



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Application for amendment of an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations 2010

Kindly note that:

1. This form must be used to apply for the amendment of an environmental authorisation. An amendment includes:
 - a) adding, substituting, removing or changing a condition or requirement of an environmental authorisation, or
 - b) or updating or changing any details or correcting a technical error.

*Please note that amendment **does not** include expansion (according to the EIA Regulations “expansion” means “the modification, extension or alteration of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased”).*

2. This form is current as of 16 July 2012. It is the responsibility of the Applicant / EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. The required information must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. It is in the form of a table that can extend itself as each space is filled with typing.
4. Incomplete applications may be rejected or returned to the applicant for amendment.
5. The use of “not applicable” in the form must be done with circumspection. Where it is used in respect of material information that is required by the competent authority for assessing the application, this may result in the rejection of the application as provided for in the regulations.
6. **No faxed or e-mailed applications will be accepted.**
7. Unless protected by law, all information contained in and attached to this application, will become public information on receipt by the competent authority. Upon request during any stage of the application process, the applicant / EAP must provide any registered interested and affected party with the information contained in and attached to this application.
8. This form must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Should the application form and attached reports not be submitted to the addresses given below it will be rejected.

DEPARTMENTAL DETAILS

Postal address:

Department of Environmental Affairs
Attention: Director: Integrated Environmental Authorisations
4th floor ST
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Director: Integrated Environmental Authorisations
4th floor ST
Fedsure Forum Building (corner of Pretorius and Van der Walt Streets)
2nd Floor North Tower
315 Pretorius Street
Pretoria
0002

Queries must be directed to the Directorate: Integrated Environmental Authorisations at:
Tel: (012) 310-3167 Fax (012) 320-7539

Please note that this form must be copied to the relevant provincial environmental department(s)
View the Department's website at <http://www.environment.gov.za/> for the latest version of the documents.

Application for Amendment of Environmental Authorisation

1. Application Details

Name of person to whom the environmental authorisation was issued:	Deirdre Herbst Environmental Manager Sustainability Division Eskom		
Contact person:	Deirdre Herbst		
Postal address:	PO Box 1091		
	Johannesburg		
	Postal code: 2000		
Telephone:	+27 11 800 2303	Cell:	
E-mail:	HerbstDL@eskom.co.za	Fax:	011 800 5140
Environmental Assessment Practitioner (EAP):	Dr Shael Harris		
Contact person:	Dr Shael Harris		
Postal address:	PO Box 2437		
	Halfway House		
	Postal code: 1685		
Telephone:	010 060 0355	Cell:	082 8214261
E-mail:	shaelharris@sebatainstitute.com	Fax:	086 293 5676
EAP Qualifications:	MSc, PhD		
EAP Registrations/Associations:	SACNASP 400056/99 (Environmental Science and Marine Science)		
Name of landowner if the person to whom the environmental authorisation has been issued is not the owner:	Eskom Holdings SOC Limited		
Contact person:	Erna Struwig		
Postal address:	P.O.Box 1091		
	Johannesburg		
	Postal code: 2000		
Telephone:	028 381 9068	Cell:	083 650 4537
E-mail:	erna.struwig@eskom.co.za	Fax:	0866676641
	In instances where there is more than one landowner, please attach a list of landowners with their contact details to the back of this page, together with copies of the notices given to these landowners about the amendment application.		

Application for Amendment of Environmental Authorisation

<p>Project Description:</p>	<p>The project is located in the Western Cape Province falling within the Matzikama Local Municipality and the District Management Area WCMA01 within the West Coast District Municipality (WCDM). The overarching objective for the wind energy facility is to maximise electricity production through exposure to the wind resource, while minimising infrastructure, operational and maintenance costs, as well as social and environmental impacts.</p> <p>The wind energy facility proposes to produce up to 100 MW of electricity (an energy output of approximately 2 MW per turbine). The site is 3700ha in extent of which 70ha will be impacted upon by the proposed wind energy facility. Eskom Holdings Ltd obtained authorisation for this wind project (EIA Ref No. 12/12/20/913) on 24 April 2008 (Annexure 1), and an extension to the EA 15/06/2010 (Annexure 2). This Environmental Authorisation included the following project infrastructure:</p> <ul style="list-style-type: none">• 100 turbine units (80m in height) with a 90m diameter rotor (consisting of 3x45 m blades);• A concrete foundation (15mx15m) to support each turbine tower;• Underground electrical cabling between each turbine and substation;• A substation (80mx80m) to receive generated power via underground distribution cabling from each wind turbine;• 132kV overhead power line from the wind farm substation to the electricity grid at the Juno transmission substation;• An access road to the site from the main R363 road at Koekenaap;• Internal access roads providing access to each wind turbine site (with a permanent travel surface of approximately 6m in width).• An office/workshop building and visitors centre at the facility entrance (400m²). <p>Two amended authorisations, for project description, have been obtained, on the 29 October 2010 and the 29 August 2011, permitting the facility to make use of towers of up to 120 metres and 67 turbines, instead of 100 turbines (Annexures 3 and 4, respectively) to optimise the wind energy capture for the project. Further advancement in wind technology has since occurred and this forms the basis of this application.</p> <p>The Sere Wind Facility design has been further updated as new and improved wind energy technology from the wind industry and turbine suppliers has become commercially available. The proposed changes to the project are as follows:</p> <ul style="list-style-type: none">• Reduce the number of turbines from 67 to approximately 50 wind turbine units (each not more than 120m in height)• Increase the rotor diameter from 90m (3 x 45m blades) to 106m diameter rotor (3 x 53m blades); and• Increase the dimensions of turbine concrete foundations from 15m x 15m to 20m x 20m
-----------------------------	--

Application for Amendment of Environmental Authorisation

Farm name, Erf No., portion etc:	<ul style="list-style-type: none"> • Portion 5 of the farm Gravewaterkop 158 (known as Skaapvlei) • A portion of Portion 620 of the farm Olifants River Settlement (known as Skilpadvlei) • A portion of Portion 617 of the farm Olifants River Settlement (known as Nooitgedag)
Physical address where authorised activity is taking or will take place:	Lot 1852 Olifants Rivier Settlement, Matzikama Municipality, Vanrynsdorp registration division
Magisterial District or Town:	Matzikama Local Municipality and West Coast District Municipality
Departmental reference number of the previous environmental authorisation in respect of which an amendment is applied for:	12/12/20/913
Date of issue of environmental authorisation:	24/04/2008 (Annexure 1) Extension to EA 15/06/2010 (Annexure 2)

Application for Amendment of Environmental Authorisation

<p>Activity/ies for which authorisation was granted:</p>	<p><u>Environmental Authorisation 24/04/2008</u> The proposed project will include the following:</p> <ul style="list-style-type: none"> • 100 wind turbine units (80m in height) with a 90m diameter rotor (consisting of 3 x 45m blades); • A concrete foundation (15m x 15m) to support each tower; • Underground electrical cabling between each turbine and substation; • A substation (80m x 80m) receive generated power via underground distribution cabling from each wind turbine; • 132kV overhead powerline from the wind farm substation to the electricity grid at the Juno transmission substation; • An access road to the site from the main R363 road at Koekenaap; • Internal access road roads providing access to each wind turbine site (with a permanent travel surface of approximately 6m in width); • A workshop/office building and visitors centre at the facility entrance (400m²). <p>The site is 3700ha in extent of which 70ha will be impacted upon by the proposed development of the wind energy facility and associated infrastructure.</p> <p><u>Amendment to EA 29/10/2010</u> The project description, bullet 1 on pg 4 of the EA described as</p> <ul style="list-style-type: none"> • <i>“100 wind turbine units (80m in height) with a 90m diameter rotor (consisting of 3 x 45m blades);</i> <p>Must be substituted with</p> <ul style="list-style-type: none"> • <i>100 wind turbine units (120m in height) with a 90m diameter rotor (consisting of 3 x 45m blades)</i> <p><u>Amendment to EA 29/08/2011</u> The project description, bullet 1 and 8 on pg 4 of the EA described as</p> <ul style="list-style-type: none"> • <i>“100 wind turbine units (120m in height) with a 90m diameter rotor (consisting of 3 x 45m blades); and</i> • <i>A workshop/office building and visitors centre at the facility entrance (400m²).</i> <p>Must be substituted with</p> <ul style="list-style-type: none"> • <i>100 wind turbine units (120m in height) with a 90m diameter rotor (consisting of 3 x 45m blades);</i> • <i>A workshop/office building and visitors centre of approximately 8 000m².</i>
<p>Please Note: A certified copy of the environmental authorisation must be attached to this application. Annexure 1, 3 & 4</p>	

2. DETAILS OF IMPLEMENTATION OF PREVIOUS ENVIRONMENTAL AUTHORISATION

Was the activity commenced with during the validity period of the environmental authorisation? If yes, please describe the implementation of the previous environmental authorisation to date:	YES	NO X
Site establishment activities for the site offices are taking place. The Department was notified thereof on the 17 th of August 2012.		

3. AMENDMENTS APPLIED FOR AND RELATED INFORMATION

Please indicate which of the following is relevant:

3.1. The holder of an environmental authorisation may at any time apply to the relevant competent authority for the amendment of the authorisation if:

(a) there is a material change in the circumstances which existed at the time of the granting of the environmental authorisation;	YES	NO X
(b) there has been a change of ownership in the property and transfer of rights and obligations must be provided for; or	YES	NO X
(c) any detail contained in the environmental authorisation must be amended, added, substituted, corrected, removed or updated.	YES X	NO

3.2. Describe the amendments that are being applied for:

- From 67 to approximately 50 wind turbine units (each not more than 120m in height)
- From 90m (3 x 45m blades) to 106m diameter rotor (3 x 53m blades); and
- Turbine concrete foundation from 15m x 15m to 20m x 20m

3.3. Please provide the reasons and/or a motivation for the application for amendment:

Purpose of amendment

Following four years of project planning the Sere Wind Facility project details have been amended and updated as new and improved wind energy technology from the wind industry and turbine suppliers becomes available. This is to optimise the wind energy capture of the turbines based on the local wind conditions at the proposed site and to finalise the site development plan prior to construction commencing.

The overall aim of the design changes is to maximise electricity production through exposure to the wind resource, while minimising infrastructure, operation and maintenance costs, and social and environmental impacts.

Turbine design and energy efficiency

The benefits of longer blades on the turbine units will increase the energy capture of each turbine, therefore increasing electricity generation with a reduced number of turbines. The first amendment to the EA (29/10/10) was done in response to 18 months of a wind resource assessment (WRA) specific to the Sere wind facility site, resulting in Eskom increasing the turbine height from 80 m to not more than 120 m to improve the net capacity factor and electricity production by 16%.

With the current requested amendment to the EA, the change in turbine blade length from 45 m to 53 m will increase the diameter of the rotor from 90 m to 106m, increasing the expected energy production of the facility by an additional 21.91%.

Building Footprint

The reduced number of turbines from 67 to approx. 50 will require the site layout to be revised and will include the repositioning of the wind turbine generators on site. Site layout optimisation will indicate the best possible positions for the turbines, substation and other infrastructure from a technical perspective based on the wind resource in the area. A detailed site layout will be submitted to DEA prior to construction of this activity as per Condition 1.4 of the Environmental Authorisation 24/04/2008 (**Annexure 1**).

The project description included in the Environmental Authorisation (24/4/08), states that an area of 70ha of the total 3700ha will be impacted by the proposed wind energy facility and associated infrastructure. The 2008 EIA¹ describes the effective utilized area required to accommodate the infrastructure was 16km². This area took into account 100 turbine units with the affected area primarily including the turbines, substation and associated access roads. There are both permanent and temporary affected areas.

Permanently affected footprint

The permanently affected area of the project would be less under the current proposed amendment than the affected area under the EA as amended in August 2011. In terms of the previous amendment, the infrastructure footprint (29/08/11) represented a permanently affected area of 181900 m² (0.5% of the total site), comprised of 67 turbine footprints (67 foundation size 15 m x 15 m), access roads (6 m in width), a substation footprint (80 m x 80 m) and a visitors centre (8 000 m²). The concrete foundation size is 15 m x 15 m but the footprint size per turbine is 20 m x 20 m i.e. 400m² each, of area permanently disturbed at each turbine position (EIA Report, 2008). This area of permanent disturbance for 67 turbines is shown as follows:

¹ EIAR (2008). Proposed Wind Energy Facility & Associated Infrastructure, Western Cape. DEAT Ref no 12/12/20/913.

Application for Amendment of Environmental Authorisation

Facility component - permanent	Approximate area/extent (m ²)
67 turbine footprints	26 800
Permanent access roads (excluding Skaapvlei road which is an existing permanent feature bisecting the site) and power line footprints (parallel to permanent access road)	140 700
Substation footprint (80m x 80m)	6 400
Visitors centre building and parking areas	8 000
TOTAL	181 900 (of a total area of 37 001 985) = 0.5% of the site

The total permanently affected area represented by the current proposed amendment, with the change to approximately 50 turbines with 53m blades and concrete foundations 20 m x 20 m size but the footprint size per turbine is 25 m x 25 m i.e. 625m² each, is approximately 150 650 m² (0.4% of the site), as shown below.

The reduction in the overall number of turbines will reduce the footprint and extent of access roads required, thereby reducing the overall area of disturbance. An estimate of 2,100m² of access road per turbine is used to calculate the access road footprint (i.e. approximately 17.5 km and 6 m wide access roads).

Facility component - permanent	Approximate area/extent (m ²)
50 turbine footprints	31 250
Permanent access roads (excluding Skaapvlei road which is an existing permanent feature bisecting the site) and power line footprints (parallel to permanent access road)	105 000
Substation footprint (80m x 80m)	6 400
Visitors centre building and parking areas	8 000
TOTAL	150 650 (of a total area of 37 001 985) = 0.4% of the site

Temporarily affected areas

Temporarily affected areas of the 67 turbine scenario consisted of laydown areas for turbines (each laydown area with a footprint of 40 m x 40 m i.e. 2x the foundation footprint) as well as a track of an additional 8m in width for the crawler crane to move across the site (i.e. an additional 8 m width to the permanent road of 6 m in width). The 33kV cabling to connect the turbines to the substation is to make use of the disturbed area travelled over by the crane. An approximately 1 m wide trench would be excavated, the cabling laid and the area rehabilitated.

Application for Amendment of Environmental Authorisation

Facility component - temporary	Approximate area/extent (m ²)
67 turbine footprints laydown areas	107 200
Temporary crane travel (8m) track adjacent to permanent access road PLUS trench for 33kV cabling	187 600
TOTAL	294 800 (of a total area of 37 001 985) = 0.8% of the site

With the change to 50 turbines, the temporary affected areas and each turbine laydown areas will increase to 50 m x 50 m, hence temporarily disturb a larger footprint. However, the overall temporary footprint area will still be less with fewer turbines due to reduced temporary access roads required.

Facility component - temporary	Approximate area/extent (m ²)
50 turbine footprints laydown areas	125 000
Temporary crane travel (8m) track adjacent to permanent access road PLUS trench for 33kV cabling	140 000
TOTAL	265 000 (of a total area of 37 001 985) = 0.7% of the site

In summary, the change from 67 to approximately 50 turbines will reduce the overall footprint for permanently affected areas on the Sere Wind Facility site, by approximately 0.1% of the site i.e. an area of 37 000m² (3.7ha). Hence, the total impacts from the project as amended will be less than as originally approved.

3.4. Should the amendment being requested result due to 3.1 (b) above, you are requested to furnish the Department with a written undertaking that the new holder of the environmental authorisation is willing and able to assume responsibility of the environmental authorisation issued. Provide a short motivation and explanation below:

N/A

4. ENVIRONMENTAL IMPACTS

4.1. Describe any negative environmental impacts that may occur if the application for amendment is granted, amongst others information on any increases in air emissions, waste generation, discharges to water and impacts of the natural or cultural environment must be included.

Environmental sensitivity

The reduction in overall number of turbines required, and subsequent reduction in development footprint size of the wind facility, will further minimise the potential for environmental impact. However a revised layout of the turbines will be required which will take into account all

environmental constraints identified through the EIA process, as well as the conditions of the environmental authorization granted in 2008. A final layout will be submitted to DEA for acceptance prior to construction, as per condition 1.4 of the Environmental Authorisation which must consider the local sensitive areas (vegetation, wetland, shell middens) when planning the revised layout as per condition 1.3 (**Annexure 1**).

From the specialist investigations undertaken during the EIA process, key potential negative environmental impacts associated with the wind energy facility on the identified site were: visual impacts and avifauna mortality.

The current amendment to the Sere Wind Facility project will most likely not affect the overall environmental impact on the site, however in order to verify the potential for a change in the impacts on avifauna as well as visual exposure, the amendment has been presented to the avifauna and visual specialists engaged as part of the EIA for their review, consideration and comment. These are attached in **Annexures 5 and 6**, respectively.

Avifauna sensitivity

The avifauna specialist (Endangered Wildlife Trust) have confirmed that the proposed change in number of turbines and blade length, of the current amendment, does not present any change in the significance of the collision and disturbance impacts on priority species. The data available on bird flight movement is not accurate enough to allow for predictions on the change in impact significance (bird collisions with turbine blades) based on a difference in turbine rotor diameter.

The increased turbine rotor diameter will increase the Rotor Swept Area (RSA) per turbine. However this is accompanied by a decrease in number of turbines and therefore “fewer blades” in the sky, therefore balancing out any increased impact. The impact ratings, conclusions and recommendations of the original avifauna report remain the same.

The submission of the Endangered Wildlife Trust is included in **Annexure 5**.

Visual sensitivity

The Visual Impact Specialist (MetroGIS) formed part of the original Environmental Impact Assessment for the Sere Wind Energy Facility (WEF) undertaken in 2008. MetroGIS have confirmed that the potential visual impacts associated with the proposed current amendment should not alter/influence the outcome of the project decision-making, and generally recommend that the amendment application be supported.

The current amendment with the proposed change in turbine number by 25% (67 to 50 turbines) is bound to reduce the frequency of potential visual exposure of the turbines and subsequently mitigate the visual impact. The increase in length of the turbine blades is not expected to greatly influence the general appearance of the wind turbine structures.

In light of these findings, MetroGIS do not expect the amendment to significantly alter the outcome of the potential visual impacts associated with the original WEF application, as stated in the original VIA report.

Application for Amendment of Environmental Authorisation

The submission of the Visual Impact statement from MetroGIS is included in **Annexure 6**.

4.2. Describe any negative environmental impacts that may occur if the application for amendment is **not** granted.

- The potential to harness and utilise good wind energy resources at the Sere Wind Facility site would be lost.
- The National electricity grid would not benefit from the additional generated power (Eskom propose that up to at least 200 MW can be realised from the proposed facility on the West Coast (based on turbine technology choice).
- Delay in construction programme of wind turbines, which is due to start March 2013

4.3. Describe any positive environmental impacts that may occur if the application for amendment is granted, amongst others information on any reduction in the ecological footprint, air emissions, waste generation and discharges to water must be included.

The purpose of the amendment is optimise the turbine design so as to maximise electricity production through exposure to the wind resource, while minimising infrastructure, operation and maintenance costs, and social and environmental impacts.

The overall positive impact is a more efficient use of the wind resource, whilst simultaneously reducing the building footprint and associated visual and avifauna impacts.

5. AUTHORISATION FROM OTHER GOVERNMENT DEPARTMENTS

5.1. Are any permission, licenses or other authorisations required from any other departments before the requested amendments can be effected?	YES	NO X
--	-----	---------

If yes, please complete the table below.

Name of department and contact person	Authorisation required	Authorisation applied for (Yes/ No)
N/A	N/A	N/A

6. RIGHTS OR INTERESTS OF OTHER PARTIES

In your opinion, will this proposed amendment adversely affect the rights and interests of other parties?	YES	NO X
---	-----	---------

Please provide a detailed motivation of your opinion.

The current amendment application is in response to a change in turbine design for the Sere

Application for Amendment of Environmental Authorisation

Wind Energy Facility, as a result of subsequent developments in wind technology to optimise the wind energy capture for the project. These turbine changes will most likely not affect the overall environmental impact on the site, as confirmed by both the avifauna and visual specialists. Although the turbine rotor diameter increases, there will be “fewer blades” in the sky as the overall number of turbines is reduced by 25%. Hence, the EAP is of the opinion that the current amendment to the EA is a *non-substantive amendment application*. In other words, the environment or the rights or interests of other parties are not likely to be adversely affected by the proposed amendment to the Sere WEF Environmental Authorisation.

NOTE: The Department is entitled to request further information if it believes it is necessary for the consideration of the application. If the application is for a substantive amendment or if the rights or interests of other parties are likely to be adversely affected, the Department will instruct the applicant to conduct a public participation process and to conduct any investigations and assessments that it deems necessary.

7. DECLARATION:

I, Dr Shael Harris, declare that I will comply with all my legal obligations in terms of this application and provide accurate information to everyone concerned in respect to this application.

Signature of the applicant:

Name of company or organisation:

Date: