
**POWER LINE FROM THE
RHEBOKSFONTEIN WIND ENERGY
FACILITY TO THE AURORA SUBSTATION,
WESTERN CAPE PROVINCE
(DEA REF: 14/12/16/3/3/1/1533)**

**MOTIVATION FOR AMENDMENT OF
ENVIRONMENTAL AUTHORISATION**

DOCUMENT FOR PUBLIC REVIEW

NOVEMBER 2016

Prepared for:

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APPENDICES

- Appendix A:** Basic Assessment Specialist Report
- Appendix B:** Addendum to Avifauna Specialist Report
- Appendix C:** Public Participation Documentation

PROJECT DETAILS

- Title** : Proposed Power Line from the Rheboksfontein Wind Energy Facility to the Aurora Substation, Western Cape Province
Motivation For Amendment of Environmental Authorisation
- Report compiled by** : Jo-Anne Thomas
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- Client** : Moyeng Energy (Pty) Ltd
- Review Period** : 30 November 2016 – 23 January 2017

PURPOSE OF THIS REPORT

Moyeng Energy (Pty) Ltd received an Environmental Authorisation (EA) for the construction of a 132kV power line between the authorised Rhebokfontein Wind Energy Facility and the Aurora Substation (DEA Ref No.: 14/12/16/3/3/1/1533) on 8 July 2016.

Alternative 1D was recommended as the preferred route for the power line in the final Basic Assessment report (Savannah Environmental, May 2016). The option of following the existing power line (Alternative 1C) was considered fatally flawed from an avifaunal / bird perspective based on information available at that time. Following objections raised by the affected landowners regarding the approval of Alternative 1D as the preferred alternative as a result of impacts on agricultural activities and land use, further discussions and recent on-site data collected by the bird specialist and Eskom, the findings of the impact assessment have been revisited and revised. Alternative 1C which runs parallel to the existing 400kV lines in the south is now regarded as the preferred option from an avifaunal perspective. This option would also be the preferred option of the landowners as it reduces impacts on the land use for the landowner in that area.

The proposed amendments in themselves are not listed activities and do not trigger any new listed activity.

In terms of Condition 5 of the Environmental Authorisation and Chapter 5 of the EIA Regulations of December 2014, it is possible for an applicant to apply, in writing, to the competent authority for a change or deviation from the project description to be approved. Savannah Environmental has prepared this motivation report in support of this amendment application on behalf of Moyeng Energy (Pty) Ltd.

This report aims to provide detail pertaining to the significance and impacts of the proposed change to the project description in order for interested and affected parties to be informed of the proposed amendment and provide comment, as required in terms of the EIA Regulations, and for the competent authority to be able to reach a decision in this regard. This report is supported by specialist studies in order to inform the final conclusion regarding the proposed amendments. This main report must be read together with these specialist studies in order to obtain a complete understanding of the proposed amendments and the implications thereof.

This amendment motivation report will be made available to registered interested and affected parties for a 30-day period from **30 November 2016 to 21 January**

2017. The document is available for download at www.savannahsa.com/projects and CD copies are available on request from the contact person below.

To obtain further information, register on the project database, or submit written comment please contact:

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1. OVERVIEW OF THE PROJECT

Location:

The new 132kV power line is located between the authorised Rheboksfontein Wind Energy Facility and the Aurora Substation within the following properties:

- Riet Fontein 5/378
- Elandsfontyn 5/349
- Elandsfontyn 6/349
- Groote Fontyn RE/305
- Groote Fontyn 2/305
- Adjoining Springfontein 174
- Yzerfontein Re/178
- Yzerfontein 6/178
- Riet Fontein RE/378
- Riet Fontein 1/378
- Elandsfontyn 1/349
- Driehoeks Fontein 3/176
- Yzerfontein 3/178
- Elandsfontyn 2/349
- Elandsfontyn 3/349
- Elandsfontyn 7/349
- Riet Fontein 2/378
- Riet Fontein 3/378
- Drooge Valley 1/456
- Driehoeks Fontein RE/176
- Zwart Water 1/454
- Schilpad Fontein 5/455
- Sonquas Fontein 1/446
- Drooge Valley Re/456
- Zwartbergs Valley RE/447
- Plat Klip 1/551
- Rheboks Fontein RE/568
- Bonteberg RE/571

Five alternatives were considered within the Basic Assessment Report for the location of this power line (refer to Figure 1). A corridor of 500m in width was considered. Within this corridor, a servitude of 31m will be negotiated with the affected landowners. Access roads (of up to 4m in width) will be constructed along the servitude where required. The power line is proposed to be constructed by Moyeng Energy (Pty) Ltd on behalf of Eskom Holdings SoC Limited. The power line will however be owned and operated by Eskom.

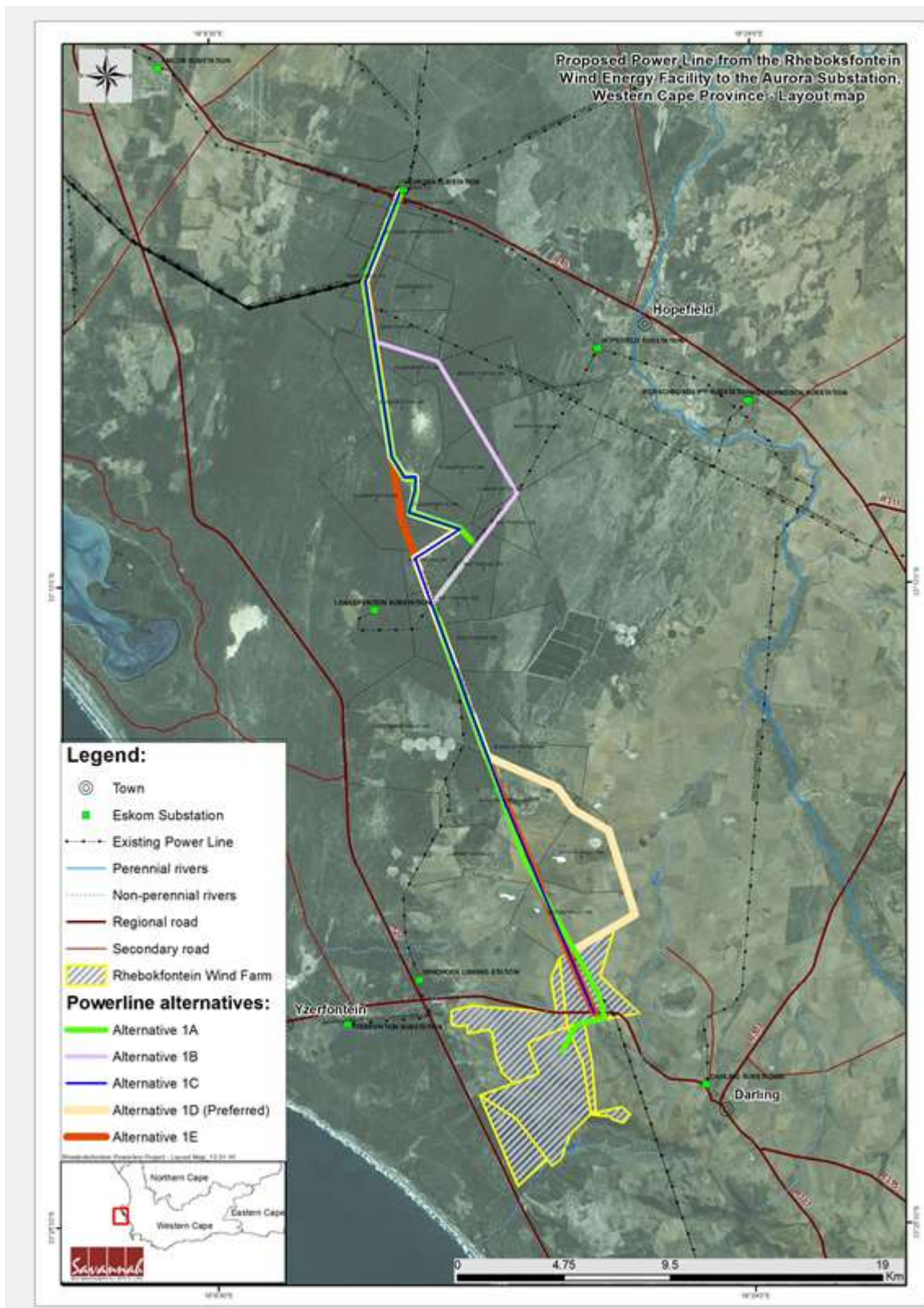


Figure 1: Map indicating the alternative power line routes to Aurora substation for the proposed Rheboksfontein Wind Energy Facility grid connection as assessed within the Basic Assessment process.

Environmental sensitivity:

From the specialist investigations undertaken within the Basic Assessment process for the proposed power line no environmental fatal flaws were identified. However, the following environmental sensitivities and potential impacts were identified:

- » Areas of visual impact
- » Potential impacts on birds
- » Potential impacts on ecology
- » Potential impacts on heritage sites
- » Potential social impacts

Key conclusions and recommendations of the Basic Assessment pertinent to this application:

Alternative 1D was nominated as the preferred option in the southern portion of the line. This was considered to be the only acceptable alignment from an avifaunal perspective in the south¹. Alternative 1E was noted as the preferred option in the north. This alternative was the most acceptable alignment from a heritage and palaeontology perspective since it avoids the Elandsfontein Provincial Heritage site. After discussions with various authorities during the review period of the Draft Basic Assessment report and from comments received it was confirmed that Alternative 1E is not preferred by SANParks. The 1D alternative is not fatally flawed from a heritage perspective, although application in terms of section 27 of the Heritage Resources Act would be required to be lodged with Heritage Western Cape for this section of the line. It is therefore proposed that the final alignment should follow the 1D alignment in both the north and the south (refer to Figure 2).

No environmental fatal flaws were identified to be associated with the proposed Suurplaat Wind Energy Facility. However a number of issues requiring mitigation have been highlighted. Environmental specifications for the management of potential impacts are detailed within the Environmental Management Programme.

¹ Note that this conclusion was based on information available at the time of completing the assessment.

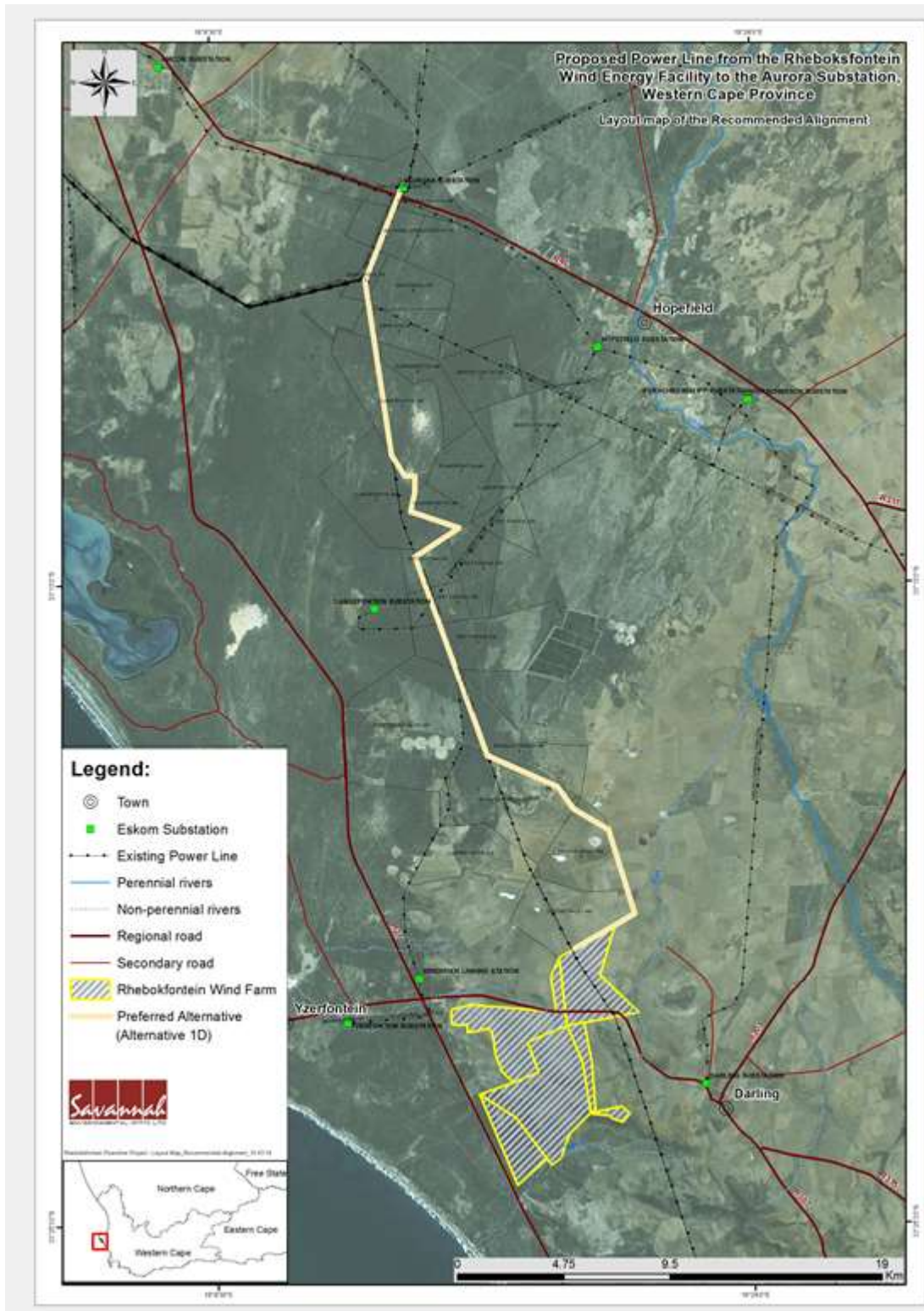


Figure 2: Preferred route Alternative 1D recommended within the EIA

2. DETAILS OF THE AMENDMENTS APPLIED FOR

The following amendments are being applied for:

1. Amendment of approved route for the power line

Condition 1 of the EA states: *"The preferred route Alternative 1D for the construction of the 132kV power line from the Rheboksfontein Wind Energy Facility to the Aurora Substation, within the Swartland Local Municipality and Saldanha Local Municipality in the Western Cape Province, with the above-mentioned co-ordinates as indicated in the final BAR dated 15 April 2016 is hereby approved."*

It is requested that the preferred route be amended to Alternative 1C (as depicted in Figure 3), such that condition 1 states:

*"The preferred route Alternative **1C** for the construction of the 132kV power line from the Rheboksfontein Wind Energy Facility to the Aurora Substation, within the Swartland Local Municipality and Saldanha Local Municipality in the Western Cape Province, with the above-mentioned co-ordinates as indicated in the final BAR dated 15 April 2016 is hereby approved."*

Note: the start middle and end point co-ordinates of Alternative 1C are identical to Alternative 1D and therefore the co-ordinates on page 4 of the EA do not need to be amended.

2. Amended mitigation measures recommended by the avifaunal specialist

Condition 31 of the EA is therefore requested to be amended in line with this. The condition currently states that: "Anti-collision devices such as bird flappers must be installed where the power line crosses avifaunal corridors, as recommended by the avifaunal specialist. The input of an avifaunal specialist must be obtained for the fitting of the anti-collision devices onto specific sections of the line once the exact positions of the towers have been surveyed and pegged"

It is requested that the wording of Condition 31 be updated to include the most recent mitigation measures from the Avifaunal Specialist's addendum report so that it reads:

"The new 132 kV line must be routed on the west-side of the existing lines. Spiral bird diverters must be added to the earth wires of all new lines once the exact positions of the towers have been surveyed and pegged. An avifaunal specialist must be hired to assess the efficiency of the bird diverters every 6 months."

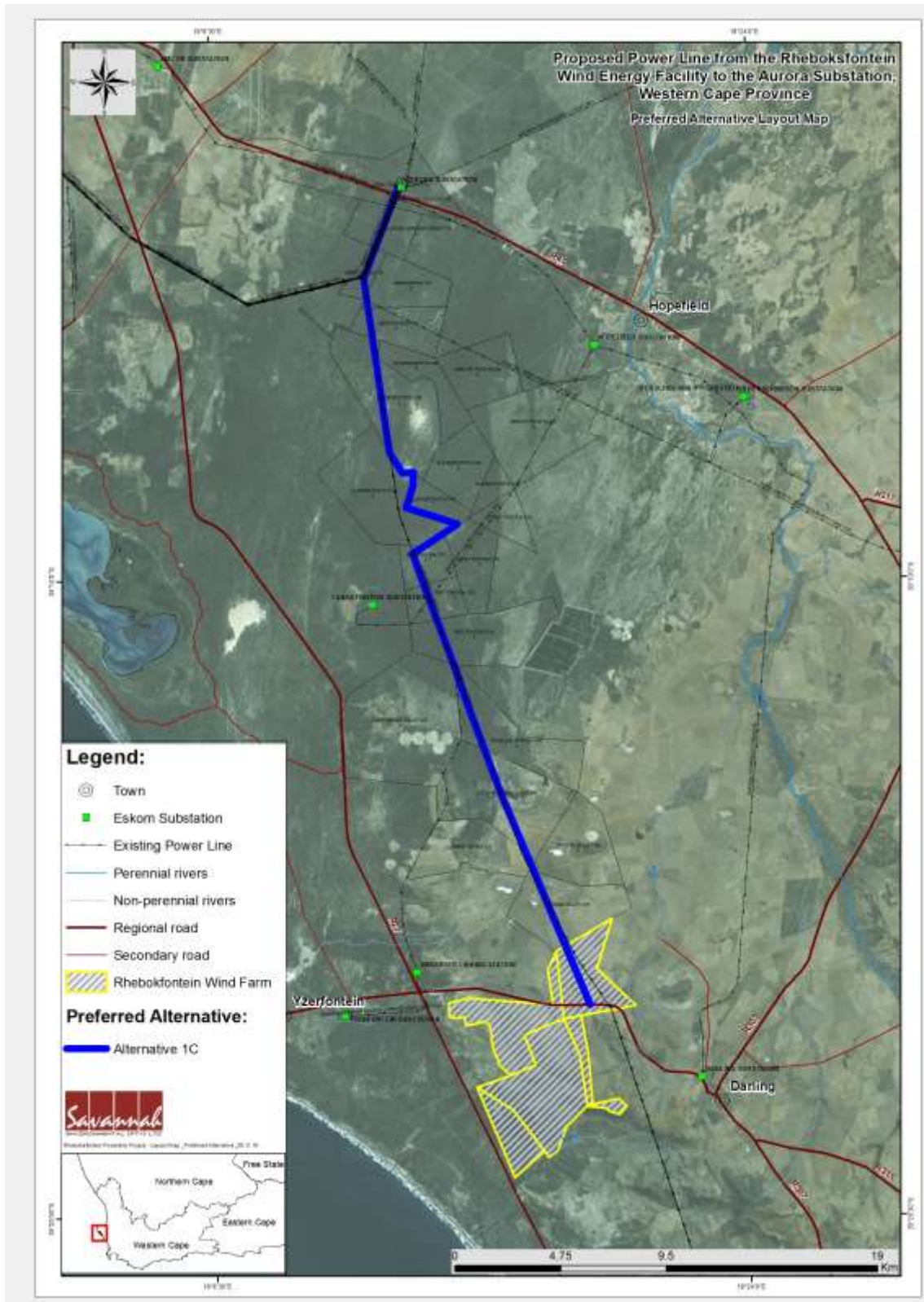


Figure 3: Alternative 1C

3. Correction of DEA reference number on page 1 of the EA and the accompanying cover letter:

The DEA reference number stated in the EA is 14/12//16/3/3/1/1327. This however is the old project reference number. This application lapsed as per the letter received by DEA on 31 July 2015. The correct reference number for the current application should be used instead: **14/12//16/3/3/1/1533**

3. MOTIVATION FOR THE PROPOSED AMENDMENTS

1. Amendment of approved route for the power line

As detailed in Section 1 of this report, five alternatives were considered within the Basic Assessment Report for the location of this power line (refer to Figure 1). These alternatives were considered and comparatively assessed by all specialists involved in the study (refer to Appendix A – D for specialist studies completed as part of the Basic Assessment study).

Alternative 1D was recommended as the preferred route for the power line in the final Basic Assessment report (Savannah Environmental, May 2016). This alternative runs approximately 2-3km to the east of the existing Eskom power lines in the area - on the same land - and was proposed in order to avoid crossing in close proximity of existing water bodies. The option of following the existing power line (Alternative 1C) was considered fatally flawed from an avifaunal / bird perspective *based on information available at that time*.

Following objections raised by the affected landowners regarding the approval of Alternative 1D as the preferred alternative as a result of impacts on agricultural activities and land use, further discussions and recent on-site data collected by the bird specialist and Eskom, the findings of the impact assessment have been revisited and revised. Alternative 1C which runs parallel to the existing 400kV lines in the south is now regarded as the preferred option from an avifaunal perspective. This option would also reduce impacts on the land use for the affected landowners.

An addendum to the avifaunal report has been prepared in this regard by the avifaunal specialist (refer to Appendix B). This addendum states the following:

"Since the report was written, and more importantly because of the species highlighted in our report (Simmons & Martins 2015), the Endangered Wildlife Trust (EWT) in conjunction with Eskom undertook mitigation action shortly thereafter. This comprised affixing spiral bird-diverters to the earth wires of both lines immediately around the hotspot of mortality identified (Figure 1).

In the follow-up inspection (23 August 2016) to determine if the spiral diverters on the existing earth wires of the power lines adjacent to the pan shown in Figure 1, were effective, Lourens Leeuwner of EWT reported as follows:

"I found remains of two flamingos, the one was very old and may have been from the previous set of collisions. The other was around a month old. Both remains were underneath the earth wire of the line closest to the pan. There were also 400-500 flamingos in the pan.

The birds seem to be colliding with the earth [wire] of the existing line closest to the pan. If our observations are correct here, placing the new line on the side furthest from the pan, should actually result in no further collisions now that all earths are clearly marked. I think the situation has definitely been improved.

I definitely think that placing the [new] line parallel to existing lines would be preferable as it will also increase the overall visibility. However, I think you must insist that the new line is marked as soon as it is erected, specifically around the affected sections and

...it is of the utmost importance that the new line runs on the side furthest from the pan, and NOT between the pan and the current lines. (L Leeuwner, Renewable Energy Project Manager, Endangered Wildlife Trust, 23 August 2016)."

One potential bias explaining the small number of carcasses found by this EWT inspection is the removal of carcasses by scavengers. However, we doubt this could cause any bias in the results because few scavengers were seen (no vultures occur and only Pied Crows were recorded). If mammalian predators were removing carcasses then the old remains (comprising bones and feathers) found in our August 2015 site inspection would not have occurred. So we doubt any bias results from carcass removal but we have only circumstantial evidence.

Given Mr Leeuwner's experience with avian collisions and power lines, we support his data, recommendations and suggested mitigations. We recommend therefore that:

- » *The new 132 kV line running south from the Rhebokfontein wind farm that runs parallel to the existing lines is given preference over all other routings suggested previously (Simmons & Martins 2015);*
- » *The new line has spiral bird diverters (alternating black-white-black-white) be affixed to all new earth wires as the new line is erected;*
- » *The new 132 kV line is routed furthest from the pan where the red data birds congregate, i.e. on the west-side of the existing lines. This will reduce further the likelihood that incoming birds will impact the line;*
- » *That regular inspections (every 6 months) are made of the lines at least 1km either side of the pan."*

From the findings of the Basic Assessment undertaken, only the avifaunal specialist noted issues with Alternative 1C. All other specialist studies conclude that this alternative was considered to be acceptable (refer to Appendix A – D). The overall preferred alternative is now therefore considered to be **Alternative 1C**.

2. Amended mitigation measures recommended by the avifaunal specialist

The study visit by EWT (L. Leeuwner, pers. comm.), to the power lines identified as causing high mortality to wetland birds, indicates that the high impact fatalities on this section of power line appear to have been reduced by the addition of spiral bird diverters on the earth wire in 2015. Thus the original mitigation measures to reduce further avian deaths (re-routing the new lines) can be replaced with (i) the placement of the new line adjacent to, and west of the present lines (ii) adding spiral bird diverters to the earth wires of all new lines as they go up and (iii) competent ornithologists assessing their efficiency every 6 months.

Based on the updated information available to the bird specialist amended, more specific mitigation measures are proposed to be included in the EA. These new proposed mitigation measures are considered more suitable for reducing the potential impact of avifaunal mortality associated with the proposed power line.

3. Correction of DEA reference number on page 1 of the EA and the accompanying cover letter

The correct current reference number for the current application should be used:
14/12//16/3/3/1/1533

4. CONSIDERATIONS IN TERMS OF THE REQUIREMENTS OF THE EIA REGULATIONS

In terms of Regulation 31 of the EIA Regulations 2014, an environmental authorisation may be amended by following the process in this Part (i.e. a Part 2 amendment) if it is expected that the amendment may result in an impact where such level or nature of impact was not:

- a) Assessed and included in the initial application for environmental authorisation;
or
- b) Taken into consideration in the initial authorisation.

And the change does not, on its own, constitute a listed or specified activity.

The Department of Environmental Affairs (DEA), as the Competent Authority, has confirmed that this process is to be followed for the amendment under consideration. This section of the report provides an assessment of the amendment in terms of the requirements of Regulation 32.

4.1. Potential for Change in the Significance of Impacts as Assessed in the EIA as a Result of the Proposed Amendment

As detailed in Section 1 of this report, five alternatives were considered within the Basic Assessment Report for the location of this power line (refer to Figure 1). These alternatives were considered and comparatively assessed by all specialists involved in the study (refer to Appendix A for specialist studies completed as part of the Basic Assessment study).

Alternative 1D was recommended as the preferred route for the power line in the final Basic Assessment report (Savannah Environmental, May 2016). The option of following the existing power line (Alternative 1C) was considered fatally flawed from an avifaunal / bird perspective *based on information available at that time*.

1. Avifaunal Impacts associated with the proposed amendments

An addendum to the avifaunal report has been prepared in this regard by the avifaunal specialist (refer to Appendix B). This addendum states the following:

"Since the report was written, and more importantly because of the species highlighted in our report (Simmons & Martins 2015), the Endangered Wildlife Trust (EWT) in conjunction with Eskom undertook mitigation action shortly thereafter. This comprised affixing spiral bird-diverters to the earth wires of both lines immediately around the hotspot of mortality identified (Figure 1).

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...it is of the utmost importance that the new line runs on the side furthest from the pan, and NOT between the pan and the current lines. (L Leeuwner, Renewable Energy Project Manager, Endangered Wildlife Trust, 23 August 2016)."

One potential bias explaining the small number of carcasses found by this EWT inspection is the removal of carcasses by scavengers. However, we doubt this could cause any bias in the results because few scavengers were seen (no vultures occur and only Pied Crows were recorded). If mammalian predators were removing carcasses then the old remains (comprising bones and feathers) found in our August 2015 site inspection would not have occurred. So we doubt any bias results from carcass removal but we have only circumstantial evidence.

Given Mr Leeuwner's experience with avian collisions and power lines, we support his data, recommendations and suggested mitigations. We recommend therefore that:

- » *The new 132 kV line running south from the Rheboksfontein wind farm that runs parallel to the existing lines is given preference over all other routings suggested previously (Simmons & Martins 2015);*
- » *The new line has spiral bird diverters (alternating black-white-black-white) be affixed to all new earth wires as the new line is erected;*

- » *The new 132 kV line is routed furthest from the pan where the red data birds congregate, i.e. on the west-side of the existing lines. This will reduce further the likelihood that incoming birds will impact the line;*
- » *That regular inspections (every 6 months) are made of the lines at least 1km either side of the pan."*

2. Land Use Impacts associated with the proposed amendments

Following the issuing of the Environmental Authorisation for the proposed power line, issues regarding impacts on land use of three landowners affected by Alternative 1D were raised. It was noted by the landowners that construction of the power line along Alternative 1C (i.e. parallel to the existing power lines in the area) would reduce this impact.

3. Conclusions

From the findings of the Basic Assessment undertaken, only the avifaunal specialist noted issues with Alternative 1C. All other specialist studies conclude that this alternative was considered to be acceptable (refer to Appendix A). The overall preferred alternative is now therefore considered to be **Alternative 1C**.

4.2. Advantages and Disadvantages of the Proposed Amendments

In terms of Regulation 32(1)(a)(ii), this section provides details of the advantages and disadvantages of the proposed amendment.

Advantages of the amendment	Disadvantages of the amendment
Based on recent information available from studies undertaken by EWT and Eskom, it is concluded that implementation of the proposed amendments will result in a reduction in significance of impacts on avifauna as detailed within the Basic Assessment Report, specifically a reduction of the significance of the direct impact of avifaunal mortality around the new power lines for the bird groups identified as being at risk. The cumulative impacts relating to avifaunal mortality would also be reduced.	The proposed amendment will not result in any additional new impacts beyond those identified in the original Basic Assessment. No disadvantages are associated with the proposed amendments.
The implementation of the proposed amendments will reduce impacts on land use for the affected landowner.	
Given the fact that the preferred route mainly follows the existing Eskom 400kV transmission line in the area, the	

Advantages of the amendment	Disadvantages of the amendment
requirement for new access routes will be kept to a minimum with the implementation of Alternative 1C.	

Based on the above, it can be concluded that the advantages of the proposed amendments outweigh the disadvantages from an environmental and social perspective.

4.3. Requirement for Additional Mitigation as a Result of the Proposed Amendments

As required in terms of Regulation 32(1)(a)(iii), consideration was given to the requirement for additional measures to ensure avoidance, management and mitigation of impacts associated with the proposed change.

The study visit by EWT (L. Leeuwner pers comm) to the power lines identified as causing high mortality to wetland birds indicates that the high impact fatalities on this section of power line appear to have been reduced by the addition of spiral bird diverters on the earth wire in 2015. Thus the original mitigation measures to reduce further avian deaths (re-routing the new lines) can be replaced with (i) the placement of the new line adjacent to, and west of the present lines (ii) adding spiral bird diverters to the earth wires of all new lines as they go up and (iii) competent ornithologists assessing their efficiency every 6 months.

Based on the updated information available to the bird specialist amended, more specific mitigation measures are proposed to be included in the EA. These new proposed mitigation measures are considered more suitable for reducing the potential impact of avifaunal mortality associated with the proposed power line.

5. PUBLIC PARTICIPATION

A public participation process is being conducted in support of a Part 2 application for amendment of the Environmental Authorisation for the 132kV power line between the Rhebokfontein Wind Energy Facility and Aurora Substation, Western Cape. This process is being undertaken in accordance with Regulations 39 – 44 of GNR982.

This public participation includes:

- Release of this draft amendment motivation report for a 30 day public review period between **30 November 2016 and 23 January 2017** at www.savannahsa.com/projects. CD copies can be provided to stakeholders on request.
- Notification of registered I&APs regarding the availability of the amendment motivation report.
- Placement of an advert in the printed press (Weslander and Die Burger (Western Cape))
- Placement of site notices on the properties affected by the amendment on 01 December 2016.

Comments received during the public review process for this report will be included in the final submission to the DEA for consideration in the decision-making process.

6. CONCLUSION

It is concluded that the proposed amendments will result in a reduction in significance of impacts on avifauna as detailed within the Basic Assessment Report, specifically a reduction of the significance of the direct impact of avifaunal mortality around the new power lines for the bird groups identified as being at risk. The cumulative impacts relating to avifaunal mortality would also be reduced. The proposed amendment would also reduce impacts on the land use for the affected landowners.

Taking into consideration the conclusions of the studies undertaken for the proposed amendments, in the opinion of the EAP it is concluded that these amendments are considered acceptable from an environmental perspective.