INYANDA ROODEPLAAT PROPOSED WIND FARM
CLARIFYING STATEMENT ON ORNITHOLOGY

DEA has raised several questions regarding the specialist reports in their assessment of the Final Environmental Impact Report (FEIR) for the Inyanda-Roodeplaat WEF. The purpose of this statement is to provide clarity on the following items relating to ornithology:

1. Project Description

Comment was sought on the significance of any differences between the project description in the FEIR and that in my report. I can confirm that my report encompasses the project description in the FEIR, using the proposed turbine layout and specifications as specified for all of my ornithological assessment work. There were, therefore, no differences between the project description in the FEIR and that in my report.

2. Fieldwork adequacy

There were issues with the initial (2013-14) field surveys undertaken regarding methodology and coverage, which were identified in a review that I undertook (as reported in the FEIR). Further surveys with improved coverage and survey methodology were implemented as a result, to provide a more robust baseline. The first six months' data from those surveys (covering the August 2015 - January 2016 period) were included within the FEIR. In addition to that, an update report providing the full year's additional data through to July 2016 (and an assessment update) was produced in December 2016. It has now therefore been demonstrated that the baseline data does provide a representative sample of the bird movements on site. The additional survey data from February-July 2016 have not had any material effect on the overall conclusion reached that, with the implementation of the proposed mitigation measures, the wind farm would not have any significant ornithological impact.

3. Site Access for Field Surveys

I can confirm that we could access all parts of the wind farm site that we needed to reach the conclusions in the ornithology report. We were not deliberately prevented access to any portion of the site.

4. Mitigation Measures: reasons and effectiveness

DEA has requested that specialists should "*provide reasons and effectiveness of each mitigation measure they proposed*". The principles of the ornithological mitigation measures proposed have been adopted at many wind farms worldwide where there have been issues with birds. Habitat management plans such as that proposed for Inyanda-Roodeplaat are now commonplace for wind farm developments, from the perspectives of both on-site management to discourage use of the wind farm, and off-site management to attract birds to feed away from areas where they may be at risk of collision (and provide enhanced ecological resources to offset any losses suffered through displacement, and often to deliver a biodiversity gain to the area overall). Both BirdLife International (Gove et al. 2013) and the European Commission (2010) both recognise the importance of such schemes and have highlighted the benefits that can be delivered in their recent respective review

and guidance. Such schemes have already been delivered successfully at many sites globally, including in proximity to internationally-important protected areas and including with similar key species and similar mountainous topography to the Inyanda-Roodeplaat site. For example, at the Beinn an Tuirc wind farm, located in mountainous habitat in SW Scotland (Walker et al. 2010), issues with golden eagle were resolved through the provision of enhanced alternative feeding habitat (with a clear net gain to the eagles delivered). Similar habitat management plans have been implemented for many of the wind farms on which I personally have worked, including the following in similar upland habitats to Inyanda Roodeplaat, many of which support internationally/nationally important raptor populations: Beinn Ghlas, Scotland (golden eagle); Salkit Uul, Mongolia (steppe eagle and black vulture); Paul's Hill, N Scotland (hen harrier); Pentland Road, Isle of Lewis, Scotland (golden eagle); Causeymire, N Scotland (hen harrier); Bankend Rig, SW Scotland (hen harrier); Calliachar, C Scotland (hen harrier); Fairfield Farm, NW England (hen harrier), Dunmaglass, N Scotland (golden eagle); and Knockacummer, SW Ireland (hen harrier).

In relation to the specific request for reasons and effectiveness of the proposed measures, I have set these out in Table 1 below, which includes all of the measures that I originally set out in Table 19 of my report. I concluded in my report that the implementation of these measures would result in no significant residual ornithological impacts and that remains the case.

Table 1. Proposed Ornithological Mitigation for the Inyanda Roodeplaat Wind Farm: proposed measures and effectiveness.

Mitigation proposed	Reason for Mitigation	Effectiveness of Measure
Avoid potentially disturbing works near active nests, as part of Breeding Bird Protection Plan (to form part of Construction Method Statement).	Avoid disturbance during construction to Verreaux's Eagle, Martial Eagle, Booted Eagle and Black Harrier	Removing the source of potential disturbance (construction activity) from a buffer zone around any active nests should avoid all disturbance to these species during breeding.
Breeding Bird Protection Plan to form part of Construction Method Statement	Avoid nest destruction during construction of ground-nesting birds	Pre-construction checks should ensure that any losses are minimised and not significant
On-site habitat management (avoid increasing food resource within wind farm)	Reduce collision mortality from operational wind turbines, specifically for Black Harrier, Verreaux's Eagle	Highly effective, ensuring construction works do not result in the creation of any potentially suitable refuges, such as through the leaving of artificial rock-piles.
Off-site habitat management (increase food resource outside wind farm through measures including improved grazing management)		This mitigation is based on proven measures that have been shown to be effective in similar situations elsewhere, so would be expected to be effective here too. Includes specific measures that have been developed for Verreaux's Eagle in South Africa.
Turbine shutdown on demand		If required, would be a highly effective back-up measure to ensure that collision risk is kept to a non-significant level. Accepted as an effective measure by BirdLife.
On-site habitat management	Reduce impact from potential disturbance of Black Harrier and Verreaux's Eagle from foraging/nesting areas by operational wind turbines	See above.
Off-site habitat management		Any lost foraging areas resulting from displacement would be offset by the enhanced habitat quality over the rest of the range. This is based on measures that have been implemented successfully elsewhere,

Mitigation proposed	Reason for Mitigation	Effectiveness of Measure
		so there is no scientific reason not to expect the same outcome at this site.
All overhead power line to be on 'bird friendly' pole design as per Eskom Standard, and high risk sections to be marked with 'bird flappers'	Reduce collisions of Blue Crane and Ludwig's Bustard with overhead wires of grid connection	Proven and widely-used measure implemented globally, will increase overhead wire visibility and give consequent reduction in collision risk.

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