



ARCUS

**AVIFAUNAL BASIC ASSESSMENT
REPORT FOR THE PROPOSED PAULPUTS SOUTH WIND
ENERGY FACILITY SUBSTATION AND GRID
CONNECTION NEAR POFADDER, NORTHERN CAPE
PROVINCE**

On behalf of

**PAULPUTS SOUTH WIND ENERGY FACILITY (RF) (PTY)
LTD**

February 2021



Prepared By:

Arcus Consultancy Services South Africa (Pty) Limited

Office 607 Cube Workspace
Icon Building
Cnr Long Street and Hans Strijdom Avenue
Cape Town
8001

T +27 (0) 21 412 1529 | **E** AshlinB@arcusconsulting.co.za
W www.arcusconsulting.co.za

Registered in South Africa No. 2015/416206/07

TABLE OF CONTENTS

| | | |
|----------|--|----------|
| 1 | INTRODUCTION | 1 |
| | 1.1 Background | 1 |
| | 1.2 Purpose and Aims | 1 |
| | 1.3 Terms of Reference | 1 |
| 2 | METHODOLOGY | 2 |
| 3 | FINDINGS OF THE AVIFAUNAL SPECIALIST REPORT FOR THE PAULPUTS WEF (2019) | 2 |
| 4 | IMPACT ASSESSMENT | 3 |
| | 4.1 Identification of Potential Impacts | 3 |
| | 4.2 Assessment of Potential Impacts | 3 |
| | 4.2.1 Construction Phase Impacts | 3 |
| | 4.2.2 Operational Phase Impacts | 5 |
| | 4.2.3 Cumulative impacts | 8 |
| | 4.2.4 No-go Alternative | 9 |
| 5 | CONCLUSION..... | 9 |

1 INTRODUCTION

1.1 Background

Paulputs Wind Farm Project Proprietary Limited appointed Arcus Consulting Services South Africa (Pty) Ltd ('Arcus') to provide avifaunal specialist input for site changes to the proposed Paulputs Wind Energy Facility (WEF), approximately 50 km east of Pofadder in the Northern Cape Province. Environmental Authorisation (EA) (Reference No 14/12/16/3/3/2/1160) was received on 11 December 2019 by WKN-WindCurrent ('WKN') under the SPV Paulputs WEF (RF) (Pty) Ltd for a maximum of 75 wind turbines with a total generation capacity of 300 MW, each with a maximum hub height of 140 m (maximum blade tip height 230 m), one on-site substation ('substation A') and OHPL Option C was also approved for the Paulputs WEF (Figure 1).

The applicant is now proposing to amend and split the authorised Paulputs WEF and associated infrastructure ('Paulputs WEF'). This includes the splitting of the WEF into Paulputs North WEF and associated infrastructure ('Paulputs North WEF') and the Paulputs South WEF and associated infrastructure ('Paulputs South WEF'). The associated infrastructure for each WEF will include a Battery Energy Storage Facility (BESS). The Proposed Paulputs Grid Connection and Electrical Infrastructure associated with the authorised Paulputs WEF will be split from the current authorisation for ease of transfer of ownership to Eskom Holdings SOC Ltd ('Eskom').

A separate environmental authorisation application is therefore being undertaken in respect of grid connection infrastructure to serve the proposed Paulputs South WEF and the impacts are assessed in this report. The substation compound will be approximately 200 m x 200 m, located on the site of the Paulputs South WEF and will include the 132 kV substation and associated infrastructure. The proposed grid connection comprises a double circuit, 132 kV line approximately 26.5 km long from 'substation C' to the existing Eskom Paulputs Substation, north-west of the N14 (Figure 1). The servitudes will be between 3 m to 6 m wide and a maximum length of approximately 26.8 km.

1.2 Purpose and Aims

The aim of this report is to assess the impact on avifauna of the proposed grid connection and substation to serve the proposed Paulputs South WEF. Both the grid connection and substation were assessed as alternatives during the original avifaunal impact assessment associated with the authorisation of the Paulputs WEF.

1.3 Terms of Reference

The Terms of Reference for this assessment are as follows:

- Review original reports and data;
- Review any updated data on the baseline avifaunal community (where available);
- Review existing literature relevant to the effects of turbine dimensions on the risks to avifauna;
- Update the avifaunal sensitivity map(s) where relevant to the proposed changes;
- Assess the impacts related to the proposed changes (if any);
- Assess advantages or disadvantages of the proposed changes;
- Identify additional changes to the mitigation measures required to avoid, manage or mitigate the impacts associated with the proposed changes (if any).

2 METHODOLOGY

Arcus carried out the pre-construction avifaunal monitoring of the Paulputs WEF and the impact assessment of the Paulputs WEF and associated infrastructure and are therefore familiar with the project and its associated impacts. The pre-construction avifaunal monitoring was conducted over four seasons between May 2018 and January 2019 and included vantage point surveys, walk-transects, drive transects, incidental observations, focal site monitoring and specialist nest survey. An additional site-visit was conducted by the avifaunal specialist from 22 to 24 July 2020.

To assess the potential impacts of the proposed development on avifauna the following documents and/or data were reviewed:

- Arcus, 2019. Final Pre-construction Monitoring Report and Avifaunal Specialist Report for Paulputs Wind Energy Facility, Northern Cape Province, June 2019.

3 FINDINGS OF THE AVIFAUNAL SPECIALIST REPORT FOR THE PAULPUTS WEF (2019)

The proposed substation site and grid connection route considered in this application were assessed as alternatives to the substation and grid connection authorised as part of the Paulputs WEF (Figure 1).

The original impact assessment stated that all options (i.e. including the proposed substation site and grid connection considered in this application) are acceptable from an avifaunal perspective if correctly mitigated.

The report defined priority species as all species occurring on the BirdLife South Africa (BLSA) and Endangered Wildlife Trust (EWT) Avian Sensitivity Map priority species list. This list consists of 107 species with a priority score of 170 or more, and most likely to be affected negatively by WEFs. The priority score was determined by BLSA and EWT after considering various factors including bird families most impacted upon by WEFs, physical size, species behaviour, endemism, range size and conservation status. Red Data species included species whose regional conservation status is listed as Near-Threatened, Vulnerable, Endangered or Critically Endangered in the Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland¹.

The report noted that the Mattheus-Gat Conservation Area (Global IBA) borders the proposed development site to the south west. A red dune system runs through the centre of the IBA, orientated from north-west to south-east. Small quartzite hills and gneiss-granitic inselbergs form islands of rocky habitat in a sea of red sand. This IBA is one of a few sites protecting the globally threatened Red Lark, which inhabits the red sand dunes and sandy plains with a mixed grassy dwarf shrub cover, and the near-threatened Sclater's Lark, which occurs erratically on gravel plains. It is seasonally important for nomadic larks, such as Stark's Lark, and sparrow-larks, which are abundant after good rains. The number of known species for this IBA is 142. It appears that the Red Lark population has declined in this IBA. Globally threatened species that occur in the IBA are Red Lark, Sclater's Lark, Kori Bustard, Ludwig's Bustard and Black Harrier. Karoo Korhaan also occurs in the IBA which is regionally threatened. Biome-restricted species include Stark's Lark, Karoo Long-billed Lark, Black-eared Sparrow-lark, Tractrac Chat, Sickle-winged Chat, Karoo Chat, Layard's Tit-Babbler, Karoo Eremomela, Cinnamon-breasted Warbler, Namaqua Warbler, Sociable Weaver, Pale-winged Starling and Black-headed Canary. Besides these trigger species, Martial Eagle, Secretarybird, Verreaux's Eagle, Booted Eagle, Black-chested Snake Eagle, Cape Eagle-Owl and Spotted Eagle-Owl are present.

¹ Taylor MR (ed.) 2015. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. Birdlife South Africa, Johannesburg.

The proposed development site does not contain the red dune and sandy plains habitat suitable for Red Lark, and Red Lark has not been recorded during four seasons of pre-construction monitoring on the project site. Therefore an impact on this species by the proposed development is unlikely. The activity and abundance of Priority Species and Red Data species on the project site were found to be very low to low. The diversity of these species recorded was also low. Abundances and diversity of small passerines was also found to be low on the project site.

Verreaux's Eagle were confirmed breeding 1.8 km outside of the project site boundary, however the species was not recorded flying on site. The project site does not contain any important Verreaux's Eagle habitat, even though they may traverse the site or forage there occasionally. Overall the four seasons of monitoring recorded a very low number of flights and as a result the entire site was assigned a score of Low Flight Sensitivity. The original impact assessment identified various features (such as aquatic features and nest sites) and applied buffers that were considered to be no-go for the construction of turbines, however they permitted the construction of other associated infrastructure.

Compared to other sites, the flight activity of priority species was the lowest recorded on any WEF that the specialists have worked on or are aware of. The original assessment concluded that the site itself appears to be well suited for wind energy development from an avifaunal perspective.

4 IMPACT ASSESSMENT

The area earmarked for the BESS development was assessed as part of the laydown facilities for the authorised Paulputs WEF and therefore the assessment footprint remains valid. The impacts assessed for the laydown areas included that of:

- Vegetation clearing resulting in habitat loss for species
- Construction and operational disturbances (noise/pollution) resulting in displacement of species
- Threat of increased human presence

Minor disturbance is expected during the operation of the BESS.

4.1 Identification of Potential Impacts

The key potential impacts on avifauna associated with the substation and grid connection infrastructure include:

- Displacement of priority or Red Data avifauna due to habitat destruction and transformation;
- Displacement of avifauna due to disturbance;
- Mortality of priority or Red Data avifauna due to collisions; and
- Mortality of priority or Red Data avifauna due to electrocution.

4.2 Assessment of Potential Impacts

4.2.1 Construction Phase Impacts

4.2.1.1 Impact 1: Habitat Destruction during Construction

Sections of natural habitat will be destroyed during the construction phase for clearing of servitudes, creation of access roads and for clearing of pylon bases, lay-down areas and temporary construction facilities. Clearing these areas will have an impact in terms of loss of habitat for avifauna. As the vegetation type associated with the substation assessment area is largely intact in the broader area, the impact is considered to be of low significance.

Pylon bases have a relatively small footprint and therefore do not pose a significant impact of habitat loss. Most of the novel clearing will therefore be transient in nature and for a short duration, as recovery will take place once the construction phase is completed. As the probability of some habitat being cleared is high the resultant impact significance in the table is of medium significance despite the intensity and extent being low. As the area surrounding the project site is widespread, contiguous habitat the small areas that may be impacted upon by the proposed development should rather be considered to be of **low significance**.

| Impact Phase: Construction | | | | | | | |
|--|--------|----------|---|----------|--------------|-------------|------------|
| Potential impact description: Habitat loss associated with the clearing of vegetation for lay-down areas, temporary construction facilities and pylon bases. | | | | | | | |
| | Extent | Duration | Intensity | Status | Significance | Probability | Confidence |
| Without Mitigation | M | M | M | Negative | M | H | H |
| With Mitigation | L | M | L | Negative | M | H | H |
| Can the impact be reversed? | | | Mostly. Destruction of habitat will largely be transient in nature. | | | | |
| Will impact cause irreplaceable loss of resources? | | | No. The habitats on site are widespread and the footprint of the power line pylons is relatively small. | | | | |
| Can impact be avoided, managed or mitigated? | | | Mostly. The use of existing servitudes will mitigate most of the residual impact. | | | | |
| Mitigation measures to reduce residual risk or enhance opportunities: | | | | | | | |
| <ul style="list-style-type: none"> Existing roads and servitudes to be used wherever possible; Minimise the development footprint as far as possible and rehabilitate disturbed areas that are not required by the operational phase of the development such as lay-down areas and temporary construction facilities; All construction vehicles should adhere to clearly defined and demarcated roads, no off-road driving should be allowed; and No open fires should be permitted outside of designated areas. | | | | | | | |
| Impact to be addressed/ further investigated | | | | No. | | | |

4.2.1.2 Impact 2: Disturbance and Displacement during Construction

Disturbances and noise from staff and construction activities can impact certain sensitive species particularly whilst feeding and breeding, resulting in effective habitat loss through a perceived increase in predation risk. There are various potentially sensitive species occurring on the project site including Ludwig's Bustard, Kori Bustard, Verreaux's Eagle, Northern Black Korhaan. Disturbance can cause these species to be displaced, either temporarily (i.e. for some period during the construction activity) or permanently (i.e. they do not return), into less suitable habitat which may reduce their ability to survive and reproduce. Disturbance of priority raptor species at nest sites, may result in failed breeding attempts. The disturbance and displacement impacts associated with the construction phase are generally temporary in nature. The area surrounding the project site is largely contiguous habitat and therefore displacement distances should not incur a great energetic cost and should allow for rapid return to the site once the disturbance concludes. The displacement of avifauna by construction activities associated with the proposed development is therefore considered to be of **low significance**.

| Impact Phase: Construction |
|----------------------------|
|----------------------------|

| Potential impact description: Displacement of priority species, particularly Red Data species, due to disturbance associated with construction activities. | | | | | | | |
|---|--------|----------|--|----------|--------------|-------------|------------|
| | Extent | Duration | Intensity | Status | Significance | Probability | Confidence |
| Without Mitigation | L | L | M | Negative | L | L | H |
| With Mitigation | L | L | L | Negative | L | L | H |
| Can the impact be reversed? | | | Yes. Disturbance associated with construction is transient in nature and the impact will cease once construction has been completed. | | | | |
| Will impact cause irreplaceable loss of resources? | | | No. Avifaunal communities will recolonize the area once construction has been completed. | | | | |
| Can impact be avoided, managed or mitigated? | | | Yes. The probability and intensity of disturbance can be reduced with mitigation measures. | | | | |
| Mitigation measures to reduce residual risk or enhance opportunities: | | | | | | | |
| <ul style="list-style-type: none"> • Maximum use of existing access road and servitudes; • No off-road driving; • Speed limits (30 km/h) should be strictly enforced to reduce unnecessary noise; • Construction camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate; • The movement of construction personnel should be restricted to the construction areas on the project site; • No dogs or cats other than those of the landowners should be allowed on site; • Any holes dug e.g. for foundations of pylons should not be left open for extended periods of time to prevent entrapment by ground dwelling avifauna or their young and only be dug when required and filled in soon thereafter; • An appointed Environmental Control Officer (ECO) must be trained by an avifaunal specialist to identify the potential priority species as well as the signs that indicate possible breeding by these species; • The ECO must make a concerted effort to look out for such breeding activities especially of Red Data species; • If any Red Data species are confirmed to be breeding (e.g. if a nest site is found), construction activities within 500m of the breeding site must cease, and an avifaunal specialist is to be contacted immediately for further assessment of the situation and instruction on how to proceed. | | | | | | | |
| Impact to be addressed/ further investigated | | | | No. | | | |

4.2.2 Operational Phase Impacts

4.2.2.1 Impact 3: Disturbance and Displacement during Operation

Periodic maintenance is required of the servitude and power line infrastructure, including the regular clearing of excess vegetation to allow for unrestricted movement along the service and access roads and to minimize the risk of fires. The power line may also require aerial inspection or maintenance. The disturbance of avifauna during the operational phase, while ongoing, is not continuous and is therefore considered to be of **low significance** if mitigation measures are adhered to.

| Impact Phase: Operation | | | | | | | |
|--|--------|----------|-----------|----------|--------------|-------------|------------|
| Potential impact description: Displacement of priority species, particularly Red Data species, due to disturbance associated with operational activities such as line assessment and maintenance. | | | | | | | |
| | Extent | Duration | Intensity | Status | Significance | Probability | Confidence |
| Without Mitigation | L | M | M | Negative | M | H | High |

| | | | | | | | |
|---|---|--|---|----------|---|---|------|
| With Mitigation | L | M | L | Negative | L | L | High |
| Can the impact be reversed? | | Yes. Birds will move back into the area after a disturbance event. | | | | | |
| Will impact cause irreplaceable loss of resources? | | No. | | | | | |
| Can impact be avoided, managed or mitigated? | | Yes. The probability and intensity of disturbance can be reduced with mitigation measures. | | | | | |
| Mitigation measures to reduce residual risk or enhance opportunities: | | | | | | | |
| <ul style="list-style-type: none"> Aerial assessment or maintenance of the power line (e.g. by helicopter) should not be conducted around the Verreaux's Eagle nest during the breeding season (May, June, July and August) where possible; All vehicles should adhere to clearly defined and demarcated roads, no off-road driving should be allowed; Speed limits (30 km/h) should be strictly enforced to reduce unnecessary noise; The movement of personnel should be restricted to the servitudes and access roads on the project site; No dogs or cats other than those of the landowners should be allowed on site; and No-go areas should be adhered to. | | | | | | | |
| Impact to be addressed/ further investigated | | | | No. | | | |

4.2.2.2 Impact 4: Collisions with Power Lines during Operation

Collisions with large (>132 kV) power lines are a well-documented threat to avifauna in southern Africa² while smaller lines pose a higher threat of electrocution but can still be responsible for collision. Collisions with overhead power lines occur when a flying bird does not see the cables, or is unable to take effective evasive action, and is killed by the impact or impact with the ground. Heavy-bodied birds such as bustards, cranes and waterbirds, with limited manoeuvrability are especially susceptible to this impact². Species that may be particularly prone to collisions that could occur on the proposed development site include Ludwig's Bustard, Kori Bustard, Karoo Korhaan, Northern Black Korhaan and Secretarybird. Given the low avifaunal activity on the site collisions with power lines is considered to be of low probability and **low significance**.

| Impact Phase: Operation | | | | | | | |
|---|--------|--|-----------|----------|--------------|-------------|------------|
| Potential impact description: Collision of birds with power lines. | | | | | | | |
| | Extent | Duration | Intensity | Status | Significance | Probability | Confidence |
| Without Mitigation | L | M | M | Negative | L | L | M |
| With Mitigation | L | M | M | Negative | L | L | M |
| Can the impact be reversed? | | No. | | | | | |
| Will impact cause irreplaceable loss of resources? | | No. | | | | | |
| Can impact be avoided, managed or mitigated? | | Partially. Flappers and other bird flight diverters are not 100% effective at preventing collisions. | | | | | |
| Mitigation measures to reduce residual risk or enhance opportunities: | | | | | | | |
| <ul style="list-style-type: none"> The most appropriate and up-to-date marking devices (such as flappers and bird flight diverters) must be selected in consultation with the Endangered Wildlife Trust (EWT); | | | | | | | |

² van Rooyen, C.S. 2004. The Management of Wildlife Interactions with over-headlines. In The fundamentals and practice of Over-head Line Maintenance (132kV and above), pp217-245. Eskom Technology, Services International, Johannesburg.

| | |
|--|--|
| <ul style="list-style-type: none"> • Attach appropriate marking devices on all spans of new power lines in accordance with installation guidelines to increase visibility; • Flappers and BFDs must be maintained and replaced where necessary, for the life span of the project; • Develop and implement a carcass search programme for birds during the first two years of operation, in line with the latest monitoring guidelines available. This programme must include monitoring of any overhead power lines, including the proposed grid connection line. | |
| Impact to be addressed/ further investigated | Yes. The most appropriate and up-to-date flappers and BFDs must be determined in consultation with EWT and installed according to installation guidelines. |

4.2.2.3 Impact 5: Electrocution during Operation

Electrocution refers to the scenario where a bird is perched or attempts to perch on the electrical structure and causes an electrical short circuit by physically bridging the air gap between live components and/or live and earthed components². Overhead power line infrastructure with a capacity of 132 kV or more do not generally pose a risk of electrocution due to the large size of the clearances between the electrical infrastructure components. Electrocutions are therefore more likely for larger species whose wingspan is able to bridge the gap such as eagles or vultures. Various large raptors (such as Martial Eagle, Verreaux's Eagle and potentially vultures), susceptible to electrocution (particularly in the absence of safe and mitigated structures) may occur in the broader project area, however flight activity levels of these species is low at the site. Electrocutions within the proposed substation are possible but should not affect the more sensitive Red Data species, as these species are unlikely to use the infrastructure within the substation yard for perching, nesting or roosting. The electrocution risk is considered to be of low probability and therefore **low significance** if mitigation measures are adhered to.

| Impact Phase: Operation | | | | | | | |
|---|--------|--|-----------|----------|--------------|-------------|------------|
| Potential impact description: Electrocution of avifauna by powered infrastructure. | | | | | | | |
| | Extent | Duration | Intensity | Status | Significance | Probability | Confidence |
| Without Mitigation | M | M | M | Negative | M | M | H |
| With Mitigation | M | M | L | Negative | L | L | H |
| Can the impact be reversed? | | No. Some electrocution of priority or Red Data species may occur. | | | | | |
| Will impact cause irreplaceable loss of resources? | | Potentially. Electrocution of Red Data species may occur. | | | | | |
| Can impact be avoided, managed or mitigated? | | Yes. The probability and intensity of electrocution can be reduced with mitigation measures. | | | | | |
| Mitigation measures to reduce residual risk or enhance opportunities: | | | | | | | |
| <ul style="list-style-type: none"> • The pylons to be constructed must be 'bird friendly' and provide a safe and suitable perch; • The pylons to be constructed must have bird deterrent devices mounted on relevant parts of the structure where necessary to reduce the chances of electrocution; • The pylons to be constructed must be approved by the EWT's Wildlife and Energy Programme; • An operational monitoring programme must be implemented and include regular monitoring (i.e. quarterly) of the power lines for electrocution incidents (this can be done simultaneously with the collision monitoring); and • Any mortalities must be reported to the EWT. | | | | | | | |
| Impact to be addressed/ further investigated | | Yes. Final design of the pylons must be approved by the EWT. | | | | | |

4.2.3 Cumulative impacts

A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other nearby activities as a result of the proposed development.

There are no proposed or existing wind farms within 35 km of the proposed development, however the Part II amendment to split the Paulputs WEF into two separate facilities necessitates the need for an additional substation and grid connection to serve the Paulputs South WEF. This increases the potential cumulative impact of the projects.

Two existing CSP trough plants are in operation (KaXu Solar One and !Xina Solar One) as well as one operational solar PV and another being preferred bidder. No operational monitoring data are available for any of the operational facilities. One 200 MW CSP tower plant has been approved which poses a particular threat to birds, as they incinerate when flying too close to the heated collection tower. While some birds may collide with the CSP troughs mistaking them for a surface water, collisions for this technology are generally unlikely.

The main cumulative threat to birds in the area is expected to be from habitat loss and powerline collisions, as each of the proposed facilities will require a grid connection to the Paulputs substation. This impact is only partially mitigatable, and only if all new overhead powerlines are fitted with BFD markers and are of a bird friendly design as detailed above.

The cumulative impact of habitat loss to certain local species, in particular Martial Eagle may become a potentially significant impact due to the large footprints of the planned and constructed solar facilities in the broader area.

However, given the comparatively small size of the proposed development and the low flight activity on the project site, the contribution of the proposed substation and grid connection to this impact should be considered to be of **low significance** if mitigation measures are adhered to.

| Impact Phase: Operation | | | | | | | |
|---|---|----------|-----------|----------|--------------|-------------|------------|
| Potential impact description: Cumulative impacts on avifauna. | | | | | | | |
| | Extent | Duration | Intensity | Status | Significance | Probability | Confidence |
| Without Mitigation | H | M | H | Negative | H | M | M |
| With Mitigation | H | M | M | Negative | M | L | M |
| Can the impact be reversed? | Unlikely. Reversal would require the decommissioning of all the transmission infrastructure in the area. | | | | | | |
| Will impact cause irreplaceable loss of resources? | Potentially. | | | | | | |
| Can impact be avoided, managed or mitigated? | Partially. The intensity and probability of the cumulative impact can be reduced if mitigation measures are adhered to. | | | | | | |
| Mitigation measures to reduce residual risk or enhance opportunities: | | | | | | | |
| <ul style="list-style-type: none"> All mitigation measures listed above and recommended for the other projects must be adhered to; and The applicant and/or operational project company should pro-actively collaborate with other renewable energy operators in the area. Operational monitoring data must be shared with BirdLife South Africa and EWT. | | | | | | | |
| Residual impact | A residual impact of low negative significance is likely to result from the proposed development following the implementation of mitigation measures, however the cumulative impact is difficult to mitigate against. | | | | | | |

4.2.4 No-go Alternative

The no-go alternative is that the activity does not go ahead, implying a continuation of the current situation or the status quo. The no-go alternative is not necessarily the most ecologically attractive alternative. The no-go alternative will limit the potential associated with the approved renewable energy developments that require connection to the grid, the potential of the area as a whole for ensuring local energy security and the realisation of renewable energy targets on a provincial and national scale, ultimately limiting the potential to mitigate climate change impacts on avifauna.

5 CONCLUSION

Activity and abundance of priority species and red data species were found to be very low to low on the proposed development site.

Arcus is of the opinion that the impacts associated with the construction, operation and decommissioning phases of the project can be mitigated to acceptable levels provided the recommended mitigation measures are implemented and that the EA should be granted.

Impact Statement

The proposed project is unlikely to generate significant negative impacts on avifauna post-mitigation. No highly significant negative impacts were observed, therefore from an avifaunal perspective the proposed project can be authorised if all recommendations and mitigation measures are implemented.



ARCUS

**AVIFAUNAL SITE SENSITIVITY VERIFICATION REPORT
FOR PAULPUTS SOUTH SUBSTATION AND GRID
CONNECTION**

For

**PAULPUTS SOUTH WIND ENERGY FACILITY (RF) (PTY)
LTD**

February 2021



Prepared By:

Arcus Consultancy Services South Africa (Pty) Limited

Office 607 Cube Workspace
Icon Building
Cnr Long Street and Hans Strijdom Avenue
Cape Town
8001

T +27 (0) 21 412 1529 | **E** AshlinB@arcusconsulting.co.za
W www.arcusconsulting.co.za

Registered in South Africa No. 2015/416206/07

TABLE OF CONTENTS

| | | |
|----------|--|----------|
| 1 | INTRODUCTION | 1 |
| | 1.1 Site Screening | 1 |
| 2 | METHODS | 1 |
| | 2.1 Desk-top Analysis | 1 |
| | 2.2 Site Visit | 1 |
| 3 | RESULTS | 1 |
| | 3.1 National Web-based Screening Tool | 1 |
| | 3.2 Desk-top Analysis and Site Visit | 2 |
| 4 | CONCLUSION..... | 2 |

1 INTRODUCTION

While no specific protocols for the avifaunal assessment of linear infrastructure are listed in the National Gazette, No. 43110 of 20 March, 2020: "National Environmental Management Act (107/1998) Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of sections 24 (5) (a) and (h) and 44 of the Act, when applying for Environmental Authorisation", the information presented by the online screening tool¹ was consulted to determine the sensitivity of the project site.

1.1 Site Screening

The site sensitivity verification was undertaken through the use of:

- a desk top analysis, using satellite imagery;
- a preliminary on-site inspection; and
- any other available and relevant information.

2 METHODS

2.1 Desk-top Analysis

The following relevant information was consulted to determine the baseline of the avifaunal community that could potentially occur on the project site and to assess their sensitivity to the proposed development.

- Bird distribution data of the Southern African Bird Atlas Project 2 (SABAP-2) obtained from the Avian Demography Unit of the University of Cape Town²;
- Co-ordinated Avifaunal Road Count (CAR) project³;
- Co-ordinated Water-bird Count (CWAC) project⁴;
- The Important Bird Areas of southern Africa (IBA) project⁵;
- Arcus, 2019. Final Pre-construction Monitoring Report and Avifaunal Specialist Report for Paulputs Wind Energy Facility, Northern Cape Province, June 2019; and
- The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland⁶.

2.2 Site Visit

A three-day site walkthrough was conducted between 22 and 24 June 2020.

3 RESULTS

3.1 National Web-based Screening Tool

No avian sensitivities were identified by the National Web-based Screening Tool, nor were any avifaunal species listed in the relative animal species theme.

¹ <https://screening.environment.gov.za/>

² <http://sabap2.birdmap.africa/> Accessed 18 February 2020.

³ Young, D.J., Harrison, J.A, Navarro, R.A., Anderson, M.A., & Colahan, B.D. (Eds). 2003. Big birds on farms: Mazda CAR Report 1993-2001. Avian Demography Unit: Cape Town.

⁴ Taylor, P.B., Navarro, R.A., Wren-Sargent, M., Harrison, J.A. & Kieswetter, S.L. 1999. Coordinated waterbird Counts in South Africa, 1992-1997. Avian Demography Unit, Cape Town.

⁵ Marnewick MD, Retief EF, Theron NT, Wright DR, Anderson TA. 2015. Important Bird and Biodiversity Areas of South Africa. Johannesburg: BirdLife South Africa.

⁶ Taylor, M.R., Peacock, F., and Wanless, R.M. 2015. Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland.

3.2 Desk-top Analysis and Site Visit

Activity and abundance of priority species and red data species were found to be very low to low by the pre-construction monitoring conducted by Arcus between May 2018 and January 2019. The diversity of these species recorded was also low. Abundances and diversity of small passerines was found to be low as well. Verreaux's Eagle were confirmed breeding approximately 2 km from the grid connection route, however the species was not recorded flying on site. The project site does not contain any important Verreaux's Eagle habitat, even though they may traverse the site or forage there occasionally. Overall the four seasons of monitoring recorded a very low number of flights and as a result the entire site was assigned a score of Low Flight Sensitivity.

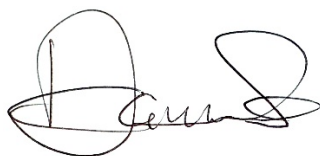
Compared to other WEF sites flight activity of priority species was the lowest recorded on any WEF that the specialists have worked on or are aware of. The assessment concluded that the WEF site itself appears to be well suited for wind energy development from an avifaunal perspective. The site visit did not result in any additional features that would result in increased avifauna sensitivity.



Figure 1: Image of the Paulputs South project site.

4 CONCLUSION

The project site is confirmed to be of low avifaunal sensitivity to the proposed development by this verification report.



Dr Owen Rhys Davies

Pr. Sci. Nat (Ecology)



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

| | (For official use only) |
|------------------------|-------------------------|
| File Reference Number: | |
| NEAS Reference Number: | DEA/EIA/ |
| Date Received: | |

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

Proposed Amendment of the Paulputs Wind Energy Facility, Northern Cape Province

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

| | | | |
|--|---|-------|------------------------------------|
| Specialist Company Name: | Arcus Consultancy Services South Africa (Pty) Ltd | | |
| B-BBEE | Contribution level (indicate 1 to 8 or non-compliant) | 4 | Percentage Procurement recognition |
| Specialist name: | Dr Owen Davies | | |
| Specialist Qualifications: | PhD Zoology (Ornithology), BSc Botany | | |
| Professional affiliation/registration: | SACNASP, ZSSA | | |
| Physical address: | Office 607, Cube Workspace, Icon Building, Cape Town | | |
| Postal address: | Office 607, Cube Workspace, Icon Building, Cape Town | | |
| Postal code: | 8001 | Cell: | 072 558 0080 |
| Telephone: | 0214121529 | Fax: | |
| E-mail: | OwenD@arcusconsulting.co.za | | |

2. DECLARATION BY THE SPECIALIST

I, Owen Rhys Davies, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

[Handwritten Signature]

Signature of the Specialist

Arcus Consultancy Services South Africa (Pty) Ltd

Name of Company

2020/11/30

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Owen Rhys Davies, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

[Handwritten Signature]

Signature of the Specialist

Arcus Consultancy Services South Africa (Pty) Ltd

Name of Company

01/12/2020

Date

01/12/2020

Signature of the Commissioner of Oaths *[Handwritten Signature]*

Date



vanrooyen.chris@gmail.com
Tel: +27 (0)82 4549570 cell
VAT#: 4580238113

6 Pladda Drive
Plettenberg Bay
6600

For attention:

25 January 2021

Arcus

Office 607 Cube Workspace
Cnr Long Street and Hans Strijdom Ave
Cape Town
8001

Att: Ashleigh von der Heyden

Dear Ashleigh

REVIEW OF AVIFAUNAL ASSESSMENT BY DR OWEN DAVIES FOR THE PROPOSED AMENDMENT TO THE AVIFAUNAL IMPACT ASSESSMENT CONDUCTED FOR THE PROPOSED PAULPUTS SOUTH WIND ENERGY FACILITY SUBSTATION AND GRID CONNECTION NEAR POFADDER, NORTHERN CAPE PROVINCE

1. BACKGROUND

Paulputs Wind Farm Project Proprietary Limited appointed Arcus Consulting Services South Africa (Pty) Ltd ('Arcus') to provide avifaunal specialist input for site changes to the proposed Paulputs Wind Energy Facility (WEF), approximately 50 km east of Pofadder in the Northern Cape Province. Environmental Authorisation (EA) (Reference No 14/12/16/3/3/2/1160) was received on 11 December 2019 by WKN-WindCurrent ('WKN') under the SPV Paulputs WEF (RF) (Pty) Ltd for a maximum of 75 wind turbines with a total generation capacity of 300 MW, each with a maximum hub height of 140 m (maximum blade tip height 230 m), one on-site substation and OHPL Option C was also approved for the Paulputs WEF.

The applicant is now proposing to amend and split the authorised Paulputs WEF and associated infrastructure ('Paulputs WEF'). This includes the splitting of the WEF into Paulputs North WEF and associated infrastructure ('Paulputs North WEF') and the Paulputs South WEF and associated infrastructure ('Paulputs South WEF'). The associated infrastructure for each WEF will include a Battery Energy Storage Facility (BESS). The Proposed Paulputs Grid Connection and Electrical Infrastructure associated with the authorised Paulputs WEF will be split from the current authorisation for ease of transfer of ownership to Eskom Holdings SOC Ltd ('Eskom'). In addition, a separate environmental authorisation application is being undertaken in respect of grid connection infrastructure to serve the proposed Paulputs South WEF.

A separate environmental authorisation application is therefore being undertaken in respect of grid connection infrastructure to serve the proposed Paulputs South WEF. The substation compound will be approximately 200 m x 200 m, located on the site of the Paulputs South WEF and will include the 132 kV substation and associated infrastructure. The proposed grid connection comprises a double circuit, 132 kV line approximately 26.5 km long from 'substation C' to the existing Eskom Paulputs Substation, north-west of the N14. The servitudes will be between 3 m to 6 m wide and a maximum length of approximately 26.8 km.

Dr Owen Davies from Arcus compiled an assessment report with to assess the impact of in respect of grid connection infrastructure to serve the proposed Paulputs South WEF. The report is titled "Avifaunal Basic Assessment Report for the proposed Paulputs South Wind Energy Facility Substation and Grid Connection near Pofadder, Northern Cape Province" and dated August 2020.

vanrooyen.chris@gmail.com
Tel: +27 (0)82 4549570 cell
VAT#: 4580238113

6 Pladda Drive
Plettenberg Bay
6600

Chris van Rooyen Consulting as approached by Arcus to review the assessment report and provide additional recommendations if necessary.

2. FINDINGS AND CONCLUSIONS OF THE AMENDMENT REPORT

The amendment report noted that the activity and abundance of priority species and red data species were found to be very low to low on the proposed development site. The report conclude that the impacts associated with the construction, operation and decommissioning phases of the project can be mitigated to acceptable levels provided the recommended mitigation measures listed in the report are implemented and that the EA should be granted. It further stated that the proposed project is unlikely to generate significant negative impacts on avifauna post-mitigation. No highly significant negative impacts were observed, therefore from an avifaunal perspective the proposed project can be authorised if all recommendations and mitigation measures are implemented.

3. CONCLUSIONS AND RECOMMENDATIONS OF REVIEWER

We are in broad agreement with the conclusions and recommendations of the amendment report. It should be noted that an influx of White-backed Vultures and Lappet-faced Vultures were recorded in the Pofadder area during the first half of 2020 (Van Rooyen unpubl. data). Of all the Red Data species that could occur in the area, vultures are most susceptible to electrocution on 132kV structures. The key recommendation is that the pylons to be constructed must be approved by the EWT's Wildlife and Energy Programme to ensure that the design is vulture-friendly to minimise the risk of vulture electrocutions.

Sincerely



Signed:

Name: Chris van Rooyen

Position: Director/ Avifaunal Specialist



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

File Reference Number:
NEAS Reference Number:
Date Received:

(For official use only)

DEA/EIA/

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

REVIEW OF AVIFAUNAL ASSESSMENT BY DR OWEN DAVIES FOR THE PROPOSED AMENDMENT TO THE AVIFAUNAL IMPACT ASSESSMENT CONDUCTED FOR THE PROPOSED PAULPUTS NORTH WIND ENERGY FACILITY NEAR POFADDER, NORTHERN CAPE PROVINCE

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.environment.gov.za/documents/forms>.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:

Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

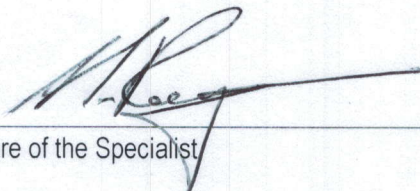
1. SPECIALIST INFORMATION

| | | | |
|--|---|---|--|
| Specialist Company Name: | Afrimage Photography (Pty) Ltd t/a Chris van Rooyen Consulting | | |
| B-BBEE | Contribution level (indicate 1 to 8 or non-compliant) | 4 | |
| Specialist name: | Chris van Rooyen | | |
| Specialist Qualifications: | BA LLB | | |
| Professional affiliation/registration: | I work under the supervision of and in association with Albert Froneman (MSc Conservation Biology) (SACNASP Zoological Science Registration number 400177/09) as stipulated by the Natural Scientific Professions Act 27 of 2003. | | |
| Physical address: | 6 Pladda Drive, Plettenberg Bay, 2122 | | |
| Postal address: | P.O. Box 2676, Fourways | | |
| Postal code: | 2055 | | |
| Telephone: | 0824549570 | | |
| E-mail: | Vanrooyen.chris@gmail.com | | |

2. DECLARATION BY THE SPECIALIST

I, Chris van Rooyen, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

Chris van Rooyen Consulting

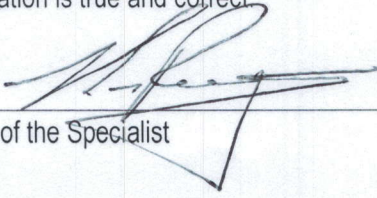
Name of Company:

20 July 2021

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Chris van Rooyen, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



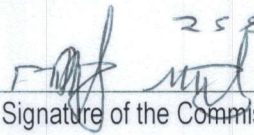
Signature of the Specialist

Afrimage Photography (Pty) Ltd

Name of Company

20 July 2021

Date

25817 22 J
 *CST MBZ1751A*

Signature of the Commissioner of Oaths

2021-07-20

Date

