

Review of the unpublished report

Blue Wind Energy Facility

Bird Monitoring

Pre-construction phase – 2013-2014

Report July 2013-March 2014

Prepared by:

BioInsight for Savannah Environmental

Review by Dr R.E. Simmons

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Background

The report provides details of the monitoring procedures, present results and future monitoring protocols for collision prone birds at the proposed wind farm at the Kleinsee Blue site in coastal Northern Cape. The facility is being developed by Diamond Wind (Pty) Ltd.

The report covers 9 of the 12 months monitoring and reviews the threats to birds from wind farms including collision, displacement and cumulative effects. They present data on all avian species likely to be found in the region from previous bird atlas data (SABAP 2 data), the number of species thought to be high risk species identified from the EIA report (Simmons and Martins 2012), the number of such species recorded during the monitoring, and other categories such as wetland species and nesting raptors.

I was requested to review the report by Savannah Environmental (Jo-Anne Thomas), partly because of my bird research experience throughout South Africa over the last 30 years and specifically because of my experience of this site (Kleinsee Blue) in the EIA, and one other site in the area.

This is a brief report on my review and my recommendations (underlined for easy access).

Methods

Bioinsight have mainly used methods proposed by the Birds and Wind Energy Specialist Group (Jenkins et al. 2012). These include (i) Vantage Point surveys for larger collision-risk species (ii) walked 1 km surveys (5 in the wind energy facility – WEF – and 5 in the control area – CO) (iii) vehicle surveys (iv) wetland surveys and (v) directed nest surveys of some sensitive species. They have also incorporated methods used overseas including a more quantitative Collision-Hazard Index, which assesses risk of collision of target birds with turbines.

The report covers 9 months but does not detail the sampling effort (in terms of hours per VP per

season) employed. Five VPs (Vantage Points) were used throughout the WEF area, and observations covered a minimum of 9 hours per VP.

Results

Total number of species (168 species),

Sensitive species from EIA (15)

Sensitive species recorded during monitoring (12)

Very low flight activity in the WEF and Control areas – mainly by crows and Rock Kestrels. A total of 182 flights were recorded comprising 394 birds records of 7 species, four of which are considered sensitive “3 of them raptors and one falcon”. Few encounters were seen with Ludwig’s Bustards or larger raptors, and several nests of kestrels and a possible Black-chested Snake Eagle were documented.

For small birds the average number of birds/km was 24 birds/km but the number of species/km was not given. In total 82 species were recorded on site using all methods.

Conclusions

Biointelligence concluded that the low activity of birds in the WEF, compared with other sites in South Africa meant that “collision risk is low but cannot be excluded” They conclude that “no no-go areas being considered”

REVIEW

Overall the report was well presented, clear and the provided graphics and maps were appropriate. The use of 500 m blocks around the proposed turbines to assess bird movements and activity is useful, as is the proportion of number of seconds that each collision-risk bird is in the danger zone (blade swept area) (Figure 4).

The grammar is sometimes poor but conveys the findings. The report is very long at 80 pages, much of which are appendices that are overly detailed in future protocols and not enough on the raw (bird) data on which the results are drawn. Raw data including hours sampled and birds seen per season for the surveys themselves, should be included as an Appendix.

Since falcons are raptors the categories “Falcons” and “Raptors” is confusing and should be changed for “Falcons” and “Other Raptors “

My biggest criticism is the finding that despite

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...the Avian Impact Assessment [suggesting] the central and south-eastern groups of turbines were considered as having a high sensitivity, especially for Ludwig’s Bustard, no major movements of the species were observed in this area, presenting risk behaviours. Nonetheless, it was within the eastern group of wind turbines that **two Ludwig’s Bustards were found dead, due to collision** with the existing aerial power line”. (page 41 of 80, my bold added)

The authors concluded

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The overall activity in the wind energy facility site, for the general community was very low, once comparing with other sites of South Africa or even within the Northern Province. “

and

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The low activity dictates that the collision risk is low; however it cannot be excluded. Some large birds' species, such as the Kori Bustard and Ludwig's Bustard, are considered sensitive to collisions with power lines, which were confirmed during the monitoring programme. These potentially sensitive species do not occur frequently on the Blue site,...

thus

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Considering the general low activity **the study area was classified as having low sensitivity for birds, with no no-go-areas being considered.**”

The only mitigations suggested despite the two deaths of two of South Africa's most collision-prone species, (ranked 8th), with an IUCN red-data category of Vulnerable (and now -2014-raised to Endangered in South Africa) are:

- Monitoring at the construction and post-construction phase: “Concerning these possible impacts already identified some mitigation measures were recommended, *i.e.* an adequate monitoring programme for monitoring the impacts during the operational phase of the wind energy facility is advised”
- Further mitigation of (page 41/80 and 44/80):
 - (i) construction restricted during the breeding season of the bustard and the raptors in areas where these birds are breeding, and no disturbance < 500m of known nest sites;
 - (ii) moving the raptor nests occurring within 1000 m of the areas to be constructed (p44);
 - (iii) bird flappers to be used for areas where sensitive birds are found; and
 - (iv) a restriction zone of 500m be affected during construction around all sensitive nests found.

I agree with all these mitigations. However, they do not directly address the problem of the breeding bustards being affected in the long-term – *i.e.* being displaced or killed by the turbines or associated infra-structure (lines).

Given that Simmons and Martins (2012) found a pair of Ludwig's Bustards breeding on the Kleinsee Blue site (near VPBL03 in Figure 2 of the present report) in August 2011, and a total 11 turbines are to be constructed either side of this nest, then this site must be considered a highly sensitive area, contra the present report. This was clearly stated in the original EIA report (Simmons and Martins 2012).

To put this area into perspective, there would be 6 turbines as close as 650m south of the known nest and 5 turbines as close as 610 m north of the known nest. The likelihood that this pair would either impact, or be displaced by the present configuration, is therefore very high. The Ludwig's Bustard nest area was found at S 29° 35' 6.53" E 17° 6'54.18"

We recorded bustards and BioInsight (2014) located two dead bustards on the Eastern area (Area 3). This latter Area 3 should also be considered a High Risk area for bustards.

So I believe the mitigation measures suggested by BioInsight are not sufficient to avoid disturbance or mortality of these red data species (bustards), and therefore I recommend the following additional mitigation measurements for the High Risk areas:

- a) the turbines in the highly sensitive bustard areas must only operate outside the breeding season. The bustard breeding season generally runs from July-November. If no bustards are present – as judged monthly, by an experienced ornithologist, familiar with bustard breeding and behaviour – then the turbines within 1.0 km of known nests, be allowed to operate until such time as bustards re-appear. Bustards are partial migrants and sometimes do not enter the Succulent Karoo biome. However, approximately half of the known South Africa population does so according to the most recent research (Shaw 2013), and 40% of the population is estimated to be killed by power lines alone per year (Shaw 2013). This restriction must be adhered to for the life-time of the wind farm project.
- b) If a) is not satisfied, then the above should be considered a no-go area with a buffer of 1 km around the known nest (GPS position given above).
- c) To reduce further any mortality the lowest point of the blade swept area be made as high off the ground as possible, given that bustards generally fly below 30m. My own records from a site 14 km south indicate 5% of 72 bustard records were above 30m. The remainder were below this. This suggests that higher turbines will kill fewer bustards.
- d) Therefore, the lowest points of the blade swept area of the installed wind turbines shall be 40 or 50m off the ground.
- e) That the raptor nests are left intact. The pairs involved will move naturally if the disturbance is too great and move back when it has declined.
- f) Bird flappers are used for all power lines (present and future) in the area.
- g) No construction to take place in the August – November period within a radius of 1000m from any active bustard or Secretarybird nests to avoid the main breeding activity times if the bustards or Secretarybirds occur on site.

I believe our original EIA report is accurate and the differences in the bustard and raptor activity findings between the Pre-construction report of BioInsight (2014) and the original EIA (Simmons & Martins 2012) may have arisen from (i) the variable migration strategy of the bustards which respond to variable winter rainfall (Shaw 2013) (ii) under sampling in the winter period in the BioInsight report and thus an under recording of bustard activity. The latter seems more likely because at a similar site 14 km south of here my team (R. Simmons, M Martins, unpubl data) recorded a large number of bustards (up to 25) in the same winter period, as covered by the BioInsight report.

References

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Shaw J.M. 2013. Power line collisions in the Karoo: conserving Ludwig's Bustards. PhD thesis University of Cape Town,

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