



Background Information Document and Invitation to Comment

Proposed Development of Roggeveld Wind Farm

Aim of this Document

The aim of this Background Information Document is to provide stakeholders with information about the development of a wind energy facility including wind turbines and associated infrastructure and the associated Environmental Impact Assessment (EIA).

You are invited to raise issues and concerns that you have about the project. Potential positive and negative environmental and social impacts will be investigated during the EIA.

A Scoping Report and Environmental Impact Report (EIR), along with your comments, will be compiled during this process and submitted to the Department of Environmental Affairs (DEA) who will decide

whether or not to authorise the wind farm development.

Please direct your comments to Claire Alborough of Environmental Resources Management (ERM).
Tel: 021 702 9100
Fax: 021 701 7900
Email: claire.alborough@erm.com
Postal address: Postnet Suite 90, Private Bag X12, Tokai, 7966

Please register as an interested and affected party (I&AP) or provide your comments by 20 August 2010

Please clearly state the following DEA Reference Number on all correspondence: 12/12/ 20/1988.

Background Information

G7 Renewable Energies (Pty) (G7) proposes to establish a wind energy facility between Matjiesfontein and Sutherland in the Western and Northern Cape. The site is located on the R354, approximately 40 km south of Sutherland and approximately 20 km north of Matjiesfontein. The approximate site boundary is shown on Figure 1. The facility will generate up to 750 MW of electricity which will be fed into the National Power Grid.

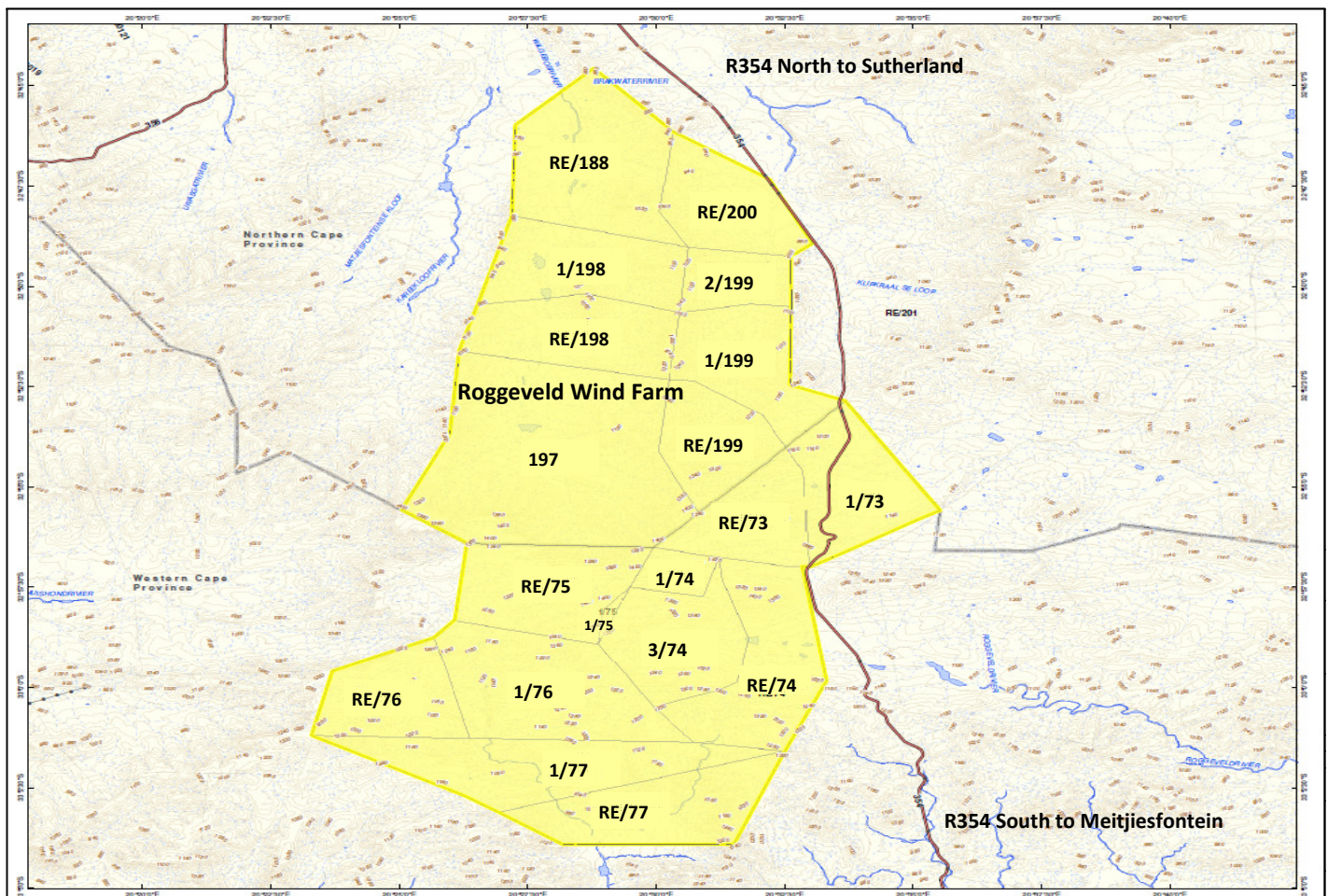
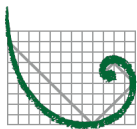


Figure 1. Site Locality Map: Roggeveld Wind Farm



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Project Description

The key components of the proposed wind farm are outlined below.

Wind Turbines

- There will be up to 250 wind turbines on the site. Each turbine will have an individual capacity of up to 3 MW.
- The turbines will be approximately 80 m high (to the turbine hub), with a blade diameter of approximately 90–100 m.
- Each turbine will have a concrete foundation at its base. The foundation will be approximately 5 m x 5 m.
- There will be a gravel hard standing area adjacent to each turbine (approximately 2500 m²) that will be used during construction and maintenance activities.
- Each turbine will be accompanied by an electrical transformer.

Access Roads

- The site will be accessed via the R354.
- Existing farm tracks will be up-graded and new gravel roads may be constructed within the site to facilitate movement of construction and maintenance vehicles.
- Site access roads will be up to 6 m wide with drainage trenches adjacent to the road.
- Some existing public roads may need to be upgraded to facilitate the transport of the turbines and other construction materials to the site.

Additional Infrastructure

- An office and storage building with security and ablution facilities will be constructed on the site.
- A permanent wind measuring mast of up to 80 m will be erected to monitor wind conditions.
- Site fencing will be erected as required.



Figure 2. A Typical Wind Turbine

Electrical Connections

- The turbines will be connected to each other via medium voltage electrical cables which will be buried under the ground.
- A new substation will be built on the site. This substation will connect the facility to the National Power Grid Network via existing transmission lines.

Useful Terminology

Hub: The centre of the wind turbine rotor, which holds the blades in place and attaches the blades to the shaft. **Hub Height** is The distance from the ground to the centre of the hub.

Nacelle: A protective cover over the generator or motor.

Blade: The part of the turbine that is moved by the wind. There are three blades on a typical wind turbine.

Rotor: The rotor is the site of the mechanical link between the blades and the low-speed shaft in the hub. The **Rotor Diameter** is the distance from the rotor to the blade tip, i.e. the air space that the blade sweeps through.

Tip Height: The distance from the ground to the end of the blade when the blade is pointing directly up. This is the highest point of the turbine.

Wind Measuring Mast: A mast that is installed to monitor wind speed and direction.



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Construction

A number of **temporary** activities will take place during construction of the wind farm. These will include:

- A temporary laydown area of up to 150 m x 20 m (hard standing) will be constructed for the storage of construction vehicles and materials.
- A temporary site compound will be created for the construction workforce.
- It is possible that borrow pits will be developed within the site (for production of construction aggregate). These will be backfilled as far as possible once construction is complete.

The final location, size and type of each wind turbine will be determined using information gathered from wind measuring masts, as well as the environmental and social considerations that will be determined during the EIA process.

Prior to the installation of the wind turbines, the site will be prepared as required, this would include construction of on-site access roads and laying of turbine foundations. In total, the entire construction period (including site preparation and turbine erection) would take approximately 24 months.

After the completion of the internal electrical connections between the turbines, turbine function testing will take place to verify the correct operation of the facility.



Figure 4. Wind Turbine Rotor and Blades during Assembly



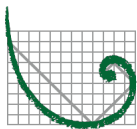
Figure 3. Wind Turbine Construction

Operation

Once construction of the facility is complete and it becomes operational it is expected that the wind farm will have a minimum life span of up to 25 years. Regular maintenance will be required to ensure that the turbines are kept in optimal working order. Most day to day facility operations will be done remotely through the use of computer networks. During operation the wind farm can function in parallel with daily farming activities due to the relatively small footprint of the turbines, hard-standing areas and access roads.

Decommissioning

Once the facility has reached the end of its life span the turbines may be refurbished and continue operating as a power generating facility, or the facility can be closed and decommissioned. If decommissioned, all the components of the wind farm would be removed and the site would be rehabilitated.



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Background Information Document and Invitation to Comment

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Environmental Impact Assessment (EIA) Process

Under the National Environmental Management Act (NEMA) (Act No. 107 of 1998) an EIA is required to be undertaken for the development of the wind energy facility. ERM is the independent practitioner that is completing the Scoping Report and EIA Report (EIR) for the project.

The Scoping Report will be made available for public comment and will include a Plan of Study for the EIA. The EIA will assess the likely positive and negative impacts of the project. It will include a draft Environmental Management Plan (EMP) which will describe the plans to be put in place to manage these impacts. The EIR and EMP will also be made available for public comment before it is submitted to the DEA for decision making.

The key listed activities involved in the project (listed in the EIA Regulations (Government Notice R387)) include the following:

Activity 1(a) - “the generation of electricity where (i) the electricity output is 20 megawatts or more; or (ii) the elements of the facility cover a combined area in excess of 1 hectare.”

Activity 1(l) - “the transmission and distribution on of above ground electricity with a capacity of 120 kilovolts or more.”

Activity 2 - “any development activity, including associated structures and infrastructure, where the total area of the developed area is, or is intended to be, 20 hectares or more.”

In addition, the following activities listed in Government Notice R386 may also be triggered by the proposed project:

Activity 1(l) - “Transmission and distribution of electricity above ground with a capacity of more than 33 kilovolts and less than 120 kilovolts.”

Activity 1(m) - “The construction of facilities or infrastructure, including associated structures or infrastructure, for – (m) any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including— (i) canals; (ii) channels; (iii) bridges; (iv) dams; and (v) weirs.”

Activity 7 - “The above ground storage of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres but less than 1,000 cubic metres at any one location or site.”

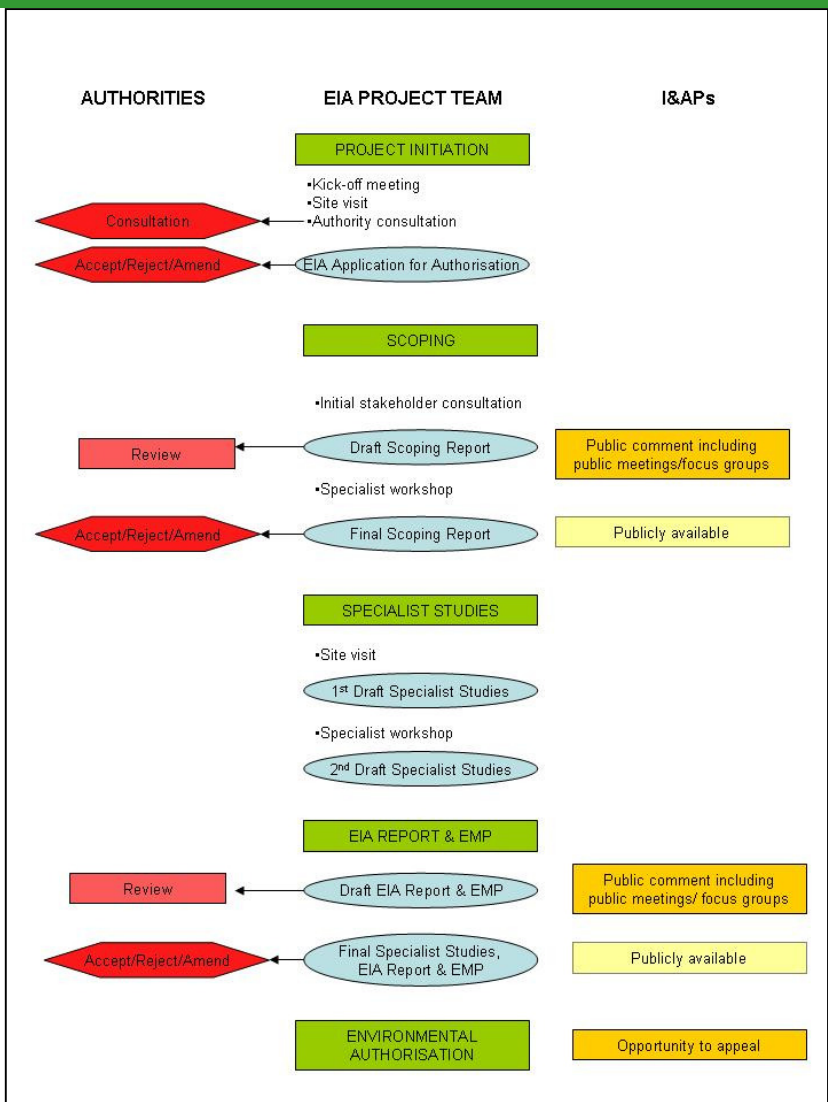
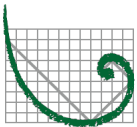


Figure 5. The EIA Process

Activity 14 - “Construction of masts of above 15 metres high.”

Activity 15 - “Road construction if wider than 4 metres or with reserve wider than 6 metres unless within ambit of another listed activity or which are access roads of less than 30 metres long.”



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How Can You Be Involved?

The Scoping Report will be made available for public comment and will include a Plan of Study for the EIA. The EIA will assess the likely positive and negative impacts of the project. It will include a draft Environmental Management Plan which will describe the plans to be put in place to manage these impacts. The EIA Report (EIR) and EMP will also be made available for public comment before it is submitted to the DEA for decision making.

Your participation and contribution is a key part of the EIA process and it is important that ERM receives your comments. If you register as a stakeholder you will be kept informed throughout the process which will allow you to comment on the Draft Scoping and EIA Reports.

Please post or fax this comment sheet to the address below by 20 August 2010 so that we can take your comments into consideration in the EIA.

Please clearly state the following DEA Reference number on all correspondence: 12/12/20/1988

| | |
|-----------------------------|---------------|
| Please fill in your details | |
| Name: | Organisation: |
| Telephone: | Position: |
| Cell phone: | Email: |
| Address: | |

Please send this form to the following address:

Claire Alborough
 Environmental Resources Management
 Tel: 021 702 9100
 Fax: 021 701 7900
 Email: claire.alborough@erm.com
 Postal address: Postnet Suite 90, Private Bag X12, Tokai
 7966

It would be useful if you could answer the questions below but please feel free to provide any comments you would like to raise. Please continue on additional paper if required.

1. What are the primary concerns faced by you/ your community/ your organisation with regards to the proposed wind energy project?

2. Are you in favour of or against the proposed activity? Please provide a reason for your answer.

3. Do you have or know of any information that might be relevant to the EIA (e.g. environmental information and community, social or economic information)?

4. Do you know of any other individual or organisation that you feel would want to register as a stakeholder and receive information. Please provide names and contact information below.

Thank you for your participation