

APPLICATION FOR AMENDMENT OF THE DEA ENVIRONMENTAL AUTHORISATION (DEA REFERENCE NUMBER: 12/12/20/1651) ISSUED ON 15 AUGUST 2011, AS AMENDED, AND AMENDMENT OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) & FINAL LAYOUT PLAN FOR THE AUTHORISED MAANHAARBERG WIND ENERGY FACILITY NEAR DE AAR, NORTHERN CAPE PROVINCE

Addendum to Specialist Visual Impact Assessment:

1.0 Original Assessment:

The specialist Visual Impact Assessment for the Maanhaarberg Wind Energy Facility (WEF) (De Aar 1 WEF) near De Aar in the Northern Cape Province, prepared for DJ Environmental Consultants in 2010 on behalf of Mulilo Renewable Energy (Pty) Ltd (now Longyuan Mulilo De Aar Wind Power (RF) (Pty) Ltd), refers.

Environmental Authorisation was granted by the Department of Environmental Affairs (DEA) on 15 August 2011 for 67 Wind Turbine Generators (WTGs) with a potential generation capacity of 100MW. Construction of the WEF commenced in August 2015 and is nearing completion.

There have been subsequent applications for Amendments to the EA which have been granted. The Applicant now wishes to apply for a further amendment to the DEA EA, as outlined below.

2.0 This Addendum Assessment:

Is to address the implications, if any, of the proposed amendments to the Environmental Authorisation (including amendments to the project description), and Environmental Management Programme (EMPr) and Final Layout Plan, which forms the subject of a new Application for Amendment of the Environmental Authorisation (EA) for the abovementioned project.

The proposed Amendments are as set out in the ToR prepared by: Holland and Associates, P O Box 31108, Tokai, 7966, South Africa and are (condensed for clarity) as follows:

3.0 Amendments to the EA to be assessed and as set out by Holland and Associates:

Ref. Nr	Ref. to the DEA EA	Condition	Amendment Required
1	1.1	“Layout Alternative 1 as described in the EIR dated November 2010 is hereby authorised”.	“Layout Alternative 1 as described in the EIR dated November 2010, as amended by subsequent amendments to the description, as approved by DEA, is hereby authorised”. Updates to this description cover the following: Hardstanding areas to increase from 40 x 20m to 50 x 50m Internal electrical reticulation lines to change from 22kV to 33kV

2	1.5	The recommendations and mitigation measures recorded in the EIR dated November 2010 must be adhered to.	The recommendations and mitigation measures recorded in the EIR dated November 2010 or approved amendments thereto must be adhered to.
3	10.12.11	All electrical collector lines must be buried in a manner that minimises additional surface disturbance.	All internal reticulation lines must be over-head in a manner that minimises additional surface disturbance.
4	10.5.4	Commercial messages and graffiti on turbines must be avoided.	Condition to be removed. Longyuan would like to have a company logo on the nacelle. (A letter (dated 9 May 2014) and specialist comment (November 2016) was issued by the visual impact specialist for the project, Ms Karen Hansen, confirming that the removal of condition 10.5.4 would be acceptable from a visual impact perspective).
5	10.8.1	<u>Underground</u> cables and internal access roads must be aligned as much as possible along existing infrastructure to limit damage to vegetation and watercourses.	<u>Aboveground</u> internal reticulation lines and internal access roads must be aligned as much as possible along existing infrastructure to limit damage to vegetation and watercourses.
6	10.13.1, 10.13.2, and 10.13.3	All relating to the 132kV overhead powerline)	Remove this condition as the 132kV power line is subject to a separate EA.

4.0 The Nature of these proposed amendments

Amendment nr.1: WTG to be connected to a 33kV transmission line instead of a 22kV transmission line, and the area of adjacent hard-standings to increase; no changes to visual impact would accrue

Amendment nr.2: recommendations, mitigation measures and amendments must be adhered to; there would be no material change to the visual impact in this case.

Amendment nr.3: change from underground to aboveground internal reticulation lines while ensuring minimum surface disturbance

Amendment nr.4: removal of condition relating to the commercial messages, etc, on WTGs

Amendment nr.5: change in installation of internal reticulation lines from underground to above-ground, and internal access roads, to limit damage to vegetation and watercourses

Amendment nr.6: Condition relating to the 132kV powerline is omitted; no visual impact

5.0 Amendments to EMPr and Layout Plan to be assessed, as set out by Holland and Associates:

Environmental Management Plan			
7	Section 2.1 (page 2)	Final Layout Map	As-built layout map i.e. the proposed amended Layout Plan to be approved by DEA. The following amendments have been made to the final layout map (and require approval from DEA): The approved access road onto the Swartkoppies mountain has been realigned: Due to botanical search and rescue requirements, Due to the route being under a live transmission line, Due to the significant amount of cut and fill, Changes to freshwater buffers, construction camp position and micrositing of turbine 21

8	Page 3 and Page 15	The turbine masts, rotors and nacelle should all be finished in a nonreflective matte white paint without decals or logos	The EMPr will need to be updated, to bring it in line with the proposed amendments to the EA. The proposed amendment is as follows: "Turbine masts, rotors and nacelle will all be finished in a nonreflective matte white paint without decals or logos ".
9	Page 11 and 27	If nest VE3 is active, a monitoring programme must be initiated between November 2015 and February 2016 to record the flight patterns of fledgling	One of the adult Verreux's Eagles of the breeding pair at nest VE3 should be fitted with a telemetry device, rather than the fledgling, as recommended by Chris van Rooyen consulting (letter dated 5 August 2016).
10	Appendix 3	Inclusion of the EA amendment dated 3 December 2015	The DEA granted an amendment of the EA on 3 December 2015. In terms of this amendment, Condition 10.5.7 of the EA is removed, Condition 10.7.8 was amended and the contact details of the holder of the EA were changed.
11	OEMP (Appendix 4) Page 3 Row 2, Page 12	Insert mitigation measures	Appoint an independent Environmental Professional to undertake annual audits for the first three years of operation and once every three years thereafter Rescued plants must be monitored for at least 3 years post-relocation and survival success must be reported Only locally indigenous species may be used for rehabilitation. The water user must undertake a habitat assessment study annually for 3 years to Removal of the condition that states: "In addition to that, the 132kV grid connection should also be inspected at least once a quarter to establish if there is any significant collision mortality",
12	Appendix 16	Insert the updated Layout Plan (and updated AECOM technical report, if available)	Insert the updated Layout Plan (and updated AECOM technical report, if available)
13	Various other text edits in Table 1 – as per Karen Low's email to NHolland dated 26 January 2017 & 26 July 2017		Amendments include: Appoint an independent Environmental Professional to undertake annual audits.... "Independent audits to be undertaken annually for the first three years adding DENC to the "verification" column.... Mitigation measures relating to the protection of fauna and bats. Visual Aesthetics: Removing "Turbines should not display brand names". Satellite tracking of the Verreux's Eagle

6.0 The Nature of these proposed amendments

Amendment nr.7: The approved access road onto the Swartkoppies mountain has been realigned:

Amendment nr.8: Decals and logos are acceptable on the masts

Amendment nr.9: Fitting of telemetry device to Verreux eagle; no visual impact would accrue

Amendment nr.10: Change to contact details of EA holder of the EA; no visual impact

Amendment nr.11: relating to the appointment of an environmental auditor; requirement to plant only locally indigenous species, habitat assessment study to be undertaken by water user

Amendment nr.12: refers to the acceptance of the updated layout plan; all changes are addressed within other amendments; no specific visual impact would accrue

Amendment nr.13: relating to the appointment of an independent Environmental Professional to undertake regular audits, including brand names on WTGs

7.0 Impact Summary Table from Original Report, the Authorised Project

Table of the Visual Significance of the Impacts associated with the Construction and Operation of the De Aar Maanhaarberg Wind Farm

	<u>Nature of impact</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of occurrence</u>	<u>Status of impact</u>	<u>Degree of confidence</u>	<u>Level of significance</u>	<u>Mitigation Measures</u>	<u>Significance after mitigation</u>
CONSTRUCTION PHASE										
Preferred Option										
1	<u>Location of the construction roads, off existing roads</u>	Local and surrounds	Short-term	Medium-high	Definite	Negative	High	Moderate-high	Upgrade road junctions as required	Moderate
2	<u>Upgrading existing local gravel roads on west and east flanks of hills</u>	Local and surrounds	Short-term	Medium-high	Definite	Negative	High	Moderate-high	Careful alignment of road for least visibility, revegetating disturbed slopes	Moderate
3	<u>Provision of new roads on top of hills to connect infrastructure for construction and maintenance</u>	Local and surrounds	Short-term	Medium-high	Definite	Negative	High	Moderate	Careful alignment of road for least visibility, revegetating disturbed slopes	Moderate
4	<u>Movement of construction vehicles around the site, with lights</u>	Local and surrounds	Short-term	High	Definite	Negative	High	Moderate-High	None	Moderate-High
5	<u>Dust generation, movement of construction vehicles</u>	Local and surrounds	Short-term	Medium	Definite	Negative	High	Moderate	None	Moderate
6	<u>Construction of trenches for underground cables</u>	Local and surrounds	Short-term	Medium	Probable	Negative	Moderate	Moderate	Return ground to original state	Low
7	<u>Construction of buildings, (small, garage sized)</u>	Local and surrounds	Short-term	Medium	Definite	Negative	High	Moderate	Locate out of view of centres of population	Low
8	<u>Construction of small sub station on site</u>	Local and surrounds	Short-term	Medium	Definite	Negative	High	Moderate	Locate out of view of centres of population	Low
9	<u>Construction of the concrete footings, 40x20m for each turbine</u>	Local and surrounds	Short-term	High	Definite	Negative	High	High	Methodology set out in report	Moderate-low
10	<u>Impact on local roads used for low loader bringing very large, heavy components from the N10, R48, around De Aar</u>	Local and surrounds	Short-term	High	Definite	Negative	High	High	Good traffic management and keeping local people informed	Moderate-High

	<u>Nature of impact</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of occurrence</u>	<u>Status of impact</u>	<u>Degree of confidence</u>	<u>Level of significance</u>	<u>Mitigation Measures</u>	<u>Significance after mitigation</u>
11	<u>The impact of the construction of the transmission lines from the site to Eskom lines</u>	Local and surrounds	Short-term	Medium to high	Definite	Negative	High	Moderate	None	Moderate
12	<u>The grouping of the turbines on site</u>	Local and surrounds	Long-term	Moderate	Probable	Neutral	High	Moderate	None	Low
13	<u>The colour finish of the turbines</u>	Local and surrounds	Long-term	High	Definite	Negative	Moderate	High	Use a neutral colour, preferably white, non reflecting; no stripes, decals or logos	Low
OPERATIONAL PHASE										
Preferred Option										
1	<u>Maintenance visits by maintenance crew, using the existing gravel roads, the upgraded gravel roads and the gravel roads connecting the infrastructure</u>	Local and surrounds	Permanent	Low	Definite	Neutral	High	Low	None	Low
2	<u>Site buildings, (small, garage sized)</u>	Local and surrounds	Long-term	Medium	Definite	Negative	High	Moderate	Locate out of view of centres of population	Low
3	<u>Small sub station on site</u>	Local and surrounds	Long-term	Medium	Definite	Negative	High	Moderate	Locate out of view of centres of population	Low
4	<u>Concrete footings for each turbine</u>	Local and surrounds	Long-term	High	Definite	Negative	High	High	The disturbed areas should be re-vegetated	Low
5	<u>The impact of the transmission line from the site to Eskom line</u>	Local and surrounds	Long-term	Medium	Definite	Negative	High	Moderate	None	Moderate-low
6	<u>The grouping of the turbines on site</u>	Local and surrounds	Long-term	Moderate	Probable	Neutral	High	Moderate	None	Moderate
7	<u>The colour finish of the turbines</u>	Local and surrounds	Long-term	High	Definite	Negative	Moderate	High	Use a neutral colour, preferably white, non reflecting; no stripes, decals or logos	Low
8	<u>The visual impact of seeing the turbines rotating</u>	Local and surrounds	Long-term	Will range depending on location of receptor	Definite	Neutral	Moderate	Will vary for receptors	Local consultations	Moderate-low

	<u>Nature of impact</u>	<u>Extent of impact</u>	<u>Duration of impact</u>	<u>Intensity</u>	<u>Probability of occurrence</u>	<u>Status of impact</u>	<u>Degree of confidence</u>	<u>Level of significance</u>	<u>Mitigation Measures</u>	<u>Significance after mitigation</u>
Alternative Option										
1	<u>Assessment of Impacts during Construction and Operational Phases</u>	Local and surrounds	Long-term	High	Definite	Negative	High	High	As for the Preferred Option	Greater than the Preferred Option due to the increase in Turbine numbers and consequent infrastructure increase
NO GO OPTION										
1	<u>Retention of status quo</u>	Local and surrounds	Permanent	Medium	Probable	Status quo	Moderate	Moderate	N/a	N/a

8 Impact Summary Table: the findings of the re-assessment for the Proposed Amended Project

A re-assessment of the significance (before and after mitigation) of the identified impact(s) in light of the proposed amendments (as required in terms of the 2014 EIA Regulations), for the construction, operational and decommissioning (where relevant) phases, including consideration of the following:

Nature: <u>Amendment nr.1</u> : WTG to be connected to a 33kV transmission line instead of a 22kV transmission line, and the area of adjacent hard-standings to increase; no changes to visual impact would accrue		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	Long -term	Long-term
<i>Magnitude</i>	Medium High	Low
<i>Probability</i>	Definite	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Neutral	Neutral
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> not capable of being mitigated as the upgrading of the transmission lines would result in no change to visual impact. Increase in hard-standings would result in no change to visual impact		
<i>Cumulative impacts:</i> none identified.		
<i>Residual Impacts:</i> none		

Nature: <u>Amendment nr.3</u> : change from underground to above-ground internal reticulation lines while ensuring minimum surface disturbance		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	short -term	Long-term
<i>Magnitude</i>	Low	Low
<i>Probability</i>	Probable	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Neutral	Neutral
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> over grounding would be more visible and would provide additional visual clutter, but to few sensitive receptors. However, there would be less ground disturbance which also introduces visual clutter, therefore the net result is no change to impact.		
<i>Cumulative impacts:</i> none identified.		
<i>Residual Impacts:</i> none		

Nature: <u>Amendment nr.4</u> : removal of condition relating to the commercial messages, etc, on WTGs		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	Long -term	Long-term
<i>Magnitude</i>	High	Moderate
<i>Probability</i>	Definite	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Neutral	Neutral
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> this condition was imposed at a time when the guidance defined decals and logos as clutter. That no longer applies. In this project, sensitive receptors would be at a distance where such logos would not be clearly seen		
<i>Cumulative impacts:</i> None anticipated.		
<i>Residual Impacts:</i> none		

Nature: <u>Amendment nr.5</u> : change in installation of internal reticulation lines from underground to above-ground, and internal access roads, to limit damage to vegetation and watercourses		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	short -term	Long-term
<i>Magnitude</i>	Low	Low
<i>Probability</i>	Probable	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Neutral	Neutral
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> over grounding would be more visible and would provide additional visual clutter, but to few sensitive receptors. However, there would be less ground disturbance which also introduces visual clutter, therefore the net result is no change to impact.		
<i>Cumulative impacts:</i> none		
<i>Residual Impacts:</i> none		

Nature: Amendment nr.7: The approved access road onto the Swartkoppies mountain has been realigned: Due to botanical search and rescue requirements, due to the route being under a live transmission line, due to the significant amount of cut and fill, changes to freshwater buffers, construction camp position and micrositing of turbine 21		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Regional	Regional
<i>Duration</i>	Long -term	Long-term
<i>Magnitude</i>	Low	Low
<i>Probability</i>	Definite	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Positive	Positive
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> the final degree of visual impact may be reduced; in that the botanical search and rescue requirements would have a positive effect on rehabilitation, and reduction of cut and fill would reduce evident land scarring. Remaining changes are not expected to alter the degree of visual impact		
<i>Cumulative impacts:</i> none identified		
<i>Residual Impacts:</i> none		

Nature: Amendment nr.8: Decals and logos are acceptable on the masts		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	Long -term	Long-term
<i>Magnitude</i>	High	Moderate
<i>Probability</i>	Definite	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Neutral	Neutral
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> this condition was imposed at a time when the guidance defined decals and logos as clutter. That no longer applies. In this project, sensitive receptors would be at a distance where such logos would not be clearly seen.		
<i>Cumulative impacts:</i> None identified.		
<i>Residual Impacts:</i> none		

Nature: <u>Amendment nr.11</u> : relating to the appointment of an environmental auditor; requirement to plant only locally indigenous species, habitat assessment study to be undertaken by water user		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	Short -term	Short-term
<i>Magnitude</i>	Very Low	Very Low
<i>Probability</i>	Definite	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Positive	Positive
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> not assessed in original report for mitigation. Regular audit reports considered a positive and could reduce visual impact of disturbed ground		
<i>Cumulative impacts:</i> none identified		
<i>Residual Impacts: none</i>		

Nature: <u>Amendment nr.13</u> : relating to the appointment of an independent Environmental Professional to undertake regular audits, including brand names on WTGs		
	<i>Without mitigation</i>	<i>With mitigation</i>
<i>Extent</i>	Local	Local
<i>Duration</i>	Long -term	Long-term
<i>Magnitude</i>	Very Low	Very Low
<i>Probability</i>	Definite	Definite
<i>Consequence</i>	Low	Low
<i>Significance (consequence x probability)</i>	Low	Low
<i>Nature (positive or negative)</i>	Positive	Positive
<i>Reversibility</i>	Low	Low
<i>Irreplaceable loss of resources?</i>	No	No
<i>Can impacts be avoided, managed or mitigated?</i>	No	
<i>Mitigation:</i> current agreed mitigation measures continue to apply; these changes would not affect the visual impact qualitatively or quantitatively		
<i>Cumulative impacts:</i> None identified.		
<i>Residual Impacts: none</i>		

9 Statements:

Significance ratings for the proposed amendments are not expected to vary from the Authorised Project; the most positive for visual impact are the greater controls over the terrestrial and aquatic environments. Other amendments including the change from 22kV to 33kV would not represent a change in significance of impact to sensitive receptors.

The proposed amendments would not result in an increased level of the impact nor result in a greater significance of visual impact or change in the nature of the impact.

The **potential advantages** are those relating to the terrestrial environment; no **disadvantages** have been identified.

No changes to **mitigation measures** affecting visual impact were identified.

The impact management outcomes of the EMPr are expected to result in beneficial changes.



KAREN HANSEN

07 December 2017