on in the EIA report as well as dialogue with affected parties.

Exxaro Resources has appointed **Savannah Environmental**, as independent consultants, to undertake a Scoping and Environmental Impact Assessment to identify and assess all potential environmental impacts associated with the proposed project for the area as identified, and propose appropriate mitigation measures in an Environmental Management Plan (EMP). As part of these environmental studies, interested and affected parties (IB&Ps) will be actively involved through the public involvement process being undertaken by **Sustainable Futures**.

The phases of an EIA are:



POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH A WIND ENERGY FACILITY

Although a wind farm utilises a renewable resource to generate electricity, the construction and operation of the facility has the potential to impact on the environment both negatively and positively.

The following potential impacts are typically associated with wind energy developments:

- » **Visual impacts:** due to their size, wind turbines have the potential to have a visual impact on the surrounding area.
- » **Noise impacts:** the rotation of the blades may result in noise emissions which could impact on nearby residents.
- » **Impacts on avifauna:** birds and bats may be impacted through collision with the blades during operation of the wind energy facility.
- » **Impacts on ecology, fauna and flora:** the construction of the wind energy facility and the associated habitat disturbance and transformation may result in impacts on biodiversity.
- » **Impacts on heritage sites:** disturbance to or destruction of heritage sites may result during the construction of the wind energy facility.
- » **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 could impact on local land use; the generation of electricity will have a positive impact.

These potential impacts will be assessed through the specialist studies which will be undertaken as part of the EIA process. The specialist studies will assess potentially significant impacts 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 EMP. Specialist studies will be informed by existing information, field observations and input from the public participation process. As an I&AP, your input is considered an important part of this process, and we urge you to become involved.

PUBLIC INVOLVEMENT PROCESS

The sharing of information forms the basis of the public involvement process and offers you the opportunity to become actively involved in the EIA from the outset. Comments and inputs from I&APs during the EIA process are encouraged in order to ensure that potential impacts are considered within the ambit of the study.

The public involvement process 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 Scoping and EIA reports.

In order to ensure effective participation, the public involvement process includes the following phases:



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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 in this EIA process, 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 that you may have in the approval or refusal of the application for the proposed project.

HOW TO BECOME INVOLVED

1. By responding (by phone, fax or e-mail) to our invitation for your involvement which has been advertised in local and national newspapers.
2. By returning the attached Reply Form to the relevant contact person.
3. 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.

4. By contacting the consultants with queries or comments.
5. By reviewing and commenting on the draft Scoping and EIA Reports within the stipulated 30-day review periods.

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

By completing and submitting the accompanying Reply Form, you automatically register yourself as an I&AP for this project, and are ensured that your comments, concerns or queries raised regarding the project will be noted.

COMMENTS & QUERIES

Direct all comments, queries or responses to:

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Contact: Shawn Johnston
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To view project documentation, visit

www.savannahSA.com/projects

