



**CONSTRUCTION OF THE PROPOSED  
TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY  
EASTERN CAPE PROVINCE**

**BACKGROUND INFORMATION DOCUMENT**



Exxaro Resources and Watt Energy (Pty) Ltd are proposing to establish a commercial wind energy facility and associated infrastructure on a site located within the Kouga Local Municipality in the Eastern Cape Province. The proposed site is situated approximately 30 km west of Humansdorp, south of the N2 National Road in the Tsitsikamma area. Based on an extensive pre-feasibility analysis and site identification process undertaken, as well as an analysis of the wind resource in the area, a favourable area has been identified for consideration and assessment as per the requirements of an Environmental Impact Assessment (EIA). Wind turbines with a capacity of up to 100 MW, collectively referred to as a wind energy facility, are planned to be constructed over an area of approximately 54 km<sup>2</sup> in extent. The use of wind for power generation is considered as a non-consumptive use of a natural resource which produces zero greenhouse gas emissions. The nature and extent of this proposed facility and associated infrastructure is explored in more detail in this Background Information Document (BID).

## AIM OF THIS BACKGROUND INFORMATION DOCUMENT

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

- » An overview of the proposed Tsitsikamma Community Wind Energy Facility.
- » An overview of the Environmental Impact Assessment process and studies being undertaken to assess the potential impacts, both positive and negative, of the proposed project.
- » Details of how you can become involved in the process, receive information, or raise issues, which may concern and/or interest you.

## OVERVIEW OF THE PROPOSED PROJECT

The site being considered for the proposed wind energy facility covers an area of approximately 54 km which has primarily been used for agricultural activities. This site is proposed to accommodate wind turbines with a generating capacity of up to 100 MW as well as the associated infrastructure which is required for such a facility (i.e. substation, access roads and distribution power line linking to Eskom's existing Melkhout substation).

The Wind Energy Facility is proposed on the following farms: Portions 19 and 22 of Zalverige Valley 660, Portions 3 and 5 of Vergaaderingskraal 675, Portion 1 of Ou Driefontein 721, Portion 2 of New Driefontein 720, Portions 3 - 9 of Wittekleibosch 787, Farm 818, Remainder of Farm 678 and Portion 3 of Kliprug 676.

Through a technical feasibility study which considered wind resource, access to the electricity grid, accessibility of the site and local site topography, a potential site for the development of a wind energy facility and associated infrastructure was identified by Exxaro Resources and Watt Energy.

Since the performance of the turbines is determined by disturbances to the wind resource, they must be appropriately spaced within the facility. The overall aim of the design and layout of the facility is to maximise electricity production through exposure to the wind resource, while minimising infrastructure, operation and maintenance costs, and social and environmental impacts. The location of the turbines will be informed by on-site wind monitoring and the outcomes of the EIA process.

Infrastructure associated with the facility will include:

- » Wind Turbines with a total generating capacity of ~100 MW
- » Foundations to support the turbine towers
- » Underground cables between turbines
- » A substation within the development site
- » An overhead power line (i.e. 132 kV distribution line) which will link to the existing Eskom Melkhout Substation ~ 25 km northeast of the proposed site
- » Internal access roads to each wind turbine.
- » Workshop/administration building

## WIND TURBINES

Wind energy facilities consist of multiple wind turbines which are used to capture the kinetic energy of the wind. This kinetic energy is then used to drive a generator located within the wind turbine and the energy is subsequently converted into electrical energy. A typical wind turbine consists of four primary components:

- » The foundation unit upon which the turbine is anchored to the ground;
- » The tower which is typically between 80m – 100m in height;
- » The nacelle (generator/turbine housing); and
- » The rotor which is typically comprised of three rotor blades (up to 50 m in length).

The mechanical power generated by the rotation of the blades is transmitted to the generator within the nacelle via a gearbox and a drive train. The wind turns the blades, which in turn spin a shaft which connects to a generator and generates electrical power. The amount of energy a turbine can harness is dependent on the wind velocity and the length of the rotor blades. Wind turbines start generating power at wind speeds of between 10-15 km/hour, with speeds between 45-60 km/hour required for full power operation. In a situation where wind speeds are excessive, the turbine automatically shuts down to prevent damage.

Exxaro Resources and Watt Energy are considering various site layouts in order to maximise the generating capacity and minimise the potential environmental impacts of the proposed development. Decisions regarding the final design of the facility will be made following further analyses of the on-site wind resource and environmental sensitivities.

A facility consisting of up to 100 MW worth of wind turbines will typically take approximately 2 years to construct and commission, and requires the expertise of skilled staff. A turbine is designed to operate continuously, with low maintenance for more than 20 years.

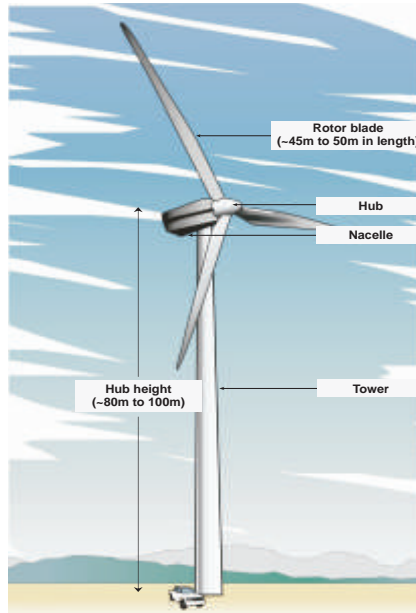


Figure 1: Illustration of a wind turbine

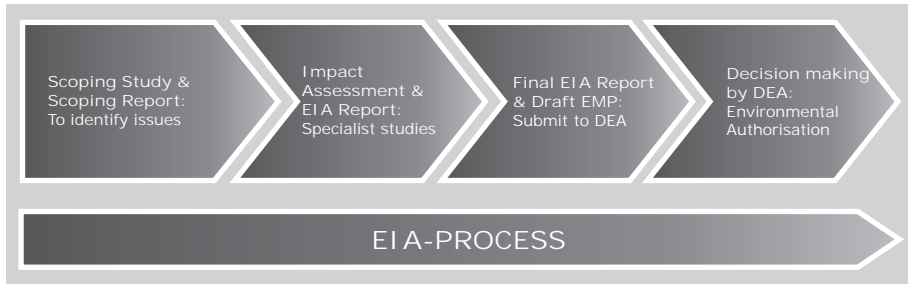
## ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

In terms of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA, Act No. 107 of 1998), Exxaro Resources and Watt Energy require authorisation from the National Department of Environmental Affairs (DEA) (in consultation with the Eastern Cape Department of Economic Affairs, Environment and Tourism) for the undertaking of the proposed Wind Energy Facility. In terms of sections 24 and 24D of NEMA, as read with the EIA Regulations of GN R543 (Regulations 26-35) and R545, a Scoping Study and EIA are required to be undertaken for this proposed project. In order to obtain authorisation, comprehensive, independent environmental studies must be undertaken in accordance with the EIA Regulations. This project has been registered with the National DEA under application reference number 12/12/20/2209.

An EIA is an effective planning and decision-making tool. It allows the potential 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 forewarned of potential environmental issues such that these can be considered in the facility design, and allows for resolution of the issue(s) reported on in the EIA report as well as dialogue with I&APs.

Exxaro Resources and Watt Energy have appointed Savannah Environmental, as the independent environmental consultant, to undertake the required Scoping Study and Environmental Impact Assessment to identify and assess all the potential environmental impacts associated with the proposed project, and propose appropriate mitigation and management measures in an Environmental Management Programme (EMP). As part of these environmental studies, I&APs will be actively involved through the public involvement process being undertaken by

The phases of an EIA are:



## WHAT ARE THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED PROJECT?

A number of potential environmental impacts, both positive and negative, associated with the proposed Wind Energy Facility have been identified. These potential impacts will be assessed through the following specialist studies:

- » Visual quality and aesthetics: 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 disturbance of vegetation may result in impacts on ecology.
- » 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.
- » Impacts on heritage sites and fossils/palaeontology: disturbance to or destruction of heritage sites and fossils/palaeontology may result during the construction of the wind energy facility.
- » Impacts associated with geology: relating to underlying soil conditions and erosion potential.
- » Impacts on agricultural potential: Impacts on agricultural areas and potential, and land capability.

These specialist studies will be undertaken in two phases:

1. The Scoping Phase/Study consists of a desktop study wherein potential issues associated with the proposed project are identified and evaluated, and those issues requiring further investigation through the EIA phase are highlighted.
2. The EIA phase involves the detailed assessment of potentially significant impacts identified in

the Scoping Phase. Practical and achievable mitigation and management measures will be recommended within the draft Environmental Management Plan (EMP).

Specialist studies will be guided 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.

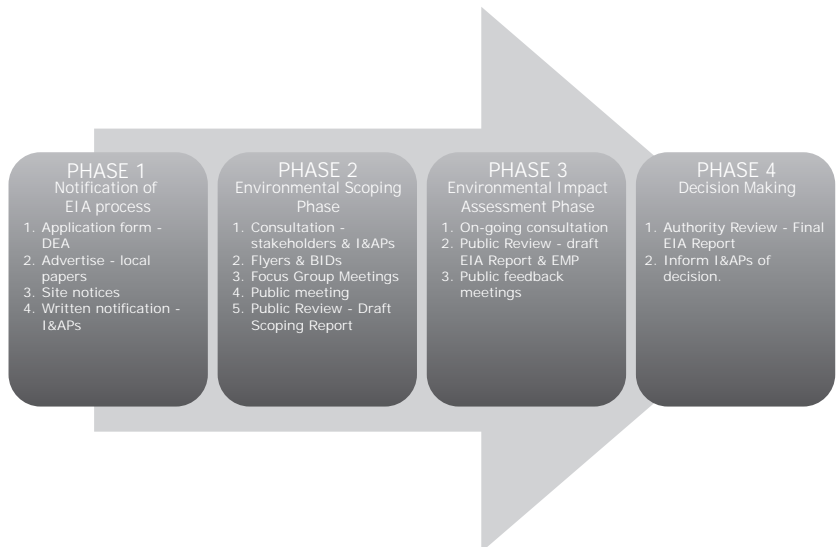
## PUBLIC INVOLVEMENT PROCESS

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 that contains all the relevant facts in respect of the application is made available to I&APs for review.
- » I&AP participation is facilitated in such a manner that they are provided with a reasonable opportunity to comment on the proposed project.
- » 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 4 phases:



## 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 which that you may have in the approval or refusal of the application for the proposed wind energy facility.

## 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 AND QUERIES

Direct all comments, queries or responses to:

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PO Box 749, Rondebosch, CAPE TOWN, 7701  
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To view project documentation, visit  
[www.savannahSA.com](http://www.savannahSA.com)

# Tsitsikama Wind Energy Facility

## Locality Map

### Legend

- National Road
- Regional Road
- Secondary Road
- Railway Line
- Perennial River
- Non-perennial River
- Power Line
- Distribution Substation
- Farm Portions

