

**ENVIRONMENTAL IMPACT ASSESSMENT**  
**PROPOSED 132 KV TRANSMISSION LINE CORRIDOR ADJACENT TO**  
**THE EXISTING ESKOM TRANSMISSION LINE FROM LONGYUAN**  
**MULILO DE AAR 2 NORTH WIND ENERGY FACILITY (WEF) TO THE**  
**HYDRA SUBSTATION IN DE AAR, NORTHERN CAPE**

DEA REFERENCE: 14/12/16/3/3/1/1166



APRIL 2014

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**EXECUTIVE SUMMARY: DRAFT BASIC ASSESSMENT REPORT**

**Background**

Longyuan Mulilo De Aar 2 North (Pty) Ltd (Mulilo) proposes to construct a 132 kV overhead transmission line and associated infrastructure in order to connect the authorised 138.96 MW Longyuan Mulilo De Aar 2 North Wind Energy Facility (WEF), to be developed to the east of De Aar, Northern Cape to the Hydra Substation. The newly proposed 132 kV transmission line route would run parallel to existing 400 kV lines, which pass through the site on route to the Hydra substation, with small routing adjustments near to Hydra substation in order to take cognisance of other incoming lines for the final connection.

In terms of the National Environmental Management Act (NEMA) (Act 107 of 1998) as amended, the proposed project triggers a number of listed activities, which require authorisation from Department of Environmental Affairs (DEA) before they can be undertaken. The proposed project triggers the following activities as listed in terms of Government Notice (GN) Regulation 544 items 10, 11 and 18 and GN R546 items 13, 14 and 16 in terms of NEMA namely the Department of Environmental Affairs (DEA). DEA's decision will be based on the findings of this Basic Assessment process. Aurecon South Africa (Pty) Ltd (Aurecon) has been appointed by Mulilo to undertake the requisite environmental process.

**Proposed project**

Mulilo has recently received preferred bidder status from the Department of Energy (DoE) under the third round of the Renewable Energy Independent Power Producers Programme (REIPPPP) for the North WEF.

The North WEF will be developed in order to connect to the national grid. The length of the transmission line is approximately 27 km, connecting the North WEF switching / metering station to Eskom's existing Hydra Substation.

The proposed transmission line would consist of the following infrastructures:

- 132 kV steel monopole structure including foundations and insulators;
- Existing access roads and jeep tracks

**Purpose of this document**

This document provides a summary of the Draft Basic Assessment Report (DBAR), as required in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations (2 August 2010, as amended). This document provides an assessment of the potential environmental (socio-economic and biophysical) impacts associated with the proposed 132kV overhead power line in order to connect a previously approved Wind Energy Facility to the national grid. It further describes the public participation process undertaken to date, and the feasible and reasonable project alternatives that have been assessed. Please review this Summary Document and, preferably, the full DBAR, and submit your comments on the proposed project by **26 May 2014**. All EIA documents will be available for review and comment at the De Aar Public Library, the Emthanjeni municipal offices and on the Aurecon website ([www.aurecongroup.com](http://www.aurecongroup.com) change "Current Location" to "South Africa" and follow the "public participation" link where you will be asked to register with the above mentioned DEA Ref. no.). To comment, write a letter, call, fax or e-mail **Aurecon:**

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- Line and servitude clearances to meet the statutory requirements.

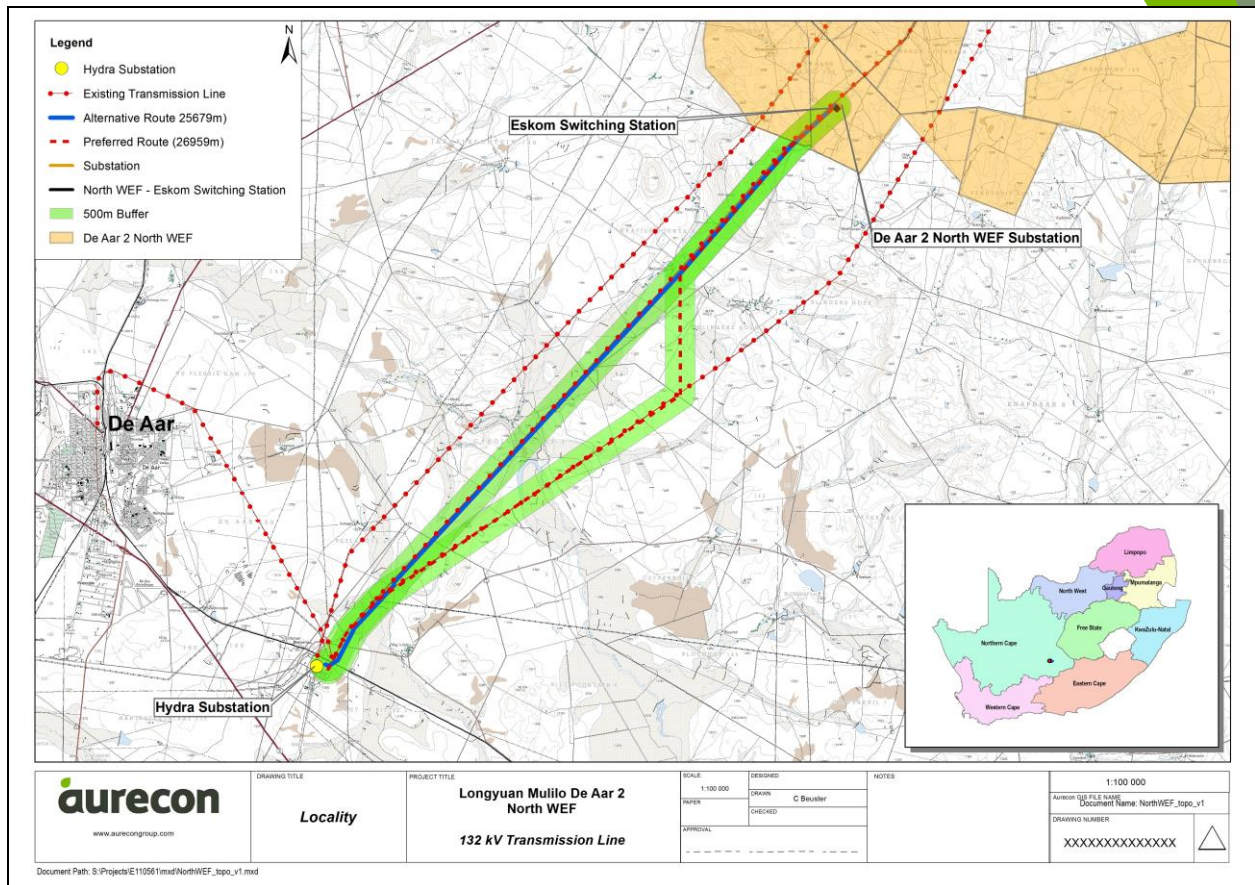


Figure 1: Locality map indicating the transmission line alternatives.

## Need and Desirability

The transmission line would facilitate the connection for the WEF to provide renewable energy to the national grid. The need for renewable energy is well documented and reasons for the desirability of wind energy include:

- Reducing the demand on scarce resources, such as water;
- Meeting nationally appropriate emission targets in line with global climate change commitments as the generation of electricity from the WEF produces no pollution per MW/h;
- Enhancing energy security by diversifying generation;
- Job opportunities and contribution to social upliftment; and
- Local economic development.

## Site description

The North WEF is located on the eastern plateau approximately 20 km east of De Aar, Northern Cape. The North WEF substation and metering station is located within the footprint of the North WEF on the farm Pienaars Kloof (Portion 6 of Farm 136). The 132 kV transmission line connects from the metering station and runs 21.46 km south-west traversing the farms Pienaars Kloof (Farm 136 – Portion 6 and Remainder of Portion 6), Slingshoek (Farm 2 – Remaining Extent and Portion 5), Maatjes Fountain (Farm 1 – Portion 3 and Portion 5 and Remainder of Portion 1 and Remainder of Portion 2), Carolus Poort (Farm 2 - Portion 3 and Portion 4 and Remainder of Portion 2), Wagt en Bittje (Farm 5 – Remaining Extent and Portion 3), Wag 'n Bietjie Annex B (Farm 139 - Remaining Extent) to the Hydra Substation (Farm 144 - Remaining Extent). The landowners of the farms that the servitudes cross have entered into

agreements with Mulilo. These farms are zoned for Agriculture and are currently used for grazing sheep, goats and cattle.

## Project alternatives

The following feasible alternatives were assessed in the Draft BAR:

### Site alternatives:

Two alternative 500 m route corridors (referred to as alternative A and alternative B) have been considered and assessed by all specialists. Details of the two site alternatives are provided below:

- Alternative A transmission line (preferred alternative) is approximately 27 km from the North substation to the Hydra substation.
- Alternative B transmission line is approximately 25.5 km from the North substation to the Hydra substation.

### Layout alternatives:

- The final location of pylon positions would only be finalised during implementation and would be dependent on approval as required by Eskom. Within the route corridor, only one servitude would be required for the transmission line consisting of single circuit lines (requiring Type 266 towers) or one transmission line consisting of one double circuit line (requiring Type 277 towers).

### Activity alternatives:

- Transmission of electricity generated at the Wind Energy Facilities; and
- “No-go” alternative.

### Technology alternatives:

- Single circuit Monopole 266; and
- Double circuit Monopole 277.

## Identified impacts

During this assessment the following potential significant environmental impacts have been identified:

- **Construction phase impacts on the biophysical and socio-economic environments:**
  - Impact on Botany
  - Impact on Avifauna
  - Impact on Freshwater Ecology
  - Impact on Agriculture
  - Impact on Heritage resource including Palaeontology
  - Impact on Transport
  - Impact on Dust
  - Impact on Visual
  - Impact on Socio-economic
- **Operational phase impacts on the biophysical and socio-economic environment:**
  - Impact on Botany
  - Impact on Avifauna
  - Impact on Freshwater Ecology
  - Impact on Agriculture
  - Impact on Visual
  - Impact on Socio economic
  - Impact on Energy generation
  - Impact on Climate change

**Table 1: Significance rating of potential impacts that might occur during the construction phase**

Impact	Significance rating	
	Without mitigation	With mitigation
<b>Alternative A and B Construction phase</b>		
<b>Impact on Botany</b>		
• Direct impact	Low - Medium (-)	Low - Very low (-)
• Indirect impact – <i>none identified</i>	-	-
• Cumulative impact – Loss of species	Low (-)	Very low (-)
• Cumulative impact – Spread of alien plants	High (-)	Low (-)
<b>Impact on Avifauna</b>		
• Direct impact	Medium	Low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact	Medium (-)	Low (-)
<b>Impact on Freshwater Ecology</b>		
• Direct impact	Low (-)	Very low (-)
• Indirect impact	Low (-)	Very low (-)
• Cumulative impact	Low (-)	Very low (-)
<b>Impact on Agriculture</b>		
• Direct impact	Low (-)	Low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	-	-
<b>Impact on Heritage resources, including Palaeontology</b>		
• Direct impact		
○ Loss of Archaeological sites	Medium (-)	Low (-)
○ Loss of Palaeontology finds	High (-)	Low (-)
○ Loss of Cultural Landscape	Low (-)	Low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	-	-
<b>Impact on transport</b>		
• Direct impact	Low (-)	Low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	-	-
<b>Impact on dust</b>		
• Direct impact	Low (-)	Very low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	-	-
<b>Impact on Visual</b>		
• Direct impact	Low (-)	Low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact	Medium (-)	Low (-)
<b>Impact Socio-economic</b>		
• Direct impact	Medium (+)	Medium (+)
• Indirect impact - <i>none identified</i>	Medium (+)	Medium (+)
• Cumulative impact	Medium (+)	Medium (+)
<b>No-Go option</b>		
• Direct impact	Medium (-)	Medium (-)
• Indirect impact	Medium – High (-)	Medium – High (-)
• Cumulative impact	Medium – High (-)	Medium – High (-)



**Table 2: Significance rating of potential impacts that might occur during the operational phase**

Impact	Significance rating	
	Without mitigation	With mitigation
<b>Alternative A and B Operational phase</b>		
<b>Impact on Botany</b>		
• Direct impact	Low - Medium (-)	Very low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	-	-
<b>Impact on Avifauna</b>		
• Direct impact	Medium- High (-)	Medium (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact	Medium (-)	Low (-)
<b>Impact on Freshwater Ecology</b>		
• Direct impact	Medium (-)	Low - Medium (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact- same as in construction phase	-	-
<b>Impact on Agriculture</b>		
• Direct impact	Very low (-)	Very low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	-	-
<b>Impact on Visual</b>		
• Direct impact	Low (-)	Low (-)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact - <i>none identified</i>	Medium (-)	Medium (-)
<b>Impact on socio-economic</b>		
• Direct impact	Medium (+)	Medium (+)
• Indirect impact	Medium (+)	Medium (+)
• Cumulative impact	Medium (+)	Medium (+)
<b>Impact on economic (Energy Generation)</b>		
• Direct impact	Low (+)	Low (+)
• Indirect impact - <i>none identified</i>	-	-
• Cumulative impact	High (+)	High (+)
<b>Impact on climate change</b>		
• Direct impact	Low (+)	Low (+)
• Indirect impact	Low (+)	Low (+)
• Cumulative impact - <i>none identified</i>	Medium (+)	Medium (+)

Mitigation measures are recommended to manage the identified impacts associated with the proposed transmission line during the construction and operation phases and is described in the Draft BAR.

### How you can get involved

Public participation is a key component of this EIA process and enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners; national-, provincial- and local authorities; environmental groups; civic associations; and communities), to identify their issues and concerns, relating to the proposed activities, which they feel should be addressed in the EIA process. The public participation process to date has involved the following aspects:

- Advertisements were placed in the local newspapers, the *Volksblad* and *The Echo*, on 23 and 25 April 2014 respectively, notifying the broader public of the initiation of the EIA and inviting them to register as I&APs from **23 April 2014** till **26 May 2014**;

- A site notice was placed at the De Aar Public Library and the Emthanjeni municipal offices
- The Draft BAR was lodged for review and comment at the De Aar (Station Road) Public Library and the Emthanjeni municipal offices in Voortrekker Road, De Aar.
- All documentation was made available from the Aurecon website ([www.aurecongroup.com](http://www.aurecongroup.com) – change “*current location*” to “*South Africa*” and follow the “*public participation*”- link where you will be asked to register with the above mentioned DEA Ref. No.).
- Potential I&APs were notified of the period available to submit their comments or concerns on the DBAR by means of letters sent by post, fax or e-mail. I&APs have 30 days until **26 May 2014**, to submit their written comments on the DBAR. Cognisance will be taken of all comments in compiling the final report, and the comments, together with the project team and proponent’s responses thereto, will be included in the Final Basic Assessment Report (FBAR).

### Way forward

All written comments can be submitted to Aurecon (a Response Form is attached, for your convenience). All issues raised via written correspondence will be summarised into a Comments and Response Report with responses from the project team and will be included as an annexure to the FBAR.

Comments can be sent to Aurecon via telephone, fax, email or post to the following contact persons:

**Table 3: Contact details of the project team**

Basic Assessment project team: Longyuan Mulilo De Aar 2 North Transmission Line		
	Simon Clark	Tamryn Johnson
<i>Tel</i>	(021) 526 6034	(021) 526 5737
<i>Fax</i>	(021) 526 9500	(021) 526 9500
<i>Email</i>	<a href="mailto:simon.clark@aurecongroup.com">simon.clark@aurecongroup.com</a>	<a href="mailto:tamryn.johnson@aurecongroup.com">tamryn.johnson@aurecongroup.com</a>
<i>Postal address</i>	PO Box 494, Cape Town, 8000	PO Box 494, Cape Town, 8000

On completion of the public comment period, the Basic Assessment Report will be finalised and all comments received from I&APs will be incorporated into the final report. Deviation from the Public Participation Process on the FBAR 21 day commenting period has been applied for. Should this not be approved by the DEA, registered IA&APs will have 21 days to comment on the FBAR.

The FBAR will be submitted to DEA for their review and decision regarding acceptance of the report. The DEA will review the FBAR, who must, do one of the following:

- Accept the FBAR;
- Notify the applicant that the report has been referred for specialist review;
- Request amendments to the report; or
- Reject the report if it does not materially comply with regulations.

If the report is accepted, DEA must within 45 days:

- Grant authorisation in respect of all or part of the activity applied for; or
- Refuse authorisation in respect of all or part of the activity.

Once DEA issues their decision on the proposed project, all registered I&APs on the project database will be notified of the outcome of the decision, as well as the Appeal process, within 12 calendar days of the date of the decision should an Environmental Authorisation be issued.

### List of Acronyms

DBAR	Draft Basic Assessment Report
DEA	Department of Environmental Affairs
EIA	Environmental Impact Assessment
FBAR	Final Basic Assessment Report
I&AP	Interested and Affected Party
kV	Kilovolt
MW	Megawatts
NEMA	National Environmental Management Act