APPENDIX C7(4): COMMENTS RECIEVED

Comments on Basic Assessment Report

Review period 04 March 2021 – 06 May 2021

(C&RR: Point 1)

Key Stakeholders and Interested & Affected Parties

Peer review of the bird impact study for the proposed Wind Garden Wind Farm in the Grahamstown area of the Eastern Cape Province, South Africa

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Introduction

Wind Garden (Pty) Ltd is planning to construct and operate a utility-scale wind energy facility (WEF) approximately 17 km north-west of Grahamstown in the Eastern Cape Province, South Africa. The project will comprise up to 47 turbines, spread over an area of about 3400 ha and with a generating capacity of up to 264 MW. The Wind Garden project is the western component of the eastern block of a much larger cluster of proposed wind and solar energy projects, under consideration for development by the same parent company – Wind Relic (Pty) Ltd. Fronteer is a second proposed wind farm located immediately adjacent to Wind Garden, making up the eastern component of the eastern development block.

Savannah Environmental was contracted by the developer to conduct environmental impact studies on these Wind Relic projects. The entire cluster of proposed renewable energy developments falls within the Cookhouse Renewable Energy Development Zone (REDZ – Jenkins & du Plessis 2014), and as such is subject to an abbreviated, Basic Assessment process, although this benefit does not materially extend to the requirements for bird impact studies. A collaboration between East Cape Diverse Consultants and Ecology Consultants was contracted by Savannah to conduct a baseline bird study which extended over the entire development cluster. This study ran from June 2019 to August 2020 and has subsequently informed separate avian impact assessments for both the Wind Garden and Fronteer projects, applicable to all of the various development activities associated with each.

AVISENSE Consulting was asked in February 2021 by Richard Summers (representing C-SA Properties (Pty) Ltd and a consortium of landowners in the vicinity of the proposed wind farm project to conduct a peer-review of the East Cape Diverse Consultants/Ecology Consultants bird baseline study and impact assessment for the Wind Garden WEF, as part of a formal objection to the construction and operation of this development.

Dr Andrew Jenkins and Anthony van Zyl of *AVISENSE* Consulting compiled the present report on the bird study submitted by East Cape Diverse Consultants/Ecology Consultants. Dr Jenkins is a qualified ornithologist with three decades of experience as a field biologist and as a specialist in avian impact assessment. He has an extensive publication record in peer-reviewed academic journals on aspects of raptor biology and conservation and avian collision ecology, and is the primary author of the BirdLife South Africa/Endangered Wildlife Trust guidelines document for assessing the impacts of wind farms on South African birds (Jenkins *et al.* 2015). He is also the primary author of Phases 1 and 2 Strategic Environmental Assessments (SEAs) for renewable energy development in South Africa (Jenkins & du Plessis 2014, Jenkins 2019). He has worked on screening, scoping, baseline, EIA and post-construction bird studies for >100 wind farm proposals in multiple African countries.

Anthony van Zyl holds an MSc in Zoology from UCT and is a trained project manager. He has 19 years of experience in the oil and gas industry in sub-Saharan Africa, including 5 years of experience of project management. He is an experienced field ornithologist and has been involved in multiple

raptor research and surveys in South and East Africa over the last 30 years. He has co-authored several peer reviewed papers on birds and in particular birds of prey.

For more information on *AVISENSE* Consulting see http://www.avisense.co.za/.

Methods

This review was conducted in terms of the following approach:

1. A review of the existing data relevant to the bird impact study for the WEF development.
2. An eight-day visit to the Wind Garden site, aimed particularly at evaluating the coverage, accuracy and overall adequacy of the field work done to determine the status of cliff- and tree-nesting raptors (key cliff-nesting species being Verreaux's Eagle *Aquila verreauxii* and Lanner Falcon *Falco biarmicus*, key tree-nesting species being Martial Eagle *Polemaetus bellicosus* and Crowned Eagle *Stephanoaetus coronatus*) – by far the highest priority and most impact susceptible species implicated in this assessment. Other species of potential special interest include Cape Vulture *Gyps coprotheres*, Secretarybird *Sagittarius serpentarius*, Black Harrier *Circus maurus*, Black Stork *Ciconia nigra*, Blue Crane *Grus paradisea,* Denham's Bustard *Neotis denhami,* Ludwig's Bustard *Neotis ludwigii,* and Southern Black Korhaan *Afrotis afra.*
3. Field survey work was done by (i) two observers using a single 4x4 vehicle to access as much of the area immediately surrounding the project as possible, using the existing road infrastructure and walking to more remote sites as and when necessary, (ii) three and sometimes four observers using a single 4x4 vehicle to access and check key habitats in the Kwandwe Private Game Reserve, and (iii) two observers and a pilot using a Robinson R44 helicopter to expand the survey to include habitats that proved inaccessible from the ground. Because of currently poor relations between our clients and the landowners contracted into the WEF development, we were not able to work on the ground in the proposed development area itself.
4. Each targeted area of nesting habitat (cliff-lines, well-wooded ravines and patches of mature forest) was surveyed by searching sheer faces or emergent trees for birds, nest structures and other signs of occupation, and by periods of passive observation of the presence and behaviour of target species in the general area. Observations were conducted from suitable look-out points, each with a clear view of the habitat in question, using 10 x 42 binoculars and a 20-60x spotting scope. As many as possible of the nest sites mapped in the study under review were included in our survey work.
5. For the purposes of this study, we defined a definite, large eagle nest site as one which was identified as such by the baseline study and confirmed during our site visit, at least by sighting an adult bird or pair in the near vicinity. A probable large eagle nest site was either one identified as such by the baseline study, located in an area of good habitat but which we were unable to confirm during our site visit, or one with a history of recent sightings combined with good habitat quality and appropriate social spacing, while a possible nest site was one where good habitat was located or predicted (but not surveyed) and the spacing was appropriate for the relevant species. For the remaining species, any combination of pairs of adult birds, nest structures, good habitat, and/or behaviour suggestive of breeding was considered sufficient to consider these as definite nest sites.

6. All spatial information was captured on digital, 1:50 000 topographic maps using the mobile application *Avenza*^{TM}. Throughout the time spent in the vicinity of the proposed development area atlas lists were compiled of the bird species encountered per 5' x 5' 'pentad', as per the Southern African Bird Atlas Project 2 (SABAP2) protocols, using the mobile phone-based application *BirdLasser*^{TM}. This information provided insight to the nature and composition of the general avifauna of the area for comparison with the results of the East Cape Diverse Consultants/Ecology Consultants study.
7. The results of the field survey are presented here as (i) a GIS-based file mapping all the habitats surveyed, and all the known or suspected nest sites located, and (ii) a corresponding annotated inventory of the threatened, large eagle nest sites confirmed or considered likely to be located within the broader impact area of the proposed wind farm.
8. The results of (1-6) are then used to inform an objective review of the bird impact work done for this development to date. Our review highlights (i) any information gaps, inconsistencies or errors in data presentation, analysis or interpretation, and instances of non-compliance with the accepted national standards for such work, (ii) any inadequacies of the established baseline and/or shortcomings in the listing of avian impacts likely to be associated with the planned development activities, and (ii) deficiencies in assessing the local, regional and national significance of these impacts, and the measures proposed for mitigating impacts to truly sustainable levels.

Results & Discussion

Existing data

There are no substantial published studies of birds in the Makhanda/Grahamstown area, although there are good quantities of Southern African Bird Atlas Project data (SABAP1 – Harrison *et al.* 1997, and SABAP2 - http://sabap2.adu.org.za/) available for the quarter-degree squares or pentads affected by the proposed development envelope (e.g. 186 full protocol SABAP2 cards for the pentads including and surrounding the proposed development area, submitted over the last 10 years). An integrated SABAP1/2 list for the core affected area includes >300 species (Appendix 1), sustained mainly by the extreme heterogeneity of the available habitat. Note that the baseline study under review makes no direct reference to these atlas data.

A desk-top-based description of the likely avifauna and avian habitats of the Cookhouse REDZ (within which the proposed development area is located) is provided in the Phase 1 REDZ report for birds (Jenkins & du Plessis 2014). There is also an unpublished MSc manuscript on the breeding biology of Lanner Falcons in the Grahamstown area (Stephenson 1991), that includes locations of nest sites as surveyed in the mid-late 1990s. The proposed Wind Garden WEF site is not situated close to any recognized national Important Bird and Biodiversity Areas, with the closest being the Woody Cape Section of the Addo Elephant National Park IBA, about 55 km to the southeast (Marnewick *et al.* 2015). The baseline report draws virtually verbatim on the REDZ document but, again, makes no direct reference to the Lanner Falcon study.

Nesting habitat surveys

The general area of the proposed development was visited from April 20th to 27th 2021. Over effectively six days spent in the field, two observers managed to cover most (but not all) of the target habitat (Fig. 1), and located (and in some instances characterized and surveyed) 20 cliffs or cliff-lines and a multitude of patches of mature woodland or forest (Fig. 2), all of which constituted possible nesting habitat for large eagles and/or other priority species (Fig. 2).

Fieldwork focused on surveying the valleys and cliff-lines along the northern (Helspoort Pass) and southern (New Year's River valley) edges of the proposed development envelope, where nesting habitat availability for large eagles and other priority species appeared to be greatest. Because the bird impact report gives no definitive indication of where and how nest surveys were conducted, it's not clear to what extent the areas of potential nesting habitat we identified and surveyed had been previously surveyed during the baseline study, with the results used to inform the bird impact assessment.

General avifauna

SABAP2 protocol bird lists were compiled for seven pentads concentrated around the development area during the site visit (containing 25-79 species) and 133 species were recorded overall (Appendix 1). The general nature and composition of the avifauna we observed did not differ significantly from that detailed by the baseline study (Barkhuysen & Percival 2021), although the latter only actually lists a complement of <100 species. This is even though the project team presumably spent at least 8-10 days on site, on four occasions, spread over all seasons of the annual cycle. In our opinion, the richness of the affected avifauna is not fully accounted for in the current baseline study (Barkhuysen & Percival 2021), and may well not be adequately accommodated in the resulting impact assessment.

During our time in the project area, we accumulated >20 sightings of seven priority species (Fig. 3).

Nest surveys

Although the timing of our survey was not ideal (coinciding with pre- or early-breeding season for Martial and Verreaux's Eagle, and off-season for Crowned Eagle and smaller raptors), we managed to locate or confirm 11 definite, probable or possible nest sites of five species within roughly a 10 km radius of the centre of the Wind Garden project area (Fig. 4), supplementing those sites already identified by the existing baseline study (Barkhuysen & Percival 2021).

Overall, the community of cliff-and tree-nesting raptors was probably typical for the general area. There is a scarcity of high-quality cliffs, with the best faces located along the main river courses and drainage lines. Intact woodland and forest patches are mostly confined to protected areas and/or areas of higher topographic relief. Most of the smaller cliffs we found, with sheer elements and protective overhangs, were used by resident, breeding pairs of White-necked Raven *Corvus albicollis*, with the space in many instances shared with pairs of Rock Kestrel *Falco rupicolus*.

Martial Eagle sites seemed to be associated with tall indigenous and/or alien trees growing in ravines or areas of higher topographic relief. Although we weren't able to absolutely confirm a nest of this species during our April 2021 site visit, we did see individuals of the species on three

occasions, involving two juvenile birds and one adult, all seen to the north of the project area (Fig. 3). While we flushed an adult Martial Eagle from the site located by the baseline study to the south of the development area (Fig. 4), and were happy to consider this a definite nesting location, we were unable to find any evidence of Martial Eagle occupation of the site marked to the east, despite surveying the immediate area both from the ground and from the helicopter. Given that the baseline study includes a number of flights by Martial Eagle over this area, including adults displaying and carrying food (Barkhuysen & Percival 2021), we strongly suspect that there is a nest site in this general area, but it is probably tucked away in a ravine, a short distance away to the northwest of the presently indicated location.

Verreaux's Eagle nest sites were located on the highest quality cliffs only, which were essentially absent from the immediate area of the Wind garden WEF. One definite Verreaux's Eagle nest site was found (Fig.4), and three possible sites, the closest located on the New Year's River about 3.8 km from the development area. The possible Verreaux's Eagle nest site proximal to the project was located in the baseline study in the Helspoort Pass area, only 1.7 km from the proposed development area. We walked in to this kloof and closely examined the rock faces present but found no sign of occupation by a Verreaux's Eagle pair.

Crowned Eagle nest sites were apparently confined to more thickly vegetated slopes or ravines, with only one assumed (but not confirmed) definite site located on the upper slopes of the New Year's River valley to the southwest of the project area, and one possible site just north of the main road through Helspoort Pass (Fig. 4), although this location features degraded thicket habitat and relatively high levels of human disturbance).

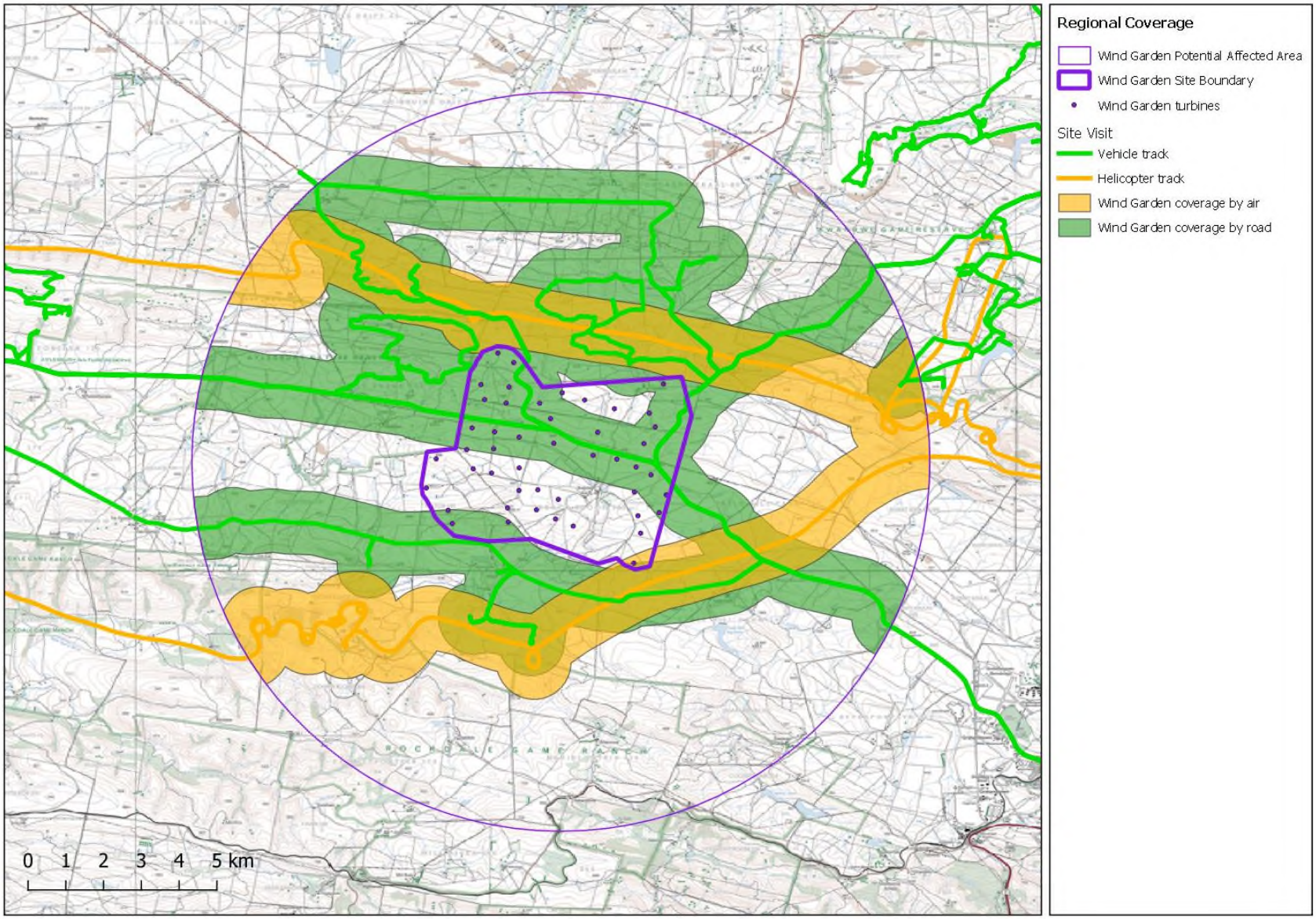

Figure 1. *AVISENSE* coverage of the target area during a site visit in April 2021.

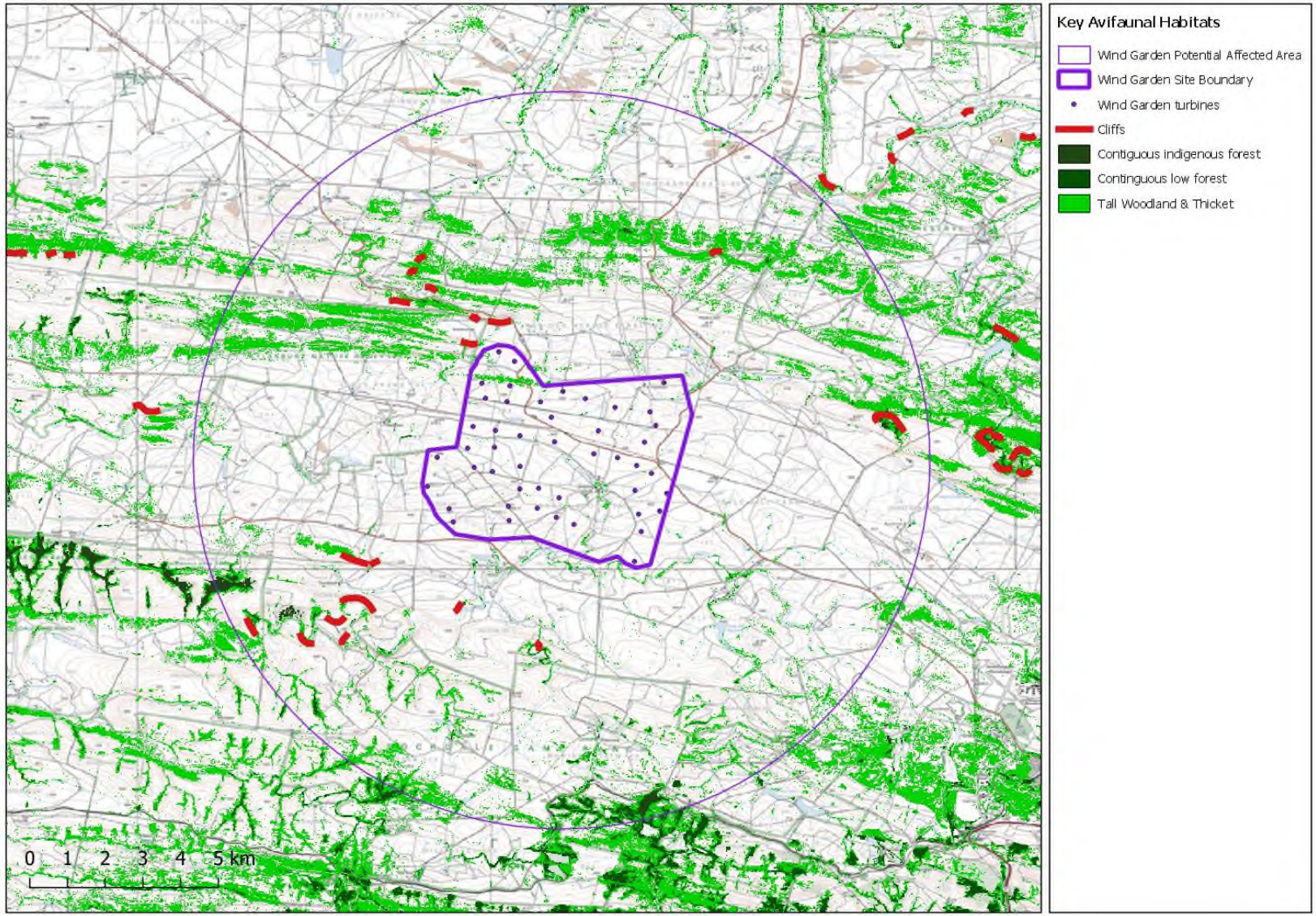

Figure 2. Distribution of potential nesting habitat for large eagles and other key species located in the vicinity of the proposed Wind Garden Wind Farm during the *AVISENSE* survey in April 2021.

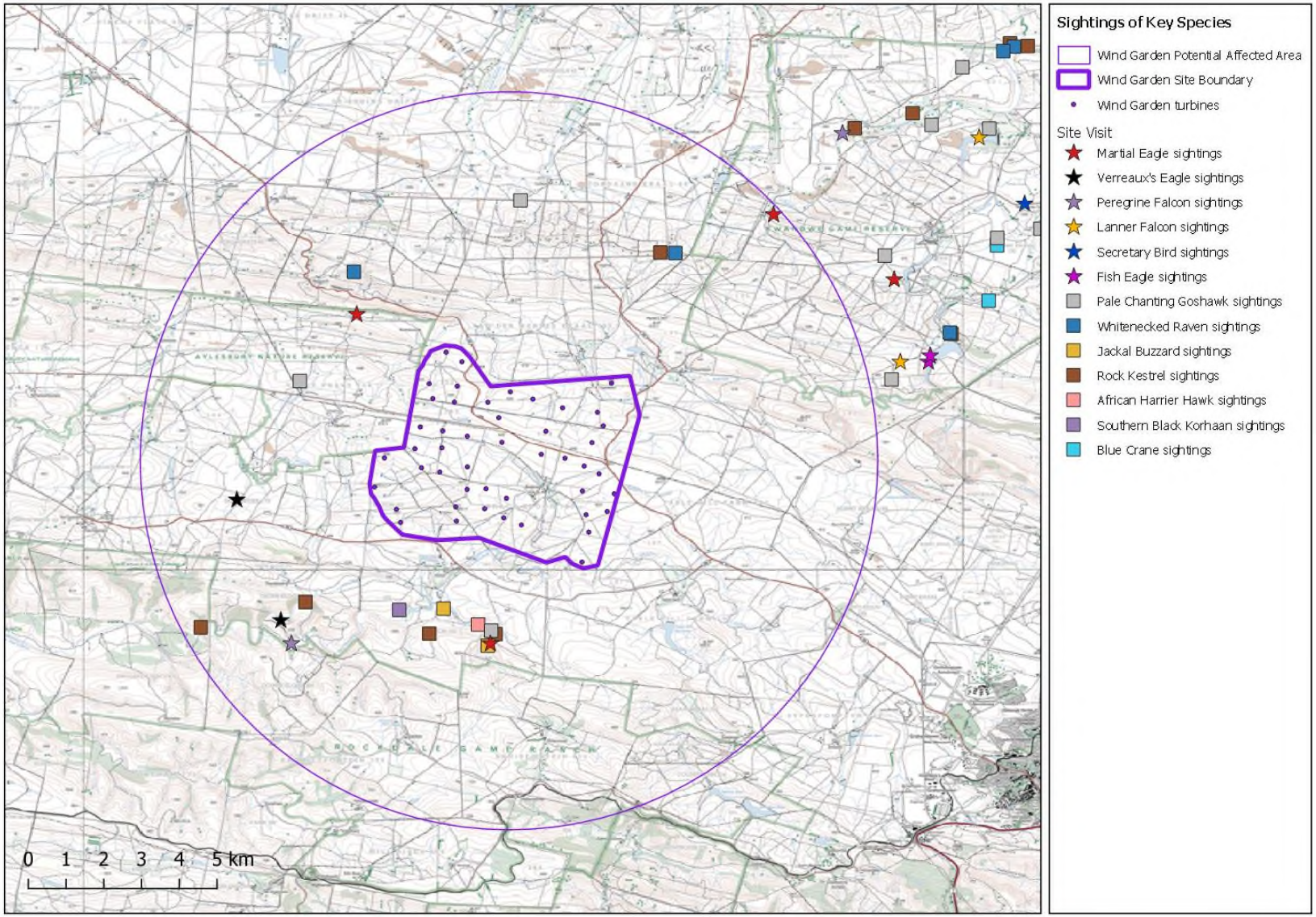

Figure 3. Distribution of sightings of key bird species in the vicinity of the proposed Wind Garden Wind Farm during the *AVISENSE* survey in April 2021.

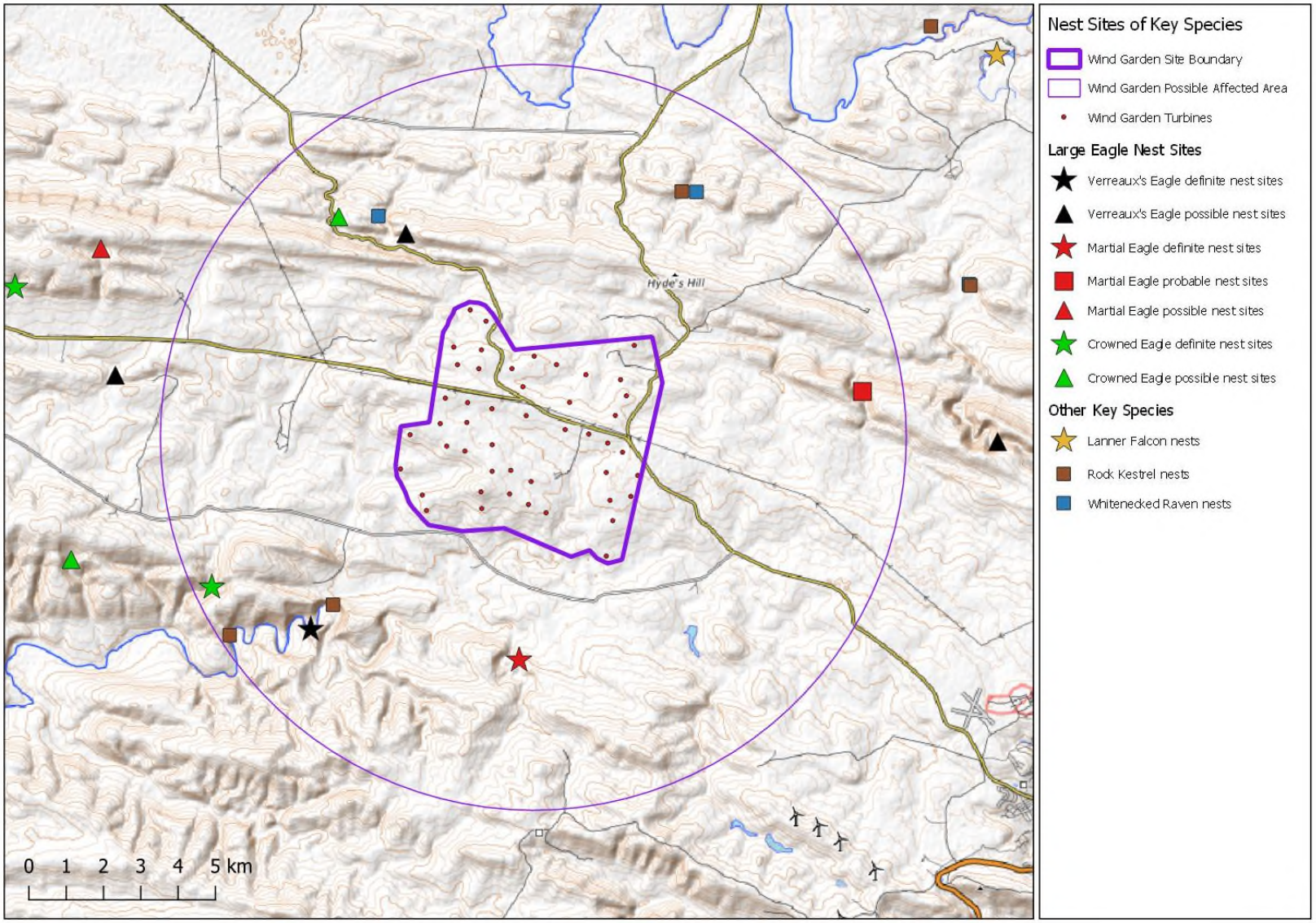

Figure 4. Distribution of nest sites of all key species located in the vicinity of the proposed Wind Garden Wind Farm during the *AVISENSE* April 2021 site visit.

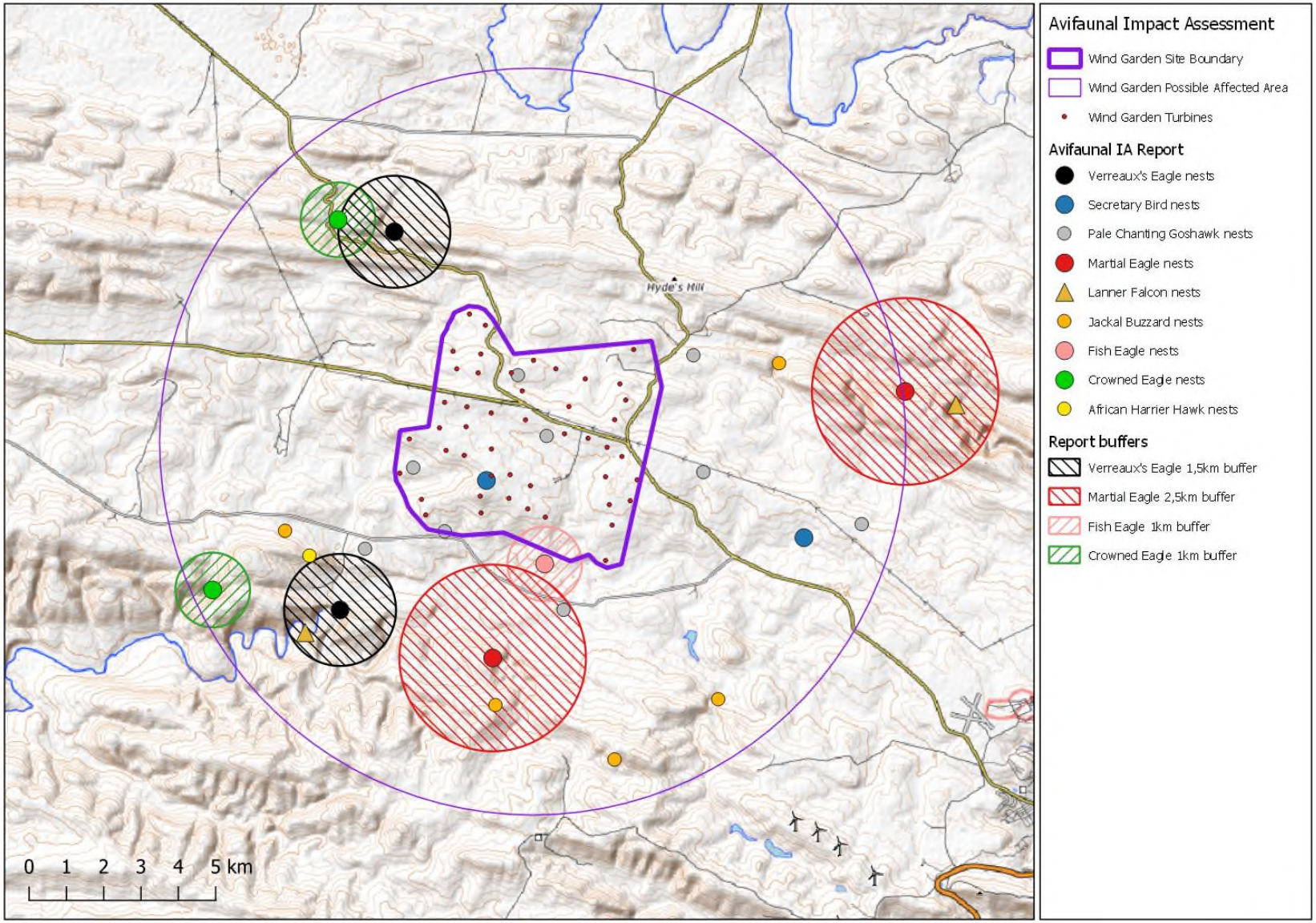

Figure 5. Large eagle nest sites found in the vicinity of the proposed Wind Garden Wind Farm by the baseline and impacts study (Barkhuysen & Percival 2021), with the protective buffers applied to these sites in that report.

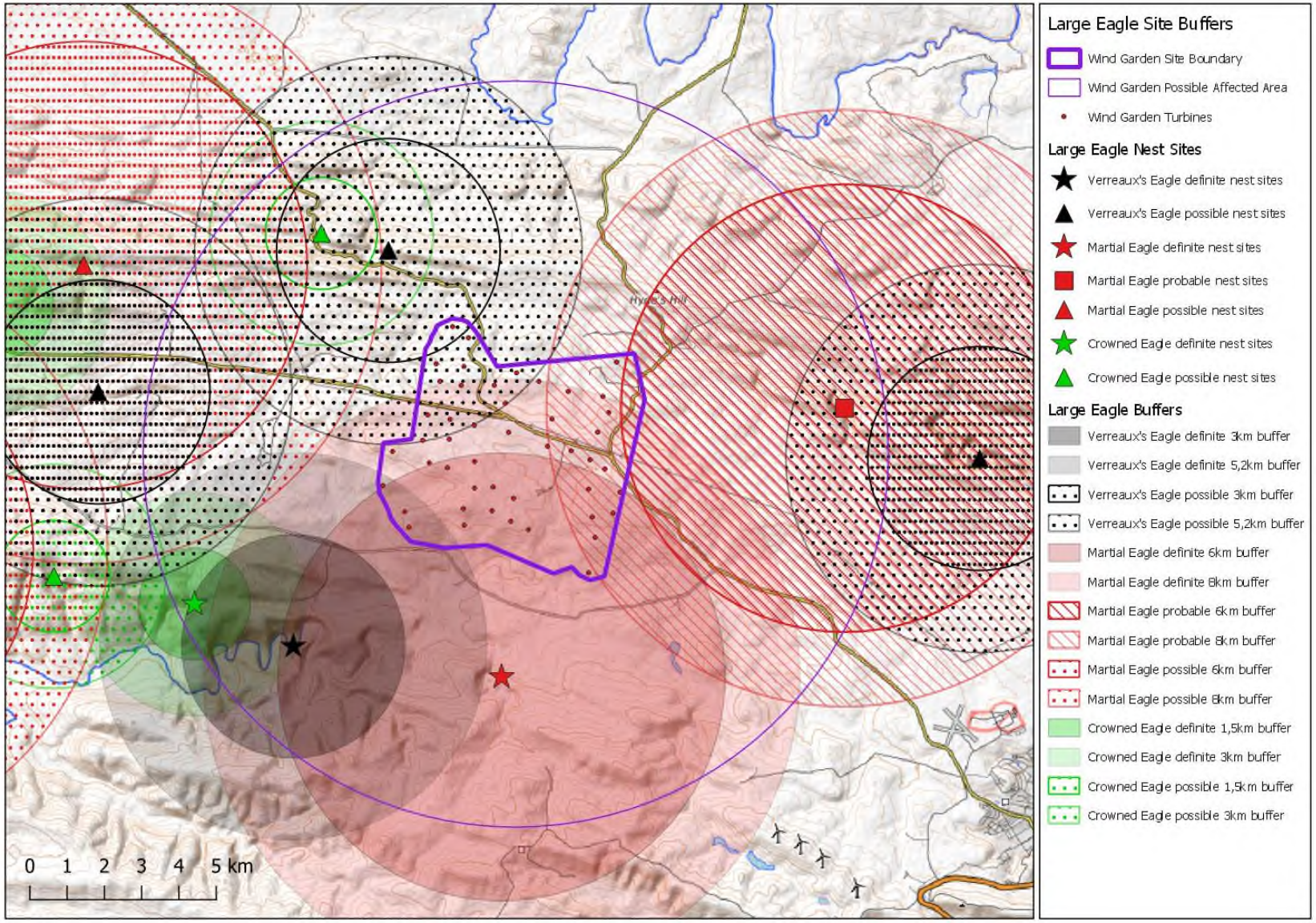

Figure 6. Definite, probable and possible large eagle nest sites confirmed or found in the vicinity of the proposed Wind Garden Wind Farm during the AVISENSE survey in April 2021, with the appropriate protective buffers applied.

Conclusions

Quality of the baseline study

The baseline bird study for the Wind Garden Wind Farm is basically sound. It is broadly compliant with national best practice (Jenkins 2015) and provides some level of detail on most of the relevant aspects of the affected avifauna. However, although the framework of the study is adequate for purpose, some important aspects of its execution and detail are deficient.

Some specific problems with the study as presented include:

1. The report refers to and maps sampling sites in a control area located to the south of the development area, but the 'Before' data collected here are not presented anywhere in the report, or compared with the equivalent data collected in the WEF area. The denies the reader the opportunity to examine the quantity and nature of these data and to assess their comparability with the on-site data and legitimacy for use in a BACI-type study.
2. While it is clear that the locations of large eagle nest sites in the proximity of the proposed WEF are of critical importance in assessing the potential impacts of the development, only two searches for such nests were conducted over the study period. Both these surveys were conducted in mid-late winter – usefully timed for Verreaux's Eagle and Martial Eagle, but of little use in searches for active Crowned Eagle nests, or in surveying cliff habitat for Lanner Falcon, Peregrine Falcon *Falco peregrinus*, Booted Eagle *Hieraaetus pennatus* or Jackal Buzzard nests, all of which are spring/summer breeders. Furthermore, no information is presented on the extent or intensity of these nest surveys – what habitats were targeted, where and how, so there is no way of knowing what habitats have or haven't been searched or how well the searching has been done.
3. Stemming from (2) above, the locations and actual status of at least three of the large eagle nests listed in the baseline report (Barkhuysen & Percival 2021) remain uncertain, we suspect because the nest survey team was unable to access the relevant properties (owned either by the defence force of by landowners in opposition to the development) to do this directly, and reverted to estimation from a distance, based mainly on behavioural evidence. While we are sympathetic to this kind of constraint on the efficiency of fieldwork, in the scheme of a full year of baseline monitoring it is imperative that such obstacles are overcome, and sensitive sites are accurately located and effectively protected from harmful impacts.
4. The complex integration of undulating, rugged terrain, impenetrable thicket and hidden or inaccessible ravines, riparian forest and forest patches is difficult habitat to survey, and we didn't find as much to add to or change the outcome of the large eagle survey work informing the bird impact study as we had expected. However, given the proximity of potentially suitable habitat to the proposed development area and gaps in the spacing of known or suspected breeding pairs, we do not feel that this survey work has been done well enough. In particular, we are concerned that (i) the actual locations of the Martial Eagle nest to the east of the project and the Verreaux's Eagle site to the north remain unknown, and (ii) there is an as-yet unknown Martial Eagle site somewhere to the northwest of the WEF area, close enough to influence the sustainability of the development.

5. The baseline report refers to the likelihood that both Blue Crane and Secretarybird– globally threatened and impact susceptible species (Taylor *et al.* 2015, https://www.iucnredlist.org/search) - breed on or close to the development area, and yet no concerted effort was made to find such sites during the baseline study. Why was this important work not done during the baseline study when it could have made a material difference to the outcomes of the EIA? Secretarybird is now both regionally and globally Endangered, and regularly active nest sites either close to or within the development area would require considerable buffering – applied at the authorization and design stages of the project, rather than during pre-construction - to be fully protected from displacement and mortality impacts.
6. Although the report is dated 2021, references made to the regional and global threat status of key species are outdated. For example, both Martial Eagle and Secretarybird are now globally Endangered – important changes to consider when assigning the significance ratings of negative impacts.

Quality of the Impact Assessment

As expressed above, we feel that the field dataset on which the collision risk modelling and bird impact assessment are based is not of the required standard, with the quality, extent and intensity of the nest survey and monitoring information being particularly poor. Compounding this, we have significant problems with the way in which these data have been used to derive predicted impacts of to be of low significance, providing a favourable outcome for development.

Apart from the distinct possibility that at least one or two important nest sites may have been overlooked, we are also concerned about the way in which small quantities of Vantage Point (VP) data have been used to build statistical models of both collision risk and range use. For example, just four Martial Eagle flights and six Verreaux's Eagle flights at rotor height, recorded during only 7% of the daylight hours available over the 12-month extent of the full sampling period, are used to generate low collision risk estimates and small, core foraging ranges, the latter being used to justify relatively small protective buffers around each nest. Unfortunately, the capacity of human observers to detect and accurately track bird flights over distance, and particularly those of wide-ranging species like large eagles, is limited, and a number of comparative studies have found that VP observers miss a significant proportion of bird flights that occur during periods of data collection, and plot the detected flight lines with considerable inaccuracy (e.g. Jenkins *et al.* 2018, Becker *et al.* 2020, AR Jenkins, Pers. obs). Hence, when small quantities of such notoriously unreliable data are used to drive predictive statistical treatments, and the outcomes of such treatments are used to influence important development decisions, margins for significant error are wide.

The study's approach to buffering nest sites is also intrinsically problematic and flies in the face of building, empirical evidence that we should be applying much bigger buffers than previously thought. Recent GPS tracking data (e.g. Murgatroyd *et al.* 2016, 2018) used to develop the VERA model usefully define a practical, effective, generic buffer radius to impose around Verreaux's Eagle nest sites. Previously set at 3 km (BirdLife 2017), the most recent analyses suggest that a circular buffer distance of as much as 5.2 km would only exclude 50% of collision fatalities recorded for this species to date (BirdLife 2017, Perold *et al.* 2020, Murgatroyd *et al.* 2020). This is more than triple the no-go buffer distance applied in the present study, with significant implications for the proposed turbine layout (Fig. 5 *vs* Fig. 6). The same principles apply to Martial Eagle, where recent GPS

tracking data for a large sample of territory-holding adults in the Karoo suggest an optimal buffer distance of 6 km (G. Tate, Pers. comm., 2.4 times the buffer used in the Percival study). In combination, imposition of these more appropriate buffers around Martial Eagle nests, based on data-rich analysis of tracked birds in comparable habitats, would substantially reduce the space available for turbine placement in the Wind Garden development area (Fig. 5 *vs* Fig. 6).

We also have concerns about the way in which the Barkhuysen & Percival study assesses loss of foraging range for both Verreaux's and Martial Eagles, with figures drawn from studies of high-density populations of both species – Verreaux's Eagle in the Central Karoo (Davies 1994) and Martial Eagle in the Kruger National Park (van Eeden *et al.* 2017) used as proxies for territory size in the Grahamstown area. Given that the densities of breeding pairs of both species are markedly lower around the Wind Garden development, surely territory sizes of pairs in this area are likely to be proportionally larger? If this is the case, percentage losses of foraging habitat to turbines in each case are likely to be greater, as are proximal and population-level impacts.

Hence, our position is that unmitigated impacts of the proposed development on the local avifauna are potentially far greater than those estimated by Barkhuysen & Percival (2021, in which mortality habitat loss and disturbance/displacement impacts are almost uniformly listed as 'Low'). The primary mitigation option for such impacts is to impose appropriate buffers, far greater in size than those currently imposed, which would effectively exclude most of the indicated area from sustainable development (Fig. 6).

Apart from the use of buffers, the study under review suggests three options for mitigating operational impacts on key species at the Wind Garden WEF site. Turbine curtailment – via shut-down on demand, mediated either by direct observation or by remote sensing (radar- or camera-driven triggers) is put forward as a back-up should other options prove ineffective. It should be noted that while a number of commercial service providers are offering shut-down on demand systems to address avian collision mitigation, and this has been shown to work in some cases (e.g. de Lucas *et al.* 2012), there is as yet no formally published study that clearly demonstrates the efficacy of such an approach in a situation where the flight behaviour of target species is relatively unpredictable (both spatially and temporally – as opposed to, for example, wind farms situated along migration fly-ways), and these species are potentially capable of covering ground more rapidly than the shut-down mechanism is able to react. Put simply – "Shutdown should be seen as a mitigation measure of last resort, and not as a substitute for location and design considerations to minimize adverse impacts" (Gove *et al.* 2013).

The primary forms of impact mitigation suggested (Percival 2016, Percival *et al.* 2016) involve habitat modification both within the wind farm area (to discourage incursions by raptors by reducing foraging opportunities) and away from the wind farm (to encourage raptors to forage in areas other than the wind farm). Contrary to the assertions made by Percival in his report and subsequently in responses to I&APs, there is no published evidence that such a scheme can be effective. The cited study in Scotland in which pine trees were felled to create extra foraging habitat for Golden Eagles *Aquila chrysaetos* away from a wind farm (Walker *et al.* 2005) involves exceptional circumstances that simply cannot be replicated at the Wind Garden site. Furthermore, in a subsequent review of interactions between Golden Eagles and wind farms in Scotland, Fielding & Haworth (2010) concluded that "...prey enhancement by habitat modification is unlikely to show rapid benefits for Golden Eagles". Habitat modification is listed as a theoretically possible mitigation option in recent

guidelines documents for Verreaux's Eagle (BirdLife 2017), but caution is encouraged and developers are urged to exhaust other options first.

While confidently putting forward on-site and off-site habitat modification as viable and effective ways to mitigation collision risk for eagles and harriers, Barkhuysen & Percival (2021) provide no detail at all on what these modifications might entail, how they would discourage or attract foraging raptors, how much habitat would have to be modified and where, whether or not modifications required to influence Verreaux's Eagle behaviour might conflict with those required to influence Martial Eagle behaviour, and what the impacts of these modifications might be on other components of the local biodiversity. In short, the mitigation alternatives put forward are experimental at best and unlikely to be effective at worst.

All of the above deficiencies, inaccuracies and inappropriate data treatments are compounded when they are brought forward into the assessment of cumulative impacts of the Wind Garden proposal in combination with multiple other renewable energy projects built or planned within a 50 km radius (including Wind Garden's sister project Fronteer).

In closing, the key findings of this review can be summarized as follows:

1. The bird impact study for the Wind Garden Wind Farm proposal is superficially adequate, but lacks the accuracy, completeness and detail required to fully identify and evaluate the impacts of the proposed development.
2. The survey work on cliff-and tree-nesting raptors contributing to the study was deficient in scope, extent and intensity, possibly resulting in important sites not being detected and therefore not being factored into the impact assessment.
3. The impact assessment underplays the potential severity of the potential impacts of the development on threatened and collision-prone species such as Verreaux's Eagle, Martial Eagle, Crowned Eagle (and possibly Secretarybird, Lanner Falcon and Blue Crane), and over-estimates our current ability to mitigate such impacts, resulting in residual impact ratings that are overly lenient on the development proposal. This project-specific failing is compounded and magnified in the report's attempt to evaluate the cumulative impacts of this and other renewable energy projects in the region on local populations of threatened birds.

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Appendix 1. List of bird species known or expected to occur in the general vicinity of the proposed Wind Garden Wind Farm and possible adjacent wind energy projects. Species seen during the April 2021 site visit appear in **bold**.

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Common Ostrich	***Struthio camelus***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and karoo**
Black-necked Grebe	*Podiceps nigricollis*	-	-	Uncommon	Nomad	Wetlands
Little Grebe	***Tachybaptus ruficollis***	**-**	**-**	**Common**	**Resident**	**Wetlands**
White-breasted Cormorant	*Phalacrocorax carbo*	-	-	Common	Resident	Wetlands
Reed Cormorant	***Phalacrocorax africanus***	**-**	**-**	**Common**	**Resident**	**Wetlands**
African Darter	*Anhinga rufa*	-	-	Common	Resident	Wetlands
Grey Heron	***Ardea cinerea***	**-**	**-**	**Common**	**Resident**	**Wetlands**
Black-headed Heron	***Ardea melanocephala***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Goliath Heron	*Ardea goliath*	-	-	Rare	Visitor	Wetlands
Purple Heron	*Ardea purpurea*	-	-	Uncommon	Resident	Wetlands
Great Egret	*Egretta alba*	-	-	Uncommon	Resident	Wetlands
Little Egret	*Egretta garzetta*	-	-	Common	Resident	Wetlands
Cattle Egret	***Bubulcus ibis***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Little Bittern	*Ixobrychus minutus*	-	-	Uncommon	Resident	Wetlands
Black-crowned Night-Heron	*Nycticorax nycticorax*	-	-	Uncommon	Resident	Wetlands
Hamerkop	***Scopus umbretta***	**-**	**-**	**Uncommon**	**Resident**	**Wetlands**
African Openbill	*Anastomus lamelligerus*	-	-	Scarce	Vagrant	Wetlands
Yellow-billed Stork	*Mycteria ibis*	Endangered / Least concern	-	Uncommon	Visitor	Wetlands
Black Stork	*Ciconia nigra*	Vulnerable / Least concern	-		Resident	Wetlands and cliff-lines
White Stork	*Ciconia ciconia*	-	-	Common	Summer migrant	Open savanna
African Sacred Ibis	*Threskiornis aethiopicus*	-	-	Common	Resident	Open savanna
Hadeda Ibis	***Bostrychia hagedash***	**-**	**-**	**Common**	**Resident**	**Open savanna, thicket and forest**
African Spoonbill	***Platalea alba***	**-**	**-**	**Uncommon**	**Visitor**	**Wetlands**
Lesser Flamingo	*Phoenicopterus minor*	Near threatened / Near threatened	-	Uncommon	Visitor	Wetlands
Spur-winged Goose	***Plectropterus gambensis***	**-**	**-**	**Common**	**Resident**	**Wetlands**

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Egyptian Goose	***Alopochen aegyptiacus***	**-**	**-**	**Common**	**Resident**	**Wetlands**
South African Shelduck	***Tadorna cana***	**-**	**Endemic**	**Common**	**Resident**	**Wetlands**
Cape Shoveler	***Anas smithii***	**-**	**Endemic**	**Common**	**Resident**	**Wetlands**
African Black Duck	***Anas sparsa***	**-**	**-**	**Uncommon**	**Resident**	**Wetlands**
Yellow-billed Duck	***Anas undulata***	**-**	**-**	**Common**	**Resident**	**Wetlands**
Red-billed Teal	***Anas erythrorhyncha***	**-**	**-**	**Common**	**Resident**	**Wetlands**
Cape Teal	*Anas capensis*	-	-	Uncommon	Resident	Wetlands
Hottentot Teal	*Anas hottentota*	-	-	Scarce	Visitor	Wetlands
White-faced Duck	***Dendrocygna viduata***	**-**	**-**	**Uncommon**	**Visitor**	**Wetlands**
Fulvous Duck	*Dendrocygna bicolor*	-	-	Uncommon	Visitor	Wetlands
Southern Pochard	*Netta erythrophthalma*	-	-	Uncommon	Resident	Wetlands
Maccoa Duck	*Oxyura maccoa*	Near threatened / Vulnerable	-	Uncommon	Visitor	Wetlands
White-backed Duck	*Thalassornis leuconotus*	-	-	Uncommon	Visitor	Wetlands
Secretarybird	***Sagittarius serpentarius***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and karoo**
Peregrine Falcon	***Falco peregrinus***	**-**	**-**	**Uncommon**	**Resident**	**Cliff-lines, thicket and forest**
Lanner Falcon	***Falco biarmicus***	**Vulnerable / Least concern**	**-**	**Uncommon**	**Resident**	**Cliff-lines, thicket and open savanna**
Amur Falcon	*Falco amurensis*	-	-	Uncommon	Summer migrant	Open savanna
Rock Kestrel	***Falco rupicolus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Lesser Kestrel	*Falco naumanni*	-	-	Uncommon	Summer migrant	Open savanna and karoo
Yellow-billed Kite	*Milvus aegyptius*	-	-	Common	Summer migrant	Open savanna, thicket and forest
Black-shouldered Kite	***Elanus caeruleus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
European Honey-buzzard	***Pernis apivorus***	**-**	**-**	**Uncommon**	**Summer migrant**	**Thicket and forest**
Long-crested Eagle	*Lophaetus occipitalis*	-	-	Uncommon	Resident	Open savanna and forest
Booted Eagle	*Aquila pennatus*	-	-	Uncommon	Summer breeder	Cliff-lines, thicket, open savanna and karoo

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Martial Eagle	***Polemaetus bellicosus***	**Endangered / Vulnerable**	**-**	**Rare**	**Resident**	**Thicket, open savanna and karoo**
African Crowned Eagle	***Stephanoaetus coronatus***	**Vulnerable / Near threatened**	**-**	**Rare**	**Resident**	**Thicket and forest**
African Fish-eagle	***Haliaeetus vocifer***	**-**	**-**	**Uncommon**	**Resident**	**Wetlands**
Jackal Buzzard	***Buteo rufofuscus***	**-**	**Near endemic**	**Uncommon**	**Resident**	**Cliff-lines, open savanna and thicket**
Steppe Buzzard	*Buteo vulpinus*	-	-	Common	Summer migrant	Open savanna, thicket and karoo
Forest Buzzard	*Buteo trizonatus*	Least concern / Near threatened	Near endemic	Uncommon		Thicket and forest
Rufous-chested Sparrowhawk	***Accipiter rufiventris***	**-**	**-**	**Uncommon**	**Resident**	**Forest, thicket and open savanna**
Little Sparrowhawk	*Accipiter minullus*	-	-	Uncommon	Resident	Thicket and forest
Black Sparrowhawk	*Accipiter melanoleucus*	-	-	Uncommon	Resident	Forest, thicket and open savanna
African Goshawk	*Accipiter tachiro*	-	-	Uncommon	Resident	Thicket and forest
Gabar Goshawk	***Melierax gabar***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and karoo**
Southern Pale Chanting Goshawk	***Melierax canorus***	**-**	**Near endemic**	**Common**	**Resident**	**Open savanna and karoo**
African Marsh-harrier	*Circus ranivorus*	Endangered / Least concern	-	Rare	Resident	Wetlands
Black Harrier	*Circus maurus*	Endangered / Endangered	Near endemic	Rare	Resident / visitor	Fynbos, wetlands open savanna and karoo
African Harrier-Hawk	***Polyboroides typus***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna, thicket and forest**
Red-winged Francolin	*Scleroptila levaillantii*	-	-	Uncommon	Resident	Open savanna
Red-necked Spurfowl	*Pternistis afer*	-	-	Uncommon	Resident	Thicket and forest
Common Quail	*Coturnix coturnix*	-	-	Common	Summer migrant	Open savanna
Helmeted Guineafowl	***Numida meleagris***	**-**	**-**	**Common**	**Resident**	**Open savanna**
African Rail	*Rallus caerulescens*	-	-	Rare	Resident	Wetlands

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Baillon's Crake	*Porzana pusilla*	-	-	Rare	Resident	Wetlands
Black Crake	*Amaurornis flavirostris*	-	-	Uncommon	Resident	Wetlands
Red-chested Flufftail	*Sarothrura rufa*	-	-	Uncommon	Resident	Wetlands
Buff-spotted Flufftail	*Sarothrura elegans*	-	-	Uncommon	Resident	Wetlands
Striped Flufftail	*Sarothrura affinis*	Vulnerable / Least concern	Endemic	Rare	Resident	Fynbos and wetland
African Purple Swamphen	*Porphyrio madagascariensis*	-	-	Uncommon	Resident	Wetlands
Common Moorhen	*Gallinula chloropus*	-	-	Common	Resident	Wetlands
Red-knobbed Coot	***Fulica cristata***	**-**	**-**	**Common**	**Resident**	**Wetlands**
African Finfoot	*Podica senegalensis*	Vulnerable / Least concern	-	Rare	Resident	Wetlands
Blue Crane	***Anthropoides paradiseus***	**Near threatened / Vulnerable**	**Near endemic**	**Uncommon**	**Resident**	**Open savanna and karoo**
Kori Bustard	***Ardeotis kori***	**Near threatened / Near threatened**	**-**	**Uncommon**	**Resident**	**Open savanna and karoo**
Ludwig's Bustard	*Neotis ludwigii*	Endangered / Endangered	Near endemic	Uncommon	Visitor	Open savanna and karoo
Denham's Bustard	*Neotis denhami*	Vulnerable / Near threatened	-	Uncommon	Visitor	Open savanna
White-bellied Korhaan	*Eupodotis senegalensis*	Vulnerable / Least concern	-	Uncommon	Resident	Open savanna
Greater Painted-snipe	*Rostratula benghalensis*	Near threatened / Least concern	-	Rare	Resident	Wetlands
Common Ringed Plover	*Charadrius hiaticula*	-	-	Uncommon	Summer migrant	Wetlands
Kittlitz's Plover	*Charadrius pecuarius*	-	-	Uncommon	Resident	Wetlands
Three-banded Plover	***Charadrius tricollaris***	**-**	**-**	**Common**	**Resident**	**Wetlands**
Crowned Lapwing	***Vanellus coronatus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Blacksmith Lapwing	***Vanellus armatus***	**-**	**-**	**Common**	**Resident**	**Wetlands**
African Snipe	*Gallinago nigripennis*	-	-	Uncommon	Resident	Wetlands
Curlew Sandpiper	*Calidris ferruginea*	- / Near threatened	-	Uncommon	Summer migrant	Wetlands
Little Stint	*Calidris minuta*	-	-	Uncommon	Summer migrant	Wetlands
Ruff	*Philomachus pugnax*	-	-	Uncommon	Summer migrant	Wetlands

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Common Sandpiper	*Actitis hypoleucos*	-	-	Uncommon	Summer migrant	Wetlands
Marsh Sandpiper	*Tringa stagnatilis*	-	-	Uncommon	Summer migrant	Wetlands
Common Greenshank	*Tringa nebularia*	-	-	Uncommon	Summer migrant	Wetlands
Wood Sandpiper	*Tringa glareola*	-	-	Uncommon	Summer migrant	Wetlands
Black-winged Stilt	*Himantopus himantopus*	-	-	Uncommon	Resident	Wetlands
Water Thick-knee	*Burhinus vermiculatus*	-	-	Uncommon	Resident	Wetlands
Spotted Thick-knee	***Burhinus capensis***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Grey-headed Gull	*Larus cirrocephalus*	-	-	Uncommon	Visitor	Wetlands
Caspian Tern	*Sterna caspia*	Vulnerable / Least concern	-	Uncommon	Visitor	Wetlands
Whiskered Tern	*Chlidonias hybrida*	-	-	Uncommon	Summer breeder	Wetlands
Speckled Pigeon	***Columba guinea***	**-**	**-**	**Common**	**Resident**	**Cliff-lines and open savanna**
African Olive-pigeon	***Columba arquatrix***	**-**	**-**	**Uncommon**	**Resident**	**Thicket and forest**
Red-eyed Dove	***Streptopelia semitorquata***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Cape Turtle-dove	***Streptopelia capicola***	**-**	**-**	**Common**	**Resident**	**Open savanna and karoo**
Laughing Dove	***Streptopelia senegalensis***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Namaqua Dove	***Oena capensis***	**-**	**-**	**Uncommon**		**Open savanna and karoo**
Tambourine Dove	*Turtur tympanistria*	-	-	Uncommon	Resident	Thicket and forest
Emerald-spotted Wood-dove	***Turtur chalcospilos***	**-**	**-**	**Uncommon**	**Resident**	**Thicket and forest**
Lemon Dove	*Aplopelia larvata*	-	-	Uncommon	Resident	Thicket and forest
African Green-pigeon	*Treron calvus*	-	-	Uncommon	Resident	Thicket and forest
Red-chested Cuckoo	*Cuculus solitarius*	-	-	Common	Summer migrant	Thicket and forest
Black Cuckoo	*Cuculus clamosus*	-	-	Common	Summer migrant	Thicket and forest
Jacobin Cuckoo	***Clamator jacobinus***	**-**	**-**	**Uncommon**	**Summer migrant**	**Open savanna**
Klaas's Cuckoo	*Chrysococcyx klaas*	-	-	Uncommon	Summer migrant	Thicket and open savanna
Diderick Cuckoo	*Chrysococcyx caprius*	-	-	Common	Summer migrant	Open savanna

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Barn Owl	***Tyto alba***	**-**	**-**	**Uncommon**	**Resident**	**Cliff-lines and open savanna**
African Scops-owl	*Otus senegalensis*	-	-	Uncommon	Resident	Open savanna
Cape Eagle-owl	*Bubo capensis*	-	-	Uncommon	Resident	Cliff-lines and open savanna
Spotted Eagle-owl	***Bubo africanus***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and thicket**
Fiery-necked Nightjar	***Caprimulgus pectoralis***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
African Black Swift	*Apus barbatus*	-	-	Common	Resident	Cliff-lines
White-rumped Swift	*Apus caffer*	-	-	Common	Summer migrant	Open savanna
Horus Swift	***Apus horus***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Little Swift	*Apus affinis*	-	-	Common	Resident	Open savanna
Alpine Swift	*Tachymarptis melba*	-	-	Common	Resident	Cliff-lines
African Palm-swift	*Cypsiurus parvus*	-	-	Uncommon	Resident	Open savanna
Speckled Mousebird	***Colius striatus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Red-faced Mousebird	***Urocolius indicus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Narina Trogon	*Apaloderma narina*	-	-	Uncommon	Resident	Thicket and forest
Pied Kingfisher	*Ceryle rudis*	-	-	Common	Resident	Wetlands
Giant Kingfisher	***Megaceryle maximus***	**-**	**-**	**Uncommon**	**Resident**	**Wetlands**
Half-collared Kingfisher	*Alcedo semitorquata*	Near threatened / Least concern	-	Rare	Resident	Wetlands
Malachite Kingfisher	*Alcedo cristata*	-	-	Uncommon	Resident	Wetlands
African Pygmy-Kingfisher	*Ispidina picta*	-	-	Uncommon	Resident	Open savanna
Brown-hooded Kingfisher	***Halcyon albiventris***	**-**	**-**	**Common**	**Resident**	**Open savanna**
European Roller	*Coracias garrulus*	Near threatened / Least concern	-	Uncommon		Open savanna
African Hoopoe	***Upupa africana***	**-**	**-**	**Common**	**Resident**	**Open savanna and karoo**
Green Wood-hoopoe	***Phoeniculus purpureus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Trumpeter Hornbill	*Bycanistes bucinator*	-	-	Uncommon	Resident	Thicket and forest
Crowned Hornbill	***Tockus alboterminatus***	**-**	**-**	**Uncommon**	**Resident**	**Thicket and forest**

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Southern Ground-hornbill	*Bucorvus leadbeateri*	Endangered / Vulnerable	-	Rare	Resident?	Thicket and forest
Black-collared Barbet	***Lybius torquatus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Acacia Pied Barbet	***Tricholaema leucomelas***	**-**	**Endemic**	**Common**	**Resident**	**Open savanna, karoo and thicket**
Red-fronted Tinkerbird	***Pogoniulus pusillus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Greater Honeyguide	***Indicator indicator***	**-**	**-**	**Uncommon**		**Thicket and forest**
Scaly-throated Honeyguide	*Indicator variegatus*	-	-	Uncommon		Thicket and forest
Lesser Honeyguide	*Indicator minor*	-	-	Uncommon		Thicket and forest
Brown-backed Honeybird	*Prodotiscus regulus*	-	-	Uncommon		Open savanna and thicket
Knysna Woodpecker	*Campethera notata*	Near threatened / Near threatened	Endemic	Uncommon	Resident	Thicket and forest
Cardinal Woodpecker	***Dendropicos fuscescens***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
Olive Woodpecker	***Dendropicos griseocephalus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Red-throated Wryneck	***Jynx ruficollis***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Rufous-naped Lark	***Mirafra africana***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Spike-heeled Lark	*Chersomanes albofasciata*	-	-	Common	Resident	Open savanna and karoo
Grey-backed Sparrowlark	*Eremopterix verticalis*	-	Endemic	Uncommon	Visitor	Open savanna and karoo
Red-capped Lark	***Calandrella cinerea***	**-**	**-**	**Common**	**Resident**	**Open savanna and karoo**
Barn Swallow	***Hirundo rustica***	**-**	**-**	**Common**	**Summer migrant**	**Open savanna**
White-throated Swallow	*Hirundo albigularis*	-	-	Common	Summer migrant	Wetlands and open savanna
Pearl-breasted Swallow	*Hirundo dimidiata*	-	-	Common	Summer migrant	Open savanna
Greater Striped Swallow	***Hirundo cucullata***	**-**	**-**	**Common**	**Summer migrant**	**Open savanna**
Lesser Striped Swallow	*Hirundo abyssinica*	-	-	Common	Summer migrant	Open savanna
Rock Martin	***Hirundo fuligula***	**-**	**-**	**Common**	**Resident**	**Cliff-lines**
Common House-martin	*Delichon urbicum*	-	-	Uncommon		Open savanna

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Brown-throated Martin	***Riparia paludicola***	**-**	**-**	**Common**		**Wetlands and open savanna**
Black Saw-wing	*Psalidoprocne holomelaena*	-	-	Common	Resident	Thicket and forest
Black Cuckoo-shrike	***Campephaga flava***	**-**	**-**	**Uncommon**	**Resident**	**Thicket and forest**
Grey Cuckoo-shrike	*Coracina caesia*	-	-	Uncommon	Resident	Thicket and forest
Fork-tailed Drongo	***Dicrurus adsimilis***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Black-headed Oriole	***Oriolus larvatus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Pied Crow	***Corvus albus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Cape Crow	***Corvus capensis***	**-**	**-**	**Common**	**Resident**	**Open savanna**
White-necked Raven	***Corvus albicollis***	**-**	**-**	**Common**	**Resident**	**Cliff-lines, thicket and open savanna**
Southern Black Tit	***Parus niger***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
Cape Penduline-tit	*Anthoscopus minutus*	-	Endemic	Uncommon	Resident	Open savanna and karoo
Bush Blackcap	*Lioptilus nigricapillus*	Vulnerable / Vulnerable	Endemic	Uncommon	Resident	Thicket and forest
African Red-eyed Bulbul	*Pycnonotus nigricans*	-	Endemic	Uncommon	Resident	Open savanna and karoo
Dark-capped Bulbul	***Pycnonotus tricolor***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
Terrestrial Brownbul	*Phyllastrephus terrestris*	-	-	Uncommon	Resident	Thicket and forest
Sombre Greenbul	***Andropadus importunus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Cape Rock-thrush	***Monticola rupestris***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and cliff-lines**
Sentinel Rock-thrush	*Monticola explorator*	-	-	Uncommon	Resident	Open savanna and cliff-lines
Buff-streaked Chat	*Oenanthe bifasciata*	-	Endemic	Uncommon	Resident	Open savanna and cliff-lines
Familiar Chat	***Cercomela familiaris***	**-**	**-**	**Common**	**Resident**	**Open savanna and karoo**
Mocking Cliff-chat	***Thamnolaea cinnamomeiventris***	**-**	**-**	**Common**	**Resident**	**Open savanna and cliff-lines**

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Anteating Chat	***Myrmecocichla formicivora***	**-**	**Near endemic**	**Common**	**Resident**	**Open savanna and karoo**
African Stonechat	***Saxicola torquatus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Chorister Robin-chat	*Cossypha dichroa*	-	-	Uncommon	Resident	Thicket and forest
Cape Robin-chat	***Cossypha caffra***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
Karoo Scrub-robin	***Cercotrichas coryphoeus***	**-**	**Endemic**	**Common**	**Resident**	**Open savanna and karoo**
Brown Scrub-robin	*Cercotrichas signata*	-	-	Uncommon	Resident	Thicket and forest
White-browed Scrub-robin	***Cercotrichas leucophrys***	**-**	**-**	**Common**	**Resident**	**Open savanna**
White-starred Robin	*Pogonocichla stellata*	-	-	Uncommon	Resident	Thicket and forest
Willow Warbler	*Phylloscopus trochilus*	-	-	Uncommon	Summer migrant	Open savanna and thicket
Lesser Swamp-warbler	*Acrocephalus gracilirostris*	-	-	Common	Resident	Wetland
African Reed-warbler	*Acrocephalus baeticatus*	-	-	Uncommon	Summer migrant	Wetland
Marsh Warbler	*Acrocephalus palustris*	-	-	Uncommon	Migrant	Wetland
Little Rush-warbler	*Bradypterus baboecala*	-	-	Common	Resident	Wetland
Barratt's Warbler	*Bradypterus barratti*	-	Endemic	Uncommon	Resident	Fynbos and thicket
Cape Grassbird	*Sphenoeacus afer*	-	Endemic	Common	Resident	Open savanna
Long-billed Crombec	***Sylvietta rufescens***	**-**	**-**	**Common**	**Resident**	**Open savanna and karoo**
Bar-throated Apalis	***Apalis thoracica***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
Yellow-breasted Apalis	*Apalis flavida*	-	-	Uncommon	Resident	Thicket and forest
Green-backed Camaroptera	***Camaroptera brachyura***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Grey-backed Camaroptera	*Camaroptera brevicaudata*	-	-	Uncommon	Resident	Thicket and forest
Zitting Cisticola	*Cisticola juncidis*	-	-	Common	Resident	Open savanna and karoo
Cloud Cisticola	*Cisticola textrix*	-	Endemic	Common	Resident	Open savanna
Wing-snapping Cisticola	*Cisticola ayresii*	-	Endemic	Common	Resident	Open savanna and fynbos

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Neddicky	***Cisticola fulvicapilla***	**-**	**-**	**Common**	**Resident**	**Open savanna and fynbos**
Grey-backed Cisticola	***Cisticola subruficapilla***	**-**	**Endemic**	**Common**	**Resident**	**Open savanna and fynbos**
Wailing Cisticola	*Cisticola lais*	-	-	Uncommon	Resident	Open savanna and karoo
Levaillant's Cisticola	*Cisticola tinniens*	-	-	Common	Resident	Wetland
Lazy Cisticola	*Cisticola aberrans*	-	-	Uncommon	Resident	Open savanna
Tawny-flanked Prinia	*Prinia subflava*	-	-	Common	Resident	Open savanna
Spotted Flycatcher	*Muscicapa striata*	-	-	Uncommon	Summer migrant	Thicket and forest
African Dusky Flycatcher	*Muscicapa adusta*	-	-	Common	Summer migrant	Thicket and forest
Chestnut-vented Tit-babbler	***Parisoma subcaeruleum***	**-**	**-**	**Common**	**Resident**	**Open savanna and karoo**
Southern Black Flycatcher	*Melaenornis pammelaina*	-	-	Uncommon	Resident	Thicket and forest
Fiscal Flycatcher	***Sigelus silens***	**-**	**Endemic**	**Common**	**Resident**	**Open savanna**
Yellow-throated Woodland-warbler	*Phylloscopus ruficapilla*	-	-	Uncommon	Resident	Thicket and forest
Cape Batis	***Batis capensis***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Chinspot Batis	***Batis molitor***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Blue-mantled Crested-flycatcher	*Trochocercus cyanomelas*	-	-	Uncommon	Resident	Thicket and forest
African Paradise-flycatcher	*Terpsiphone viridis*	-	-	Common		Thicket and forest
African Pied Wagtail	*Motacilla aguimp*	-	-	Uncommon	Resident	Wetland
Cape Wagtail	***Motacilla capensis***	**-**	**-**	**Common**	**Resident**	**Wetland and open savanna**
Mountain Wagtail	*Motacilla clara*	-	-	Uncommon	Resident	Wetland and forest
African Pipit	***Anthus cinnamomeus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Long-billed Pipit	***Anthus similis***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Plain-backed Pipit	*Anthus leucophrys*	-	-	Uncommon	Resident	Open savanna
Buffy Pipit	*Anthus vaalensis*	-	-	Uncommon	Resident	Open savanna
Yellow-breasted Pipit	*Anthus chloris*	Vulnerable / Vulnerable	Endemic	Rare	Resident	Open savanna

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Cape Longclaw	***Macronyx capensis***	**-**	**-**	**Common**	**Resident**	**Open savanna and fynbos**
Common (Southern) Fiscal	***Lanius collaris***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Red-backed Shrike	*Lanius collurio*	-	-	Uncommon	Resident	Open savanna
Southern Boubou	***Laniarius ferrugineus***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Black-backed Puffback	*Dryoscopus cubla*	-	-	Common	Resident	Thicket and forest
Southern Tchagra	***Tchagra tchagra***	**-**	**Endemic**	**Uncommon**	**Resident**	**Fynbos**
Black-crowned Tchagra	*Tchagra senegalus*	-	-	Uncommon	Resident	Open savanna and thicket
Olive Bush-shrike	*Telophorus olivaceus*	-	-	Uncommon	Resident	Thicket and forest
Orange-breasted Bush-shrike	***Telophorus sulfureopectus***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and thicket**
Bokmakierie	***Telophorus zeylonus***	**-**	**Endemic**	**Common**	**Resident**	**Open savanna and karoo**
Grey-headed Bush-shrike	***Malaconotus blanchoti***	**-**	**-**	**Common**	**Resident**	**Open savanna and thicket**
Common Starling	***Sturnus vulgaris***	**-**	**-**	**Common**	**Resident**	**Urban**
Wattled Starling	*Creatophora cinerea*	-	-	Uncommon	Visitor	Open savanna and karoo
Violet-backed Starling	*Cinnyricinclus leucogaster*	-	-	Uncommon	Resident	Open savanna
Cape Glossy Starling	***Lamprotornis nitens***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Black-bellied Starling	*Lamprotornis corruscus*	-	-	Uncommon	Resident	Thicket and forest
Red-winged Starling	***Onychognathus morio***	**-**	**-**	**Common**	**Resident**	**Cliff-lines and open savanna**
Pied Starling	***Spreo bicolor***	**-**	**Endemic**	**Common**	**Resident**	**Savanna, fynbos, open savanna and karoo**
Red-billed Oxpecker	***Buphagus erythrorhynchus***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Cape Sugarbird	*Promerops cafer*	-	Endemic	Uncommon	Resident	Fynbos
Gurney's Sugarbird	*Promerops gurneyi*	-	Endemic	Uncommon	Resident	Fynbos and open savanna

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Malachite Sunbird	***Nectarinia famosa***	**-**	**-**	**Common**	**Resident**	**Fynbos, open savanna and karoo**
Greater Double-collared Sunbird	***Cinnyris afer***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna and thicket**
Southern Double-collared Sunbird	*Cinnyris chalybeus*	-	Endemic	Common	Resident	Thicket, fynbos, open savanna and karoo
Grey Sunbird	*Cyanomitra veroxii*	-	-	Uncommon	Resident	Thicket and forest
Collared Sunbird	*Hedydipna collaris*	-	-	Uncommon	Resident	Thicket and forest
Amethyst Sunbird	***Chalcomitra amethystina***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
House Sparrow	***Passer domesticus***	**-**	**-**	**Common**	**Resident**	**Urban**
Cape Sparrow	***Passer melanurus***	**-**	**Near endemic**	**Common**	**Resident**	**Open savanna and karoo**
Yellow-throated Petronia	*Petronia superciliaris*	-	-	Uncommon	Resident	Open savanna and thicket
Dark-backed Weaver	*Ploceus bicolor*	-	-	Uncommon	Resident	Thicket and forest
Spectacled Weaver	***Ploceus ocularis***	**-**	**-**	**Uncommon**	**Resident**	**Thicket and forest**
Village Weaver	*Ploceus cucullatus*	-	-	Uncommon	Resident	Open savanna
Cape Weaver	*Ploceus capensis*	-	Endemic	Common	Resident	Open savanna
Yellow Weaver	*Ploceus subaureus*	-	-	Uncommon	Resident	Wetland
Southern Masked-weaver	*Ploceus velatus*	-	Endemic	Common	Resident	Open savanna
Thick-billed Weaver	*Amblyospiza albifrons*	-	-	Uncommon	Resident	Wetland
Red-billed Quelea	***Quelea quelea***	**-**	**-**	**Common**	**Visitor**	**Open savanna**
Southern Red Bishop	*Euplectes orix*	-	Endemic	Common	Resident	Wetland and open savanna
Yellow Bishop	*Euplectes capensis*	-	-	Uncommon	Resident	Fynbos and Open savanna
Red-collared Widowbird	*Euplectes ardens*	-	-	Common	Resident	Open savanna
Fan-tailed Widowbird	*Euplectes axillaris*	-	-	Uncommon	Resident	Wetland and open savanna
Long-tailed Widowbird	*Euplectes progne*	-	-	Uncommon	Resident	Wetland and open savanna

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Bronze Mannikin	*Spermestes cucullatus*	-	-	Common	Resident	Thicket and forest
Swee Waxbill	*Coccopygia melanotis*	-	-	Common	Resident	Open savanna, thicket and forest
African Firefinch	***Lagonosticta rubricata***	**-**	**-**	**Common**	**Resident**	**Thicket and forest**
Common Waxbill	***Estrilda astrild***	**-**	**-**	**Common**	**Resident**	**Wetland and open savanna**
African Quailfinch	***Ortygospiza atricollis***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Pin-tailed Whydah	***Vidua macroura***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Dusky Indigobird	***Vidua funerea***	**-**	**-**	**Uncommon**	**Resident**	**Thicket and forest**
Cape Canary	*Serinus canicollis*	-	-	Common	Resident	Open savanna and fynbos
Forest Canary	*Crithagra scotops*	-	-	Uncommon	Resident	Thicket and forest
Yellow-fronted Canary	***Crithagra mozambicus***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Brimstone Canary	***Crithagra sulphuratus***	**-**	**-**	**Common**	**Resident**	**Open savanna, fynbos and thicket**
White-throated Canary	*Crithagra albogularis*	-	Near endemic	Common	Resident	Open savanna and karoo
Yellow Canary	*Crithagra flaviventris*	-	Near endemic	Common	Resident	Open savanna and karoo
Streaky-headed Seedeater	***Crithagra gularis***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Lark-like Bunting	***Emberiza impetuani***	**-**	**-**	**Common**	**Visitor**	**Open savanna and karoo**
Cinnamon-breasted Bunting	***Emberiza tahapisi***	**-**	**-**	**Uncommon**	**Resident**	**Open savanna**
Cape Bunting	***Emberiza capensis***	**-**	**-**	**Common**	**Resident**	**Open savanna**
Golden-breasted Bunting	*Emberiza flaviventris*	-	-	Uncommon	Resident	Open savanna
Rock Dove	*Columba livia*	-	-	Common	Resident	Urban and cliff-lines
Karoo Thrush	*Turdus smithi*	-	Endemic	Common	Resident	Open savanna, and karoo and thicket
Olive Thrush	*Turdus olivaceus*	-	-	Common	Resident	Thicket and forest
Cape White-eye	***Zosterops virens***	**-**	**Near endemic**	**Common**	**Resident**	**Open savanna and thicket**

Common name	Scientific name	Threat status - Regional / Global	Endemism	Relative abundance	Residency	Habitat
Eastern Clapper Lark	***Mirafra fasciolata***	**-**	**Endemic**	**Uncommon**	**Resident**	**Open savanna and karoo**
Burchell's Coucal	*Centropus burchellii*	-	-	Uncommon	Resident	Wetland and thicket
Knysna Turaco	***Tauraco corythaix***	**-**	**Endemic**	**Uncommon**	**Resident**	**Thicket and forest**
Southern Black Korhaan	***Afrotis afra***	**Vulnerable / Vulnerable**	**Endemic**	**Uncommon**	**Resident**	**Fynbos, open savanna and karoo**
Karoo Prinia	***Prinia maculosa***	**-**	**Endemic**	**Common**	**Resident**	**Open savanna**
Cape Clapper Lark	***Mirafra apiata***	**-**	**Endemic**	**Uncommon**	**Resident**	**Open savanna and karoo**
Southern Grey-headed Sparrow	***Passer diffusus***	**-**	**-**	**Common**	**Resident**	**Open savanna**

RICHARD SUMMERS INC.
ATTORNEYS

Savannah Environmental (Pty) Ltd

Attention: Ms. Nicolene Venter

Our ref: RWS/cfa/CSP20-004
Your ref:

Per e-mail: nicolene@savannahsa.com

6 May 2021

Dear Ms Venter

RE: COMMENTS ON THE BASIC ASSESSMENT REPORTS FOR THE PROPOSED WIND GARDEN WIND ENERGY FACILITY AND FRONTEER WIND ENERGY FACILITY, EASTERN CAPE PROVINCE [DFFE REF. NO.: 14/12/16/3/3/1/2314 AND 14/12/16/3/3/1/2315 RESPECTIVELY]

INTRODUCTION

1. Richard Summers Inc was appointed by Kwandwe Private Game Reserve ("Kwandwe"), Mr N Orphanides (of the Farm Clifton), Dr Mark Bristow (of Lukhanya Game Reserve) and Escape Airtours Charters and Transfers (of the Vaalkrans Garm Farm) to review and comment on the Basic Assessment Reports ("BARs") for the proposed Wind Garden[1] and Fronteer[2] Wind Energy Facilities ("the proposed Wind Garden and Fronteer WEFs").

2. As interested and affected parties, we submit these comments on their behalf. Due to the nature of the concerns and comments raised herein in connection with the reports and the assessment process, these comments have wider application and would be equally relevant to other stakeholders and I&APs.

3. Our clients – as I&APs - are situated in close proximity to the proposed Wind Garden and

[1] DFFE reference number 14/12/16/3/3/1/2314.
[2] DFFE reference number 14/12/16/3/3/1/2315.

Fronteer WEFs and each has a direct and material interest in the outcome of these applications, as they each stand to be the most directly affected stakeholders.

4. The game reserve and ecotourism industry in the Eastern Cape is a highly significant sector that stands to be adversely affected by the proposed Wind Garden and Fronteer WEFs and other developments of a similar nature. Kwandwe also forms part of the statutorily protected and formally declared Indalo Protected Environment ("Indalo PE") which is represented by nine Game Reserves (measuring 76 076,59 hectares in extent).[3] The Indalo PE was founded with the objective to promote biodiversity conservation and ecological sustainability on a much larger scale than individual reserves, and to present a unified voice on issues affecting the tourism and game reserve industry. The potential impact on the Indalo PE has not been identified or assessed.

5. In terms of the conservation and protection of vegetation biodiversity targets and the wildlife conservation value of our client's properties, and the ecosystem protection and ecosystem services the properties provide, the contribution made by our clients individually and collectively is significant. The conservation value and the environmental, social and economic benefits of our clients' respective ecotourism / conservation initiates hinges entirely on the continued, long-term economic viability of the eco-tourism businesses underpinning the sustainability of the existing operations.

6. We have described in these comments how the project level impacts on this sector and on I&APs in question, and specifically the impact on the long-term viability of the eco-tourism businesses and related operations have not been adequately identified, evaluated or assessed in the manner required by NEMA. Nor for that matter have the broader spatial or landscape ecology impacts or biodiversity conservation impacts been investigated in a manner that is both relevant and proportional to the risk of high negative and/or severe project impacts manifesting in connection with the proposed Wind Garden and Fronteer WEFs.

[3] Declaration Notice in Provincial Notice 70 in *Provincial Gazette* 4030 dated 13 April 2018, page 3.

SUMMARY OF KEY ISSUES & CONCERNS

7. A significant majority of the proposed wind turbines across both projects and both sites represent a fatal flaw according to a considered analysis of the visual sensitivity mapping. The mitigation hierarchy is ignored in connection with VERY HIGH NEGATIVE visual impacts and HIGH NEGATIVE visual impacts.

8. No visual simulations of the impact of lights at night from sensitive viewpoints are provided and generally the inadequate attention paid to severity and extent of significant adverse impacts of night lights on the turbines. The direct impact is underplayed. The cumulative impact of night lights in the broader context is unquantified. The significance rating are questionably low for this impact and the reliability and certainty of suggested mitigation is untested. Mitigation measures identified are subject to a significant degree of uncertainty. This impact is unresolved and largely unassessed.

9. Avoidance measures, including the use of protected area buffers and visual buffers, have not been considered as an essential part of the mitigation required to address high impacts.

10. The buffer required under Regulations under the Civil Aviation Act (Act 13 of 2009), designed to avoid obstacle limitations near airfields, such as the Makhanda (Grahamstown) airfield have been ignored. Comment on the proposals and buffer encroachment is a real concern which must be addressed directly by the CAA and the local airfield.

11. The assessment of impacts associated with specific turbine specifications and ALL associated infrastructure requirements is not addressed. The information regarding project layouts, laydown areas, roads, transmission lines, vegetation clearance etc. associated with ALL infrastructure including boom assembly areas, use of steel or concrete turbine components, location and scale of concrete turbine foundations and associated hardstands are not identified anywhere. All of these aspects contribute to visual, ecological and other impacts. The information relevant to these concerns is absent.

12. The public participation process is neither meaningful nor credible. Directly affected impacted landowners were not considered or consulted at the outset of the process with the result that there is no understanding or scoping of what existing ecotourism operations are operating in the area let alone any credible assessment of impacts on such operations. What efforts have been implemented to contact and inform farmworkers, local communities and occupiers on affected landholdings? How is it even conceivable that the assessment of socio-economic and visual impacts is considered to be relevant and accurate if they have not made any efforts to groundtruth the receiving environment or directly impacted stakeholders? Why is it considered appropriate or best practice that adjacent landowners are being contacted by the socio-economic specialists less than seven days prior to the current deadline for comment submission on the basic assessment reports in order to scope their inputs in a superficial and meaningless attempt to account for the impacts on their livelihoods and operations?

13. A lack of accuracy taints several of the specialist studies and thus, ultimately, the BARs as well. These concerns are substantiated in these comments and the comments by other I&APs. Inaccurate statements, unsubstantiated findings and incomplete analyses prevail. This has the potential to underplay the negative effect of the projects on the surrounding environment and does not giving the decision makers accurate information.

14. There is a lack of integration of assessment and findings. For example, the inter-relatedness with respect to visual issues and heritage issues is superficial and fails to properly account for impacts at the landscape scale.

15. Visual exposure, visibility and visual absorption capacity are not addressed adequately. The experiential qualities and the value placed on the landscape as a resource in its own right, and the impacts on landscape integrity are not addressed. The assessment of visual impacts is especially sterile and ineffective. The over-reliance on GIS tools and desktop assessment fails to determine visual impact 'significance' in relation to the local or regional importance of the landscape features, the relative intactness of these, and the effect on the prevailing sense of place.

16. Aspects of the avifaunal impacts and associated studies lack the accuracy, comprehensiveness and detail required to fully identify and evaluate project related impacts. Certain survey work is deficient in scope, extent and intensity. The avifaunal impact assessment underplays the potential severity of the potential impacts of the projects on threatened and collision-prone species such as Verreaux's Eagle, Martial Eagle, Crowned Eagle and possibly other species too. The evaluation of the cumulative impacts of the subject projects and other renewable energy projects in the region on local populations of threatened birds is wholly inadequate.

17. The treatment of the cultural landscape in the basic assessment process is deficient and fails to comply with the Environmental Impact Assessment ("EIA") Regulations (GNR 326 of 4 December 2014, as amended 7 April 2017, Appendix 6).

18. The minimum requirements for HIA reports in section 38(3) of the National Heritage Resources Act ("NHRA") are not adequately described or explained.

19. The quantification of the socio-economic impacts and specifically the adverse impact on property values on neighbouring farms and overall effect on the eco-tourism sector is misleading. The studies lack objectivity. The flaws and omissions create and inescapable sense of bias in favour of the proposed developments and thus the reports fall short of the independent the unbiased assessment and specialist opinion that is required by NEMA.

20. The treatment of alternatives in the basic assessment process is deficient and fails to satisfy the legal requirements for the investigation and evaluation of alternatives during the basic assessment process.

21. The indirect, cumulative and consequential impacts have not been quantified in circumstances where the proposed Wind Garden and Fronteer WEFs and other projects of a similar nature adversely affect the sustainability of game reserves, statutorily declared protected areas, and ecotourism related operations.

22. The assessment of geohydrological impacts, adequate water availability and the impact of the

proposed Wind Garden and Fronteer WEFs on the sustainability of the water resource and the ecological groundwater reserve have not been assessed. The sustainability of water use and water abstraction cannot be divorced from the requirements of NEMA to assess all project related impacts.

23. The evaluation and consideration of need and desirability of the proposed Wind Garden and Fronteer WEFs and the compatibility thereof with all applicable policy and relevant policy documents do not satisfy the EIA best practice, nor do they meet the peremptory requirements prescribed by NEMA.

24. The nature of the obligations imposed in terms of NEMA requires the EAP to assess, among other things, the cumulative impact on the environment brought by the proposed Wind Garden and Fronteer WEFs and all other existing and/or proposed WEFs that are in close proximity to the Wind Garden and Fronteer WEFs. This in turn requires the EAP to assess the impact on the sustainability of existing game reserves and eco-tourism operations. Although the socio-economic impact of the proposed Wind Garden and Fronteer WEFs has been identified as a relevant concern in the BARs and specialist assessments, the direct, indirect and cumulative impacts on the actual stakeholders most directly affected by the proposed development have not been quantified (as explained above). The assessment of cumulative impacts is found wanting in several other areas of the specialist studies.

25. The various information gaps in the reports (as identified in these comments) have the combined effect of compromising the ability of stakeholders and I&APs to engage meaningfully in the basic assessment process and it does not enable them to comprehend and interpret the nature, severity and duration of project related impacts. This undermines the public participation process and renders it meaningless. In several key respects there is no evidence or data in the reports or specialist studies to support key assertions made by the specialists made in favour of the projects. The manner that these assertions have been arrived at are unfounded and unprofessional. The credibility of the process is tainted as a result.

26. Given the above concerns, various external reviews have been commissioned in order to review

the efficacy of the basic assessment process as a whole as well as the specialist inputs relied on in support of the proposed Wind Garden and Fronteer WEFs. All external reviews have identified that the BARs and specialist reports suffer from either fatal flaws or material omissions and as a result cannot serve as a basis for accurate impact evaluation and/or defensible decision-making by the competent authority.

27. The gaps and omissions in the assessment are extensive and constitute a material flaw in the basic assessment process. Due to the high levels of speculation and the "missing" categories of relevant information classified by the relevant specialists as unknown, the BARs fail to comply with minimum legal requirements and cannot support reasonable or rational decision-making by the competent authority.

28. The data relied upon in the BAR and the socio-economic study in particular is grossly inaccurate and misleading. The investigations undertaken were notoriously superficial. For example, by way of refuting the studies undertaken the figures supplied by Kwandwe indicate that in terms of numbers, approx. 85% of visitors are international tourists, being about 8,418 bed nights per annum on average. The contribution of foreign visitors is ±95% to income, with the average rate per room for a local guest being about 35% of that of a foreign guest. Based on the information obtained from Kwandwe, in excess of 3,000 guests visited the reserve in 2019. About 14% of this were South Africans. The paltry figure of 335 used in the reports is grossly distorted and not accurate. The inaccuracies taint the objectivity of the reporting as a whole, resulting in an unavoidable perception of bias.

29. The profile of and impact on the immediately affected environment is inadequate both in terms of subjects and issues. The scoio-economic report deliberately uses a grossly inaccurate figure for international tourists visiting annually, to substantiate the argument that the impact on the tourism sector is deemed minimal. The figures are wrong and the loss of income is potentially substantial - changing the nature, extent and severity of the impacts. The accuracy of the information is essential. Accuracy is lacking in key respects.

30. According to the socio-economic specialist only "a sample" of landowners was directly

consulted. Why? Why is this even considered as remotely acceptable? This flaw is so pervasive in the findings that it cannot be resolved through further revisions or adjustments of the repots. A critical threshold requirement for NEMA compliance is that the reports are prepared by independent specialists. The conclusions adopted reflect a clear bias for and outcome in favour of the development proceeding. This concern - held by many I&APs - is justified given the abject failure to ground-truth the receiving environment. There is no comprehensive attempt at accurate research and no accurate data. I&APs reject the reports and put on record that the objectivity of the process is questioned. Obtaining the relevant data after the conclusions (i.e. to support the development) have already been reached is highly problematic.

31. No accurate information about employment created by existing game farms, or the dependents supported by those employed or their livelihoods and security of tenure is provided.

32. The impact on employment associated with the projects is grossly exaggerated and in respect of the potential negative impact on existing operations it is grossly underestimated. Once again, the manner in which information is reported in the BAR's underplays the importance of existing game reserves and ecotourism operations and formally protected nature reserves (such as Kwandwe) and the net benefit these existing operations have on employment and the supply of housing in the area.

33. The reports raise more questions than they provide answers: How were the views of direct neighbours integrated into the formulation of the findings? A full explanation is required. How has the potential impact between High Negative Visual Impact, impact on tourism product and investment on adjacent and/or neighbouring game reserves been evaluated? How have existing investments into the wildlife tourism across the sector been quantified? How has the threat or risk of disinvestment (should the proposed WEF's be approved) been scoped, quantified and a significance rating assigned? Has this impact been discounted completely from the cost benefit analysis by mistake of by design? How have the long-term consequences in an enforced change in land use patterns been assessed at local and regional scale?

34. The combined effect of the repeated understated scoring of and unreasonably low significance

ratings materially influence the overall accuracy and credibility of the finding of the BARs and specialist studies.

35. The purpose of a BAR should be to determine the impact of a proposed development on the receiving environment. If the scoring is above 60, the impact is regarded as "High", i.e., "the impact must have an influence on the decision to develop in the area". In this case, the BAR's go to great lengths to downplay the impacts, so that the impact is not regarded as "High". This is highly questionable. Not only do we have reason to doubt the accuracy of the scoring of significance ratings, especially with regard to the visual and socio-economic impacts, but where impacts are "High", the no-go option is disregarded or misrepresented. A clear breach of the NEMA mandate mitigation hierarchy which is unexplained and not rationalised.

36. These comments highlight several shortcomings of the BAR's and the specialist studies. The BAR's and the conclusions drawn from them should be rejected, as the reports are not deemed to be factually correct or objective. The underlying data used to support the conclusions and findings is not credible.

37. These issues and concerns are described in more detail below in these comments which must read together with the following Annexures forming part of these comments:

ANNEXURE A: APPRAISAL CORPORATION REPORT – KWANDWE
ANNEXURE B: APPRAISAL CORPORATION REPORT – CLIFTON
ANNEXURE C: OBERHOLZER AND LAWSON REVIEW
ANNEXURE D: SARAH WINTER REVIEW
ANNEXURE E: GLOBAL GREEN REVIEW
ANNEXURE F: AVISENSE REVIEW – WIND GARDEN WEF
ANNEXURE G: AVISENSE REVIEW – FRONTEER WEF

38. In support of these comments and by way of substantiating the severity of the deficiencies in the assessment process and the reporting to date, we refer in particular to the independent review by Global Green (ANNEXURE E). Each of the comments and concerns raised in the Global

Green report is requested to be read as expressly incorporated herein as comments made by I&APs.

39. Overall, the independent review by Global Green concludes that basic assessment reports achieved an 'E' rating in the independent review which means that the content is not satisfactory with several significant omissions or inadequacies in the impact assessment. It also confirms that the contents of the reports and assessment undertaken to date cannot support defensible decision making by the competent authority in terms of sections 2, 23 and 24 of NEMA. The reports should be rejected on the basis of the significant number and materiality of the flaws.

FAILURE TO ASSESS THE CULTURAL LANDSCAPE

40. As a starting proposition, section 3(2)(b) of the NHRA provides that "*landscapes and natural features of cultural significance*" form part of the national estate.

41. To adequately address landscape issues, the nature and degree of heritage significance and sensitivity of the receiving environment must be assessed across different scales of analysis at the regional and local scales, and in terms of their relative intactness, representivity and rarity. The outcome of this assessment must then inform a set of consolidated constraints including no-go areas which ultimately influence the layout of the projects. In addition, the cultural landscape affected provides an analytical framework within which individual heritage resources are embedded and linked.

42. Notwithstanding that the greatest heritage impacts occur at the regional or landscape level, the primary focus of the HIA reports is an assessment of individual structures older than 60 years, burials grounds and graves which are under review. Wider considerations are applicable and have been completely disregarded by the specialists.

43. Further, notwithstanding the identification of medium to high heritage impacts at a cultural landscape level, the impacts on landscape and sense of place have not been adequately

addressed. Instead, the assessment of the impacts (direct and cumulative) of the proposed Wind Garden and Fronteer WEFs on landscape and sense of place is inherently bias towards a predetermined outcome in favour of the developer on the basis that the location of the proposed turbines was negotiated with "the client and the developer". This is evident from the following extract:

> *"The proposed location of the turbines, overhead power lines and sub-stations… have been negotiated with specialist input with the developer and the client. This has led to an acceptable placement of turbines (and associated infrastructure) away from heritage sensitive areas. The overall impact… on heritage resources identified during this report is seen as acceptably low after the recommendations have been implemented and therefore, impacts can be mitigated to acceptable levels allowing for the development to be authorised*".[4]

44. It is not acceptable that the location of turbines is negotiated by specialists with the developer and client (the two are the same) outside of the environmental assessment context. I&APs reject this process outright as flawed and formally question the professional integrity and independence of the EIA consultants.

45. What remains completely absent from the BARs is an explanation or specialist inputs regarding how the cultural landscape impact of the receiving environment (at both spatial and temporal levels) have informed the need and desirability analysis for the proposed Wind Garden and Fronteer WEFs. This is evident from the failure in the VIA and HIA reports to recognise that the landscape – as a resource – has significance in its own right and is potentially worthy of conservation (in its own right).

46. Given the failure to assess cultural landscape impacts, the following concerns are tabled on behalf of our clients:

[4] PSG Heritage 2021: 89; PSG Heritage 2021:84.

46.1. The scale of the assessment is disproportionate to the scale and nature of the proposed development, which requires the consideration of landscape issues.

46.2. The HIAs ignore the visual sensitivity of the receiving environment related to the proposed WEFs. There is therefore no evidence to demonstrate how the HIA process has informed the preferred layout in terms of combined visual and heritage sensitive mapping and identification of no-go buffer areas.

46.3. There is no credible assessment of levels of acceptable change visually-spatially, thematically, or temporally. As a result, there is minimal integration of the HIA and the VIA at an analytical level which is a serious omission given that the heritage impacts in this instance are largely of a visual nature. The identification of sensitive visual receptors and the selection of viewpoints in the VIA must clearly include heritage resources.

46.4. The no-go buffer areas are limited to 500m around the significant homesteads and 30m around burial grounds and grave sites. There is an absence of no-go buffer areas around visually sensitive landscape features and areas which reinforces the I&AP's concern that the no-go areas have been predetermined by the developer's needs and not specialist inputs.

46.5. The identification and mapping of sensitive heritage areas is limited to individual heritage resources (historical structures, burial grounds and graves). As a result of the failure to recognise the landscape as a resource in its own right, the specialist findings regarding the identification and mapping of all heritage resources in the affected is questioned.

46.6. There is an inadequate identification and mapping of landscape resources and constraints. The nature and degree of significance in terms of the NHRA criteria relevant to landscape impacts have not been unpacked and spatialised at the regional and local landscape scales.

46.7. The HIA (and the VIA) rely heavily on the location of the projects in the Cookhouse Renewable Energy Development Zone (REDZ) and do not clarify that the entire REDZ is not necessarily suitable for this type of development. The evaluation of the impacts of the

proposed Wind Garden and Fronteer WEFs on heritage resources relative to the sustainable social and economic benefits to be derived from the WEFs has therefore not been undertaken.

46.8. Mitigation measures at a cultural landscape level are cursory with the admission that given the large size of the turbines no mitigation is possible. The HIAs simply rely on the VIA mitigation measures with no attempt to screen, remove or relocate turbines. The preferred mitigation of avoiding no-go areas and areas of high visual sensitivity is not considered.

47. In addition to the above concerns, numerous omissions in the HIA reports have been identified. These include the following:

47.1. There is no dedicated landscape assessment including the identification and mapping of heritage resources at various scales such as the identification and mapping of scenic routes, the settings of significant homesteads (WEF1-04 and WEF2-01), special landscape features, and the wilderness qualities of protected natural landscapes (e.g. Kwandwe Nature Reserve).

47.2. The definition of the "study site" is constrained and ignores impacts on the receiving environment which transcends cadastral boundaries of the proposed development at a regional and local scale.

47.3. The heritage sensitivity mapping is derived from a desktop study of satellite images and topographical maps and fieldwork.

47.4. The reference to cultural landscape issues is cursory with limited consideration of landscape significance and impacts. There is an absence of analytical and spatial information at various scales to support significance.

47.5. There is an absence of heritage significance being ascribed to the totality of the landscape including sense of place qualities.

47.6. The cultural significance of the protected areas landscape is not taken further in terms of the wilderness landscape qualities and sense of place. No reference is made to the fact that a large component this wilderness landscape will be affected by the proposed Wind Garden and Fronteer WEFs.

47.7. The heritage impact of the proposed development on the overall cultural landscape is considered to be medium negative (before mitigation) and low negative (after mitigation). However, there is insufficient information to demonstrate impacts before and after mitigation. Furthermore, it is stated that while no mitigation of the impact on sense of place of the regional or the cultural landscape is possible, the impact of the development on the cultural landscape can be minimised. This is contradictory and wrong.

47.8. The issue of cumulative impacts is not adequately addressed. No specific mitigation measures relating to cumulative impacts are provided. The assessment of cumulative heritage impacts is not clearly represented in the form of a wider regional map of the area.

47.9. The HIA reports do not integrate important visual information including significant viewpoints from heritage resources (before and after mitigation).

48. As is evident from the above, the HIA reports contain material gaps in the information and do not meet all the requirements of NEMA and the EIA Regulations, and the requirements of section 38(3) of the NHRA. The HIAs and the BARs do not to warrant an informed recommendation regarding the acceptability of the proposed Wind Garden and Fronteer WEFs from a heritage perspective; is insufficient to facilitate informed decision-making by DFFE, and should be rejected on this basis alone.

IMPACTS ON PROPERTY VALUES

49. A key project related impact not effectively addressed or meaningfully assessed is the impact on land values.

50. Based on the information presented the Appraisal Corporation report, it is evident that the individual impact of development of either of the Wind Garden or Fronteer WEF will have a significant effect on the value of Kwandwe, Clifton and other properties in the immediate vicinity of the proposed WEFs. This is largely as a result of the HIGH NEGATIVE visual impact and the socio-economic effects of the proposed Wind Garden and Fronteer WEFs on the sustainability of existing game reserves and wildlife / biodiversity-based operations.

51. The anticipated derogation in property value per wind farm development on Kwandwe alone, is in excess of R100,000,000, i.e. more than 20% of the open market value. The figure represents the scenario for the development per wind facility. Importantly, each of the wind facility will have this effect. If both Wind Garden and Fronteer are developed, the combined and cumulative effect will be significantly higher, due to the sheer magnitude of impacts of the two WEFs adjacent to each other. Excluded from this calculation is the loss in income from the hospitality business and losses in employment opportunities, which to date remains unquantified and absent from the BARs and specialist inputs.

52. All of the above factors must be considered in the evaluation of the desirability of the proposed Wind Garden and Fronteer WEFs. Having regard to the BARs and the conclusions reached on the potential impacts of the proposed WEFs, it is clear that none of these impacts have been taken into consideration or assessed accurately. The specialist reports undertaken as part of the basic assessment processes are grossly inaccurate, and reflective of a severe understatement on the effect on the receiving environment. In light of this, we are of the opinion that the BARs and their annexures are not reflective of reality and should be disregarded in the evaluation process.

53. Further, concerns with regard to the efficacy of the assessments are captured for ease of reference below:

53.1. Chapters 7 of the Socio-Economic Impact Assessments (SEIAs) have no relevance to Kwandwe or the areas in which the proposed WEFs are to be located. The reports refer to the "*Non-Urban*" areas of Makana, the Blue Crane Route and Kouga, with "*rural areas similar*

to that of the proposed development"[5] but fail to focus on farms as the primary subject of the study. The market affected is in fact not considered.

53.2. What is in fact studied in the SEIAs is the residential property market i.e. vacant land / plots, freehold houses and sectional title apartments. This is meaningless and irrelevant to identifying project impacts, the receiving environment or context affected by the proposed WEFs. The obvious inference being that none of the conclusions drawn in the SEIAs has direct bearing on or relevance to the relevant market or the receiving environment. Unique attributes that define and qualify the affected property / market viz remoteness, the rural ambience, views and noise levels are important factors which distinguish the receiving environment from the residential property market. As all these attributes can potentially be impacted by the proposed WEFs, the effect on the value of a residential home cannot be used as baseline for the impact on a farm or upmarket tourism property.

53.3. Examples of the incorrect focus on housing / residential application in the SEIAs include:

53.3.1. Paragraphs 7.1 states that "*The predominant perception of wind turbines is that they lower nearby housing values*"[6]

53.3.2. Paragraphs 7.2 notes that the Waainek Wind Farm is "*largely characterised by rural property types with some light industrial developments located to the east of the wind farm*" and "*the area can therefore be classified as rural but located on the periphery of an urban node*".[7] How does this offer a meaningful comparison to the receiving environment which compromises largely unimproved conservation areas surrounding the proposed WEFs?

53.3.3. All references to the Lightstone study (paragraphs 7.2 and 7.4) should be disregarded as the study has an important caveat: "*The data used in Lightstone's aggregated reports*

[5] Page 48 of the SEIAs.
[6] Page 49 of the SEIAs.
[7] Page 49 of the SEIAs.

(Town, Suburb, Sectional Scheme and Estate Reports) and market analysis tools reflect the trends in developed residential homes".[8] As above, this is a totally different market and offers no relevant or meaningful comparison to rural, agricultural and hospitality properties.

53.3.4. The FNB Housing Price Index in paragraphs 7.3 is applicable to "*housing market performance*" and not the property market as a whole. The Housing Price Index does not represent the "*South Africa's property market*"[9] as is claimed. Given its focus on the residential property, the Index is of limited use in the commercial, agricultural or hospitality property markets.

53.3.5. No statistics on agricultural properties are reflected in the SEIAs – a material omission.

53.4. The claim that "*no properties were recorded as 'transferred' in the 10 year period in Makana NU (Makanda)*"[10] is false and a serious oversight. The Appraisal Corporation Report identified more than 65 agricultural property transactions being registered in the rural district of Albany alone, during the period of 01 January 2016 to the present.

53.5. A further flaw is that the SEIAs rely on and use statistics of sectional title units and vacant residential plots and no reasoning is provided as to justify the relevance of that approach.

53.6. With regard to the opinions of Agents (paragraphs 7.5 of the SEIA's) towards the impact of the proposed WEFs on property prices in the "*affected areas*", there following is applicable:

53.6.1. There is no indication of the boundary or location of the "*affected areas*" - does it cover agricultural properties only, or is it focused on non-agricultural properties?

53.6.2. The questions posed in the questionnaire / survey are not discussed. Was a distinction

[8] Lightstone Website.
[9] Page 51 of the SEIAs.
[10] Page 52 of the SEIAs.

made between the different types of property, or is it a general overview of the prices of the properties that the Agents sold in the period just prior to the survey?

53.6.3. How do these Agents gauge price levels?

53.7. For the reasons stated in the Appraisal Corporation report, the opinions of the Agents interviewed is at best anecdotal.

53.8. In contrast to this, a longer listing period for farm properties in the Cookhouse district due to the presence of wind farms is not anecdotal - this a something that can be measured in days and months. The same applies to the opinion of the Remax Frontier agent in Makana, with regard to finding investors for tourism and game farms.

53.9. It is therefore clear that the research contained in this section of the SEIA's do not cover the type of property or market that is potentially affected by the proposed WEFs. The information is irrelevant and of no use in connection with impacts associated with the proposed Wind Garden and Fronteer WEFs.

53.10. In paragraphs 7.6 of the SEIA's[11], the international literature reviewed focuses on the residential housing market mostly on "*the values of nearby homes*" and "*home sale prices*" and cannot be compared to say a hospitality property located in a rural location.

53.11. The claim / conclusion that "*there is no direct correlation between wind farms and property values over the long-term*"[12]is based on a seriously flawed methodology and incorrect data. The residential market is not reflective of all property types. The significance score of "Low (24)" is in not accurate and in no manner reflects the correct assessment of this impact or the actual state of affairs. See Appraisal Corporation report.

54. There is no evidence tabled that the SEIAs conclusion that holds true for the type of properties

[11] Page 56 of the SEIAs.
[12] Page 59 of the SEIAs.

that are potentially affected by Wind Garden and Fronteer WEFs. This is a serious shortcoming of the two SEIA's and the reports are of no value to informed decision-making.

55. This flawed analysis is reflected in the respective BARs, where the term "*property values*" as used in the SEIAs is expanded to now include "*land values*"[13]. For the reasons stated herein and the Appraisal Corporation report, the conclusions drawn are not applicable to the "*rural and farm areas*".

56. In conclusion, the area that is relevant to determining impact on property and land value is not studied in any of the literature quoted in the SEIAs. This gross generalisation is in our opinion an overreach by the writers, stating it as a conclusion where in fact it was not covered by any of the various studies the writers relied on.

57. The assessment of impacts on market value and land value undertaken is wholly inappropriate, inaccurate and is rejected outright by those most directly impacted. The manner in which the studies have been undertaken has been misconceived. It cannot and does not motivate against an adverse finding regarding a clearly identified project impact which needs to be fully investigated. The methodology – in terms of which perceived impacts on the residential housing market are used to motivate an absence of significant impacts associated with the Wind Garden and Fronteer WEFs indicates an inexcusable lack of objectivity. The reporting and analysis fall short of the independent and unbiased opinion that is required by NEMA. The SEIAs and the BARs are tainted by this and the credibility of the assessment is question.

INADEQUATE CONSIDERATION OF ALTERNATIVES

58. A particular concern with the BARs and specialist studies is the fact that the *status quo* is not presented in an impartial manner as a real or viable alternative.

59. In a few instances, the no-go option (e.g. paragraph 10.13 of the BARs) is presented as "*not*

[13] Page 223 of the Wind Garden BAR; page 219 of the Fronteer BAR.

having a positive influence", instead of indicating the effect to be neutral. This is disingenuous. One example of this is where the impact on employment is discussed: "…*however, if the wind farm is not developed, then the unemployment rate will not be positively influenced by the proposed development. …Therefore, from an employment perspective, the 'do-nothing' alternative is not preferred as there is a perceived loss of employment opportunities*".[14]

60. The statement above seems to be deliberately aimed at painting a bleak picture, and in doing so either unwittingly or deliberately motivates in favour of the proposed WEFs as the only outcome. The motivation behind this is possibly less of a concern than its effect. The effect of this discounts the value and positive environmental, and socio-economic conditions associated with the network of game reserves and wildlife tourism-based operations in the area and the net positive effect they have on the economy and local employment; but in fact, the situation remains the same as before - nothing gained, nothing lost. It is our opinion that the writers did not fully investigate this option with the necessary objectivity, stating effects to be negative where in fact, the effect remains neutral. Neutral cannot be ascribed as no net environmental or socio-economic benefit.

61. The approach and the assessment of alternatives is materially flawed. For this reason, the independent review by Global Green assigned an overall 'E' rating ("Not satisfactory, significant omissions or inadequacies") for Review Area 3: Alternatives.

62. We refer to the following key deficiencies in the respective BARs:

62.1. The assessment fails to deal with fundamental alternatives. The end in this case (renewable energy is part of South Africa's energy mix) does not justify the means as it implies for example that a full cost benefit analysis is not required as part of the need and desirability and that the no-go option need not be considered. The approach is wrong on both accounts.

62.2. The failure to assess alternatives of the proposed Wind Garden and Fronteer WEFs is a *fait*

[14] Page 234 of the Wind Garden BAR; page 230 of the Fronteer BAR.

accompli, and all the BARs can hope to achieve is to tweak the development proposals. The approach is one of impact management and not assessment with a view to avoiding and minimising impacts (as required by NEMA).

62.3. The approach to alternatives is wholly unacceptable to I&APs. It undermines the credibility of the process and the opportunity to meaningfully contribute to the process if I&AP input cannot or influence affect the most fundamental decision about the acceptability of the overall development. In other words, the development is a *fait accompli* and input is limited to managing impacts.

62.4. The BARs and assessments undertaken fail to deal with 'site specific' and 'layout' alternatives: It is stated that, based on a technical feasibility assessment and an environmental screening process, one specific site has been identified due to its specific characteristics. However, the environmental screening process is not explained in the BARs.

62.5. The screening relied on the identification of 'fatal flaws' and 'no-go' areas. However, these concepts are not defined or explained – so there is no way of understanding what would qualify as a fatal flaw or a no-go area, and how this influenced the optimised layout. The explanation tendered in the BARs (in Figure 3.2 and 3.3) do not provide proper and credible explanation and therefore the optimised layout appears to have been informed by the developer's preferences.

62.6. No evidence is provided which indicates that public participation was conducted during the environmental screening process to inform the number and siting of turbines, thereby ensuring a transparent and accountable EIA process. The process is further confused by the EAP producing two different BARs for what seems to be a single development / layout plan incorporating both the Fronteer and Wind Garden WEFs.

62.7. In addition, the underlying documentation and baseline information used as part of the screening process has not been made available to I&APs (as was requested of the EAP during the public meeting held in Makana on 26 March 2021).

63. As indicated above, I&APs have several substantive concerns with regard to the environmental screening process applied bilaterally among the developer and the specialists. Firstly, core sensitivities such as biodiversity and visual are seemingly ignored. At a process level, the concern is that the development footprint and siting of the turbines were informed by a preceding environmental screening process and not the actual basic assessment process, which is problematic. The result of this screening process is presented as a foregone conclusion. In this sense, the fundamental flaw arising from the environmental screening process resulted in constraining the basic assessment processes and layout in terms of its scope (i.e. location, design, etc.).

64. I&APs suggest that the environmental screening is deeply flawed and discredits the entire basic assessment process. In the very least, I&APs require that the screening process be described in more detail (either in a revised BAR or in a separate report to avoid further confounding and already questionable process). The decryption should provide all baseline data relied upon in the screening process and the reasoning or justification for the scope of the basic assessments, as well as the number and siting of the turbines.

65. The basic assessment process undertaken in respect of the proposed Wind Garden and Fronteer WEFs should be revisited *ab initio* in order to assess different alternatives, numbers of turbines and siting options for the turbines. It is entirely unacceptable that the basic assessment processes have been restricted in the current manner to merely assessing and accepting the outcome from the screening process.

INDIRECT, CUMULATIVE AND CONSEQUENTIAL VISUAL IMPACTS

66. A key factor to the consideration of potential visual impacts requires an assessment of the "visible" effect on the surrounding areas. It follows that eco-tourism operations (such as those of our clients) which are marketed for their scenic beauty, would lose its appeal if they are visually scarred.

67. The VIAs indicate that the cumulative visual impact of the proposed Wind Garden and Fronteer WEFs, in the context of the existing Waainek WEF and proposed Albany WEF, is expected to be of **"**HIGH**"** significance.

68. In terms of significance ratings, the VIA reports state that "*No mitigation of the high visual impact is possible, but general mitigation and management measures are recommended as best practice"*.[15] No attempt has therefore been made by the specialists to implement the hierarchical approach to impact management through impact avoidance to address the negative visual impacts ranked as being of "HIGH" significance.

69. In addition, the VIAs fails to:

69.1. Describe or assess any genuine project alternatives and/or to prescribe or implement impact avoidance / mitigation measures required to address the findings of "High" impacts.

69.2. Recognise the landscape as a cultural resource in its own right and therefore ignores the high scenic value and wilderness quality of the study area and the negative impacts on visual scenic resources, including nearby nature reserves.

69.3. Assess the "sense of place" - i.e. the experience of the environment by the user - and how the altered visual landscape will impact on the undeveloped nature of the rural area and thus the resultant marketability of the surrounding properties and ultimately their value.

69.4. Assess the ancillary impacts of the proposed WEFs on our clients and other eco-tourist operations in the immediate surrounds, namely the impact of the WEFs on tourists routes which are at present generally an undeveloped landscape connecting an established tourism industry which cannot be mitigated. In this regard, we note that although the VIAs indicate that the location of wind turbines on routes will not impact on visitor and tourist numbers to the area, this opinion is speculative, unsubstantiated and based on the findings of the

[15] VIAs at pages 55; 56; 57; 59 and 60.

SEIAs which, as indicated above, are questionable.

69.5. Consider the REDZ visual mapping at a regional scale which shows that this portion of the REDZ is classified as mostly “very high” and “high” visual sensitivity and is thus, not ideally suited for wind farm development.

69.6. Adequately assess the cumulative impact of both the Wind Garden and Fronteer WEFs on surrounding Protected Areas and eco-tourism lodges, with the resultant effect that the combined effect of both WEFs on the receiving environment will be significantly larger (i.e. viewed collectively, the Wind Garden and Fronteer WEFs combined will provide for 85 turbines located across 6089ha, making the proposal one of the biggest contiguous windfarm areas in the country).

70. The shortcomings in the VIAs were raised as a key concern by various stakeholders during the public hearing conducted. Notwithstanding, no attempts has been made by either the specialists or the EAP to address these concerns. As a result, our clients have commissioned the services of Bernie Oberholzer and Quinton Lawson, both of whom are experts in visual impact assessment and widely recognised leaders in this field to undertake an independent peer review of the findings of the VIAs.

71. The key findings of the Oberholzer / Lawson Review confirmed the following:

71.1. The VIA reports contain too many omissions and inaccuracies and does not serve as a basis for informed recommendations or assessments regarding the visual acceptability of the proposed Wind Garden and Fronteer WEFs. The conclusions in the VIA reports are therefore questionable given that it has not been adequately informed by accurate baseline information.

71.2. Not all of the related infrastructure for the proposed WEFs have been assessed, in particular the internal access roads and connecting powerline to the Eskom substation beyond the Wind Garden and Fronter WEF sites.

71.3. Not all sensitive receptors have been taken into account in the assessments of the WEFs, neither have adequate photomontages relating to sensitive viewpoints been provided. The fact that the same 5 visual simulations / photomontages were used for each of the WEFs (which are on different sites), is unacceptable. There are patently too few visual simulations, which in turn hardly cover the range of sensitive viewpoints, and which are therefore not helpful for the visual assessment.

71.4. The avoidance of high significance visual impacts is completely ignored and avoidance as a key mitigation measure was not prioritised.[16]

71.5. Several findings in the VIA reports lack credibility and there is limited evidence of proper screening having been undertaken during the basic assessment in order to avoid visually sensitive areas. No screening has been carried out, nor has site-specific landscape features, scenic resources and sensitive receptors been clearly identified or mapped.

72. The concern that the visual impacts (both during day and night) of the proposed Wind Garden and Fronteer WEFs on our clients gives rise to unacceptably high impacts which will damage the landscape and undermine the integrity of the visual scenic resource is confirmed by the independent assessment by Oberholzer and Lawson. This in turn will have a direct detrimental effect on the tourism experience offered by our clients and will negatively affect the sustainability of its ecotourism and hospitality businesses and the marketability of the tourism product they are able to offer. In the longer term, this will undermine the financial viability and sustainability of the environmental management of the landholding and its conservation outcomes. On this basis alone, the NEMA application for the proposed Wind Garden and Fronteer WEFs should be refused outright.

[16] Page 10 of the Oberholzer / Lawson Review.

FAILURE TO ASSESS IMPACTS ON WATER RESOURCES

73. The impact of the proposed Wind Garden and Fronteer WEFs on the availability of water within the Makana area has not been assessed.

74. NEMA requires that the use and exploitation of non-renewable natural resources must be responsible and equitable[17], and take into account the consequences of the depletion of the resource.[18] The development, use and exploitation of renewable resources (and the ecosystems of which they are part) should not exceed the level beyond which their integrity is jeopardised[19]. NEMA advocates that a risk-adverse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions;[20] and that the negative impacts on the environment and people's environmental rights be anticipated and prevented, and where they cannot altogether be prevented, are minimised and remedied.[21]

75. The impact on the sustainability of the proposed water use, directly and cumulatively with other similar uses, on the resource is unquantified and unresolved. This is a fatal flaw.

76. The fact that high levels of water usage will emanate from the construction of the proposed Wind Garden and Fronteer WEFs, means that the failure to assess this impact as part of the basic assessment process is in direct opposition to various NEMA Principles stated above. More specifically, the failure to assess an identified impact directly contravenes NEMA[22] especially when considering the lack of specialist studies undertaken during the basic assessment process on geohydrological impacts; and water requirement needs / impacts associated with international water obligations.

[17] NEMA section 2(4)(a)(v).
[18] NEMA section 2(4)(a)(v).
[19] NEMA section 2(4)(a)(vi).
[20] NEMA section 2(4)(a)(vii).
[21] NEMA section 2(4)(a)(viii).
[22] NEMA sections 3; 4 (a) vi; vii; viii; 4 (g); 4 (i); 4 (n) and 4 (o).

77. The purpose of the EIA Regulations is to "*regulate the procedure and criteria as contemplated in Chapter 5 of the Act relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto*".[23] The impact assessment process envisages that all potential harm to the environment will be thoroughly evaluated and assessed in order to, as a first choice, prevent potential detrimental impacts on the environment.

78. During the public participation hearings conducted, various I&APs raised the fact that the Makana area is known to experience severe droughts so the increased pressure on an already-scarce water resource will decrease the water availability, and subsequently increase competition for water.

79. The impact of the proposed Wind Garden and Fronteer WEFs, and cumulative impacts of other water abstraction- related activities impacting on the same resource needs to be fully assessed in terms of the basic assessment process in order to satisfy the requirements of the EIA Regulations. The fact that a lawful water use requires a license in terms of the National Water Act is not determinative and is a separate statutory issue unrelated to the NEMA mandated assessment. The BARs fail to assess the impact on the resource and seeks to explain this material omission with reference to extraction of water from existing (unidentified) boreholes in the area. The impact is unresolved and unaddressed.

80. The content of the BARs show that neither the water impact / availability was assessed from the perspective of sustainability of the water source itself and the impact on the ecological reserve of groundwater in the area affected. The EAP's assessment of the impacts fails to adopt a risk-adverse and cautious approach, based on the limits to current knowledge and that decisions should be taken responsibly when information is unknown or in need of further investigation.

[23] Regulation 2 of the EIA Regulations.

81. Ironically the BARs acknowledge that there are "*significant restrictions placed on other natural resources such as water…*"[24] and that "*as an already water-stressed nation… due to the detrimental effects of climate change on water availability*"[25]. Notwithstanding this, no evidence is provided that the availability of water from existing boreholes has in fact been assessed or that the Municipality will be in a position to provide for the additional water requirements envisaged for the proposed Wind Garden and Fronteer WEFs.

82. The prediction that the area will have enough capacity to provide for the water needs of the proposed WEFs is based on speculation rather than a credible assessment firsthand of the true impact that the proposed Wind Garden and Fronteer WEFs will have on a strained water resource. This is evidenced by the following unsubstantiated extract from the BARs:

> "*Access to water and electricity is not a significant concern in the area, although the supply of electricity is sometimes erratic. If a construction camp is established to accommodate workers there will be a need for additional water and electricity connections for both the camp as well as the sire office. These connections will, however, be minimal and it is unlikely to alter the demand significantly*".[26]

83. Regarding the forecasted water use requirements for the WEFs, the BARs record that:

83.1. "*water will be required for the construction phase, which will be approximately 14313.19kl in total for the construction activities and 10140.24kl for human consumption. Water will be sourced from existing boreholes in the area*".[27]

83.2. "*water will be required for the construction phase, which will be approximately 19014.12kl in total for the construction activities and 12686.98kl for human consumption. Water will be*

[24] Page 28 of the Wind Garden and Fronteer BARs.
[25] Page 64 of the Fronteer BAR; page 65 of the Wind Garden BAR.
[26] Page 218 of the Fronteer BAR; page 222 of the Wind Garden BAR.
[27] Page 17 of the Fronteer BAR.

sourced from existing boreholes in the area".[28]

84. With regard to the proposed Wind Garden and Fronteer WEFs, we note that although an Aquatic Impact Assessment has been undertaken in respect of the proposed WEFs, the assessment fails:

84.1. to identify the boreholes referred to in the BARs;

84.2. to assess the availability and/or sustainability of proposed water uses and water abstraction rates of those boreholes;

84.3. to confirm that the Municipality can cater for (supply) the anticipated water requirements of the proposed WEFs in a sustainable manner. This is particularly important as the Makana IDP has confirms that the "*inadequate catchment area to Makana West… could result in possible water shortages to the community in the future*".

85. In the circumstances, the failure to assess, predict and evaluate the water availability of the boreholes / water supply from the Municipality is contrary to the provisions of NEMA. Given the critical importance of this resource, the BARs should be rejected on this basis alone.

POLICY CONSIDERATIONS

86. The policy context is not considered holistically in the BARs. Although the municipal IDP is considered, this is done, at best, as a high-level passing reference. No account is taken for the fact the IDP expressly recognises that "*tourism is often based on an area's physical attributes"*[29] and no link is made to the issues raised by I&APs regarding impacts on the very environmental features and qualities of landscape that make this an attractive tourism market.

87. Makana municipality plays a strategic conservation role as the Albany Centre of Endemism and

[28] Page 17 of the Wind Garden BAR.
[29] Section 2.1.7.1 of the Makana IDP.

has 27 endemic plant species of which 17 (62%) are cited as being vulnerable and 5 (32%) are cited as being endangered. In this regard, section 2.1.7.9 of the IDP notes that "*significant portions of land in the Makana municipality are classified as 'Critical Biodiversity Areas'. This means that these areas are to be managed for biodiversity and conservation, with only limited development in the form of small-scale tourism amenities recommended* (emphasis added)."

88. None of the other important strategic spatial planning instruments such as municipal and district Spatial Development Frameworks (SDF) have been addressed. There is no credible analysis of what the future spatial vision is for the area or what the SDFs state about the future land use of the region and particular sites within the study area. Related to this, the relevance of strategic planning in respect of conservation and biodiversity protection are not considered adequate in general and as part of the need and desirability analysis. There are various strategic documents providing direction for biodiversity planning at the provincial, regional and local scales and none of those are addressed convincingly. The strategic importance, contribution and role played by the Indalo PE in this context is overlooked to the extent of being completely ignored in the BARs.

89. This is particularly concerning since significant future economic development and tourism potential is locked up in the landscape and biodiversity value of the area. The sole reliance and motivation on the renewable energy sector is not an automatic justification for the desirability of the development which is how it is motivated by the EAP. This bias in motivation is problematic.

90. Although the Eastern Cape Provincial Draft Development Plan (PDP), 2014[30] identifies seven sectors with high potential for economic development, the BARs focus almost exclusively on climate change and renewable energy.

91. Considerations are selectively applied and relied upon in the BARs to motivate why the proposed Wind Garden and Fronteer WEFs are desirable. The BARs fail to note that the tourism

[30] Page 49 of the Wind Garden and Fronteer BARs.

sector, specifically eco-tourism, is an equally relevant sector. The aforementioned comments in the Makana IDP highlight the importance of the tourism sector and its interrelatedness with other sectors. A negative effect on one sector will have a ripple effect on a range of other sectors. The entire policy analysis and its interplay with need and desirability is flawed, as the BARs and various specialist reports have viewed the renewable energy sector as the only relevant strategic and policy consideration.

92. The PDP also expressly identifies game reserves in the Eastern Cape province as top attractions for international tourists and that international tourism spending is 40% greater than domestic tourism spending[31]. This is an important issue as it has a direct impact on tourism property, the tourism market and the value chain associated with tourism operations.

93. The importance of tourism as a sector and foreign tourism in particular is significantly underplayed in the BARs. This is a fatal flaw and must result in the rejection of the BARs outright.

NEED AND DESIRABILITY

94. The need and desirability of the proposed developments must be considered against other (competing) sectors and an accurate and credible impact assessment process. The cost benefit analysis undertaken by the EAP is not clear in terms of the reasoning for the conclusions in favour of the proposed Wind Garden and Fronteer WEFs to the exclusion of a range of sever and significant project-related impacts. The reasoning behind this analysis is required to be explained to I&APs.

95. Based on the comments provided during the public meetings and set out in these Comments, a credible and accurate assessment of several project specific impacts is lacking in the BARs and in respect of several specialist studies. This taint and in fact cripple the need and desirability analysis.

[31] Page 56 of the PDP.

96. Throughout the BARs and the specialist reports, there is a singular focus on the energy sector and benefits of renewable energy to the exclusion of other sectors and the relative benefits of other sectors. This bias (and motivation in favour of the proposed Wind Garden and Fronteer WEFs being approved) is replicated in the findings of the impacts assessed. The need and desirability analysis and its singular focus on energy generation with no meaningful integration of other sectors such as tourism and conservation are concerning and the reasoning behind this requires an explanation.

97. The BARs do not analyse or assess the implications (project impacts) of the proposed WEFs for other sectors and to this extent the need and desirability analysis is flawed.

98. To pass muster and satisfy the Need & Desirability Guidelines the need and desirability analysis must be informed by, as a bare minimum, of accurate and credible qualitative assessment of project impacts against the backdrop of a balanced account of the policy sector.

99. These aspects were not well considered in the demarcation of the REDZ, which means that the individual assessments within the REDZ need to engage with key questions around tourism and conservation impacts and impacts on existing operations informed by a minimum of qualitative assessment.

100. Based on the incomplete investigation of key impacts, the flaws identified in the assessments and the unjustifiably low impact significance ratings, it is not possible for I&APs to comment meaningfully on need and desirability, save to the extent that the analysis is superficial. It does not allow for the competent authority's decision-making process to satisfy the section 2 NEMA Principles.

101. At this stage, the analysis fails to comply with the Need & Desirability Guidelines (DFFE) and is non-compliant with NEMA and the EIA Regulations.

102. In the very least, all of the polices and strategies that are relevant to the specific context must

be identified, considered and described in the BARs. Based on how this is done in the future in terms of a substantively amended and revised set of reports, I&APs should be allowed to comment on this aspect in due course once the various errors and omissions identified herein have been rectified.

103. In terms of documentation released for public comment there is an alarming lack of a balanced consideration of the relevant issues.

104. In summary, the need and desirability of the projects: (1) is inconclusive; (2) is untested against applicable the policy and strategic context at local, provincial, national and international levels; and (3) is not measured rationally or objectively against key project impacts, especially the impact of the projects on the sustainability of existing operations and investments in the wildlife or ecotourism-based businesses and game reserves that operate in the immediate site context as well as those situated within the general region of Makana. The latter concern is unaddressed and unresolved. On this basis alone, the reports released for comment should be rejected outright and the process commenced afresh.

PROTECTED AREA / LANDSCAPE ECOLOGY IMAPCTS

105. Regarding land use and settlement patterns of the area, there are a number of protected areas in the region, including Kwandwe and several other wildlife or ecotourism-based businesses and game reserves that operate in the receiving environment.

106. The impact on the Indalo PE, of which Kwandwe forms a part, and a number of owners of informal private protected areas, game farms and other farms surrounding the projects generally oppose the construction of wind turbines within the region. It is noted that these properties generally "*rely on the natural environment of the region in order to function effectively*".

107. The Indalo PE has increased the conservation status and value of 68,075 hectares of Eastern Cape land, spanning six biomes, including two global biodiversity hotspots of Fynbos and Albany

thicket, and protects more than 88 species of threatened or endangered plants and animals. Indalo reserves also employ 1,079 people and support 3,992 dependents.

108. The full extent of potential impacts of the proposed Wind Garden and Fronteer WEFs on protected areas and landscape ecology (including the spatial components of interacting biophysical and socioeconomic features) has not been assessed. The following pertinent aspects are unassessed and remain unresolved:

108.1. The impact on adjacent to landscapes of high wilderness and tourism value has been completed ignored. The reasoning for this omission is not clear from the BARs.

108.2. The strategic footprint of the proposed Albany Biodiversity Corridor appears absent from the BARs and specialist studies. The reasons for the absence should have been stated upfront as a key limitation.

108.3. It is uncertain whether all proposed landscape ecological corridors within the Albany Biodiversity Corridor and the Indalo PE and associated corridors have been addressed. Any omissions of ecological / biodiversity corridors (in either the BARs or specialist studies) should have been stated upfront as a key limitation.

108.4. The absence of quantification of the conservation, economic and social benefit and public good associated with Indalo PE and the Game Reserves constituent members from the BARs and specialist studies is a significant omission and must be addressed in order to render the basic assessment process compatible with the requirements in NEMA.

109. Most fundamentally, key stakeholders, and neighbouring landowners all of whom are directly affected by the proposed Wind Garden and Fronteer WEFs were completely ignored by the various specialists. This not only taints the credibility of the consultation process required to enable local content and knowledge of local conditions and impacts, but it also negates the ability of the process to fully assess and quantify the contribution that key stakeholders, neighbouring landowners make to the socio-economic and landscape ecology context. This has much wider strategic ramifications for the long-term integrity of protected areas management

(and expansion) and associated biodiversity corridors and remain unresolved.

IMPACTS ON BATS

110. Our clients commissioned the services of Inkulukelo Wildlife Services ("IWS") to perform a high-level review in respect of the Bat Impact Assessment Reports ("the BIA Reports") compiled by Arcus Consultancy Services South Africa (Pty) Ltd in respect of the proposed Wind Garden and Fronteer WEFs.

110.1. The primary concern raised by IWS related to the absence of "Appendix B" (wherein the various monitoring methodologies are described) as it was difficult to judge whether the monitoring methodologies were in strict accordance with the South African best practice guidelines by Sowler *et al*. (2017). The specific concerns raised include:

110.2. The fact that monitoring standards in the Sowler et al. (2017) where not applied. Within the almost 300 000 ha monitoring area, passive ultrasonic monitoring was performed at only 25 localities (including 11 "at height" monitoring localities, and 14 ground level monitoring localities). In terms of the Sowler *et al.* 2017 guidelines, monitoring of bat activity at height should be performed at 30 localities, and near ground level at 60 localities for a 300 000 ha area.

110.3. It is not clear whether bat activity was in fact monitored at an adequate number of localities. A map should have been included which shows the boundaries of the proposed Fronteer Wind Garden WEF sites in relation to the boundaries of the Eastern Study Area, and the locations of the 25 passive monitoring localities.

110.4. It is not clear if suitable driven transects were performed twice during each summer. A map should have been included which shows the transect routes and identity and / or number of bats that travel along these routes.

111. Regarding the contents of the BIA Reports, we comment as follows:

111.1. While the Assumptions and Limitations[32] are considered normal and reasonable, gaps in the passive monitoring are not mentioned.

111.2. The National Environmental Management: Protected Areas Act 57 of 2003 (NEM:PAA) is a central law that should have informed the content of the BIA Reports given the close proximity of various formal and informal protected areas to the proposed Wind Garden and Fronteer WEFs. The fact that NEM:PAA did not inform the legislative context of the BIA Reports is concerning.

111.3. The monitoring stations that were situated inside or close to the Fronteer and Wind Garden WEF sites should have been highlighted so that the local recorded levels of bat activity are more obvious.

111.4. Habitat destruction, fragmentation and degradation should be considered in their own right and should not be lumped and assessed with bat displacement from habitats, under the term "Habitat Modification."

111.5. In respect of the proposed Wind Garden WEF, the evaluation of impacts and their mitigation, all proposed infrastructure (including especially the proposed 132kV powerline, and the substation) should be shown in the sensitivity map (Figure 3).

111.6. The significance ratings should be influenced by the impact of the proposed WEFs on bat ecosystem services. The impact of the development on bat ecosystem services (e.g. insect pest control, plant pollination, seed dispersal, and thus habitat maintenance and re-generation) is not considered.

112. According to the inputs received from IWS, the prescribed curtailment of turbines requires refinement/revision as follows:

[32] Section 2.2 of the BIA Report

112.1. A lower turbine cut-in temperature of 13 °C (not 17.5-18.5 °C) is advised;

112.2. A statement needs to be included regarding the value, or determination of a quarterly bat fatality threshold; and

112.3. In recognising that 38 or more fatalities occur during November, December and / or January, there needs to be clarity on what curtailment should be applied as well as clarity on where it should be applied (namely, across all turbines or only by those with fatalities).

113. In light of the above, the Environmental Management Programme for the Wind Garden and Fronteer WEFs requires amendment / refinement to ensure that:

113.1. The refined/revised curtailment recommendations are fully incorporated;

113.2. An independent company (rather than the O&M Operator) is tasked with analysing the bat fatality data and prescribing appropriate adaptive mitigation; and

113.3. The Wind Garden and Fronteer WEFs, respectively, are obliged to promptly act (within two weeks) if / when a quarterly / biannual / annual bat fatality threshold is exceeded.

SOCIO-ECONOMIC IMPACTS

114. The accuracy of the information contained in the SEIAs is essential to the credibility of the basic assessment process and the assessments undertaken therein. In this case, much of the information contained in the SEIAs is inaccurate, and this casts doubt on the outcomes that were determined. A central concern is the fact that those who have been most directly impacted by the proposed Wind Garden and Fronteer WEFs were not consulted.

115. The risks and socio-economic impacts that the proposed Wind Garden and Fronteer WEFs will have on adjoining game reserves, adjacent landowners, existing biodiversity or wildlife-based

enterprises and their value chains are not taken into account in the conclusions in the SEIAs. The effect of ignoring the risks and impacts on relevant stakeholders is to significantly obfuscate and underplay the possible negative consequences of the proposed WEFs, whilst exaggerating the alleged positive impacts. This is not a balanced consideration of project impacts. From the content in the SEIAs, it is clear that the impact of the Wind Garden and Fronteer WEFs on the aforesaid stakeholders is blatantly ignored.

116. The SEIAs relied on literature that can be discredited because the studies that were undertaken in other countries are not based on comparable circumstances that are relevant from a South African context.

117. <u>The following points are noteworthy from the Iceland study, undertaken in 2020:</u>

117.1. The Iceland study indicates that the number of wind turbines was far less than when compared to the number of wind turbines for the proposed development. Since there were two wind turbines, it would have a minimal impact on an area of this size. The impact of two wind turbines can hardly be likened to the current proposals entailing 85 structures to be erected on a ±6,000 ha piece of land.

117.2. The receiving environments of Iceland and South Africa are materially distinct, and no meaningful comparison can be made between the two. The landscape of Iceland comprises mountains, volcanoes, large ice caps and glacial rivers. When taking a photo of this environment, orientation is far less important than when taking a photo of, for instance, an elephant or rhino with a view of turbines in the background. The Iceland study does not reflect this unique aspect of the receiving environment around our clients.

117.3. Manmade structures can be hidden from tourism gateways due to Iceland's fairly mountainous landscape, whereas it is more challenging to hide the presence of wind turbines in a South African context.

117.4. The location where the Iceland study was undertaken is not considered to be a tourist area,

notwithstanding the fact that one needs to travel through the area to arrive at the tourism destination. As such, the receiving environs and neighborhood area is not comparable with the subject property in South Africa.

117.5. Residents that accrue monetary benefits from *inter alia* rental for the property on which the farms are developed and increased retail spending in the construction phases are more receptive to the development than tourists, who prefer that protected areas are shielded from unsightly development activities.

118. <u>The following points are noteworthy from the New Hampshire study, undertaken in 2013:</u>

118.1. The studies indicate that the negative perception of the wind farms diminish with time as the residents grow accustomed to the development. The results that negative perceptions seemingly decline does not demonstrate that the economy or property market was not affected; instead, it merely shows that it was too late to take action as the damage had been done already.

118.2. New Hampshire is known for its forests and is fairly mountainous. There is a strong likelihood that the wind farm was less visible because of the area in which it was situated.

118.3. At least 36.6% of the visitors travelled to the site with the purpose of visiting a destination, without an option of going elsewhere once the wind farm was constructed. A visitor is unlikely to change their location on the basis of visual disturbances due to wind farms if the purpose of their visit was not influenced by the scenery of the area. This study is not comparable to the neighbouring areas of the proposed Wind Garden and Fronteer WEFs, where tourism is a key reason for people visiting the area.

119. <u>The following points are noteworthy from the Northumberland Study, undertaken in 2014:</u>

119.1. This survey was aimed at "potential" visitors who had not yet experienced the natural beauty of the area. These potential visitors are more likely to respond positively to the

development, when compared to a visitor who has already experienced the area and who thus, has a better understanding of the full effect of the development.

119.2. A limitation of the study, as indicated by the author of the study, was that the actual impacts of the wind farms on tourism are not assessed because of its "*geographical remoteness to Northumberland".*[33] Consequently, the study *"only gives an indication of potential visitor intentions, not actual visitor intentions*".[34]

119.3. *Certain s*tatistics that are contained in the Northumberland study were omitted from the SEIA.[35] These include:

119.3.1. Of the 410 respondents, 11% (45) would be discouraged from visiting Northumberland due to the wind farms and two thirds of those are male.

119.3.2. 19% (78) indicate that their decision to visit Northumberland is likely to be affected by wind farms.

119.3.3. 30% of respondents will definitely or may be encouraged to book a holiday / visit to somewhere other than Northumberland in the future because of the presence of wind farms.

119.4. It is thus evident that only the "positive" conclusions (i.e. those conclusions which are intended to enhance or promote the positve socio-economic benefits of the proposed Wind Garden and Fronteer WEFs) were selected by the authors of the SEIAs, without providing information on the negative feedback. This one-sided and selective reporting is not indicative of an unbiased and objective opinion which is required in terms of the impact assessment process. This one-sided approach casts doubt over the unqualified use of these reports and the objectivity of the authors of the SEIAs.

[33] Evolution of the impacts of onshore wind farms on tourism on Northumberland, UK, 2014, page 3.
[34] Evolution of the impacts of onshore wind farms on tourism on Northumberland, UK, 2014, page 3.
[35] Evolution of the impacts of onshore wind farms on tourism on Northumberland, UK, 2014, Page 45.

120. The following points are noteworthy from the Scottish Study, undertaken in 2008:

120.1. Key findings from the in-person survey showed that some 44% of respondents did not like to see several wind farms in the same view.[36] The general trend was that wind farms had a limited effect on decisions to visit the area again.

120.2. The internet survey focussed on two groups, from UK and US, respectively. Of the 606 UK residents surveyed, only 34% (206) indicated that the reason for their visit was *"to see Scotland".* The remainder were in Scotland for destination based purposes (such as shopping, visiting friends and family or attending an event or business). Of the 103 US based visitors, 68% (70) indicated their reason to visit as *"to see Scotland*".

120.3. From the total number that was surveyed (709), only 267 indicated the reason for their visit as *"to see Scotland".* This means that less than 38% of the people who had been surveyed were visiting to view the scenary of the area. This fact alone brings the relevance of this study into question, given that majority of visitors to the neighbourhood area of the Wind Garden and Fronteer WEFs visit in order to see the country side and the scenic beauty that the area offers. The study is therefore not suitable to be used in the SEIAs as a basis for the potential or the actual impacts of the proposed WEFs on tourism in the Eastern Cape province of South Africa.

121. The Ireland Study undertaken in 2012 was a follow-up on a previous study, concluded in 2007:

121.1. As such it is more focussed on changes in behaviour and attitudes in the intervening period rather than on future decisions. The differences indicate that over time, the percentage of respondents that had no opinion decreased from 49% to 23%. Those opinions that were positive changed from 32% to 47% and those opinions that were negative changed from 17% to 30%. This indicates that people either grew accustomed to the wind farms over time, or

[36] The economic impacts of wind farms on Scottish tourism, 2008, page 127.

that they had more negative experiences with them. This study does not show the initial impact of wind farms on tourism, so its value in informing the content of the SEIAs is limited.

122. The Portugal study conducted in 2017 is of very limited use, as only 68 visitors and 21 residents were interviewed. In terms of demographics, 17% were foreign tourists (of the 68 visitors, 53 were Portugese and 15 were Spaniard). The reason for visiting the area is not mentioned in the study. If, for instance the reason was to visit friends and family, then the existence of a wind farm will have a limited impact on the visitor experience. This could well be reason for the anecdotal comment that "*visitors continue to come to Sortelha*"[37] Furthermore, the sample size of this study makes it a poor comparison for the Wind Garden and Fronteer WEFs and it adds limited value to the findings of the SEIAs.

123. With regard to "RSA Studies", the authors requested that several accommodation establishments complete questionaires.[38] In this reagrd, we comment as follows:

124. Limited or no information is supplied on the type of questions posed or the responses received and I&APs cannot comment on the accuracy of the conclusions that were drawn from this survey. The following concerns are raised in respect of the South African studies:

124.1. Only eight establishments were contacted. This is not a basis for legitimate, accurate or credible conclusions for the the assessment. The EAP is requested to motivate the reasons for why this level of study is deemed accurate.

124.2. Of the eight establishments that were contacted, three are situated in Makhanda (these include: a bed and breakfast establishment, a backpackers lodge and a guesthouse). None of these establishments are focussed on game reserves, ecotourism, the landscape around our clients or the experience of nature, but rather cater for over-night guests or visitors to the town. This is a fatal flaw for the following reasons:

[37] Wind Farms and Rural Tourism, 2017, page 250
[38] WGSEIA page 44, FSEIA page 44

124.2.1. Being located in Makhanda, a wind farm some 5km from the town will have a limited impact on guest numbers or income.

124.2.2. This is due to the limited visual and other disturbances that it causes in Makhanda.

124.2.3. The type of guests frequenting these type of establishments in Makhanda has no resemblance to the type of guests to the farms and lodges in the neighbourhood area surrounding the projects.

124.2.4. The guest requirements for establishments in Makhanda will, therefore, vary significantly making a meaningful comparison in terms of impacts impossible.

124.3. Three establishments that were contacted are based in Jeffrey's Bay / Oyster Bay. These include a multi-use venue, a lodge and self catering accommodation, making a meaningful comparison in terms of impacts impossible.

124.4. As similarly pointed out in the comments relating to the Makhanda establishments, the distance from wind farms is not reflected, so the evaluation of the evidence presented is impossible.

124.5. It may well be that these three establishments are shielded from the wind farms by mountains or vegetation, with the only effect being a drive-by rather than having a view affected.

124.6. Based on knowledge of the hospitality market in the area, it is safe to assume that the type of guest to these three ventures will have completely different hospitality requirements, most likely not aimed at seeing nature / experiencing the eco-tourism market. The information obtained from these establishments is in no way comparable to the circumstances prevailing on the ecotourism operations of our clients.

124.7. The last two respondents are located in Cookhouse. The same issues noted above are also

applicable to the two ventures in Cookhouse.

125. With this in mind, we are of the opinion that limited value can be placed on any of the conclusions drawn from either the international or local studies used in the two SEIAs. The type of project impact specific to the receiving environment, the type of tourist, the purpose of visits and the level of visual and other impacts differ vastly between the studies and the neighbourhood area. The studies are of limited value in this context.

126. The SEIAs ignore studies which conclude that there is a significant change in tourist behaviour once a wind farm is developed. We draw attention to key issues and conclusions drawn from the study *"Gone with the wind? The impact of wind turbines on tourism demand"* that was completed in August 2015, by Tom Broekel and Christoph Alfken[39]:

126.1. Contrary to other studies relying on surveys and interviews, this study focusses on statistics on tourism and a comparison to the location of turbines in Germany.

126.2. Spatial panel regression techniques are used to determine their relationship.

126.3. Four other studies are also noted in this report, all based on surveys. This was used to show the anomalies in this type of study and also to determine the pitfalls that had to be avoided in the new study.[40]

126.4. As in South Africa, Germany experienced a significant growth in wind farms, from close to 0 in 1984 to 23,095 turbines at the end of 2012.

126.5. There is a difference in the relationship between inland tourism and wind turbines, and coastal tourism and wind turbines. This is ascribed to the visitor requirement being different, with coastal visitors requiring "*close to nature*" vacations[41]. This will therefore be

[39] The Institute of Economic and Cultural Geography, Leibniz University of Hannover, Germany
[40] Gone with the wind? 2015, page 5
[41] Gone with the wind? 2015, page 15.

comparable to the type of tourism in the SEIAs study areas.

126.6. The study found a negative relationship between the installed capacity of wind turbines in municipalities and tourist demand. Moreover, tourist demand is negatively related to the ratio between the number of wind turbines installed within and in the vicinity of municipalities. This second conclusion was however only observed in one model.

126.7. One conclusion that is still open for discussion is the positive relation between the number of installed wind turbines in the surroundings of a municipality and tourist demand. The authors' explanation for this is that tourists avoid areas with high and further increasing turbine densities. Tourists prefer to stay in the same district, but another location, not more than approximately 20km away, where the density of wind turbines is lower. This is evident from the fact that areas with a lower density of turbines show an increased tourist demand when the density in other close-by areas are increased.

126.8. Furthermore, "*tourists tend to avoid their preferred destinations when these are characterised by large wind turbine numbers and the surrounding regions offer locations less exposed to wind turbines. These tourists want to stay in the greater region and therefore close locations in the vicinity of their original destinations, with less turbines*".[42]

126.9. The studies revealed a negative relationship (in log form) of -0.01. This implies that a 1% increase in the installed wind turbine capacity relates to a reduction of 0.01% in the occupancy rates in the same and subsequent years. However, as general occupancy rates increase on an annual basis, this negative impact is difficult to observe in reality.[43]

127. In case of negative externalities, the BARs and specialist studies do not fully account for social and economic costs, and social welfare. Research or policy concerned with internalisation must be informed about the categories and scope of externalities as well as the state of knowledge. However, as the application of a narrow externality concept can be quickly stretched to its

[42] Gone with the wind? 2015, page 17.
[43] Gone with the wind? 2015, page 17.

limits, this literature review pursues a more encompassing and pragmatic approach. Providing a qualitative map of the public economics of wind power, this paper surveys the literature to identify external effects, whether triggered or mitigated, as well as further unintended consequences. Evidence is structured according to scope and effect, with central findings synthesised. There is no existing comprehensive literature review, consolidating evidence from otherwise disparate sources: economics, ecology, geography, public health, as well as economics and engineering which is a gap this paper addresses.

128. The EAP and the specialists did not attempt to engage our clients or their guests about the potential impacts of the Wind Garden or Fronteer WEFs. The same applies to other game reserves and ecotourism operations in the affected area. In relation to a similar application for a renewable energy facility, Kwandwe consulted its client base in order to offer insight into how its clients would respond to the construction of wind farms which are in close proximity to it. It was also to determine how tourists who are familiar with the landscape and the eco-tourism product offered by Kwandwe would perceive the development of a wind farm in close proximity to Kwandwe. This shows how these tourists perceive wind farm related impacts and also how it might influence their behaviour and choices in future, regarding tourism destinations.

129. The opinions of the respondents of that survey can be supplied on request, but the following comments can be viewed as a summary:

129.1. The scale and location of wind turbines would appear as visually intrusive and alien features in an otherwise undisturbed landscape. This would be harmful to the special character and natural beauty of Kwandwe Game Reserve.

129.2. "*The visual dominance of the wind turbines throughout the day and night would inevitably impact on my choice to visit Kwandwe as a tourist destination*".

129.3. "*The visibility of wind farm from within Kwandwe would mean that unfortunately I would no longer visit Kwandwe to enjoy the unique tourist experience currently offered*".

130. One respondent is a Chartered Town Planner and Senior Director at Pegasus Group, one of the UK's leading planning consultancies. He has extensive experience of preparing and assessing Environmental Impact Assessment for major development proposals. He further states: "*I acknowledge the contribution that wind farms can make in addressing climate change. Nevertheless, wind farm developments need to be sited in appropriate location and avoid sensitive landscapes. In this instance, the benefits of wind power should be balanced against the harmful environmental impacts on the natural landscape and the harmful economic impacts on the local tourist industry*".

131. The loss of rates revenue to the Municipality as a consequence of reductions in property values (which for the reasons set out herein is unassessed and unresolved project-related impact) is not addressed.

132. There is a general failure to consider the full range of externalities that are created by enterprises in the nature-based value chain and how this stands to be affected. The full impact (direct, indirect, consequential and cumulative impacts) on the value chain needs to be considered.

133. The IDP expressly recognises the interrelatedness of various industries and, by implication, the danger for ripple effects to be experienced across a range of different services, industries and sectors. Section 2.3.13 of the Makana Municipality IDP states that *"although manufacturing is a relatively small portion of the Makana GDP, it is still an important industry that supports the agriculture and ecotourism industries. This further contributes value to the other sectors in the economy."*

134. The entire assessment is based on the unsubstantiated proposition that these competing land uses can co-exist in this specific context. The conclusion is flawed as it underplays (to the extent that such concerns are ignored) the possible negative consequences of the proposed Wind Garden and Fronteer WEFs. The resultant land use conflict places the proposed development entirely at odds with key aspects of applicable policies, including the Municipal IDP and various biodiversity conservation sector plans and guidelines.

135. The SEIAs conclusions on the impact on tourism (i.e. that the wind farms will not significantly negatively influence the tourism industry or impede the influx of visitors to tourist facilities or lodges within the region) are flawed. The studies used as basis for the conclusions are not comparable, nor compatible to the situation in the receiving environment. Literature indicating a conclusion to the contrary of the reported studies was disregarded and there was no engagement with Kwandwe, one of the largest hospitality enterprises in the area and our other clients who are all directly impacted stakeholders. In fact, none of the other tourist operations in the area were consulted regarding tourism impacts. There is no evidence of primary research on the tourism market, nor was there any meaningful attempt to assess the actual impact of the proposed Wind Garden and Fronteer WEFs on tourism in the area. The conclusion that tourist numbers will not be affected is thus, in our opinion incorrect and not representative of actual trends.

Yours sincerely

Richard Summers Inc

Per RW Summers