

CES

Contact Person: Caroline Evans
Email: c.evans@cesnet.co.za
Tel: 046-622 2364

**Reference: Albany Wind Energy Facility, DEFF Ref: 14/12/16/3/3/2/1131 :
Impact to Indalo Protected Environment and Addo to Great Fish Corridor
Protected Area Expansion**

We are commenting on the Albany Wind Energy Facility (WEF), DEFF Ref: 14/12/16/3/3/2/1131 as a concerned association of landowners, as a formally protected area and a concerned group of wildlife tourism which constitutes the Indalo Protected Environment.

Under cover of this letter we make more detailed comment on the Draft EIR report and specialist studies supporting the application.

1 NDALO PROTECTED ENVIRONMENT

The Indalo Protected Environment is made up of the 9 private game reserves reflected in the Table below and consists of properties belonging to different landowners. These 9 private game reserves are located over 3 local municipalities in the Sarah Baartman District Municipality of the Eastern Cape Province of the RSA as indicated.

Table: Private Game Reserves forming part of the Indalo Protected Environment

No	Name	Size hectares	Local Municipality
1.	Amakhala Game Reserve	9,733.7	Sundays River Valley, Makana
2.	Hopewell Game Reserve	2,730.94	Sundays River Valley
3	Kariega Game Reserve	7,936.78	Ndlambe, Makana
4.	Kwandwe Game Reserve	18,988.04	Makana
5.	Oceana Beach and Wildlife Reserve	724.72	Ndlambe
6.	Pumba Game Reserve	5,837.10	Makana
7.	Shamwari Game Reserve	20,338.58	Sundays River Valley, Makana
8.	Sibuya Game Reserve	1,785.23	Ndlambe
9.	Lalibela Game Reserve	8,001.46	Makana
	TOTAL	76,076.59	

Based on government's Protected Area Expansion Strategy, buffer zones and Biodiversity Stewardship Programme, Indalo is currently actively working with local provincial and national partners including the Wilderness Foundation of South Africa, Eastern Cape Park and Tourism Agency and SA National Parks to expand areas under formal protection. This is done through further amalgamation of the southern, central and northern nodes into large agglomerations (>50 000Ha) of private nature and game reserves in the central node and private/public nature and game reserves through public-private partnerships with Addo National Park and the Great Fish (and various provincial nature reserves) in the south and north respectively.

One of the main objectives of the expansion plan is to enable common traversing agreements and unified conservation management through the dropping of fences between reserves. This is only realistic if areas

expand to the extent that larger areas of the protected area become contiguous and objectives have been set for short, medium and long term:

1. The short term:
 - a. Combining land in the central - between Lalibela and Pumba will require areas of 2500 ha; and
 - b. Combining land between Lalibela and Shamwari 2x 3500 ha.
2. Medium term:
 - a. Combining land between Sibuya, Kariega and Buffalo Kloof Private Reserve and Rivers Meeting Forest Reserve in the southern area will require some more substantive areas of 15 000ha, and
 - b. Combining land targeted by the National Protected Area expansion strategy between Shamwari, Lalibela, Pumba and Kwandwe of 50 000ha, and
 - c. Inclusion of key biodiversity conservation nodes and wilderness areas characterised by high scenic quality and low levels of intrusion
 - i. to the north and east of Addo,
 - ii. around Great Fish and south along the Fish River, and
 - iii. along the coastal shelf between Kenton and Port Alfred.
3. Long term:
 - a. Linking with the protected areas in the Amathole Biosphere Reserve.

To this effect a formal protected area expansion strategy is under development by various stakeholders including the Wilderness Foundation Africa, Eastern Cape Parks and Tourism Agency, South African National Parks and Indalo Association, which will guide protected area expansion, inform land-use planning, stimulate economic development and aide thicket restoration in the broader Albany region. Of specific relevance is the objective of the Addo Park to further expand where it is envisaged that the park will cover some 240 000 hectares on land with a proposed further 120 000 hectares of marine protected area¹.

The environmental and economic benefits associated with the agglomerations (>50 000Ha) of private reserves and expansion through private partnerships with Addo National Park in the south and the Great Fish in the north are considerable. Not only will this form a mega reserve as larger consolidated areas will lead to improved marketability of the Eastern Cape as a safari destination, making it comparable to Kruger, Sabi Sands and Madikwe. As much as wind energy development is necessary in South Africa, we hold wind energy development that impacts on the Addo, Great Fish and Indalo Protected Areas and their further extended areas to be untenable and undesirable that should be avoided at all cost.

2 BACKGROUND

Indalo reserves were formed (and continues to grow) by the amalgamation of land previously used for stock farming and substantial effort was made to remove human-made structures and to rehabilitate disturbed areas to return the landscape to a natural state.

With time Indalo has grown in terms of area under conservation, tourism numbers and revenue (an increase of 30% in visitors and Gross Revenue from R282m to R570m in the last 5 years). Before the covid-19 Pandemic five reserves intended increasing the number of beds, all nine intended increasing the size of the reserve, and eight of the nine were planning to expand both their community engagement and environmental education.

¹ Greater Addo Elephant National Park Project
<https://www.sanparks.org/parks/addo/conservation/geanp.php>

Indalo as an association and as individual members has made a substantial contribution to the conservation of threatened species including both black rhino and white rhino, the protection of landscapes of ecological importance along with contributions to numerous other objectives as set out in the Indalo Protected Area Management Plan. The Plan requires each reserve to secure the required financial resources to ensure achievement of the protected area management objectives.

Like the Addo National Park and the Great Fish Provincial Nature Reserve, the Indalo Private Game Reserves (like many others in South Africa and in Africa in general) is concerned with nature and wildlife tourism as a key protected area goods and service.

It is specifically the wildlife and nature tourist's experience that relies on the wilderness character of both the protected areas and their surrounds and in a way the wilderness character of the reserves which finances protection of ecological, geological, landscape and other features of scientific, cultural and/ or historical value (nature and wildlife tourism in reality underpins the protected areas operation and ability to meet biodiversity conservation objectives).

Like the Addo National Park and the Provincial Nature Reserves (most notably the Great Fish), the Indalo Private Game Reserves are managed according to a Protected Area Management Plan, but with the important difference that they do not receive public funds but have to secure funding from internal resources.

These resources are derived from nature and wildlife tourism which is dependent on a natural environment largely free from the structures and signs of modern civilisation (often from which the tourists come to get away). Wind energy development characterised by colossal skyline intrusion will impose a divestment on Indalo members impacted and curtail wildlife and nature tourism enabled protected area expansion.

3 OBJECTION

Although Indalo strongly supports all sustainable renewable energy development, we will object to any development such as the proposed Albany WEF that will prevent the greater Indalo to take its rightful place as a world class African nature and wildlife destination and curtail or intrude potential protected area expansion through partnership with the Addo and Great Fish Protected Areas. Indalo objects against the Albany WEF in the EIR for the following reasons.

3.1 VISUAL IMPACT ASSESSMENT

The Visual Impact Assessment (VIA) is defective and must be rejected, for the following reasons, amongst others:

- Poor selection of vantage points and complete omission of the Great Fish Provincial Nature Reserve are material deficiencies in the Report. The absence of the Great Fish Provincial Nature Reserve is conspicuous, and the deficiency is of such a nature that it makes the WEF ecologically unsustainable and should prevent the development on the proposed locality.
- The actual impact on the Great Fish Provincial Reserve and the Adams Krans view point as determined by Indalo's independent specialists, alone constitutes a fatal flaw. The aggregated visual impact on wildlife and nature tourism operations in the area would be an externality of fatal proportions for the further development of the WEF as proposed.
- It attempts to justify a high visual impact by indicating that the lifespan of the facility will be 20-25 years. If this expected lifespan were accurate it would not be justification for the high impact. In reality however the lifespan will likely be indefinite as turbine and wind energy technology advances and turbines are replaced so that operations continue past the 20-25 year period.

- It fails to scientifically contextualise the WEF development amidst the “very high visual sensitivity” of the receiving environment, rather it makes a statement that “the landscape of the study area is not pristine or of very high scenic value”.
- It indicates that there is limited mitigation potential due to the extreme size of turbines. However, it fails to investigate a reduced hub-height or the no-go alternative, both per turbine as well as for the WEF .
- The EIR’s external specialist review notes that the “peer reviewer received the VIA report at a very late stage in the process and has had very limited time to produce this peer review report”. This statement confirms that the specialist review cannot be upheld as verification of the veracity of the study, it, should be rejected and referred back to the specialist to perform a proper independent review that meets independent scientific standards.
- The lack of the consideration of impact to formally Protected Areas, most notably impact to the Great Fish Provincial Reserve measured against the stated expansion of the Indalo, Addo and Great Fish Protected Areas, is viewed with circumspection. The perpetuation of this material omission throughout the VIA (and perpetuation downstream into the SIA and EIR) is obfuscating the fact and severity of the matter.

3.2 SOCIO-ECONOMIC IMPACT ASSESSMENT

The Socio-Economic Impact Assessment (SIA) is flawed for the following reasons, amongst others:

- The finding of the SIA Specialist indicates that “[n]o evidence is presented to support the assertion that any wind farm development overseas has resulted in any adverse impact on tourism”. This finding is not correct insofar as it concerns wilderness tourism as shown through international research presented in the body of this document. It is clear that the assessment does not consider that much like the Kruger National Park and the Addo National Park, visitor experiences in Indalo and the Great Fish is concerned with activities and encounters in natural and unspoilt settings.
- The study errs in finding “Existing turbines do not affect any of the lodges at the game/hunting farms visually” and would appear to base this on Interview with Pumba Director Mr Dale Howart which who was never consulted or made any statement of this nature. We insist that this statement is corrected failing which we will be reporting this as misrepresentation to the competent authority as grounds to refuse application (or subsequent appeal as decision based on a material factual mistake).
- The study omits Nature and Conservation Tourism of formally Protected Areas, Provincial as well as Private Protected Areas from the surrounding land uses. Most notably there is no consideration afforded to Conservation Tourism from the Great Fish and Thomas Baines Protected Areas.
- The analysis in Section 7.5 Economic Sectors & Employment omits an analysis of the tourism sector and the extent to which nature and wildlife tourism contribute to the regional economy.
- The discussion of the tourism sector Section 7.6.2 Tourism does not consider to any level of detail the nature of the tourism product and services of the area, nor the wilderness character of the area as basis for nature and wildlife tourism.
- The conclusion of the SIA is wrong because it is informed by material factual mistakes in the VIA that the Albany WEF will not cause significant visual impacts on Protected Areas.

3.3 ECONOMIC IMPACT ASSESSMENT

Indalo performed an independent Economic Impact Assessment of the proposed Albany WEF which concludes that a compromise between Private Game Reserves and the WEF development (investment) could be a desirable solution. The preferred economic option indicates wind energy should be deployed sufficiently distant from nature and wildlife tourism based operators, so as to avoid impacting the wilderness character and its tourism value and sterilising future Protected Area expansion. Combined land use, that does not imply a reduction in environmental goods and services (or quality of environmental goods and services), should ideally be pursued.

3.4 NEED AND DESIRABILITY

Although the Scoping Report and EIR do provide motivation for the need and desirability of the project, all the listed desirable aspects can be achieved through deployment of the WEF in an alternative location with suitable wind resources within the province, or even beyond the province. They can be more effectively achieved in a location that would avoid significant impact to wilderness character and its tourism value as the proposed WEF will do. Neither of the two reports provide a motivation for the need and desirability in the context of the preferred location, which is a requirement of the EIA Regulations.

3.5 ASSESSMENT OF ALTERNATIVES

The lack of a proper investigation about alternative site locations in accordance with the prescribed requirements of the EIA Regulations is a material mistake in the EIR and forms further ground for the DEFF to reject the Albany WEF application. The VIA is specifically deficient in considering alternatives and specifically not considering the no-go option, with the inadequacy being carried over into the SIA and EIR where neither the no-go option nor the option (and benefits) of the Protected Area expansion program is considered.

4. CONCLUSION

The Indalo Protected Environment places on record that the EIR for the Albany WEF and the above-mentioned specialist studies are deficient to the extent that these inadequacies are covering up fatal flaws in the application. If these material deficiencies were to be addressed, it would become clear that the proposed WEF development would significantly blight views from the Great Fish Protected Area (most spectacularly from Adam Krans view point) and would degrade the scenic value of the area and its unique wilderness tourism product in general. Indalo is unconditionally in favour of the outright refusal of the present location of the Albany WEF based on the grounds set out in the attached comments of the EIR.

In other words, Indalo favours the ultimate, most effective mitigation measure for the Albany WEF and the fatal flaws that it holds in terms of impact to Protected Areas and their expansion - its avoidance through its outright refusal.



Neale Howarth

Chairperson of Indalo Private Game Reserve Association

CC:

Mr Vuyani Dayimani

CEO Eastern Cape Parks and Tourism Agency

Vuyani.Dayimani@ecpta.co.za

Mr Fundisile Mketeni

fundisile.mketeni@sanparks.org

CEO South African National Parks Park

Dr Mike Knight -

Head: Planning & Development South African National Parks Park

mike.knight@sanparks.org

CES
67 African Street
Grahamstown
6139

By electronic mail

21 July 2020

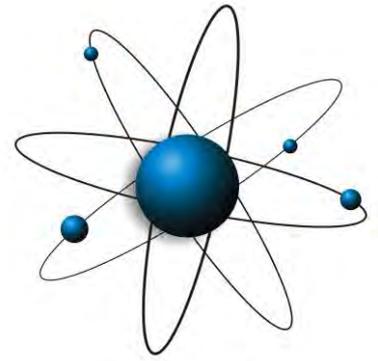
Attention: Ms Caroline Evans

Indalo Protected Area: Wind Energy

Dear Ms Evans

This letter replaces the provisional comments by the Indalo Association submitted to the CES on or about 13 July 2020 in respect of the Draft EIA for the proposed Albany Wind Energy Facility (WEF). These Revised Comments consist of the Executive Summary below and the Comments and should be read with the different specialist studies and annexures in separate files. The Revised Comments are substantially the same with some editorial changes. The only material aspect that has been added is our concerns regarding the cumulative impacts posed by the different WEFs that were not clearly expressed before and are recorded in paragraph 4.5 in the Executive Summary and paragraphs 3.1.6, 3.2.3, 3.2.6, 4.2.3 and 5.2 of the Comments.

In light of the Indalo's findings in the Revised Executive Summary and Comment (including annexures) that the draft EIR is fatally flawed, it is submitted that the CES has no option but to apply to the DEFF for a 90 day extension in terms of the EIA Regulations to redo the Visual Impact Assessment, the Socio-Economic Assessment, undertake proper focused meetings with the management of the different Indalo private Game Reserves, Great Fish and of Addo, change the draft EIR according to these findings and publish it for a second round of public comment. This proposed process reflects the generous instead of legalistic approach to procedural fairness during public participation and comment to EIAs prescribed by the courts (See e.g. Earthlife Africa v Director General Department of Environmental Affairs and Tourism 2005 (3) SA (C) at [95], [98] and [101].) We advise that CES's failure to follow that aforesaid process and to correct the fatal flaws in the Draft EIR before filing the final EIR to the DEFF, will jeopardize the proposed Albany WEF.



ESCIENCE
ASSOCIATES
(PTY) LTD

POSTAL
ADDRESS:
PO Box 2950
Saxonwold
2132

PHYSICAL
ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

TEL:
+27 11 728 2683

FAX:
+27 86 610 6703

WEBSITE:
www.escience.co.za

E-MAIL:
info@escience.co.za

R No 2009/014472/07

EXECUTIVE SUMMARY

1. INDALO PROTECTED ENVIRONMENT

The Indalo Protected Environment is made up of the 9 private game reserves reflected in the Table below and consists of properties belonging to different landowners. These 9 private game reserves are located over 3 local municipalities in the Sarah Baartman District Municipality of the Eastern Cape Province of the RSA as indicated.

Table: Private Game Reserves forming part of the Indalo Protected Environment

No	Name	Size hectares	Local Municipality
1.	Amakhala Game Reserve	9,733.7	Sundays River Valley, Makana
2.	Hopewell Game Reserve	2,730.94	Sundays River Valley
3	Kariega Game Reserve	7,936.78	Ndlambe, Makana
4.	Kwandwe Game Reserve	18,988.04	Makana
5.	Oceana Beach and Wildlife Reserve	724.72	Ndlambe
6.	Pumba Game Reserve	5,837.10	Makana
7.	Shamwari Game Reserve	20,338.58	Sundays River Valley, Makana
8.	Sibuya Game Reserve	1,785.23	Ndlambe
9.	Lalibela Game Reserve	8,001.46	Makana
	TOTAL	76,076.59	

2. BACKGROUND

2.1 Indalo reserves were formed (and continues to grow) by the amalgamation of land previously used for stock farming and substantial effort was made to remove human-made structures and to rehabilitate disturbed areas to return the landscape to a natural state.

- 2.2 With time Indalo has grown in terms of area under conservation, tourism numbers and revenue (an increase of 30% in visitors and Gross Revenue from R 282 million to R 570 million in the last 5 years). Before the Covid-19 Pandemic five Indalo reserves intended to increase the number of beds, all nine intended to increase the size of their reserves, and eight of the nine were planning to expand both their community engagement and environmental education.
- 2.3 Indalo as an association and its individual members have made a substantial contribution to the conservation of threatened species including both black rhino and white rhino, the protection of landscapes of ecological importance along with contributions to numerous other objectives as set out in the Indalo Protected Area Management Plan. The Plan requires each reserve to secure the required financial resources to ensure achievement of the protected area management objectives.
- 2.4 Like the Addo and the Great Fish, the Indalo Private Game Reserves (like many others in South Africa and in Africa in general) is concerned with nature and wildlife tourism as a key protected area goods and service.
- 2.5 It is specifically the wildlife and nature tourist's experience that relies on the wilderness character of both the protected areas and their surrounds and in a way the wilderness character of the reserves which finances protection of ecological, geological, landscape and other features of scientific, cultural and/ or historical value (nature and wildlife tourism in reality underpins the protected areas operation and ability to meet biodiversity conservation objectives).
- 2.6 Like the Addo National Park and the Provincial Nature Reserves (most notably the Great Fish), the Indalo Private Game Reserves are managed according to a Protected Area Management Plan, but with the important difference that they do not receive public funds but have to secure funding from internal resources.
- 2.7 These resources are derived from nature and wildlife tourism which is dependent on a natural environment largely free from the structures and signs of modern civilisation (often from which the tourists come to get away). Wind energy development characterised by colossal skyline intrusion will impose a divestment on impacted Indalo members and curtail wildlife and nature tourism enabled Protected Area expansion.

3. OBJECTION

Although Indalo strongly supports all sustainable renewable energy development, we object to any development such as the proposed Albany WEF that will prevent the greater Indalo to take its rightful place as a world class African nature and wildlife destination and curtail or intrude potential protected area expansion through partnership with the Addo and Great Fish Protected Areas. Indalo objects against the Albany WEF in the Draft EIR for the reasons explained below.

4. VISUAL IMPACT ASSESSMENT

The Visual Impact Assessment (VIA) is defective and must be rejected, for the following reasons, amongst others:

- 4.1 Poor selection of vantage points and complete omission of the Great Fish Provincial Nature Reserve are material deficiencies in the Report. The absence of the Great Fish is conspicuous, and the deficiency is of such a nature that it makes the WEF ecologically unsustainable and should prevent the development of the Albany WEF on the proposed locality.
- 4.2 The actual impact on the Great Fish Provincial Reserve and the Adam's Krans viewpoint **as determined by Indalo's** independent specialists, alone constitutes a fatal flaw in the VIA and the draft EIR. The aggregated visual impact on wildlife and nature tourism operations in the area would be an externality of fatal proportions for the further development of the WEF as proposed.
- 4.3 It attempts to justify a high visual impact by indicating that the lifespan of the facility will be 20-25 years. If this expected lifespan were accurate it would not be justification for the high impact. In reality however the lifespan will likely be indefinite as turbine and wind energy technology advances and turbines are replaced so that operations continue past the 20-25 year period.
- 4.4 It fails to scientifically contextualise the WEF development amidst **the "very high visual sensitivity" of the receiving environment, rather it makes a statement that "the landscape of the study area is not pristine or of very high scenic value".**

- 4.5 It fails to adequately investigate, assess and visually demonstrate through representative viewsheds the cumulative (combined) impact of all the present and planned different WEFs in the region e.g. Waailhoek, Plan 8 (Grahamstown – where the developer intends to enlarge the approved size of the turbines and environmental footprint), Albany, Dassenridge and Cookhouse. The VIA does not provide simulations (as EScience has done for Albany WEF from Adam's Krans) of the total impact on the visual and aesthetic wilderness character of the Expanded Protected Areas. This is a fatal omission of the report. Indalo submits this combined impact will be dramatic and prohibitive of yet another WEF development as it will materially disturb the wilderness character of the region for nature-based tourism.
- 4.6 It indicates that there is limited mitigation potential due to the extreme size of turbines. However, it fails to investigate a reduced hub-height or the no-go alternative, both per turbine as well as for the WEF.
- 4.7 The EIR's external specialist review notes that the "*peer reviewer received the VIA report at a very late stage in the process and has had very limited time to produce this peer review report*". This statement confirms that the specialist review cannot be upheld as verification of the veracity of the study, it, should be rejected and referred back to the specialist to perform a proper independent review that meets independent scientific standards.
- 4.8 The lack of the consideration of impact to formally Protected Areas, most notably impact to the Great Fish Provincial Reserve measured against the stated expansion of the Indalo, Addo and Great Fish Protected Areas, is viewed with circumspection. The perpetuation of this material omission throughout the VIA (and perpetuation downstream into the SIA and EIR) is obfuscating the fact and severity of the matter.

5. SOCIO-ECONOMIC IMPACT ASSESSMENT

The Socio-Economic Impact Assessment (SIA) is flawed for the following reasons, amongst others:

- 5.1 The finding of the SIA Specialist indicates that "*[n]o evidence is presented to support the assertion that any wind farm development overseas has resulted in*

any adverse impact on tourism". This finding is not correct insofar as it concerns wilderness tourism as shown through international research presented in the body of this document. The assessment does not consider that much like the Kruger National Park and the Addo National Park, visitor experiences in Indalo and the Great Fish is concerned with activities and encounters in natural and unspoilt settings.

- 5.2 The study errs in finding "*Existing turbines do not affect any of the lodges at the game/hunting farms visually*" and would appear to base this on Interview with Pumba Director Mr Dale Howarth who claims he was never consulted or made any statement of this nature. This statement is to be corrected failing which it would be misrepresentation to the competent authority and grounds to refuse application (or subsequent appeal as decision based on a material factual mistake).
- 5.3 The study omits Nature and Conservation Tourism of formally Protected Areas, Provincial as well as Private Protected Areas from the surrounding land uses. Most notably there is no consideration afforded to Conservation Tourism from the Great Fish and Thomas Baines Protected Areas.
- 5.4 The analysis in Section 7.5 Economic Sectors & Employment omits an analysis of the tourism sector and the extent to which nature and wildlife tourism contribute to the regional economy and does not form a basis for informed impact assessment.
- 5.5 The discussion of the tourism sector Section 7.6.2 Tourism does not consider to any level of detail the nature of the tourism product and services of the area, nor the wilderness character of the area as basis for nature and wildlife tourism.
- 5.6 The conclusion of the SIA is wrong because it is informed by material factual errors in the VIA that the Albany WEF will not cause significant visual impacts on Protected Areas. Section 6(2)(e)(iii) read with section (6)(2)(f)(ii)(cc) of PAJA does not allow the environmental authorisation (EA) for the Albany WEF to be based on material factual mistakes otherwise it will be set aside on appeal or review for irrationality and unlawfulness.

- 5.7 There are significant visual impacts (which were disregarded by the VIA, the SIA and the EIR) which will be a determining factor for conservation and nature tourism to the Extended Protected Areas, including the Private Game Reserves which are declared Protected Areas.

6. ECONOMIC IMPACT ASSESSMENT

Indalo performed an independent Economic Impact Assessment of the proposed Albany WEF which concludes that a compromise between the Indalo Private Game Reserves and the WEF development (investment) could be a desirable solution. The preferred economic option indicates wind energy should be deployed sufficiently distant from nature and wildlife tourism-based operators, to avoid impacting the wilderness character and its tourism value and sterilising future Protected Area expansion. Combined land use, that does not imply a reduction in environmental goods and services (or quality of environmental goods and services), should ideally be pursued.

7. NEED AND DESIRABILITY

Although the Scoping Report and EIR do provide motivation for the need and desirability of the project, all the listed desirable aspects can be achieved through deployment of the WEF in an alternative location with suitable wind resources within the province, or even beyond the province. They can be more effectively achieved in a location that would avoid significant impact to the wilderness character and its tourism value as the proposed Albany WEF will do. Neither of the two reports provide a motivation for the need and desirability in the context of the preferred location, which is a requirement of the EIA Regulations.

8. ASSESSMENT OF ALTERNATIVES

- 8.1 The lack of a proper investigation about alternative site locations in accordance with the prescribed requirements of the EIA Regulations is a material mistake in the EIR and forms further ground for the DEFF to reject the Albany WEF application.
- 8.2 The VIA is specifically deficient in considering alternatives and specifically not considering the no-go option, with the inadequacy being carried over into the SIA

and EIR where neither the no-go option or the option (and benefits) of the Protected Area expansion program is considered.

9. CONCLUSION

9.1 The Indalo Protected Environment places on record that the EIR for the Albany WEF and the abovementioned specialist studies are deficient to the extent that these inadequacies are covering up fatal flaws in the application. If these material deficiencies were to be addressed it would become clear that the proposed WEF development would significantly blight views from the Great Fish Protected Area (most spectacularly from Adam's Krans view point) and would degrade the scenic value of the area and its unique wilderness tourism product in general. Indalo is unconditionally in favour of the outright refusal of the present location of the Albany WEF based on the grounds set out in the attached comments of the EIR.

9.2 In other words, Indalo favours the ultimate, most effective mitigation measure for the Albany WEF and the fatal flaws that it holds in terms of impact to Protected Areas and their expansion - its avoidance through its outright refusal.

Yours faithfully

A handwritten signature in black ink, appearing to be 'T. Fischer', written over a faint rectangular stamp or watermark.

Mr Theo Fischer (on behalf of Indalo Association)

- ADDENDUM 1: Cover letter by Mr Nel Howarth (July 2020) for Indalo Private Game Reserve Association
- ADDENDUM 2: EScience and EBA (July 2020) Comments on the Albany Wind Energy Facility EIA Process: Inadequacies in EIR and Specialist Studies
- ADDENDUM 3: EScience (July 2020) Visual Impact Assessment Report View Simulation and Motivation
- ADDENDUM 4: Revision (June 2020) Review of the Need and Desirability of Renewable Energy in the Indalo Corridor: Economic Impact Assessment

COMMENTS ON THE ALBANY WIND ENERGY FACILITY EIA PROCESS
INADEQUACIES IN EIR AND SPECIALIST STUDIES

JULY 2020

By Mr T Fischer, EScience Associates (Pty) Ltd &
Dr JHE Basson, Ernst Basson Attorneys Inc

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	INDALO PROTECTED ENVIRONMENT	2
2.1	HISTORY	2
2.2	LEGAL STATUS	5
2.3	LEGAL FRAMEWORK	6
3.	COMMENTS OF SPECIALIST STUDIES	18
3.1	SENSE OF PLACE AND VISUAL IMPACT ASSESSMENT.....	18
3.2	SOCIO-ECONOMIC ASSESSMENT.....	27
3.3	AVIFAUNAL IMPACT ASSESSMENT.....	35
4.	COMMENTS OF ENVIRONMENTAL IMPACT REPORT (EIR)	39
4.1	NEED AND DESIRABILITY	39
4.2	REVIEW OF ALTERNATIVES	40
4.3	CONSIDERATION OF GUIDELINES IN EIA.....	44
4.4	OPINION AS TO WHETHER THE ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED.....	50
5.	IMPACTS ON BIODIVERSITY.....	50
6.	CONCLUSION	53
7.	SOURCES	53
	APPENDIX A - IFC GUIDELINES.....	1

1. INTRODUCTION

- 1.1 The Indalo Protected Environment ("Indalo") is made up of the 9 Private Game Reserves ("PGRs") belonging to different landowners. The 9 PGRs are located over 3 local municipalities in the Sarah Baartman District Municipality of the Eastern Cape Province of the RSA as indicated and form a corridor between the Addo National Park ("Addo") and the Great Fish River Provincial Nature Reserve ("Great Fish").
- 1.2 Based on government's Protected Area Expansion Strategy, buffer zones and Biodiversity Stewardship Programme discussed in this Comment, Indalo is currently actively working with local provincial and national partners including the Wilderness Foundation South Africa, Eastern Cape Park and Tourism Agency ("ECPTA") and SA National Parks ("SANParks") to expand areas under protection. This includes further amalgamation of the southern, central and northern nodes of Indalo into large agglomerations (>50 000Ha) of private reserves in the central node and private/public reserves by forming public-private partnerships with Addo and the Great Fish (and various provincial nature reserves) in the south and north respectively.
- 1.3 Like Addo and the Great Fish, the Indalo PGRs (as are many others in South Africa and in Africa in general) are concerned with nature and wildlife tourism as a key protected area goods and service. Likewise, the Indalo PGRs are managed according to a Protected Area Management Plan but instead of relying on public funds like Addo and Great Fish, they must secure funding from internal resources.
- 1.4 These resources are derived from nature and wildlife tourism which is dependent on a natural environment largely free from the structures and signs of modern civilisation (often from which the tourists come to get away to find solitude, tranquillity and serenity). Wind energy development characterised by colossal skyline intrusion will impose a significant divestment on Indalo members impacted and curtail wildlife and nature tourism enabled protected area expansion.

2. INDALO PROTECTED ENVIRONMENT

2.1 HISTORY

2.1.1 The Indalo Protected Environment ("PE") is made up of the 9 PGRs reflected in the Table below.¹

Table: Private Game Reserves forming part of the Indalo Protected Environment

No	Name	Size hectares	Local Municipality
1.	Amakhala Game Reserve	9,733.7	Sundays River Valley, Makana
2.	Hopewell Game Reserve	2,730.94	Sundays River Valley
3	Kariega Game Reserve	7,936.78	Ndlambe, Makana
4.	Kwandwe Game Reserve	18,988.04	Makana
5.	Oceana Beach and Wildlife Reserve	724.72	Ndlambe
6.	Pumba Game Reserve	5,837.10	Makana
7.	Shamwari Game Reserve	20,338.58	Sundays River Valley, Makana
8.	Sibuya Game Reserve	1,785.23	Ndlambe
9.	Lalibela Game Reserve	8,001.46	Makana
	TOTAL	76,076.59	

2.1.2 The PGRs that form the Indalo PE are classified as game and natural lodges for tourism purposes. The Tourism Grading Council of South Africa (TGCSA) regards "Private Nature Reserves" as part of "Game or Nature Lodges". The visual and scenic quality of the natural environment of the PGRs (along with wildlife and

¹ See detail in the Indalo Protected Environment - Protected Area Management Plan, 2019-2024 ("Indalo PAMP"), p 1-14.

hotel specifications), are part of the minimum requirements to be a Game or Nature Lodge.

"Scenic or natural vista (beyond that of the immediate garden area) e.g.: water view, rural outlook, mountain view or natural bush setting offering some Safari Activity such as Game Drives, Walking, Cycling, Horseback, Canoeing etc."² [Our emphasis.]

2.1.3 The unique background, character, nature-based tourism services, and community development by Indalo PGRs are well appreciated by national and regional authorities. Indalo PGRs have made a substantial contribution towards increasing areas under formal protection and contributing to achieve targets set in provincial and national protected area expansion strategies. Indalo PGRs reflect a proud history of financial investment and selfless personal commitment, dedication and service over many years by owners and personnel that have established and developed the different reserves as world class nature-based tourism destinations through ethical management of their biodiversity and natural environments. Protecting the unspoiled scenic and natural vistas of their unique natural environments were and are pivotal for the Indalo PGRs to establish and maintain their international reputation as malaria free wilderness tourism destinations of choice. This Comment demonstrates that the proposed location for the Albany Wind Energy Facility ("WEF") will significantly affect the unique wilderness experience of some of the PGRs, and in particular the Great Fish, which may cause serious economic harm to some parties.

2.1.4 Indalo is currently actively working with local provincial and national partners including the Wilderness Foundation South Africa, ECPTA and SANParks to expand areas under protection through further amalgamation of southern, central and northern nodes into large agglomerations (>50 000Ha) of private reserves in the central node and private/public reserves by forming public private partnerships

² See the *Minimum Requirements: Game Lodge / Nature Lodge Accommodation, 2014* p 1 at <https://www.tourismgrading.co.za/assets/Uploads/Game-NATURE-Lodge-Criteria.pdf>.

with Addo and the Great Fish (and various provincial nature reserves) in the south and north respectively.

2.1.5 One of the main objectives of the expansion plan is to enable common traversing agreements and unified conservation management through the dropping of fences between PGRs and Protected Areas. This is only realistic if areas expand to the extent that larger areas of reserve become contiguous and objectives have been set for short, medium and long term:

2.1.5.1 Short term:

- a. Combining land in the central - between Lalibela and Pumba will require areas of 2500 ha; and
- b. Combining land between Lalibela and Shamwari 2x 3500 ha.

2.1.5.2 Medium term:

- a. Combining land between Sibuya, Kariega, and Buffalo Kloof Private Reserves and Rivers Meeting Forest Reserve in the southern area will require some more substantive areas of 15 000 ha;
- b. Combining land targeted by the National Protected Area expansion strategy between Shamwari, Lalibela, Pumba and Kwandwe of 50 000 ha; and
- c. Inclusion of key biodiversity conservation nodes and wilderness areas characterised by high scenic quality and low levels of intrusion –
 - i. to the north and east of Addo;
 - ii. around Great Fish and south along the Fish River; and
 - iii. along the coastal shelf between Kenton and Port Alfred.

2.1.5.3 Long term: Linking with the protected areas in the Amathole Biosphere Reserve.

2.1.6 To this effect a formal protected area expansion strategy is under development by various stakeholders including Wilderness Foundation Africa, ECPTA, SANParks and Indalo Association that will guide protected area expansion, inform land-use planning, stimulate economic development and aide thicket restoration in the broader Albany region.

2.1.7 The environmental and economic benefits associated with the agglomerations (>50 000Ha) of private reserves and expansion through private partnerships with Addo in the south and the Great Fish in the north are considerable. Not only will this form a Mega Eastern Cape Protected Area as larger consolidated areas will lead to improved marketability of the Eastern Cape as a world class safari destination, making it comparable to Kruger, Sabi Sands and Madikwe. As much as wind energy development is necessary in South Africa, we hold wind energy development in Addo, Great Fish, Indalo and their further extended areas to be untenable and undesirable that should be avoided at all cost.

2.2 LEGAL STATUS

2.2.1 Proclamation: Indalo was declared on 13 April 2018 as a Protected Area, Category Protected Environment, in terms of section 28(1)(a)(i) and (b) of the National Environmental Management: Protected Areas Act, No. 57 of 2003 ("NEMPAA"), by the Member of the Executive Council ("MEC") for Economic Development, Environmental Affairs and Tourism, in the Eastern Cape Province.³

2.2.2 Indalo Association: The MEC assigned his power as Management Authority of the Indalo PE to the Indalo Association in terms of section 38(2)(b) of NEMPAA.⁴ The ECPTA, an agency of the Eastern Cape Department of Economic Development,

³ PN 70 of 13 April 2018 in PG 4030. Indalo PAMP, p 55. Lalibela Private Game Reserve was only declared part of the Indalo PE on 31 July 2019 in PN 219 of 31 July 2019 in PG 4280.

⁴ By the declaration notices.

Environmental Affairs and Tourism ("DEDEAT"), entered into an agreement with the Indalo Private Game Reserve Association that the Indalo PE becomes a Biodiversity Stewardship site.⁵

2.2.3 Stewardship Agreement: The Indalo Stewardship Agreement with the state forms an important part of the Indalo PE legal framework (read with the national and provincial biodiversity and conservation law, policies and programmes discussed below) that must be taken into consideration by the Department of Environment, Forestry and Fisheries ("DEFF") and the EAP in evaluating the EIA for the Albany WEF development. Section 8 of the Indalo Protected Area Management Plan ("PAMP") sets out certain restrictions on landowners in Indalo based on legislation and the Biodiversity Stewardship Agreement with the ECPTA. It specifically prohibits the placement of wind turbines for the generation of renewable energy inside Indalo.⁶ This prohibition on wind turbines inside Indalo addresses the same negative environmental impacts which Indalo demonstrates in this Comment that the location of the Albany WEF outside of the Indalo PE will have on the surrounding Protected Areas (including Indalo) and consequently should be situated elsewhere than the proposed site in the EIR.

2.3 LEGAL FRAMEWORK

2.3.1 The EAP's recommended in section 12.6 of the EIR that the proposed Albany WEF development be authorised (subject to the conditions). The EAP's recommendation is wrong, since the EIR is fatally flawed as demonstrated below and thus in contravention of the prescribed legal provisions. The EAP, and the DEFF as the competent authority, are required to consider, evaluate, and respectively recommend or decide, the Albany WEF application for EA against the prescribed legal framework which is summarised below.

⁵ Indalo PAMP, p 1-2. There are 5 categories of biodiversity stewardship in South Africa whereby conservation authorities secure land in biodiversity priority areas for conservation by entering into agreements with private and communal landowners: (i) Nature Reserves under NEMPAA with a single private nature reserve owner, (ii) Protected Environments (PEs) under NEMPAA with multiple landowners which is the case for Indalo, (iii) biodiversity management agreements (statutory contracts) under NEMBA, (iv) biodiversity agreements (common law contracts), and (v) biodiversity partnership areas (non-binding memorandums of understanding).

⁶ Indalo PAMP, p 92.

2.3.2 Constitutional norms: The Constitution is the supreme law in South Africa and hence the starting point in interpreting any legislation.⁷ Section 39(1) of the Constitution stipulates that the interpretation of the Bill of Rights (environmental rights in section 24 referred to below) must promote the values that underlie an open and democratic society based on human dignity, equality and freedom. International law must, and foreign law may, be considered during interpretation. This Comment demonstrates below that the legal comparison by the EIR (SIA) of the relationship between wind energy facilities and nature-based tourism in foreign jurisdiction was poorly done because of factual mistakes that excluded relevant foreign examples and referred to irrelevant foreign examples.

Furthermore, section 39(2) requires that the spirit, purport and objects of the Bill of Rights, which is the cornerstone of our society, must be promoted during legal interpretation. Hence the courts prescribe a purposive interpretation of the legal provisions regulating the EIA of the Albany WEF application measured within their larger statutory context and against the fundamental constitutional values. It is submitted that a purposive and contextual value based interpretation of environmental principles and the EIA requirements in NEMA justifies the use of international best environmental practice (“BPEO”) standards for WEFs such as by the World Bank Group (International Finance Corporation (“IFC”)) that will be discussed *infra*.

2.3.3 Right to well-being: Section 24 of the Constitution provides the fundamental normative foundation for environmental protection and conservation in South Africa by guaranteeing specific environmental rights to everyone. Section 24(a) protects the right to an environment that is not harmful to a person's health or well-being. The right to wellbeing is relevant to the Albany WEF because a person's well-being includes protection of the aesthetic quality of human life against nuisances such as odour, noise or visual pollution. This Comment indicates that the Albany WEF will cause significant visual disturbance which will negatively affect the aesthetic quality of the natural wilderness environment and the natural or wilderness experience of persons staying in or visiting the surrounding Protected

⁷ Section 2 of the Constitution.

Areas (Indalo, Great Fish and Addo). The visual disturbance will affect the right to well-being which cannot be justified in an open and democratic society based on human dignity, equality, and individual freedom. Consequently, the WEF should not be allowed to be developed on the proposed site but must be moved elsewhere where it does not have a significant impact on **people's right to well-being**.

2.3.4 Right to dignity: Section 10 of the Constitution also protects the human dignity of a person. The significant impact of the Albany WEF on the aesthetic quality and well-being of affected persons in section 24(a) of the Constitution by necessary implication also unjustifiably impair their human dignity. There is a direct relationship between the quality of the natural environment that a person is exposed to and the quality of that person's well-being and human dignity. Significant impacts of the former impair the latter. A person cannot have a dignified living (including a touristic experience) in a natural environment that is significantly visually polluted or degraded as will be brought about by the Albany WEF. Moreover, so in the present case where the unique wilderness character of the natural environment of the Indalo and Great Fish Protected Areas will be permanently scarred by the Wind Farm. The negative effect on tourism to Pumba PGR in Indalo caused by the Waaihoek WEF (see letter by the owner of Pumba, attached hereto) overwhelmingly illustrates the significant impact on nature-based and wilderness tourism by WEF developments. It shows a clear causal link between the reduction of aesthetic environmental quality by the WEF and the concomitant reduction of the **visitors'** human dignity to Pumba. The statements to the contrary in the SIA and EIR that fail to properly assess **Pumba's concerns** (which were clearly communicated to the EAP/SIA specialist but undervalued in the EIR) are factually and methodologically wrong and must be rejected by the DEFF as the competent authority.

2.3.5 Right to environmental protection: Section 24(b) of the Constitution guarantees the right to environmental protection. It places a constitutional obligation on the state to protect the environment for the sake of present and as well as future generations through reasonable measures that includes legislation that: (i) prevent pollution and ecological degradation; (ii) promote conservation and (iii)

secure ecological sustainable development and use of natural resources whilst promoting justifiable economic and social development. Thus, the constitutional principle of inter- and intragenerational conservation trusteeship places a clear legal duty on the DEFF (and other competent authorities e.g. SANParks, SANBI, ECPTA and local municipalities) to act as custodians of the natural environment and conservation by taking the necessary steps that may be required to ensure short and long-term environmental protection of the Indalo, Great Fish and Addo Protected Areas in the Eastern Cape Province. The court confirmed this principle in the Fuel Retailers case:

*"The importance of the protection of the environment cannot be gainsaid. Its protection is vital to the enjoyment of the other rights contained in the Bill of Rights; indeed, it is vital to life itself. It must therefore be protected for the benefit of the present and future generations. The present generation holds the earth in trust for the next generation. This trusteeship position carries with it the responsibility to look after the environment. It is the duty of the court to ensure that this responsibility is carried out."*⁸ [Own emphasis.]

2.3.6 The discussion of the viewsheds of the proposed WEF that were prepared by EScience for this submission (as per Addendum 3), overwhelmingly demonstrate the short and long term visual degradation of the natural environment. The DEFF's environmental trusteeship requires it to prevent this degrading development so that current and future visitors will continue to enjoy the unspoilt natural environment, moreover so of the planned Eastern Cape Mega Protected Environment through the expansion programme of the Addo, Great Fish, Indalo and other PGRs.

2.3.7 Sustainable development: Section 24(b)(iii) of the Constitution provides an exception to the right to environmental protection by acknowledging the right of the Applicant to the Albany WEF, but subject to the important proviso that it must be ecological sustainable. The right to sustainable development is one of the

⁸ *Fuel Retailers Association of South Africa (Pty) Ltd v Director-General Environmental Management Mpumalanga Province* 2007 (6) SA 4 (CC) para [102], see also para [71], [74], [75], [80], [93].

core environmental and economic principles in the Constitution and in South African law and is further guaranteed in the environmental principles in section 2(4) of NEMA that contain fundamental directives of state action, the principle of integrated environmental management in sections 23 and 24 of NEMA and the relevant EIA Regulations as well as various provisions of the specific environmental management acts ("SEMAs") and other legislation that provides environmental regulation of economic development. Sustainable development is defined by NEMA as the *"integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations."*

2.3.8 The right to sustainable development requires that both the EAP in the EIR as well as the DEFF through its decision, to strike a fair balance or equilibrium (as explained by the courts) between environmental protection of the affected Protected Areas and the economic development of the Albany WEF. In light of the serious concerns and fatal flaws of the EIR to ensure proper environmental protection, it is clear that the EAP (and some specialists) had failed to comply with the integration requirement of the section 24(b) of the Constitution and section 2(4) of NEMA. Based on the supplementary information provided by Indalo in this submission, an informed and fair **balancing of the Applicant's right to develop the Albany WEF vis-a-vis Indalo's (and the Protected Areas') and visitors' right to environmental protection and ecological conservation** clearly shows that the environmental rights outweighs the development right at the proposed location. On the evidence explained in this submission, the proposed Albany WEF will not be ecologically sustainable as required by section 24(b) of the Constitution. For this reason, the DEFF as custodian of the natural environment of the must reject the Albany WEF application.

2.3.9 Neighbour law: The common law regulates the conduct between neighbours to prevent the unlawful and **unreasonable impairment of each other's undisturbed enjoyment of their property** due to noise, visual or odour pollution or other conduct by a neighbour. This common law duty of care by a landowner or user towards neighbours is based on the *sic utere tuo* doctrine. Failure by the intruding neighbour to cease the nuisance affecting the neighbouring property can result

in interdictory relief by a court of law and in worse cases payment of compensation by Aquilian action for the damages caused by the interference. In the present matter the Protected Areas precede the proposed Albany WEF. Also, the Albany WEF has been duly informed (through this Comment – which should have been done by the EIR, but which was omitted) of the expansion programme to create the Eastern Cape Mega Protected Area. Thus, the WEF must respect the historic rights and legitimate interests of Indalo and the other Protected Areas. (The expansion of Protected Areas and creation of buffer zones are prescribed by the existing law and government have developed and is implementing expansion policies, strategies and plans over many years (discussed below).) It is Indalo's view that negative environmental impacts of the WEF will cause a significant and permanent impairment of the undisturbed enjoyment of the Indalo and Great Fish Protected Areas as well as of the future Mega Protected Area.

2.3.10 NEMA: As required by section 24(b) of the Constitution, various laws were promulgated that ensure protection of the environment during the Albany Wind Farm development. Primary are NEMA and the EIA Regulations which in the present case provide the overall national legislative framework. Section 2 of NEMA contains fundamental environmental principles, that the EAP must consider when considering the environmental impacts for the EIR and the DEFF when deciding the Wind Farm application to ensure proper environmental protection. Sections 24(4) and 24O of NEMA provide the criteria for the EIR, including compliance with NEMA (integrated environmental management and mainstreaming of conservation management in section 23, the polluter's duty of environmental care in section 28), EIA Regulations, SEMAS and other regulations and notices as specified below. The EIA Regulations contain detail requirements for EIA studies e.g. to demonstrate the need and desirability of undertaking the proposed activity, assess alternatives (including location, technology and content), public comment, assess direct, indirect and cumulative impacts of the development, and take into account any applicable government policies, plans, guidelines, environmental management instruments, and other decision-making instruments that have been adopted by the competent authorities. We indicate below the failure by the EIR to comply with specific EIA requirements.

2.3.11 Various SEMAs apply to important aspects of the Indalo, Great Fish and Addo Protected Areas in the present matter e.g. to conservation (NEMPAA), protection of biological diversity (National Environmental Management: Biodiversity Act, No. 10 of 2004 ("NEMBA")), management of water resources (National Water Act, No. 36 of 1998 ("NWA")), waste management (National Environmental Management: Waste Act ("NEMWA")), management of coastal areas (National Environmental Management: Integrated Coastal Management Act, No. 24 of 2008 ("ICMA")), etc. (Not a complete list.) Provincial environmental and conservation legislation in the Eastern Cape Province adds a further layer of legislative control. In addition, national legislation such as for spatial development planning (permission for change of land-use by section 26(4) of the Spatial Planning and Land Use Management Act, No. 16 of 2013 ("SPLUMA")) and the by-laws and spatial development frameworks ("SDFs") of the Sundays River Valley, Makana and Ndlambe local municipalities provide additional protection to these Protected Areas.

2.3.12 Conservation: The conservation of biodiversity is primarily regulated by NEMPAA and NEMBA which should be interpreted and applied in an integrated manner in support of each other's legislative purpose and objectives. Both laws emphasise the state's constitutional obligation as the national trustee for the environment to protect and conserve biological diversity, natural landscapes and seascapes as well as the species and ecosystems therein and ensure the sustainable use of indigenous biological resources.⁹ All state institutions in the national, provincial and municipal spheres of government must comply with the provisions of these Acts, their regulations, norms and standards, frameworks, strategies, conservation policies and management instruments. The provisions of NEMBA and NEMPAA prevail over conflicting provisions of any national, provincial or municipal laws e.g. provincial spatial biodiversity plans, Sara Baartman District Municipality and Makana Local Municipal integrated development plans ("IDPs") and the Makana Local Municipal SDF.¹⁰ NEMBA and NEMPAA must be interpreted and applied in accordance with the national environmental management principles

⁹ Sections 3 of NEMBA and NEMPAA. *Mining and Environmental Justice Community Network of SA and others v Minister of Environmental Affairs and Others*, Case 50779/2017 NGHC 6 November 2018, para 4.7 ("Mabola").

¹⁰ Section 48(1) of NEMBA.

of NEMA as well as be read with its applicable provisions.¹¹ In the *Mabola* case the court confirmed the objectives of NEMPAA in section 2 are –

“the provision, within the framework of national legislation, including NEMA, for the declaration and management of protected areas, to provide for cooperative governance in the declaration and management of such areas, including the promotion of sustainable utilisation of protected areas for the benefit of people in a manner that would preserve the ecological character of such areas.”¹² [Own emphasis]

2.3.13 The viewshed prepared by Indalo discussed below (Addendum 3) clearly illustrates that the Albany WEF will destroy the ecological (aesthetic) character of the scenic view from Adam’s Krans in the Great Fish Protected Area. Thus, the location of the Albany WEF will be in clear violation of NEMPAA as protected by the court. The provisions of NEMPAA (and NEMBA) trump conflicting economic growth policies in the various strategy documents and spatial planning instruments referred to by the SIA Specialist (para 3.2, 3.3 and 3.4) as justification for the Albany WEF. The legality principle of the rule of law in section 1 of the Constitution requires that all government policies must be consistent with the Constitution and legislation (in this case NEMPAA and NEMBA) otherwise they are unconstitutional and will be set aside to have no force or effect. This means the SIA cannot place more emphasis on government policies for economic (energy) development than on conflicting environmental legislation when considering the Albany WEF. The EIA Regulations require the SIA specialist and the EAP to adequately assess and disclose information that is detrimental to the WEF. This was not adequately done in the EIR.

2.3.14 Conservation obligations: Section 17 of NEMPAA is important for the evaluation of the environmental impact of the WEF with respect to the Indalo, Great Fish and Addo Protected Areas. It specifies the legal purposes which these Protected Areas are obligated to fulfil, i.e. –

¹¹ Sections 6 and 7 of NEMBA and section 5(1) of NEMPAA.

¹² *Mabola*, para 4.6.

- “(a) to protect ecologically viable areas representative of South Africa’s biological diversity and its natural landscapes and seascapes in a system of protected areas;
- (b) to preserve the ecological integrity of those areas;
- (c) to conserve biodiversity in those areas;
- (d) to protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa;
- (e) to protect South Africa’s threatened or rare species;
- (f) to protect an area which is vulnerable or ecologically sensitive;
- (g) to assist in ensuring the sustained supply of environmental goods and services;
- (h) to provide for the sustainable use of natural and biological resources;
- (i) to create or augment destinations for nature-based tourism;
- (j) to manage the interrelationship between natural environmental biodiversity, human settlement and economic development;
- (k) generally, to contribute to human, social, cultural, spiritual and economic development; or
- (l) to rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.” [Own emphasis.]

2.3.15 Protected Area Obligations: Section 28(2) of NEMPAA stipulates that the Indalo PE may only be declared for the following purposes, -

- “(a) to regulate the area as a buffer zone for the conservation and protection of a ... national park, MPA, ... or nature reserve;
- (b) to enable owners of the land to take collective action to conserve biodiversity on their land and to seek legal recognition therefor;
- (c) to protect the area if it is sensitive to development due to its (i) biological diversity, (ii) natural characteristics, (iii) scientific, cultural, historical, archaeological or geological value, (iv) scenic and landscape value, or (v) provision of environmental goods and services;

- (d) to protect a specific ecosystem outside of a national park, or nature reserve;
- (e) *to ensure that the use of natural resources in the area is sustainable;* or
- (f) to control change in land use in the area if the area is earmarked for declaration as, or inclusion in, a national park or nature reserve." [Own emphasis.]

2.3.16 All the purposes in section 17 of NEMPAA apply to Indalo, Great Fish and Addo. The underlined provisions of section 17 require that Indalo and the other Protected Areas must, (i) provide environmental goods and services, (ii) create an environment that is conducive for nature-based tourism, and (iii) ensure ecological sustainable social and economic development takes place. Similarly, the purposes in section 28(2) of NEMPAA apply specifically to the Indalo. This means that Indalo must (i) form a buffer zone between the Addo and Great Fish, (ii) enable the different PGRs inside Indalo to conserve their biodiversity, (iii) protect sensitive areas in respect of economic development e.g. areas with scenic and landscape value, and (iv) provide environmental goods and services.

2.3.17 Legal error: Indalo objects against approval of the Albany WEF because the development will prevent Indalo from fulfilling its statutory obligations (purposes) in sections 17 and 28 of NEMPAA. (This is also the case for the Great Fish and Addo in respect of their obligations under section 17.) This is so because the environmental impact of the WEF will affect the ability of the Protected Areas to adequately provide some of the environmental goods and services (e.g. game drives and walks, experiencing wildlife in their natural habitat, nature photography, wildlife education, game cuisine and cultural interaction with local communities), will significantly affect nature-based tourism and is not ecologically, socially and economically sustainable because it will cause the reduction of visitors to some of the Indalo PGRs and Protected Areas. In this regard we refer to the negative effect of the Waaihoek WEF on tourism to Pumba (see Pumba letter attached) which confirm these risks as real and not miniscule or theoretical as appears to be the impression created in the EIR and SIA.

2.3.18 Unlawful and unconstitutional conduct: The recommendation by the EAP in the EIR contains a material legal error that will have an unlawful and unconstitutional legal effect if the DEFF approves the application. The EAP's recommendation to the DEFF to provide conditional environmental authorisation (EA) for the development of the Albany WEF will affect the ability of Indalo and the other Protected Areas to comply with their legal obligations under section 17 and 28 of NEMPAA, respectively (as underlined). This effect by the environment authorisation will be contrary to the rule of law, and thus unlawful and unconstitutional conduct. If the Applicant receives EA for the Albany Wind Farm development, Indalo reserves its right to have it set aside on internal appeal to the Minister, or on judicial review in terms of sections 6(2)(d) and (i) of the Promotion of Administrative Justice Act, 3 of 2000 ("PAJA") as well as the right to obtain interdictory relief where necessary.

2.3.19 NEMBA: NEMBA regulates the legal classification and permitting system for the protection of threatened ecosystems and species in South Africa. It also provides the legal framework for integrated and coordinated planning, monitoring of biodiversity conservation and protection through 3 instruments: (i) the national biodiversity framework (provide national norms and standards to all organs of state, communities and the private sector throughout the country), (ii) bioregional plans (maps for specific geographic areas that identify Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs") with guidelines for land use, and (iii) biodiversity management plans (to protect listed threatened ecosystems, indigenous species and special categories in specific cases). Indalo indicates below important gaps in the assessment of the avifaunal impact of the WEF which will contravene the statutory obligations of the WEF in terms of NEMBA and its regulations.

2.3.20 Protected Area Expansion: The National Protected Area Expansion Strategy ("NPAES") in 2008 provides the national policy framework for the integrated and coordinated expansion and consolidation of the Protected Areas under NEMPAA through ecosystem specific expansion targets. Extended Protected Areas provide important ecosystem goods and services e.g. production of clean water, flood moderation, preventative erosion, carbon storage and protection of the

aesthetic value of the landscape. NPAES identified the Baviaans-Addo Area (Focus Area Nr. 3) for protection of 7 biomes in the Eastern Cape as a suitable Protected Area expansion area (and includes the Albany Thicket biome). The Eastern Cape Provincial Areas Expansion Strategy, 2012 ("ECPAES") was developed by ECPTA to implement the terrestrial objectives of NPAES in the EC Province. ECPAES mapped 20 priority areas and developed a realistic implementation plan over the next 5 years for focus areas of high, medium and low precedence that include the Greater Addo and the Great Fish Protected Areas. The Indalo PE is included in the proposed expansion of the Protected Areas by ECPAES. Thus, the aforesaid national and provincial expansion programs provide the legal basis for the creation over time of a Mega Protected Area in the Eastern Cape. The EIR is deficient because it does not adequately assess and consider how the expansion of the Protected Areas will be impacted by the development of the Albany WEF at the proposed location.

2.3.21 Buffer Zones: The expansion of Protected Areas is complemented by a strategy to create buffer zones to National and Provincial Parks such as for Addo and Great Fish. The ecological landscapes of the Parks continue into the surrounding region and their viability as Parks depend on their social, economic and ecological integration into the surrounding region. Once declared and gazetted, the buffer zones will provide legal mechanisms to regulate development in that area e.g. to prevent the negative impacts of intruding developments. As indicated section 28(2) of NEMPAA provides that one of the purposes of the Indalo PE was to form a buffer zone with the Addo and Great Fish. Lalibela in the Indalo PE plans to expand its area to link up with neighbouring Shamwari and Pumba Game Reserves to form part of the proposed Larger Addo - Great Fish Corridor (also referred to as the Albany Corridor). To this effect a formal protected area expansion strategy is under development by various stakeholders including the Wilderness Foundation Africa, ECPTA, SANParks, and the Indalo Association. The EIR does not adequately assess and consider how the proposed development of the Albany WEF will impact on the proposed Larger Addo - Great Fish Corridor (Albany Corridor).

2.3.22 EC Biodiversity Plan: The draft EC Biodiversity Strategy and Action Plan, 2017 for the protection of threatened or protected ecosystems was gazetted in 2018 for comment and is based on a comprehensive technical report known as the EC Biodiversity Conservation Plan, 2017. Once adopted these 2017 Plans will replace the outdated EC Biodiversity Conservation Plan of 2007 which is presently still in force. The 2017 Plans emphasise the importance of private conservation areas to the conservation of biodiversity and their contribution to the regional economy and its further expansion process. The 2017 Plans provide a systematic Spatial Biological Assessment ("SBA") that generated and mapped (down to district level) spatial terrestrial and aquatic CBA and ESA priorities based on biodiversity patterns, ecological processes, current and future land uses and the PA network. It provides a matrix of guidelines for recommended land use types and activities that have been linked to SPLUMA land uses ("Spatial Biodiversity Land Use Guidelines" ("SBLUG")) based on their impacts measured against the management objectives of the CBAs and ESAs.

2.3.23 The state's constitutional duty to ensure intergenerational environmental equity is not limited to climate change adaptation programmes such as the promotion of renewable energy (the Albany WEF), but it has the concomitant fundamental obligation to protect and conserve the environment by ensuring the ecological sustainability of the natural and wilderness environment – even against negative impacts of renewable energy projects such as the WEF. The EIR is one sided because it only focuses on the former and does not strike a fair balance between climate change adaptation and long-term environmental conservation and protection envisaged by the Protected Area expansion programme as discussed above.

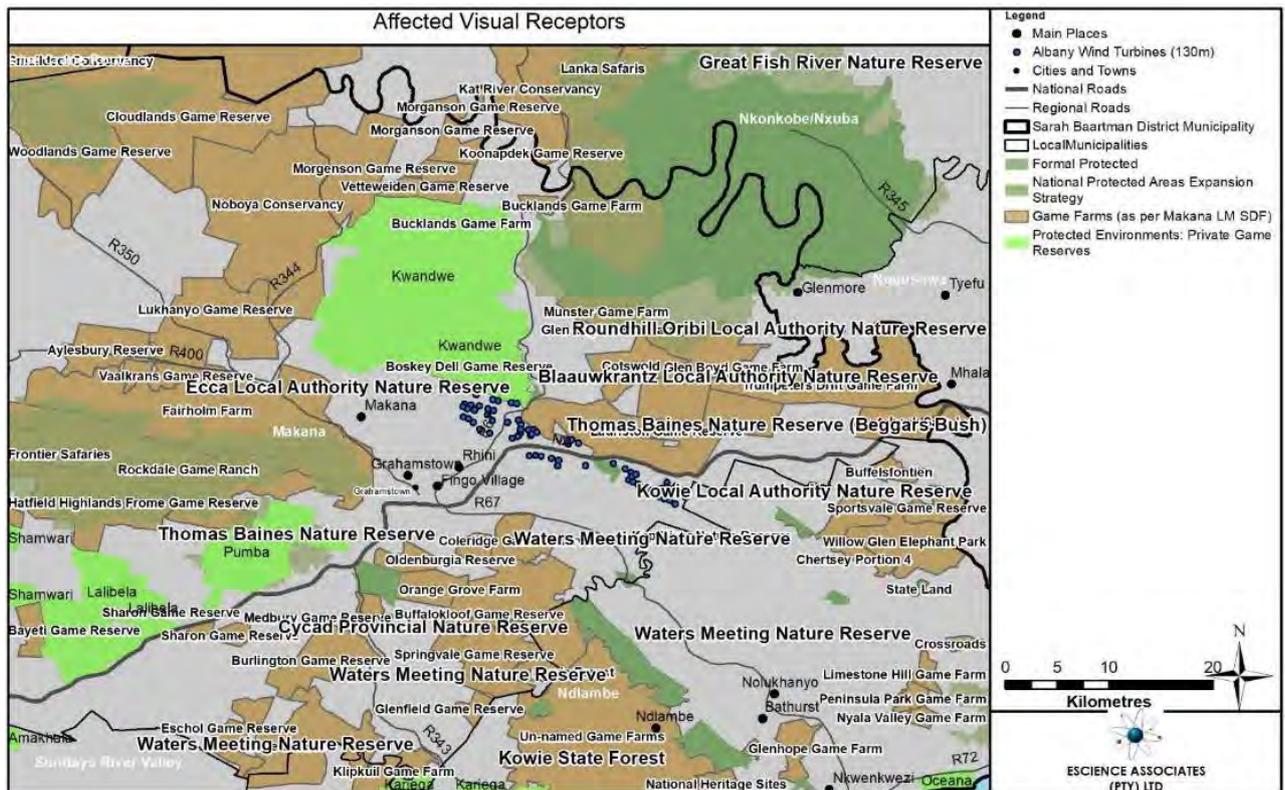
3. COMMENTS OF SPECIALIST STUDIES

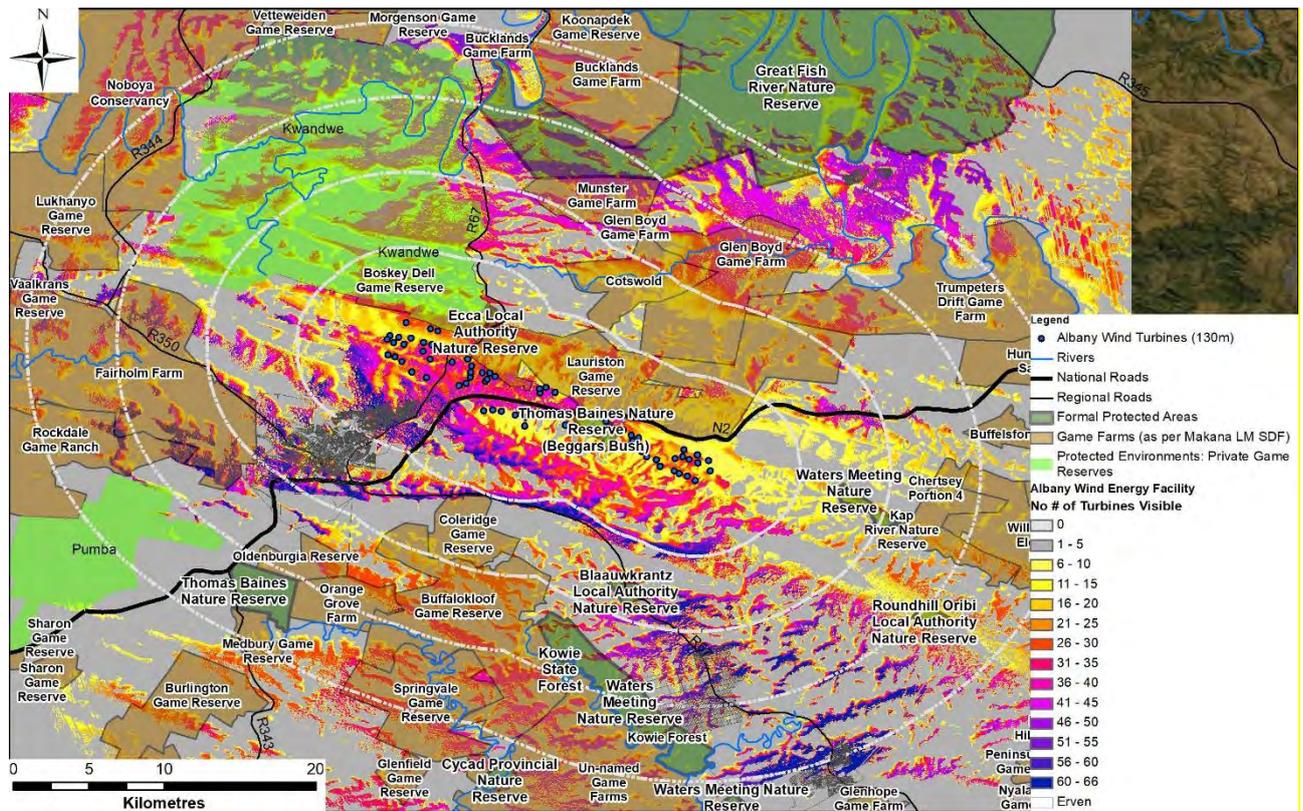
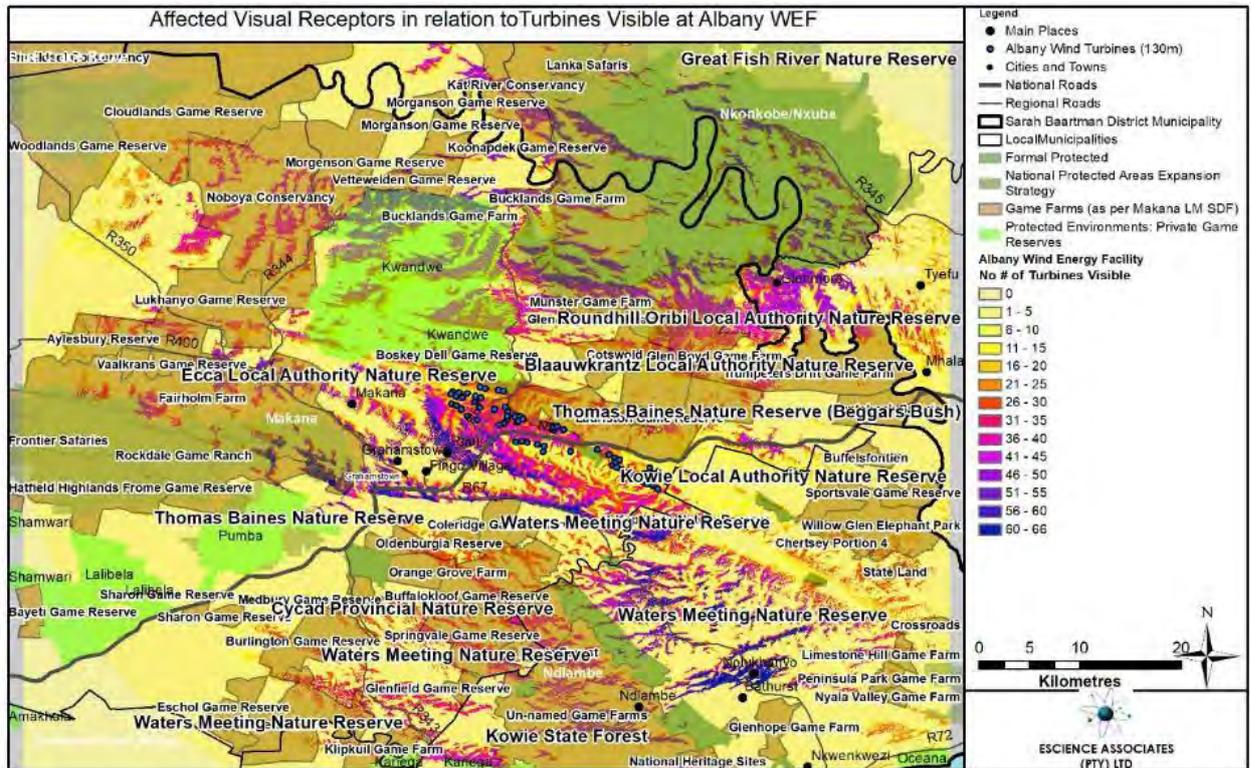
3.1 SENSE OF PLACE AND VISUAL IMPACT ASSESSMENT

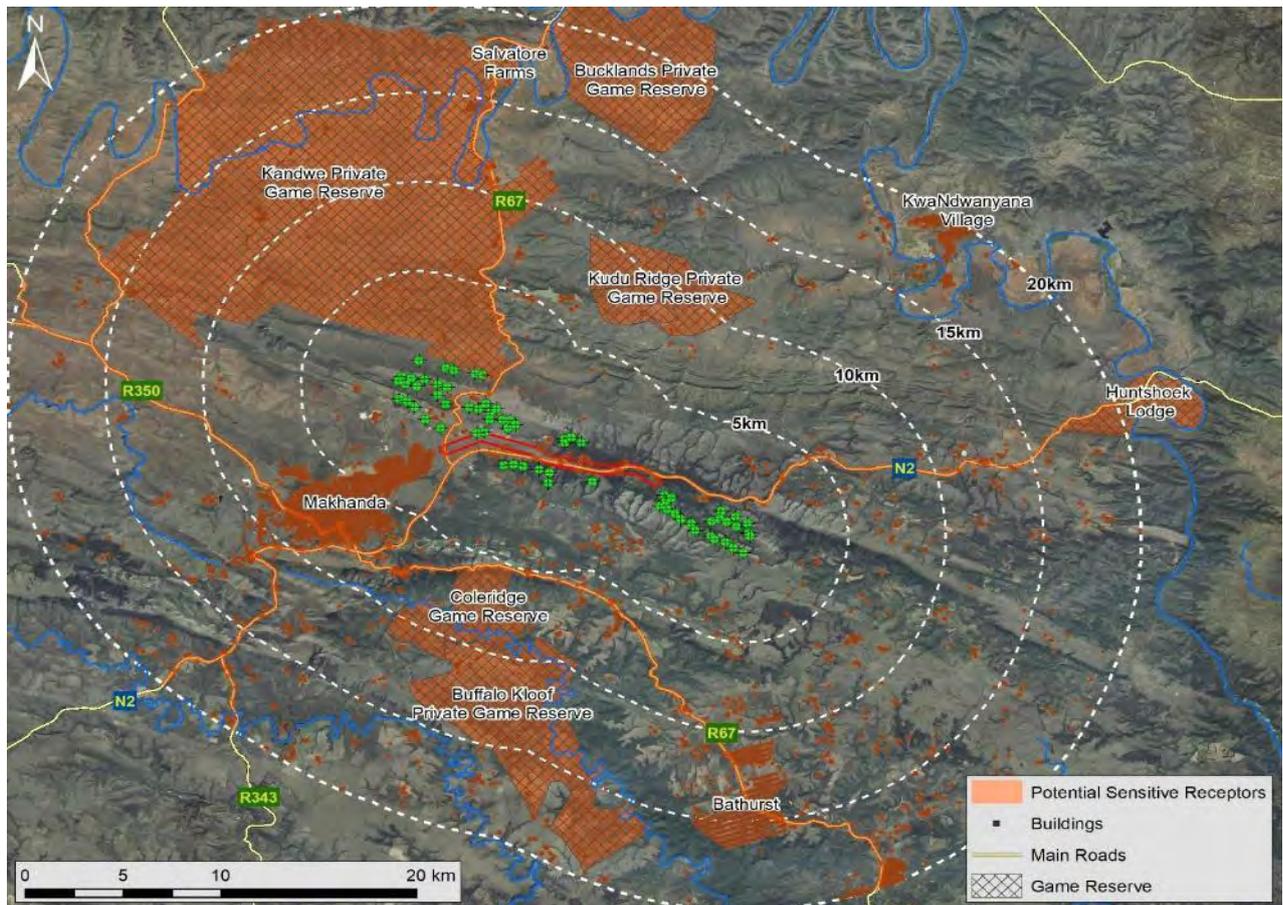
3.1.1 Requirements: A Visual Impact Assessment (VIA) has to be fit for purpose and needs to determine visual impact "significance" with respect to both the local as well as regional importance of the landscape and features the landscape is

comprised of, the relative pristineness of landscape and features comprising and their contribution to sense of place. The VIA in the EIR for the Albany WEF did not meet these objectives, is defective and must be rejected.

3.1.2 Identification of sensitive receptors: The VIA indicates that “Based on potential sensitivity, visibility and exposure, the following sensitive receptors (Figure 7) were identified within the study area.” However, the identification of the receptors is totally inadequate as can be gleaned from the below maps prepared by EScience for Indalo.



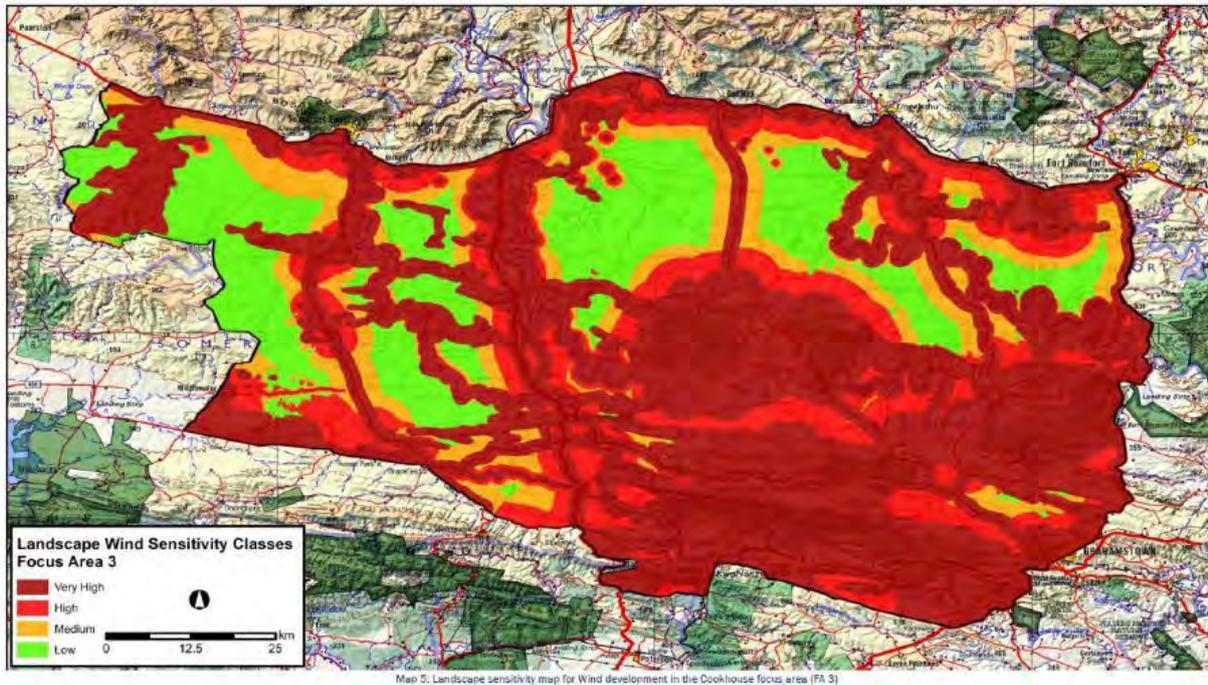




3.1.3 Vantage points: Poor selection of vantage points and complete omission of the Great Fish Provincial Nature Reserve are material deficiencies in the Report. The absence of the Great Fish is conspicuous, and the deficiency is of such a nature that it **beggars'** belief. The actual impact on the Great Fish and the Adam's Krans view point as determined by independent specialist alone constitutes a fatal flaw, the aggregated visual impact on wildlife and nature tourism operations in the area would be an externality of fatal proportions.

3.1.4 Landscape sensitivity and Cookhouse REDZ: The characterisation of the landscape of the study area is flawed and the quality of its visual character is misrepresented. A statement is made that *"the landscape of the study area is not pristine or of very high scenic value"*. Although the EIR makes much about the fact that the development is in part located within the Cookhouse REDZ, it should be noted that the REDZ visual sensitivity mapping at the regional scale indicate that the Albany WEF receiving environment is categorised as 'very high visual sensitivity'. (Our emphasis.) This means that it is not ideally suitable for wind farm development where the wilderness character forms the basis for wildlife and

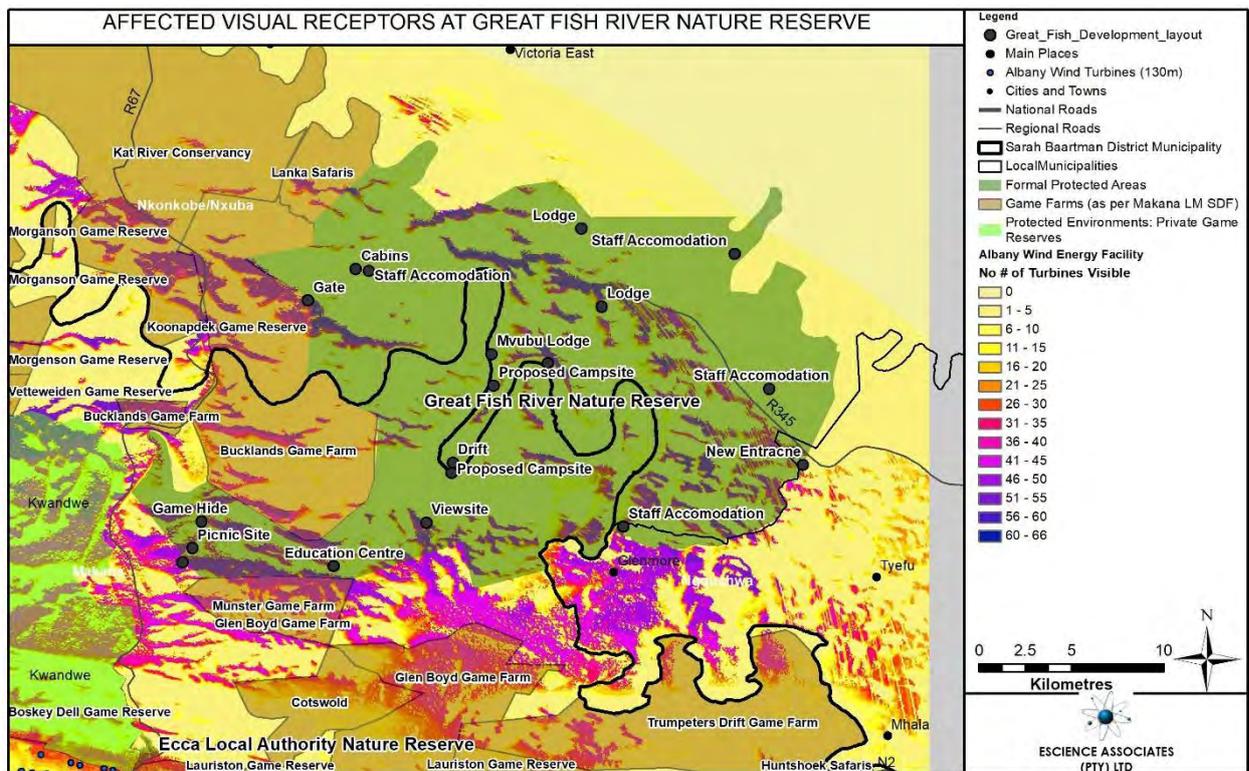
nature tourism (and more so if this is the basis for Protected Area establishment and upkeep by biodiversity stewardship). This is a further example that the EIR is fatally flawed due to its failure to scientifically contextualise the WEF development amidst the existing and planned expansion of Protected Areas.



3.1.5 Assessment of Significance of Visual Impact: Firstly, the EIR omits/ hides the impact to views that generally have both a high scenic and wilderness value that may be appreciated from Great Fish and Kwandwe. Secondly, the EIR specifically hides the impact from a viewing deck constructed in Great Fish for the purposes of appreciating the great and largely unspoilt scenery from Adam's Krans. The view from Adam's Krans has been described as "*The most beautiful landscape in South Africa*"¹³ and "*The Adam's Krantz viewpoint over the twisting Fish River canyon is one of the most iconic Eastern Cape vistas*".¹⁴

¹³ <https://www.grocotts.co.za/2015/02/18/the-most-beautiful-landscape-in-south-africa/>.

¹⁴ <https://www.visiteasterncape.co.za/parks/great-fish-river/>.



- a) The failure of the EIR to identify the significant impact of the WEF on the general views of the Great Fish and Kwandwe and specifically on the Adam's Krans view is a material and fatal flaw in the EIR. The proposed WEF is a long linear development spanning 20 km with the Sentech tower having a height of 204 m which creates a significant visual impact on the vistas from surrounding Protected Areas.

- b) The viewpoint from Adam's Krans in the Great Fish is particularly severely affected. The independent viewsheds that were prepared by EScience for Indalo clearly demonstrate that the WEF takes up two thirds in the middle of the vista from Adam's Krans and will amount to a blight on a landscape of national importance. These undisturbed landscape views form part of the unique wilderness experience for ecotourism to the Great Fish and Indalo Protected Areas that would be permanently disturbed by the WEF. For this reason alone, the application to develop the WEF is not desirable at this location and should be refused by the DEFF.

3.1.6 Deficiencies in visual impact consideration: The following additional problems with the veracity of the VIA need to be pointed out:

- a) Turbine blade and their dynamics: The dynamic aspect of wind turbine blade motion has not been considered as a contributor to visual impact whereas Sullivan found that contributed significantly to visual prominence of wind turbines at distances of up to 24 km;¹⁵ others have identified wind turbine blade as a significant attractor of visual attention and a factor that increases perceived visual contrast from wind facilities.¹⁶ Moreover, the VIA failed to assess the cumulative impact of the proposed enlargement of the Plan 8 (Grahamstown) WEF turbine blades and towers (and thus the environmental footprint) of the approved facility. (The matter is reportedly presently under appeal after the DEFF rejected the amendment application.) Generally, the VIA failed to adequately assess (e.g. through viewshed simulations from critical view points) and consider the cumulative direct and indirect visual impacts of all the different current and planned WEFs in the region (Waaihoek, Plan 8 (Grahamstown) Albany, Dassenridge and Cookhouse) on the wildlife and natural visual and aesthetic character and sense of place of the planned Mega Protected Area (Addo - Great Fish Corridor (Albany Corridor)).
- b) Atmospheric perspective: It is well understood that humans judge distance to objects in the landscape in part by assessing the effects of atmospheric perspective, the decrease in contrast between an object and its background as distance increases. As distance increases, the colours of the object become less distinct and shift toward the background colour, usually blue or gray. Atmospheric perspective is an important cue for an observer to determine relative distance of objects in the landscape. The loss of sharpness and lower contrast of photographs relative to in-situ viewing may exaggerate the effects of atmospheric perspective, thus may affect the perception of scale and distance to objects in the landscape, making them appear farther away than they actually are.¹⁷

¹⁵ Sullivan et al (2012).

¹⁶ Bishop & Miller (2007).

¹⁷ Palmer & Sullivan 2020.

AlbanyWEF - Viewpoint - Adam's Krantz



AlbanyWEF - Viewpoint - Adam's Krantz



- 3.1.7 Lifespan of wind energy facility: Consideration of the likely development lifespan and future of the wind farm indicates a project life of 20-25 years which is flawed. The Report does not consider the reality of turbines and wind energy technology development and turbine tower and blade advances which make application of taller and larger bladed turbines more economical. Typically wind farms are redeveloped during their productive lifespans for example by raising and increasing blade diameter. This means that the expected lifespan of the WEF is longer than 25 years and can even be permanent but with increasing visual impacts as the towers are lifted.
- 3.1.8 Mitigation: The VIA indicates that there is limited mitigation potential due to the extreme size of turbines. However, the alternatives evaluation is neglected and specifically omits to consider turbines of lower hub-height and reduced visibility. A reduced hub height operating at a site of good wind resource may still compete with a turbine of higher hub height at a site with poorer wind resource. The omission to investigate a reduced hub-height along with the failure to consider the no-go alternative mean the EIR has not considered the minimum requirements for "alternatives" as prescribed in the EIA Regulations. We submit that proper assessment and consideration of these alternatives will most likely have demonstrated that the proposed location for the WEF is not suitable for the development but was avoided to prevent this conclusion from being reached.
- 3.1.9 External reviewer: It is problematic that the external specialist review notes that the "*peer reviewer received the VIA report at a very late stage in the process and has had very limited time to produce this peer review report*". This statement confirms that the specialist review cannot be upheld as verification of the veracity of the study. In fact, the external specialist himself admits so much. "*The review...may require an additional opportunity and sufficient time to make specific recommendations regarding additions or alterations to the report, or whether the proposed development is acceptable in nature or fatally-flawed*". This statement means the external specialist review report is inadequate, should be rejected and referred back to the specialist to perform a proper independent review that meet independent scientific standards.

3.1.10 Perpetuation of omissions into SIA and EIR: The lack of the consideration of impact to formally Protected Areas, most notably impact to the Great Fish Protected Area, is viewed with circumspection. The perpetuation of this material omission throughout the report (and perpetuation downstream into the SIA and EIR) is obfuscating the fact and severity of the matter.

3.1.11 Consideration of alternatives: The VIA is deficient in considering alternatives and specifically not considering the no-go option, with the inadequacy being carried over into the SIA and EIR where neither the no-go option or the option (and benefits) of protected area expansion.

3.2 SOCIO-ECONOMIC ASSESSMENT

3.2.1 Sense of Place: The study indicates that *“Tourism in the study area is associated with the ‘Africa and bush experience’ and the tourism landscape thus differs from studies done in Europe, UK and USA. Parallels can however still be drawn, and it is the opinion of the SIA Specialist that research results can safely be used for this study”*. This last statement by the SIA Specialist is wrong because she fails to recognise that the Indalo PGRs (and the Addo and Great Fish) are primarily concerned with wildlife and nature tourism. The unique wilderness experience of tourists is largely defined by the “sense of place” of the area that they visit. It is this unique “sense of place” of these Protected Areas that will be significantly impacted by the Albany WEF development and that the EIR fails to adequately consider. The assessment does not consider that much like the Kruger National Park and the Addo National Park, visitor experiences in Indalo and the Great Fish Protected Areas is concerned with activities and encounters in unspoilt natural and wilderness settings.

3.2.2 International Research: A substantial volume of research concerning wilderness tourism and renewable energy have been performed in Iceland and are relevant for the Albany Wind Farm development.¹⁸ The finding of the SIA Specialist

¹⁸ See e.g. Anna Dóra Sæpórsdóttir, Rannveig Ólafsdóttir & Diane Smith (2018) *Turbulent times: tourists' attitudes towards wind turbines in the Southern Highlands in Iceland*, *International Journal of Sustainable Energy*, 37:9, 886-901, DOI: 10.1080/14786451.2017.1388236; and Anna Dóra Sæpórsdóttir, Rannveig

indicates that “[n]o evidence is presented to support the assertion that any wind farm development overseas has resulted in any adverse impact on tourism”. This finding is not correct for wilderness tourism because evidence about wilderness tourism in Iceland (as opposed to general tourism) shows the following.

- a) Visitors have reported satisfaction with “present settings and preferred to protect the area from development to ensure the provision of currently available recreational opportunities”.
- b) Surveys “indicate that one-third of the travellers would be less likely to visit the Southern Highlands if a proposed wind farm were built, and two-thirds think that wind turbines would decrease the area’s attractiveness”.¹⁹
- c) A more recent study reporting on a follow-up survey concludes that “[t]he results indicate that residents are more positive than tourists towards wind turbines and consider them less intrusive in the landscape”.²⁰
- d) This Icelandic study also found that –
 - i) Wind turbines reduce the naturalness of a landscape and the quality of wilderness.
 - ii) Residents and tourists consider landscape without power plant infrastructure more beautiful.
 - iii) Tolerance level towards landscape change is higher among residents than tourists.
 - iv) Economic reasons are likely to influence residents’ opinion on wind energy production.

Ólafsdóttir (2020) *Not in my back yard or not on my playground: Residents and tourists’ attitudes towards wind turbines in Icelandic landscapes* February 2020 [Energy for Sustainable Development](#) 54:127-138 DOI: 10.1016/j.esd.2019.11.004.

¹⁹ Sæþórsdóttir et al 2018.

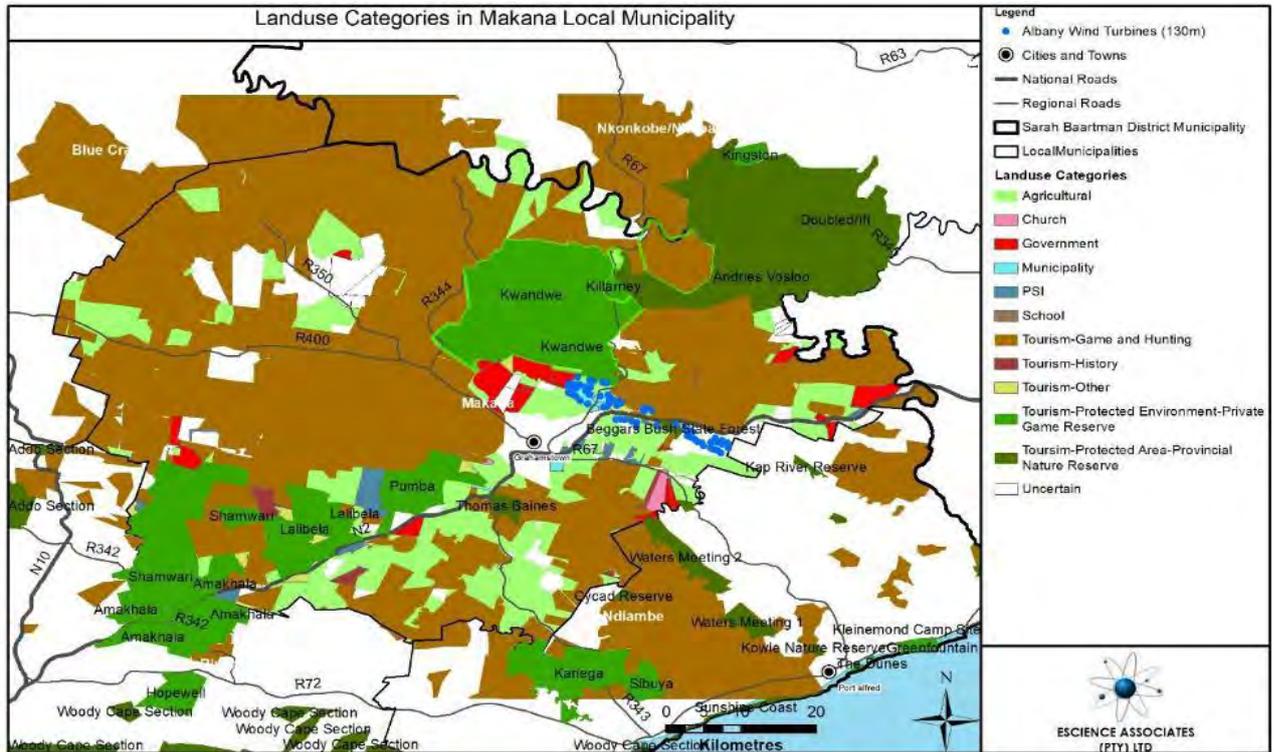
²⁰ Sæþórsdóttir & Ólafsdóttir 2020.

It is suggested that the SIA Specialist, the EAP and ultimately the DEFF, should rather draw parallels from Iceland which is a popular international wilderness tourism destination.

3.2.3 Nature Tourism: The SIA Specialist study of 2020 also consider in the Section titled "*Land uses and socio-economic background of the Project Area*", factors such as Agriculture land use, Private Game Reserves in the broader district, Residential, Towns and villages but is flawed for the following reasons.

- a) This Section omits Nature and Conservation Tourism of formally Protected Areas, Provincial as well as Private Protected Areas. Most notably there is no consideration afforded to Conservation Tourism from the Great Fish and Thomas Baines Protected Areas. See the earlier discussion of the criteria set by the Tourism Grading Council of South Africa which emphasise the visual and scenic quality of the natural environment of the PGRs to be graded as five and four star "Game or Nature Lodges".
- b) A land use map derived from the Makana Local Municipality property valuation roll in the SIA Specialist study of 2020 indicates that most of all parcels of land use in a radius of 5, 10 and 20 km are tourism related.
- c) The discussion of the tourism sector Section 7.6.2 Tourism does not consider to any level of detail the nature of the tourism product and services of the area, nor the wilderness character of the area as basis for nature and wildlife tourism.
- d) The study omits Nature and Conservation Tourism of formally Protected Areas, Provincial as well as Private Protected Areas from the surrounding land uses. Most notably there is no consideration afforded to Conservation Tourism from the Great Fish and Thomas Baines Protected Areas.
- e) The SIA Specialist indicates that landowners were consulted as the primary sphere of impact (page 21) but does not indicate who those owners are – it appears that the Eastern Cape Parks and Tourism Agency (ECPTA), which is the provincial agency that owns and, or manages Great Fish was not consulted. (As

per verbal report by ECPTA to EScience during discussions in May 2020 and confirmed in July 2020.) Had it been done then the EIR would have focussed on the impact on Great Fish Protected Area, and specifically the visual impact such as at Adam's Krans, which is a fatal flaw in this EIR.



3.2.4 Conflation of conservation with sense of place: The SIA in Section 11.4.1 Impacts on the “sense of place” at indicates: *“In the study area biodiversity conservation is particularly important, which is exemplified by the Indalo Protected Environment and the supporting land uses of the majority of farms in and around the project area”*. It then conflates biodiversity conservation with sense of place and indicates with respect to Impact significance: *“Impacts on the ‘sense of place’ is possible and rated with an overall MODERATE negative significance.”* This is clearly wrong.

3.2.5 Turbine Height: The SIA in Section 11.4.2 Intrusion impacts description and significance states that, *“Intrusion impacts relevant to this SIA report are visual and noise impacts and have been investigated and rated by the respective Specialists and summarised in the section below.”* It then continues to state, *“Visual impacts: Visual impacts cannot be mitigated due to the size and height*

of the turbines and the lack in screening opportunities in the landscape. Impacts on the three towns/villages are rated as LOW to MODERATE and on five Private Game Reserves as HIGH. Visual impacts on the residents on surrounding farms are LOW to MODERATE and on motorists that use the R67 and N2 MODERATE (Visual Impact Assessment Report)." This statement is wrong because turbine hub height may be reduced, and the no-go option can be considered both on a per turbine as well as per development basis.

3.2.6 Waainek Wind Farm Impact:

- a) The SIA Specialist refers (on page 130) to the lack of complaints by tourists to the Amakhala Private Game Reserve in the Indalo Protected Area and other game farms about the Waainek Wind Farm as evidence that there will be no significant tourism impact by the Albany Wind Farm:

"Indalo, Amakhala and Pumba Game Reserves unsuccessfully appealed the Environmental Authorisation ('EA') of the Waainek Wind Farm in 2011. Now that the project has been operational for four years, Amakhala reported no effect on eco-tourism and none of the game/hunting farms interviewed for this SIA reported that turbines/wind farms have in any way affected their tourism and businesses negatively."

- b) This statement is disputed and is wrong. This factual error is confirmed by the letter of comment from Pumba Game Reserve in the Indalo Protected Area that clearly states the negative impact that the Waainek WEF has had on tourism to Pumba. It is questioned why did the EIR and SIA underplay the valid concerns and comments raised by Pumba in the above quoted part of the report. Pumba's experience represents best evidence of the actual impact – which it had foreseen (but was ultimately rejected on appeal).
- c) Although Pumba lodges were sited so as to offer a scenic location with vistas devoid of intrusion by human-made structures and other disturbance, however the Waainek WEF has substantially impacted Gameston Wildlife Retreat as the

lodge has a northern aspect (good building design) and whereas it previously had views of an unbroken skyline, it now faces Waainek turbines that mars the landscape across the valley. The impact of the wind turbines of the Waainek WEF on Gameston was deemed excessive and a significant volume of complaints led to a decision to remove the Gameston lodge from the Pumba Reserve offering.

- d) In addition, as pointed out earlier, the SIA failed to assess and consider the cumulative direct and indirect effect of the different current and planned WEFs in the region (Waaihoek, Plan 8 (Grahamstown) Albany, Dassenridge and Cookhouse) on wildlife and nature-based tourism of the planned Mega Protected Area (Addo - Great Fish Corridor (Albany Corridor)) due to their significant degradation of the aesthetic character and sense of place.

3.2.7 Factual Mistake:

- a) The conclusion of the SIA that the Albany WEF will not have a significant impact on tourism is wrong because this statement was based on factual mistakes in the VIA that the Albany WEF will not cause significant visual impacts.
- b) It was indicated above that the VIA is fatally flawed because of its failure to assess the intrusion on vistas from e.g. Adam's Krans in the Great Fish.
- c) Section 6(2)(e)(iii) read with section (6)(2)(f)(ii)(cc) of PAJA does not allow the environmental authorisation for the Albany Wind Farm to be based on material factual mistakes otherwise it will be set aside on internal appeal or judicial review for irrationality and unlawfulness.
- d) Consequently, the SIA Specialist's own warning in her conclusions (on page ix of the SIA) is relevant and must be followed by the EAP and the DEFF instead of her main findings which are flawed.

“It is however not prudent to claim that there would be no negative impact on tourism as aesthetic and visual impacts (proximity to turbines) are strong

influences on individuals' attitudes towards wind power projects; and Proximity to turbines and their localities (visual impacts on lodges and strategic viewpoints on the game farms) could be the determining factors for visitor satisfaction and impacts on visitor volumes." [Own emphasis.]

- e) This is precisely Indalo's concern that there are significant visual impacts that were missed by the VIA, the SIA and the EIR and which will be a determining factor for conservation and nature tourism to the Extended Protected Areas, including the Indalo PGRs (which are declared Protected Areas).

3.2.8 **Indalo's Economic Impact Assessment:** Indalo performed an independent Economic Impact Assessment of the proposed Albany WEF development. The report by Marias (2020) *Indalo Protected Area Economic Impact Assessment* makes the following salient findings (see Addendum 4):

- a) The main economic concern of the Protected Areas and PGRs (as well as potential Protected Area expansion) is the potential devaluation of their tourism offering if wind energy facilities (or any other highly intrusive developments) are allowed to encroach on the Indalo Protected Area nature tourism and other environmental goods and service offerings.
- b) Although nature and wildlife tourism services and products don't constitute the entire tourism product of the of Sundays River, Ndlambe and Makana Local Municipalities, it contributes the majority of tourism products and services (and a large part of this is from Protected Area environmental goods and services, principally from Addo, Indalo and Great Fish).
- c) Degradation of the environmental goods and services upon which tourism is based would imply a certain "disinvestment" in the nature and wildlife sub-sector for the respective regions, the province and even on a national scale. Accordingly, due consideration is to be afforded to the biodiversity stewardship that nature and wildlife tourism affords the national estate.

- d) The socio-economic assessment in the EIR indicates that there is in terms of Gross Domestic Product (“GDP”) no significant economic difference between WEFs and PGRs – they would contribute equally to the wealth of the region and to the South African economic domain. Investment in either sector would yield an economic improvement if it is to displace extensive agriculture. Marais advises that it is not clear if this statement would also be applicable for the potential case of intensive agriculture displacement as the agriculture multipliers reflect agriculture in general. It is however unlikely that nature and wildlife tourism typical of PGRs will displace intensive agriculture as it requires a natural environment and wilderness setting. This is in contrast with WEFs which could co-exist with intensive agriculture (and an optimal combination would seem to combine WEFs with intensive agriculture and to combine PGRs with a natural environment and wilderness setting).
- e) Although the WEF contribution to Gross Value Added is notably higher than that of the PGRs, the difference disappears when production taxes and subsidies are incorporated to derive the comprehensive (GDP) view on the economy.
- f) There is no significant difference between the labour compensation contributions of the WEF and PGR sectors.
- g) From an employment point of view, it would be distinctly better to promote PGRs than to deploy WEFs. Investment in PGRs would generate about three times as many employment opportunities than WEFs. The “*disinvestment*” argument is equally applicable, i.e. if PGRs should be devalued by the choice to deploy WEFs, it could lead to a significant reduction in net direct, indirect and induced employment in the region.
- h) A compromise between PGR and WEF development (investment) could be a desirable solution. It might be opportune to consider the deployment of PV technology rather than wind energy facilities, as this has a lower impact on the wilderness character of the region. Alternatively, if the WEFs could be deployed sufficiently distant from nature and wildlife tourism-based operators, to avoid impacting the wilderness character and its tourism value and sterilising future

protected area expansion. Combined land use, that does not imply a reduction in environmental goods and services (or quality of environmental goods and services), should ideally be pursued.

3.3 AVIFAUNAL IMPACT ASSESSMENT

3.3.1 Minimum requirements for avifaunal assessments

3.3.1.1 In terms of meeting the minimum requirements for avifaunal assessments, the Albany Avifaunal Assessment lacks the following:

- a) Recon Study is required to be undertaken. It is a requirement that a 2-4 day recon study is to be undertaken to inform the pre-application monitoring programme and it would appear that there was a lack of such a recon and scoping of monitoring plan which may put the findings of the study in question.
- b) Pre-application Avifaunal Monitoring Plan –
 - i) Maps showing the water features, drainage lines, quarries, powerlines or other existing wind energy facilities.
 - ii) Duration of monitoring and number of observers not included it is mentioned that 9 transects walked and some in car (2 per season).
 - iii) Uncertain if pre-application monitoring has been uploaded onto national bird monitoring database.
- c) Assessment of fatalities from surrounding WEFs in general and specifically not of the nearby Waainek Wind Energy Facility.
- d) Post construction monitoring plan not included.

- e) Conditions to which the statement of approval or disapproval are subject is not included.
- f) We do not see adequate consideration of potential impact to soaring birds and specifically soaring modes in a raptors.

3.3.2 Best-Practice Guidelines for Assessing and Monitoring the Impact of Wind-Energy Facilities on Birds in Southern Africa (3rd ed, 2015).

3.3.2.1 Unlike smaller raptors, which can readily use flapping flight, large raptors are mainly restricted to soaring flight due to energetic constraints. Whereas thermal soaring occurs in relatively flat areas which are likely to have good thermal uplift availability topography. The technique is called ridge lift or slope soaring. The ridgeline targeted by the Albany WEF will present ideal conditions for raptors and other soaring along area of uplift where turbines will be located.

- a) Sufficient data should be gathered on bird movements, to enable the use of the data in collision--- risk modelling to provide an indication of the potential mortality rates of priority species.
- b) The ridgeline that is targeted by the Albany WEF is within the fog belt and the presence of fog and conditions that complicate bird observation including topography, inaccessibility and dense vegetation complicates avifaunal assessment. and accordingly, there are concerns with respect to the veracity of raptor observations.
- c) Due to the detailed data on bird movements is required, or where movements occur at night or in conditions of poor visibility (e.g. fog) special remote sensing methods should be considered e.g. radar in combination with direct observations (wherever possible).

3.3.3 Assessment of fatalities from surrounding Wind Energy facilities

3.3.3.1 Understanding the cumulative effect of wind energy fatalities is vital when multiple sites are located in one area. The Albany WEF applicant owns the established Waainek WEF nearby and should have bird fatality monitoring in place, however, the details of avifaunal impact monitoring and reports on fatalities at Waainek other is conspicuously absent from the Albany WEF avifaunal assessment.

3.3.3.2 The presence of Waainek WEF nearby can therefore be used as an additional source of data to substantiate the observations of the avifaunal specialists and lack of formal and transparent reporting of Waainek WEF avifaunal mortality monitoring is seen as a glaring omission. There are three components to estimating fatality rates: a) estimation of searcher efficiency and scavenger removal rates, b) carcass searches, and c) estimation of collision rates.

a) All turbines should be searched for fatalities, with a search interval determined by scavenger- removal trials and objectives monitoring. Two complementary search protocols should be applied: 1) intensive and regular searches of a minimum of 30% or 20 turbines at a WEF (whichever is greater), and 2) extensive, less frequent sampling of the remaining turbines to record fatalities of large-bodied birds. The search area must be defined and consistently adhered to throughout monitoring. As a minimum, the radius of the search area be should equal to 75% of the turbine height (ground to blade-tip).

b) Observed mortality rates must be adjusted to account for searcher efficiency, scavenger removal and the probability that some carcasses may be outside the search area.

3.3.3.3 As it stands the cumulative impacts discuss the need for consideration of the overall impact but there is not any investigation as to the current background

cumulative effect in terms of fatalities per existing turbine from the operational facilities.

3.3.4 Post construction monitoring plan

3.3.4.1 Currently the most significant mitigation as per the Avifaunal report is adherence to Appendix 6: sensitivity map. No monitoring requirements are set out within the Avifaunal assessment, however there are monitoring requirements outlined within the EIR, uncertain if these were provided by an avifaunal specialist or by the EAP.

3.3.4.2 Monitoring needs to take into consideration various aspects, such as searcher efficiency and scavenger removal. Therefore, without a post construction monitoring plan and actual directives as to what is required to be implemented, it is likely that monitoring will not meet the requirements of the *Birds and Wind Energy Best Practice Guidelines*.

3.3.4.3 Mitigation measures should be implemented to further prevent collisions, various suggestions outlined below:

- a) Collision detectors to prevent mass fatality of bird flocks;
- b) Ultrasonic acoustics;
- c) Make turbines more visible to birds/bats;
- d) GPS monitoring of critical species to prevent collision when these species are nearby the turbines; and
- e) Deterrent Strobe Lights.

3.3.4.4 Additional offset measures should also be investigated and implemented to prevent a net loss of bird species as a result of the operations of the Wind Energy Facility.

3.3.5 Conditions to which the statement of approval or disapproval are subject to -

3.3.5.1 In the event of approval, adequate monitoring is required to be implemented as per the Birds and Wind Energy Best Practice Guidelines. The effects of the facility on the surrounding avifauna can only be effectively quantified through appropriate post construction monitoring.

3.3.5.2 The Guidelines set out the minimum requirements for monitoring from a planning to decommissioning phase and with this as a guideline, the impact to Avifauna will be better understood.

4. COMMENTS OF ENVIRONMENTAL IMPACT REPORT (EIR)

4.1 NEED AND DESIRABILITY

4.1.1 The EIR indicates that the *“Albany Wind Power intends to promote local economic growth and development through direct and indirect employment, as well as the identification and implementation of social development schemes during the project's operational phase.”*

4.1.2 This promotion of local economic growth and development through direct and indirect employment could be achieved more effectively through deploying the Albany Wind Farm in a location that would avoid the significant impact to wilderness character and its tourism value as demonstrated in this submission.

4.1.3 Appendix 2 (2) (1) (f) of the EIA Regulations indicates that a scoping report must contain *“a motivation for the need and desirability for the proposed*

development including the need and desirability of the activity in the context of the preferred location." [Our emphasis.]

4.1.4 Appendix 3 (3) (1) (f) of the EIA Regulations indicates that an environmental impact assessment report must contain "a motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred development footprint within the approved site as contemplated in the accepted scoping report."

4.1.5 Although both the Scoping Report and EIR provide motivations for the need and desirability of the project, neither of the two reports provide a motivation for the need and desirability in the context of the preferred location. The listed desirable aspects can all be equally achieved through deployment of the Wind Farm in an alternative location than Location 1 with suitable wind resources within the province, or even beyond the province.

4.2 REVIEW OF ALTERNATIVES

4.2.1 EIA Regulations

a) Appendix 2, Items 1(d) and 2(1)(g)(i), (iv), (v), (vi), (vii) and (h)(i) of the EIA Regulations and Appendix 3, Items 2 (c), (d)(i); 3(1)(h)(i), (iv), (vii) of the EIA Regulations require, respectively, that the Scoping Report and the EIR must undertake a detailed site selection process in which it ranks the preferred and alternative sites with reference to the cumulative impacts based on the geographical, physical, biological, social, economic, and cultural aspects of the environment.

b) Regulation 1 of the EIA Regulations also specifies that "alternatives" refer to the –

- i) "property on which or location where the activity is proposed to be undertaken;
- ii) *type of activity to be undertaken*;

- iii) *design or layout of the activity;*
- iv) *technology to be used in the activity; or*
- v) *operational aspects of the activity,*

and includes the option of not implementing the activity." [Own emphasis]

- c) Appendix 2, Item 2(1)(x) and Appendix 3, Item (1)(h)(ix) of the EIA Regulations further stipulate that *"if no alternative locations for the activity were investigated"* the Scoping Report and EIR, respectively, must provide *"the motivation for not considering such."*

4.2.2 Site and Location Alternatives

- a) The reasons provided in the EIR (page 87) for not considering any alternative site locations for the Wind Farm other than the proposed Location 1, are as the following:

"None identified as the rights to sufficiently large enough contiguous parcels of private land must be sought from local landowners. Location 1 has been agreed to. Alternative sites in the area that are close to Eskom electrical infrastructure, do not yield the same wind resource potential."

- b) The EIR then further comment about this decision:

"Alternative locations for the current project are limited and where not deemed to be either reasonable or feasible due to the following:

- *The available wind resource is the most critical aspect of a wind energy project since a feasible WEF must generate sufficient energy to be financially feasible in terms of REIPPPP.*

- *A feasible WEF must also be located close to a connection point into the Eskom grid and substation. This is a critical factor to the overall technical and financial feasibility of the WEF project.*
 - *Therefore, alternative locations for the proposed Albany WEF, were not assessed."*
- c) The above explanation of the lack of suitable wind conditions as the reason why no alternative site locations were investigated, is not persuasive and must be rejected by the DEFF. The explanation does not provide a coherent, well-reasoned and rational motivation with supporting evidence to proof that no suitable alternative locations elsewhere in the Eastern Cape or in South Africa exist where wind energy may be generated without the same significant environmental impact. No evidence was provided in the EIR of a detailed site selection process in which the EAP ranked the preferred and alternative sites with reference to the cumulative impacts based on the geographical, physical, biological, social, economic, and cultural aspects of the environment as required by the EIA Regulations.
- d) The same criticism applies to the Eskom grid connection requirements.
- e) The first part of the Applicant's explanation about the absence of available private land is brief, unclear, and not further explained in the comment column of page 87. The statement: "Location 1 has already been agreed to" is problematic. So is the reference in the previous line that "Albany Wind Energy and landowners have formally agreed to the proposed development on the site and are in full support of the use of this area." It appears to indicate that the Applicant has already secured preferential rights to the land for Location 1. The legal nature of these agreements with landowners were not disclosed but it matters not as this is not a valid ground for failure to perform a proper investigation to alternative sites.

- f) Although it is important that the applicant has secured the support of the landowners for Location 1 (as it must and which is also the case for any other alternative locations), their approval does not place any legal obligation on the DEFF to accept Location 1. The competent authority cannot be expected to rubber stamp Location 1 regardless of the result of the EIA and notwithstanding the significant environmental impact of the development from that location, because the EIR presents it with a *fait accompli*. This would clearly be unlawful and an automatic ground for the rejection of the application. The Applicant knows that it carries the risk during the application and that environmental authorisation is subject to the discretion of the DEFF based on the results of the EIA process.
- g) Reasons of convenience for the Applicant (which are subjective) not to have performed the prescribed alternative location assessment should not be confused with objective substantive grounds that would in exceptional cases justify the absence of location alternatives e.g. the location of the ore body for a mining application. The Albany Wind Farm application is not such a case.
- h) The lack of a proper investigation about alternative site locations in accordance with the prescribed requirements of the EIA Regulations is a material mistake in the EIR and cannot be lawfully condoned by the DEFF. Also, the Applicant's noncompliance with the peremptory requirements of the EIA Regulations to investigate during the Scoping and EIA processes and report in the prescribed manner in Scoping Report and EIR on alternative site locations for the Albany Wind Farm means the EIR is incomplete and forms further ground for the DEFF to reject the application.
- i) A further concern is that, even if Location 1 is followed, which Indalo does not support (as indicated above), the EIR does not provide alternative locations within Location 1 to mitigate environmental impacts. For example, the SIA states (and EIR at page 110) : "*The following operational recommendations from the Socio-Economic Assessment must be implemented: ... Wherever possible, turbines must not be erected in direct view of lodges and strategic viewpoints at the Game Reserves.*" [Own emphasis.] The EIR, however, does not assess

alternative locations on Location 1 for the placement of the turbines that are proposed within these views.

4.2.3 Cumulative Impacts

4.2.3.1 Although the EIR refers at various instances to the cumulative impacts (in Chapter 9) e.g. on page 164 it assesses the visual impact from the VIA as follows:

“As seen in the cumulative viewshed (please see Figure 18 of the VIA), most of the turbines will be visible from the surrounding areas. Notable features within the viewshed include: 1) Makhanda, 2) Bathurst, 3) KwaNdwanyana, 4) Kudu Ridge PGR, 5) Bucklands PGR, 6) Kwandwe PGR, 7) Buffalo Kloof PGR, 8) Coleridge PGR, 9) Huntshoek PGR, 10) multiple homesteads, 11) the N2 and R67 roads. The most significant cumulative visual impacts will come from the Operational Waainek WEF and the Proposed Plan 8 WEF. Both these facilities are located within 20km of the Albany site. The Waainek Wind Farm consists of eight turbines, each with a hub height of 84m and a rotor diameter of 117m, and the Plan 8 facility will host up to 22 turbines, each with a hub height of up to 91.5m and a rotor diameter of up to 117m. The cumulative visual impacts of these three facilities will be high, with the proposed Albany WEF making the largest contribution to the impact.” [Own emphasis.]

4.2.3.2 Firstly, Plan 8 has applied for an increase of its size, height and footprint and the DEFF's refusal is under appeal. This is not mentioned by the EAP.

4.2.3.3 Secondly, the EIR, failed to also assess WEFs further away at Dassenridge and Cookhouse and consider the cumulative direct and indirect effect of all five these Facilities on wildlife and nature-based tourism of the planned Mega Protected Area (Addo - Great Fish Corridor (Albany Corridor)) due to the Wind Farms' significant degradation of the aesthetic character and sense of place.

4.2.3.4 Thirdly, based on the specialist VIA these direct cumulative impacts are considered as high significance with no mitigation possible, except the no go option (pages 164 and 165). The EAP confirms this in his/her summary in paragraph 9.4.11 and the conclusion in paragraph 9.4.12:

"The Visual Assessment identified a total of 15 impacts. The majority of these impacts related to the visual impact of the proposed WEF on sensitive receptors during the operational of the WEF. These seven (7) HIGH negative significance impacts cannot be mitigated due to the fact that they are perception-based (Table 9-16). ...

It is concluded that majority of the cumulative impacts are MODERATE in nature and although the most of the cumulative visual impacts of the proposed Albany WEF and existing WEF (e.g. Waainek WEF) and proposed WEF (Grahamstown WEF) in the area will be HIGH, potential losses of scenic resources are not sufficiently significant to represent a fatal flaw to the proposed project given the LOW/MODERATE significance of the remainder of the impacts and given the environmental and social benefits that such renewable energy projects promote." [Own emphasis.]

4.2.3.5 The EAPs overruling of his/her own assessment as informed by the VIA, is irrational as it is based on wrong information as pointed out above (mistakes in the VIA and SIA, failure to properly consult Pumba about Waainek and Albany WEFs, wrong international comparison, indefinite lifespan of WEFs, etc.).

4.2.3.6 The argument that the WEF is not permanent and the disturbed landscape can be restored is totally irrelevant to the affected Indalo PGR owner that will for 20-25 years suffer damages because of the presence of the WEF.

4.2.3.7 It is irrational and arbitrary for the EAP to simply conclude that *"although there are local losses in terms of visual impacts, there will also be local gains."* Through this statement the EAP simply equate the property rights of the Indalo PGRs with the economic interests of the developer and recommends that the

latter should override the former without factually establishing the impact of such decision on the Indalo PGRs. It should be noted that the rule of law in section 1 of the Constitution as in the common law, respects and protects the established rights of property owners such as of the Indalo PGRs. Their property rights cannot simply be ignored by the competent authority (DEFF) on a whim of possible future economic interests of third parties. The law does not equate established rights (of property owners) with potential interests (of the Proponent). In an irreconcilable conflict such as the present application for the Albany WEF, the vested rights of property owners must trump the potential conflicting interests of the WEF developer. Thus, based on the assessment of cumulative direct and indirect impacts in the EIR, it is submitted that the EAP did not engage in a balanced and fair weighing of opposing rights and interests as is contemplated by constitutional jurisprudence.

4.2.4 Consideration of Guidelines in EIA

4.2.4.1 No formally adopted Guidelines for Environmental Impact Assessment exist in South Africa other than *Best-Practice Guidelines for Assessing and Monitoring the Impact of Wind Energy Facilities on Birds in Southern Africa* (3rd Edition, 2015) and the DEFF *Minimum Requirements for Avifaunal Impact Assessment*.

4.2.4.2 The World Bank Group “*Environmental, Health and Safety Guidelines for Wind Energy*” (August 2015) provide a useful guideline for the application of “Good International Industry Practice” –

a) is required to be applied by any member of the World Bank Group including the International Finance Corporation (IFC); and

b) the IFC further prescribes standards of environmental assessment and management to which many financiers (including numerous South African funds of renewable energy subscribe in the form of the IFC standards) who are involved in such a project.

4.2.5 World Bank Group Environmental, Health and Safety (EHS) Guidelines

- a) World Bank Group Environmental , Health and Safety (EHS) Guidelines indicate that where any host country regulations differ from the levels and measures presented in the World Bank Group (WBG) Guidelines then the projects are expected to conform to the whichever are the most stringent.
- b) Since apart from Avifaunal Assessment no formally adopted Guidelines for wind farm site selection exist in South Africa and numerous of South African renewable energy project funders (e.g Nedbank and RMB) apply IFC standards it is expected that these World Bank Group Guidelines would be appropriate to apply in the Albany WEF EIA.
- c) The WBG Guidelines repeat the need to consider the choice of site carefully from the earliest stage of planning. *"The general approach to the management of EHS issues should consider potential impacts as early as possible in the project cycle, including the incorporation of EHS considerations into the site selection, in order to maximize the range of options available to avoid and minimize potential adverse impacts. Importantly, many EHS impacts associated with wind energy facilities may be avoided by careful site selection."* (Own Emphasis).
- d) WBG Wind Energy Guidelines Section 1.1.1, *"Landscapes, Seascapes and Visual Impacts"*, the Guidelines advise that potential impacts –
 - i) Note 12 *"on Legally Protected and Internationally Recognised Areas of Importance to biodiversity and cultural heritage features are also a consideration."* Accordingly it would have been expected that the Proponent of the Albany WEF at the hand of the EIA process would have considered the impact of the WEF on Protected Areas and Provincial Nature Reserves Legally Protected and Internationally Recognised Areas of Importance to biodiversity and cultural heritage and failing consideration of which would not be in line with NEMPAA.

ii) Note 13 it is advocated that "...avoidance and minimization measures to address landscape...and visual impacts are largely associated with the siting and layout of wind turbines and associated infrastructure...". Given that the siting of the turbines on the ridge line overlooking Protected Areas and the Provincial Reserve are intrusive on sensitive landscape that form the basis for wildlife and nature tourism within avoidance of impact through avoidance of turbine placement i.e. the no-go option can be considered both on a per turbine as well as per development basis.

e) WBG Wind Energy Guidelines Section 1.1.3 Biodiversity indicate –

i) Note 25 indicates: "Site selection is critical to avoiding and minimizing potential adverse impacts on biodiversity. Site selection should include the following:

- Consideration of the proximity of the proposed wind energy facility to sites of high biodiversity value in the region. Early screening can improve macro-level project site selection and the scoping of priorities for further assessment, thus reducing unnecessary biodiversity impacts and costs in the future. Sites of local, regional, and international importance may include national and international protected areas (including marine protected areas), Important Bird Areas (IBA), Key Biodiversity Areas (KBAs).

- Consultation with relevant national and/or international conservation organizations also helps to inform site selection for both onshore and offshore facilities."

ii) It is patently clear that Protected Areas and Provincial Reserves are affected and the relevant local, provincial and national conservation organizations (Indalo, ECPTA and SANParks) have not been consulted to help to inform site selection.

4.2.6 International Finance Group Guidelines

- a) The International Finance Group (IFC) is a member of the World Bank Group which has established a set of “*Performance Standards*” (January 2012) under its Sustainability Framework. The Sustainability Framework articulates IFC's strategic commitment to sustainable development (ref: <https://www.ifc.org/wps/>).
- i) *Standard 6 Guidance Note GN27: In practice, natural and modified habitats exist on a continuum that ranges from largely untouched, pristine natural habitats to intensively managed, modified habitats. Project sites will often be located among a mosaic of habitats with varying levels of anthropogenic and/or natural disturbance. Clients are responsible for delineating the project site as best as possible in terms of modified and natural habitat... Is the project site (or parts of it) an isolated area of natural habitat within a heavily disturbed or managed landscape? Is the project site located near areas of high biodiversity value (for example, wildlife refuges, corridors, or protected areas)? Or, is the project site located in a mosaic of modified and natural habitats that contain biodiversity values of varying importance to conservation?*
 - ii) The Albany WEF project site is located near areas of high biodiversity value and is located within mosaic of modified and natural habitats that contain biodiversity values of varying importance forming corridors between protected areas (Buffalo Kloof Protected Environment/Waters Meeting Nature Reserve, Blaauwkrantz Nature Reserve, Kwandwe Protected Environment and Great Fish Nature Reserve).
 - iii) An evaluation of the adherence to IFC Performance Standard 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources is contained in Appendix: A

4.3 OPINION AS TO WHETHER THE ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

4.3.1 EIA Regulation 31(2)(n) states that: *“An environmental impact assessment report must contain all information that is necessary for the competent authority to consider the application and to reach a decision contemplated in regulation 35, and must include ...a reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorization;”*

4.3.2 The EIA Regulation 31(2)(n) is explicit in that it requires that an EIR “*must*” contain a reasoned opinion (of the EAP) as to whether the activity “*should or should not be approved*”. In other words, if the Draft EIR fails to provide an opinion as to whether the activity should be approved, or not, then the reasoning of approval cannot be evaluated and Draft EIR does not meet the requirements of EIA Regulation 31(2)(n).

4.3.3 The EAP provides a vague and non-committal discussion around his/her views on the various aspects and impact assessment findings of the EIA study but falls short of providing a reasoned opinion as to whether the activity should or should not be authorised.²¹

5. IMPACTS ON BIODIVERSITY

5.1 The following important questions should be asked when considering a project location for a project of this nature:

5.1.1 Is the scheme likely to have a significant effect on the integrity of a protected area or nature reserve?

²¹ Section 12.6 indicates *“Based on the contents of this report, and all associated documentation, it is the opinion of the EAP that the proposed Albany WEF be authorised on condition that all conditions stipulated in Section 12.7 of this report be contained within the EA”*.

Yes - The project site is located near areas of high biodiversity value and is located within mosaic of modified and natural habitats that contain biodiversity values of varying importance forming corridors between protected areas (Buffalo Kloof Protected Environment / Waters Meeting Nature Reserve, Blaauwkrantz Nature Reserve, Kwandwe Protected Environment and Great Fish Nature Reserve).

5.1.2 If so, is the project likely to damage (or destroy) any of the features of interest, or disturb any of the wildlife for which the site is protected?

Yes – Like the Addo National Park and the Great Fish Provincial Nature Reserve, the Indalo PGRs (like many others in South Africa and in Africa in general) is concerned with nature and wildlife tourism as a key protected area goods and service.

- a) It is specifically the wildlife and nature tourist's experience that relies on the wilderness character of both the protected areas and their surrounds and in a way the wilderness character of the reserves which finances protection of ecological, geological, landscape and other features of scientific, cultural and/or historical value (nature and wildlife tourism in reality underpins the protected areas operation and ability to meet biodiversity conservation objectives).
- b) Like the Addo National Park and the Provincial Nature Reserves (most notably the Great Fish), the Indalo PGRs are managed according to a Protected Area Management Plan, but with the important difference that they do not receive public funds but have to secure funding from internal resources.
- c) These resources are derived from nature and wildlife tourism which is dependent on a natural environment largely free from the structures and signs of modern civilisation (often from which the tourists come to get away). Wind energy development characterised by colossal skyline intrusion will impose a divestment

on Indalo members impacted and curtail wildlife and nature tourism enabled protected area expansion.

5.1.3 Is the scheme likely to have a significant adverse effect on the favourable conservation status of any habitat?

Yes- the scheme will hinder the expansion of areas under formal protection –

- a) Based on government's Protected Area Expansion Strategy, buffer zones and Biodiversity Stewardship Programme, Indalo is currently actively working with local provincial and national partners including the Wilderness Foundation of South Africa, ECPTA and SAN Parks to expand areas under formal protection. This is done through further amalgamation of the southern, central and northern nodes into large agglomerations (>50 000Ha) of private nature and game reserves in the central node and private/public nature and game reserves through public-private partnerships with Addo National Park and the Great Fish (and various provincial nature reserves) in the south and north respectively.
- b) One of the main objectives of the expansion plan is to enable common traversing agreements and unified conservation management through the dropping of fences between reserves.
- c) To this effect a formal protected area expansion strategy is under development by various stakeholders including the Wilderness Foundation Africa, ECPTA, SAN Parks and the Indalo Association that will guide protected area expansion, inform land-use planning, stimulate economic development and aide thicket restoration in the broader Albany region.
- d) The environmental and economic benefits associated with the agglomerations (>50 000Ha) of private reserves and expansion through private partnerships with Addo in the south and the Great Fish in the north are considerable. Not only will this form a mega reserve as larger consolidated areas will lead to improved marketability of the Eastern Cape as a safari destination, making it comparable

to Kruger, Sabi Sands and Madikwe. As much as wind energy development is necessary in South Africa, we hold wind energy development that impacts on the Addo, Great Fish and Indalo Protected Areas and their further extended areas to be untenable and undesirable that should be avoided at all cost.

- 5.2 Accordingly it would have been expected that the Proponent of the Albany WEF, at the hand of the EIA process would have considered impact of the Facility on Protected Areas and Provincial Nature Reserves that are legally protected and internationally recognised areas of importance to biodiversity and cultural heritage as required by NEMPAA. The EIR for the Albany WEF failed to do so which is contrary to the requirements of NEMPAA.

6. CONCLUSION

- 6.1 The Indalo Protected Environment places on record that the EIR and specialist studies are deficient to the extent that these inadequacies are covering up fatal flaws in the application, if these material deficiencies were to be addressed it would become clear that the development would blight views from Great Fish Reserve (most spectacularly from Adam's Krans view point) and would degrade the scenic value of the area and its unique wilderness tourism product in general. Indalo is unconditionally in favour of the outright refusal of the Albany WEF based upon the grounds set out in this comment on EIR.
- 6.2 In other words, Indalo favours the ultimate, most effective mitigation measure for the Albany WEF and the fatal flaws that it holds in terms of impact to the Protected Areas and their potential for expansion, is by avoiding the WEF through its outright refusal.

7. SOURCES

Anna Dóra Sæþórsdóttir, Rannveig Ólafsdóttir & Diane Smith (2018) Turbulent times: tourists' attitudes towards wind turbines in the Southern Highlands in Iceland,

International Journal of Sustainable Energy, 37:9, 886-901, DOI: 10.1080/14786451.2017.1388236.

Anna Dóra Sæþórsdóttir, Rannveig Ólafsdóttir (2020) Not in my back yard or not on my playground: Residents and tourists' attitudes towards wind turbines in Icelandic landscapes February 2020 *Energy for Sustainable Development* 54:127-138 DOI: 10.1016/j.esd.2019.11.004.

Bishop, I.D. & Miller, D. R. (2007), Visual Assessment of Off-shore Wind Turbines: The Influence of Distance, Contrast, Movement and Social Variables. *Renewable Energy*, 32, 814-831.

Journal of Digital Landscape Architecture, 5-2020, pp. 286-294.8.

Sullivan, R. G., Kirchler, L. B., Lahti, T., Roché, S., Beckman, K., Cantwell, B. & Richmond, P. D. (2012), Wind turbine visibility and visual impact threshold distances in western landscapes. Conference Proceedings of the 37th Annual NAEP Conference. May Portland, OR.

Palmer, J. F., Sullivan, R. G Visual Prominence as Perceived in Photographs and In-Situ.

APPENDIX A - IFC GUIDELINES

Performance Standard 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

PROTECTION AND CONSERVATION OF BIODIVERSITY

Condition	Comment
<ul style="list-style-type: none"> Guidance Note 6 - GN27. In practice, natural and modified habitats exist on a continuum that ranges from largely untouched, pristine natural habitats to intensively managed, modified habitats. Project sites will often be located among a mosaic of habitats with varying levels of anthropogenic and/or natural disturbance. Clients are responsible for delineating the project site as best as possible in terms of modified and natural habitat... Is the project site (or parts of it) an isolated area of natural habitat within a heavily disturbed or managed landscape? Is the project site located near areas of high biodiversity value (for example, wildlife refuges, corridors, or protected areas)? Or, is the project site located in a mosaic of modified and natural habitats that contain biodiversity values of varying importance to conservation? 	<p>The project site is located near areas of high biodiversity value and is located within mosaic of modified and natural habitats that contain biodiversity values of varying importance forming corridors between protected areas (Buffalo Kloof Protected Environment / Waters Meeting Nature Reserve, Blaauwkrantz Nature Reserve and Kwandwe Protected Environment and Great Fish Nature Reserve).</p>

<ul style="list-style-type: none"> Guidance Note 6 - GN32. Where socioeconomic and cultural uses of biodiversity (that is, ecosystem services) are at issue, biodiversity offsets may include the provision of compensation packages for Affected Communities impacted by the project and offset. Note that ecosystem services are covered in paragraphs 24 and 25 of Performance Standard 6, and compensation for ecosystem services is covered in Performance Standards 5, 7, and 8. 	<p>The impact on ecosystem services was not adequately considered. Refer to section below on ecosystem services.</p>
---	--

LEGALLY PROTECTED AND INTERNATIONALLY RECOGNIZED AREAS

This IFC Performance Standard recognises legally protected areas that meet the IUCN definition: “A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.” For the purposes of this Performance Standard, this includes areas proposed by governments for such designation.

Condition	Comment
<ul style="list-style-type: none"> • Performance Standard 6 Paragraph 20. In circumstances where a proposed project is located within a legally protected area or an internationally recognized area, the client will meet the requirements of paragraphs 13 through 19 of this Performance Standard, as applicable. In addition, the client will: <ul style="list-style-type: none"> ○ Demonstrate that the proposed development in such areas is legally permitted; ○ Act in a manner consistent with any government recognized management plans for such areas; ○ Consult protected area sponsors and managers, Affected Communities, Indigenous Peoples and other stakeholders on the proposed project, as appropriate; and ○ Implement additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area. 	<p>Paragraph 14 of IFC Performance Standard 6 indicates:</p> <p>14. The client will not significantly convert or degrade natural habitats, unless all of the following are demonstrated:</p> <ul style="list-style-type: none"> • No other viable alternatives within the region exist for development of the project on modified habitat; <p>We are of the opinion that the applicant did come to a defensible conclusion that there are no other viable alternatives within the region.</p> <p>With respect to consultation with protected area sponsors, managers and stakeholders - Consultation with conservation entities seemingly substantially lacking, for example the Eastern Cape Parks Board and the Great Fish River Nature Reserve were not consulted.</p> <p>The impacts on the Great Fish River Nature Reserve and its future potential have not been considered.</p>

Condition	Comment
<ul style="list-style-type: none"> Guidance Note 6 GN95. With respect to mitigation, clients are expected to comply with requirements for natural or critical habitat, depending on the qualifying biodiversity values present in the legally protected (including areas officially proposed for protection) or internationally recognized area. 	
<ul style="list-style-type: none"> Guidance Note 6 GN96. When projects are located in legally protected and internationally recognized areas, clients should ensure that project activities are consistent with any national land use, resource use, and management criteria (including Protected Area Management Plans, National Biodiversity Strategy and Action Plans (NBSAPs), or similar documents). This will entail securing the necessary approvals from the responsible government agencies, and consulting with protected area sponsors and Affected Communities, indigenous peoples, and other relevant stakeholders. Note that stakeholder engagement and consultation is required for all projects located in legally protected and internationally recognized areas. 	<p>The project site is located near areas of high biodiversity value and is located within mosaic of modified and natural habitats that contain biodiversity values of varying importance forming corridors between protected areas (Buffalo Kloof Protected Environment / Waters Meeting Nature Reserve, Blaauwkrantz Nature Reserve and Kwandwe Protected Environment and Great Fish Nature Reserve). Accordingly, it would have been expected that the Proponent of the Albany WEF at the hand of the EIA process would have considered impact of the facility on these areas as well as the impact that the facility would have and any planned expansions of these areas.</p>

MANAGEMENT OF ECOSYSTEM SERVICES

Condition	Comment
<ul style="list-style-type: none"> 24. Where a project is likely to adversely impact ecosystem services, as determined by the risks and impacts identification process, the client will conduct a systematic review to identify priority ecosystem services. Priority ecosystem services are two-fold: (i) those services on which project operations are most likely to have an impact and, therefore, which result in adverse impacts to Affected Communities; and/or (ii) those services on which the project is directly dependent for its operations (e.g., water). When Affected Communities are likely to be impacted, they should participate in the determination of priority ecosystem services in accordance with the stakeholder engagement process as defined in Performance Standard 1. 	<p>Paragraph 2 of Performance Standard 6 defines Ecosystem services:</p> <p>“Ecosystem services are the benefits that people, including businesses, derive from ecosystems.”</p> <p>And categorises ecosystem services into four types:</p> <ul style="list-style-type: none"> (i) provisioning services (ii) regulating services, (iii) cultural services, and (iv) supporting services <p>footnote 1 of Performance Standard 6, gives examples for cultural services: “cultural services may include natural areas that are sacred sites and areas of importance for recreation and aesthetic enjoyment”</p>
<ul style="list-style-type: none"> 25. With respect to impacts on priority ecosystem services of relevance to Affected Communities and where the client has direct management control or significant influence over such ecosystem services, adverse impacts should be avoided. If these impacts are unavoidable, the client will minimize them and implement mitigation measures that aim to maintain the value and functionality of priority services. 	<p>We believe the landscape features and the relative pristineness of the landscape contribute to the remote sense of place of the region, thereby providing a cultural ecosystem service. The remote sense of place will be impacted by the proposed facility. Therefore, this should</p>

Condition	Comment
<p>With respect to impacts on priority ecosystem services on which the project depends, clients should minimize impacts on ecosystem services and implement measures that increase resource efficiency of their operations, as described in Performance Standard 3. Additional provisions for ecosystem services are included in Performance Standards 4, 5, 7, and 8.19</p>	<p>have been identified as a priority ecosystem service as <i>“services on which project operations are most likely to have an impact and, therefore, which result in adverse impacts to Affected Communities”</i></p> <p>All current beneficiaries of this ecosystem service should thus have been consulted as part of the stakeholder engagement process.</p>
<ul style="list-style-type: none"> • GN108. Ecosystem services are indeed services because there is an identified (human) beneficiary (that is, the user). Ecosystem services are related to biophysical processes in the environment, but until there is a person or group of persons benefiting from the process, it is not a service. The beneficiary might be on the local, regional, or even global scale. ... 	<p>The adverse impact on the priority ecosystem service identified above is manifested through the visual impact of the proposed turbines. The only manner in which this impact can be mitigated in order to <i>“maintain the value and functionality of priority services”</i> is through</p> <ol style="list-style-type: none"> i. consideration of alternative locations (which were not considered in the EIR) ii. consideration of reduced hub height (which was not considered in the EIR), or iii. through implementing the no-go option.
<ul style="list-style-type: none"> • GN112. Ecosystem services is a transdisciplinary topic; hence, it is covered under a number of the Performance 	

Condition	Comment
<p>Standards. With respect to provisioning and cultural ecosystem services, it is the community of practice of social development specialists...</p>	
<ul style="list-style-type: none"> GN114. Client requirements in Performance Standard 6 for ecosystem services are applicable only when the client has “direct management control or significant influence” over such services. 	<p>The applicant does have direct management control and significant influence over the cultural ecosystem service provided by the pristine landscape, landscape features and remote sense of place.</p>
<ul style="list-style-type: none"> GN115. As described in paragraphs GN4–GN6 of this note, the risks and identification process will include a scoping for ecosystem services, which should primarily take place through literature review and consultation with Affected Communities as part of the stakeholder engagement process outlined in Performance Standard 1. Stakeholder engagement is covered under paragraphs GN91–GN105 of Guidance Note 1. Of particular relevance to ecosystem system services is engagement with poor and vulnerable communities, especially indigenous peoples (see related ecosystem services requirements in Performance Standard 7). Particular emphasis should also be paid to engaging with women, as they are likely users of natural resources. Where 	<p>The visual impact assessment and the socio-economic impact assessment consider the impact on the cultural ecosystem service provided by the pristine landscape, landscape features and remote sense of place. Comments on the adequacy of these assessments can be found in the body of this report.</p>

Condition	Comment
<p>potentially significant project-related risks to ecosystem services are identified, clients will be responsible for identifying priority ecosystem services. Priority ecosystem services are defined in paragraph 24 of Performance Standard 6 as (i) those services on which project operations are most likely to have an impact and, therefore, which result in adverse impacts to Affected Communities; and/or (ii) those services on which the project is directly dependent for its operations (for example, water). Priority ecosystem services should be identified using a systematic review and prioritization (paragraph 24 of Performance Standard 6). For the purposes of this Guidance Note, this process is referred to as a systematic assessment of ecosystem services.</p>	

Condition	Comment
<ul style="list-style-type: none"> • GN116. For the purposes of Performance Standard 6 implementation, ecosystem services are categorized as two types: <ul style="list-style-type: none"> ○ Type I: Provisioning, regulating, cultural and supporting ecosystem services, over which the client has direct management control or significant influence, and where impacts on such services may adversely affect communities. ○ Type II: Provisioning, regulating, cultural and supporting ecosystem services, over which the client has direct management control or significant influence, and on which the project directly depends for its operations 	<p>The cultural ecosystem service provided by the pristine landscape, landscape features and remote sense of place falls under Type 1.</p>
<ul style="list-style-type: none"> • GN117. Where a project is likely to have an impact on ecosystem services, the systematic assessment should screen for all type I and type II ecosystem services in the project site and its area of influence and prioritize ecosystem services based on the following: (i) the project's likelihood to have an impact on the service and (ii) the project's direct 	<p>Although no explicit screening of ecosystem services was undertaken as part of the EIR, the visual impact assessment and the socio-economic impact assessment consider the impact on the cultural ecosystem service provided by the pristine landscape, landscape features and remote sense of place. Comments on the adequacy</p>

Condition	Comment
<p>management control or significant influence over that service.</p>	<p>of these assessments can be found in the body of this report.</p>
<ul style="list-style-type: none"> • GN118. Type I ecosystem services will be considered priority under the following circumstances: <ul style="list-style-type: none"> ○ Project operations are likely to result in a significant impact on the ecosystem service; ○ The impact will result in a direct adverse impact on Affected Communities “livelihood, health, safety, and/or cultural heritage;” and, ○ The project has direct management control or significant influence over the service. 	<p>These circumstances are applicable thus making the cultural ecosystem service provided by the pristine landscape, landscape features and remote sense of place a priority ecosystem service.</p>
<ul style="list-style-type: none"> • GN120. For Type I ecosystem services, the systematic assessment must be conducted as part of a participatory stakeholder consultation process. Social specialists will be the primary agents conducting this consultation, and requirements are defined in paragraphs 25–33 of Performance Standard 1. Related guidance can be found in paragraphs GN91–GN105 of Guidance Note 1. As part of the systematic assessment, the client should consider the following: 	<p>Although no explicit systematic assessment of ecosystem services was undertaken as part of the EIR, the visual impact assessment and the socio-economic impact assessment consider the impact on the cultural ecosystem service provided by the pristine landscape, landscape features and remote sense of place. Comments on the adequacy of these assessments can be found in the body of this report.</p>

Condition	Comment
<ul style="list-style-type: none"> o Review the nature and extent of ecosystem services in the project site and its area of influence. o Identify the condition, trends, and external (non-project) threats to such services. o Distinguish the beneficiaries of such services. o Assess the extent to which the project depends on or may impact identified services. o Assess the significance of the services in terms of livelihoods, health, safety, and cultural heritage. o Identify the associated key social, operational, financial, regulatory and reputational risks. o Identify courses of action and mitigation measures which can reduce identified risks. 	

Table 1: References to Ecosystem Services in Other IFC Performance Standards

Performance Standard	Paragraph Number	Reference and Relation to Performance Standard 6
1	Paragraph 8/ first bullet	With respect to the definition of the project's area of influence, indirect project impacts on biodiversity or on ecosystem services upon which Affected Communities' livelihoods are dependent are to be accounted for.
4	Paragraph 8	Describes the client's responsibility to take into account the project's potential direct impacts on priority ecosystem services that may result in adverse health and safety impacts to Affected Communities. Ecosystem services are limited to provisioning and regulating services. Client requirements link back to paragraph 25 in Performance Standard 6.
5	Paragraph 1/ footnote 1	Footnote explains that natural resource-based livelihoods are considered " livelihoods " per Performance Standard 5.
	Paragraph 5/ third bullet	Notes that Performance Standard 5 applies when economic displacement caused by project-related restrictions on land use and access to natural resources causes a community (or groups within a community) to lose access to resource usage.
	Paragraph 5/ footnote 9	States that the term " natural resource assets " as referred to in Performance Standard 5 are equivalent to the <i>provisioning ecosystem services</i> terminology of Performance Standard 6.
	Paragraph 27	Describes general client requirements for economically displaced persons who face loss of assets or access to assets, which includes natural resource assets.

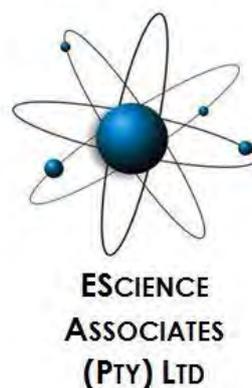
	Paragraph 28/ second bullet	Describes additional client requirements for livelihood restoration for persons whose livelihoods are natural resource-based livelihoods and where there are project-related restrictions on access to natural resources, i.e., these would be considered <i>priority provisioning ecosystem services</i> of relevance to <i>Affected Communities</i> per Performance Standard 6.
7	Paragraph 11/ footnote 5	States that the term “ natural resources and natural areas with cultural value ” as referred to in Performance Standard 7 are equivalent to the provisioning and cultural ecosystem services terminology in Performance Standard 6.
	Paragraph 13/ footnote 6	States that the term “ natural resource assets ” as referred to in Performance Standard 7 is equivalent to the <i>provisioning ecosystem services</i> terminology of Performance Standard 6.
	Paragraph 14	Describes client requirements if the client proposes to locate a project, or commercially develop natural resources on lands traditionally owned by, or under customary use of Indigenous Peoples.
	Paragraph 14/ footnote 9	States that the term “ natural resources and natural areas of importance ” as referred to in Performance Standard 7 is equivalent to <i>priority ecosystem services</i> as defined in Performance Standard 6. This footnote is slightly different than footnote 5 in that it states that where impacts on natural resources and natural areas of importance trigger client requirements in Performance Standard 7, <i>they will be considered priority ecosystem services</i> per Performance Standard 6.
	Paragraph 16/ footnote 13	Describes client requirements with respect to impacts on critical cultural heritage for Indigenous Peoples. Footnote 13 explains that this includes “ natural areas with cultural and/or spiritual value, ” which would be

		considered <i>priority cultural ecosystem services</i> per Performance Standard 6.
8	Paragraph 3	Explains that “ unique natural features or tangible objects that embody cultural values ” (such as sacred groves, rocks, lakes and waterfalls) is covered under Performance Standard 8 (unless these are cultural sites of Indigenous Peoples in which case they are covered under paragraph 16 of Performance Standard 7). “ Unique natural features or tangible objects that embody cultural values ” are equivalent to the <i>cultural ecosystem services</i> terminology used in Performance Standard 6.
	Paragraphs 11 and 12	Describes the client requirements for “ Replicable ” and “ Non-replicable ” cultural heritage. Cultural ecosystem services that meet definition 3(ii) of paragraph 3 in Performance Standard 8 will be covered by the requirements in paragraphs 11 or 12, as appropriate. The definitions of “ Replicable ” and “ Non-replicable ” cultural heritage is provided in footnotes 3 and 5 of Performance Standard 8.
	Paragraph 11/ footnote 4	Describes client requirements for “ Replicable ” cultural heritage and includes the mitigation hierarchy as it applies to Performance Standard 8. These requirements place emphasis on “ maintaining or restoring any ecological processes needed to support (the cultural heritage). ” The “ ecological processes ” term is essentially equivalent to <i>priority regulating ecosystem services</i> as defined in Performance Standard 6.

REVIEW OF THE NEED AND DESIRABILITY OF RENEWABLE ENERGY IN THE INDALO CORRIDOR

Final Draft Report:

INDALO PROTECTED AREA
ECONOMIC IMPACT ASSESSMENT



June 2020

TABLE OF CONTENTS

1. BACKGROUND.....	1
2. STUDY DOMAIN	2
3. INTRODUCTION TO ECONOMIC MULTIPLIERS.....	4
4. MULTIPLIER ANALYSIS AND COMPARISON.....	6
5. CONCLUSION.....	14
APPENDIX A: A STUDY OF THE CONSERVATION, ECONOMIC AND SOCIAL ACTIVITIES OF INDALO PRIVATE GAME RESERVES.....	16

INDEX OF FIGURES

FIGURE 2-1: MAKANA, NDLAMBE AND SUNDAYS RIVER VALLEY MUNICIPAL DISTRICTS IN THE EASTERN CAPE.....	2
FIGURE 2-2: MAKANA LM ECONOMIC ACTIVITY	3
FIGURE 2-3: NDLAMBE LM ECONOMIC ACTIVITY	3
FIGURE 2-4: SUNDAY’S RIVER VALLEY LM ECONOMIC ACTIVITY	4

INDEX OF TABLES

TABLE 4-1: MULTIPLIERS OBTAINED FOR DR BEYERS NAUDÉ (EC101) MUNICIPALITY	6
TABLE 4-2: MULTIPLIERS OBTAINED FOR BLUE CRANE ROUTE (AC102) MUNICIPALITY	6
TABLE 4-3: MULTIPLIERS OBTAINED FOR MAKANA (EC104) MUNICIPALITY	7
TABLE 4-4: MULTIPLIERS OBTAINED FOR NDLAMBE (EC105) MUNICIPALITY	7
TABLE 4-5: MULTIPLIERS OBTAINED FOR SUNDAYS RIVER VALLEY (EC106) MUNICIPALITY.....	8
TABLE 4-6: MULTIPLIERS OBTAINED FOR KOUGA (EC108) MUNICIPALITY.....	8
TABLE 4-7: MULTIPLIERS OBTAINED FOR KOU-KAMMA (EC109) MUNICIPALITY	9
TABLE 4-8: MULTIPLIERS OBTAINED FOR SARAH BAARTMAN DISTRICT (DC10) MUNICIPALITY.....	9
TABLE 4-9: MULTIPLIERS OBTAINED FOR EASTERN CAPE (EC) PROVINCE.....	10
TABLE 4-10: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – DR BEYERS NAUDÉ	11
TABLE 4-11: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – BLUE CRANE ROUTE.....	11
TABLE 4-12: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – MAKANA	11
TABLE 4-13: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – NDLAMBE	12
TABLE 4-14: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – SUNDAYS RIVER VALLEY.....	12
TABLE 4-15: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – KOUGA.....	12
TABLE 4-16: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – KOU-KAMMA	13
TABLE 4-17: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – SARAH BAARTMAN DISTRICT.....	13
TABLE 4-18: COMPARATIVE SIMPLE AND TOTAL MULTIPLIERS FOR THE VARIOUS SECTORS – EASTERN CAPE PROVINCE	13

1. BACKGROUND

- 1.1 The following excerpts from a recent study by Rhodes University¹ summarise the situation at Indalo, the EC Private Game Reserve Association:

“Indalo was established separately from its members as a forum to discuss conservation of land and related social issues. In 2018 Indalo – an area of 70 000ha - was recognized and registered by the Department of Environmental Affairs in terms of its “National Protected Area Expansion Strategy for South Africa”, a 20-year plan to expand protected areas in South Africa to better represent the variety of ecosystems in the country. In that capacity Indalo contributes to the national plan in several bio-zones including Albany thicket and Nama Karoo, both of which are designated as either poorly or not protected. Indalo further contributing to the development of a sustainable South African tourist industry through their marketing activities, job creation and skills development, and value added to GDP.”

The main focus of Indalo Protected Area and Private Game Reserves (PGRs) *“is nature and wildlife tourism – especially the ‘big five’ - supported by the provision of accommodation, together averaging 90% of Gross Income. Tourists increased from 55 000 in 2014 to more than 72 000 in 2018. Indalo members employed 1 513 staff compared to 1 133 in 2008, which constituted a growth of 19% over the period. In addition, education levels of employees had improved with 52% having completed Grade 12 and above compared to 45% a decade earlier.”*

“The main concerns expressed by reserves regarding their medium and long-term sustainability was a very large increase in security and anti-poaching measures at great expense. Important obstacles faced in the foreseeable future include the ability to maintain tourism levels in the light of local and global uncertainties, the government’s attitude and lack of support towards tourism, land expropriation legislation, crime levels, political insecurity, rhino poaching, and the spill-over of projects, such as wind energy facilities and the possibility of mining.”

- 1.2 As indicated above, the Eastern Cape region, where Indalo PGRs are located, is well suited for the establishment of wind energy generation activity. The Indalo sense-of-place study and potential impact to tourism experience as a result of wind energy development, in particular, is concerning to Indalo members, as the wind turbines would be visible from many of the secluded sites where wildlife are observed, by well-to-do tourists who pay a premium for nature and wildlife tourism experience. It is conjectured that the visual impact of wind turbines by day, and their red navigation warning lights at night, will degrade the environmental goods and services offered by Indalo (as well as neighbouring National Parks and Provincial Reserves) through impact to sense of place associated with wilderness character (and limited human development), to the extent that nature and wildlife tourism will suffer as a result of the intrusive nature of modern energy generation technology (which is likely to be viewed as out of place).

¹ Rhodes University (2019), A study of the conservation, economic and social activities of Indalo Private Game Reserves in the Eastern Cape. Page 1

- 1.3 It is recognised that wind energy facilities may impact the economic viability of the private game reserves and game farms, but that the Indalo private game reserves and other game farms (focusses on nature and wildlife tourism that relies on the wilderness character of the reserves and their surrounding area) will not affect the wind energy development establishment.
- 1.4 An economic assessment was undertaken to quantify and to contrast the socio-economic contributions of that wind energy facilities (WEF) and that of the nature and wildlife tourism enterprises of Indalo PGRs.
- 1.5 Since WEFs generation capacity is slightly more than 80% of total generation capacity in the Eastern Cape, WEFs will be categorised as an economic sector for the purpose of this investigation. In a similar manner due to the dominant role of PGRs and game farms they will be considered to represent a tourism sector.

2. STUDY DOMAIN

- 2.1 The Indalo PGRs are principally located in the Makana, Ndlambe and Sundays River Valley municipal districts in the Eastern Cape (Figure 2-1).

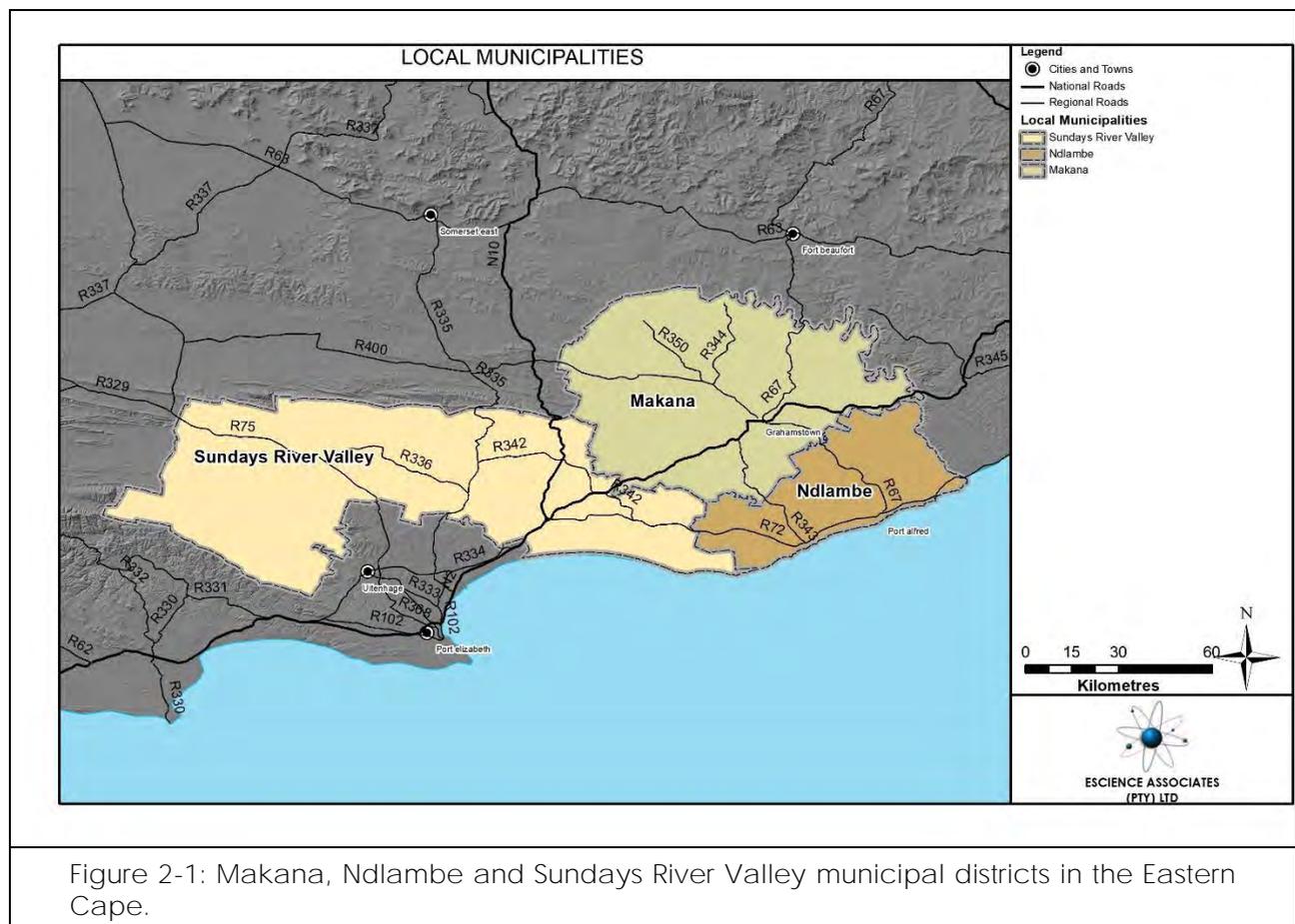


Figure 2-1: Makana, Ndlambe and Sundays River Valley municipal districts in the Eastern Cape.

- 2.2 The particular impact of electricity generation and nature and wildlife-tourism are considered in the economic impact assessment on these regions.
- 2.3 The predominant economic activity drivers for the 3 LMs are shown in Figure 2-2 - Figure 2-4.

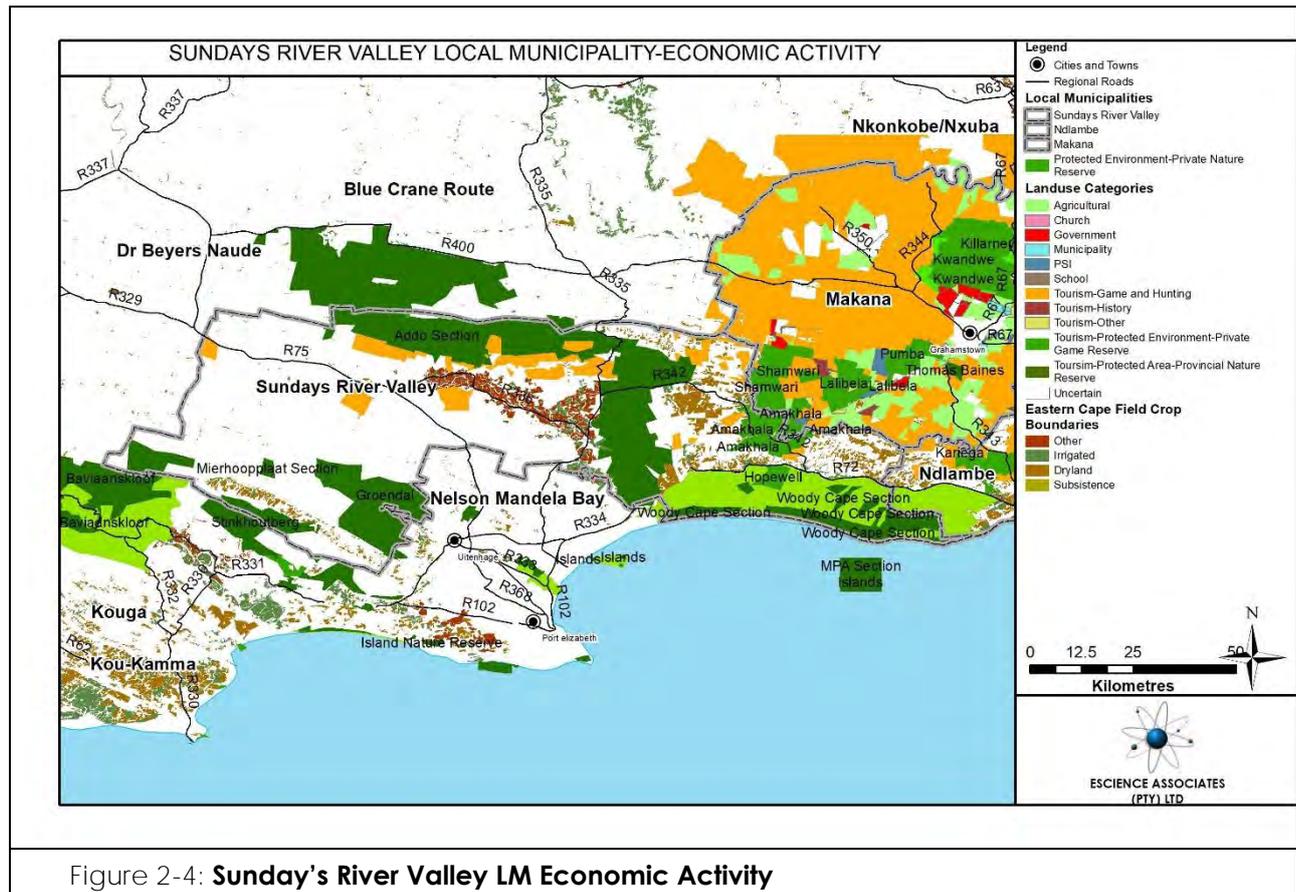


Figure 2-4: Sunday's River Valley LM Economic Activity

3. INTRODUCTION TO ECONOMIC MULTIPLIERS

- 3.1 The economic multipliers used in this assessment are based on input-output tables (IOTs) developed by Quantec and verified by comparison against Quantec's own assessment of comparable set of multipliers similarly derived. In order to derive meaningful multipliers at municipal district levels, the IOTs need to be specified at the required low-level granularity, which was produced by Quantec.
- 3.2 The IOT multipliers reflect the economy of the year 2018.
- 3.3 Multipliers for the intraregional impact, as well as the impact on the rest of South Africa, were generated. The fact that both the region and the rest of South Africa are available reflect the provision for the transfer of goods and services across regional borders.
- 3.4 A variety of multiplier types are available, notably those which relate to economic output, GDP (or GVA), employment and employee compensation. The latter is seen as a sub-section of the household income indicators.
- 3.5 The sectors considered for this analysis are recorded in the IOTs as "electricity and gas" for wind electricity generation, and a weighted blend of the "agriculture", "catering and accommodation services" and "transport and storage" sectors, which in combination constitutes the services offered by the Indalo private game reserves and other game farms in the region.
- 3.6 Multipliers are useful when considering the marginal benefit that one monetary unit (say R1m) invested in a particular sector in a specific region would generate in the region, as well as in the aggregated national economy. For example, a R1m investment in the final demand for tourism services in Makana will generate more

than R1m in the total economic output in Makana and South Africa. Since all industries are linked by way of intermediate consumption of goods and services, an investment in the services produced by the Makana PGR sector will stimulate not only the PGR sector but also those sectors that supply goods and services to the PGR sector. The result is then one that has multiple impacts on a wide range of sectors in the economy. The R1m investment in tourism services, therefore, has a multiplied impact on the regional and aggregate economic domains. Say, for example, that a multiplier 1,63 exists for the Makana PGR sector, then the R1m investment would generate another R1,63m to be added to the R1m investment, to yield a total economic output of R2,63m.

- 3.7 Multipliers can also be applied in the inverse argument where if a disinvestment needs to be applied in a specific sector, the disinvestment impact would also be multiplied in the regional and aggregate economies.
- 3.8 Given a budget of R1m to be invested, it would be best applied in the sector with the highest multiplier.
- 3.9 Multipliers traditionally reflect direct, indirect and induced impacts for investment (or disinvestment). The direct impact is what is normally directly generated by any economic initiative, while the indirect impacts are achieved through the interactive dependencies between the various economic sectors. The induced impact allows for the inclusion of household compensation in the multiplier estimation of economic output, as household demand for products and services is directly affected by compensation, which leads to the stimulation of economic output beyond that provided by the "indirect" interactive dependencies between the various economic sectors.
- 3.10 The multipliers that incorporate direct and indirect effects are described as simple multipliers. When direct, indirect and induced effects are captured, they are often referred to as total multipliers.
- 3.11 The methodology followed in this investigation is to compare the socio-economic multipliers for GPRs and WEFs individually to that of the Agriculture industry. This will demonstrate the value added (or destructed) by such sectors to the traditional contributions of agriculture. The individual contributions of PGRs and WEFs will thus be quantified for comparison to one another.

4. MULTIPLIER ANALYSIS AND COMPARISON

4.1 The following multipliers have been obtained for the various regional municipalities in the Sarah Baartman district, as well as for the Eastern Cape Province:

Table 4-1: Multipliers obtained for Dr Beyers Naudé (EC101) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.379	1.415	1.322	1.389	1.423	1.325
	Indirect	0.334	0.416	0.225	0.356	0.435	0.238
	Induced	0.915	1.152	1.022	0.973	1.214	1.071
GVA	Direct	0.572	0.591	0.731	0.576	0.594	0.733
	Indirect	0.116	0.145	0.082	0.125	0.153	0.088
	Induced	0.229	0.289	0.256	0.274	0.342	0.302
GDP	Direct	0.627	0.666	0.764	0.632	0.670	0.766
	Indirect	0.128	0.160	0.093	0.139	0.169	0.099
	Induced	0.255	0.321	0.285	0.304	0.379	0.334
Compensation	Direct	0.172	0.217	0.213	0.174	0.219	0.214
	Indirect	0.050	0.063	0.036	0.055	0.066	0.038
	Induced	0.102	0.129	0.114	0.131	0.164	0.145
Employment	Direct	8.968	6.197	0.767	9.058	6.253	0.775
	Indirect	1.067	1.089	0.435	1.199	1.182	0.487
	Induced	1.290	1.680	1.781	1.122	1.370	1.399

All figures in table include initial impacts

Table 4-2: Multipliers obtained for Blue Crane Route (AC102) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.378	1.421	1.330	1.391	1.425	1.332
	Indirect	0.218	0.358	0.197	0.229	0.363	0.199
	Induced	0.813	1.051	0.926	0.900	1.146	1.005
GVA	Direct	0.616	0.610	0.759	0.622	0.612	0.759
	Indirect	0.092	0.142	0.082	0.097	0.144	0.083
	Induced	0.220	0.285	0.251	0.253	0.322	0.282
GDP	Direct	0.677	0.689	0.792	0.683	0.691	0.793
	Indirect	0.103	0.160	0.092	0.108	0.162	0.093
	Induced	0.246	0.319	0.281	0.280	0.356	0.313
Compensation	Direct	0.174	0.213	0.206	0.177	0.214	0.206
	Indirect	0.033	0.055	0.030	0.035	0.056	0.030
	Induced	0.088	0.114	0.100	0.121	0.154	0.135
Employment	Direct	7.164	5.214	0.685	7.183	5.224	0.686
	Indirect	0.291	0.371	0.256	0.307	0.381	0.259
	Induced	0.727	0.882	0.828	1.128	1.351	1.260

All figures in table include initial impacts

Table 4-3: Multipliers obtained for Makana (EC104) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.341	1.390	1.317	1.344	1.398	1.323
	Indirect	0.200	0.298	0.239	0.206	0.306	0.245
	Induced	0.710	0.962	0.960	0.799	1.084	1.079
GVA	Direct	0.558	0.575	0.722	0.560	0.578	0.725
	Indirect	0.076	0.102	0.078	0.079	0.105	0.081
	Induced	0.176	0.239	0.238	0.224	0.304	0.302
GDP	Direct	0.631	0.668	0.757	0.632	0.671	0.760
	Indirect	0.087	0.119	0.092	0.090	0.123	0.094
	Induced	0.200	0.271	0.271	0.248	0.337	0.335
Compensation	Direct	0.160	0.211	0.217	0.161	0.212	0.218
	Indirect	0.028	0.043	0.037	0.029	0.045	0.038
	Induced	0.078	0.105	0.105	0.106	0.144	0.143
Employment	Direct	8.180	5.757	0.791	8.184	5.765	0.793
	Indirect	0.822	0.816	0.406	0.830	0.827	0.413
	Induced	1.312	1.648	1.774	1.020	1.283	1.377

All figures in table include initial impacts

Table 4-4: Multipliers obtained for Ndlambe (EC105) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.301	1.389	1.324	1.331	1.412	1.331
	Indirect	0.310	0.387	0.253	0.335	0.409	0.262
	Induced	0.994	1.243	1.200	0.966	1.186	1.119
GVA	Direct	0.530	0.558	0.737	0.544	0.569	0.740
	Indirect	0.095	0.118	0.081	0.106	0.127	0.085
	Induced	0.198	0.247	0.239	0.272	0.333	0.314
GDP	Direct	0.597	0.641	0.767	0.613	0.653	0.770
	Indirect	0.109	0.137	0.094	0.121	0.148	0.098
	Induced	0.226	0.283	0.273	0.301	0.369	0.348
Compensation	Direct	0.171	0.213	0.222	0.177	0.218	0.223
	Indirect	0.044	0.055	0.037	0.049	0.060	0.039
	Induced	0.096	0.120	0.116	0.131	0.160	0.151
Employment	Direct	5.894	4.583	0.790	5.942	4.621	0.795
	Indirect	0.496	0.615	0.442	0.535	0.651	0.455
	Induced	1.037	1.225	1.251	1.203	1.401	1.393

All figures in table include initial impacts

Table 4-5: Multipliers obtained for Sundays River Valley (EC106) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.403	1.417	1.328	1.448	1.439	1.333
	Indirect	0.661	0.572	0.285	0.714	0.602	0.292
	Induced	1.039	1.196	1.093	1.101	1.214	1.078
GVA	Direct	0.543	0.577	0.738	0.565	0.587	0.740
	Indirect	0.215	0.196	0.109	0.239	0.209	0.112
	Induced	0.259	0.299	0.273	0.311	0.343	0.305
GDP	Direct	0.576	0.640	0.765	0.600	0.652	0.768
	Indirect	0.222	0.203	0.115	0.248	0.218	0.118
	Induced	0.279	0.321	0.293	0.344	0.380	0.337
Compensation	Direct	0.163	0.210	0.218	0.172	0.215	0.218
	Indirect	0.076	0.064	0.033	0.086	0.070	0.034
	Induced	0.103	0.119	0.109	0.150	0.165	0.146
Employment	Direct	7.096	5.225	0.876	7.175	5.272	0.878
	Indirect	0.967	0.791	0.267	1.056	0.852	0.278
	Induced	1.040	1.154	1.094	1.376	1.479	1.347

All figures in table include initial impacts

Table 4-6: Multipliers obtained for Kouga (EC108) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.318	1.400	1.315	1.367	1.422	1.324
	Indirect	0.321	0.393	0.248	0.363	0.418	0.258
	Induced	0.916	1.196	1.135	0.986	1.226	1.142
GVA	Direct	0.531	0.568	0.717	0.552	0.577	0.722
	Indirect	0.103	0.123	0.075	0.121	0.133	0.080
	Induced	0.218	0.285	0.271	0.277	0.345	0.321
GDP	Direct	0.590	0.645	0.749	0.613	0.656	0.755
	Indirect	0.116	0.141	0.087	0.136	0.152	0.092
	Induced	0.243	0.317	0.301	0.307	0.382	0.356
Compensation	Direct	0.166	0.219	0.227	0.175	0.224	0.228
	Indirect	0.049	0.060	0.039	0.057	0.065	0.041
	Induced	0.105	0.137	0.130	0.132	0.165	0.153
Employment	Direct	7.417	5.320	0.760	7.485	5.361	0.762
	Indirect	0.549	0.636	0.374	0.612	0.680	0.386
	Induced	1.070	1.307	1.327	1.236	1.455	1.432

All figures in table include initial impacts

Table 4-7: Multipliers obtained for Kou-Kamma (EC109) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.325	1.375	1.321	1.386	1.406	1.338
	Indirect	0.234	0.300	0.225	0.316	0.350	0.261
	Induced	0.695	0.986	0.960	0.893	1.165	1.113
GVA	Direct	0.540	0.581	0.731	0.568	0.594	0.740
	Indirect	0.091	0.120	0.079	0.128	0.142	0.095
	Induced	0.180	0.255	0.249	0.252	0.329	0.314
GDP	Direct	0.594	0.662	0.758	0.624	0.677	0.768
	Indirect	0.099	0.132	0.091	0.139	0.157	0.108
	Induced	0.199	0.282	0.275	0.279	0.364	0.348
Compensation	Direct	0.151	0.212	0.217	0.162	0.218	0.220
	Indirect	0.032	0.046	0.035	0.048	0.056	0.042
	Induced	0.078	0.110	0.107	0.121	0.158	0.151
Employment	Direct	8.968	6.197	0.767	9.058	6.253	0.775
	Indirect	1.067	1.089	0.435	1.199	1.182	0.487
	Induced	1.290	1.680	1.781	1.122	1.370	1.399

All figures in table include initial impacts

Table 4-8: Multipliers obtained for Sarah Baartman District (DC10) municipality

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.221	1.331	1.299	1.389	1.419	1.328
	Indirect	0.136	0.191	0.179	0.290	0.298	0.223
	Induced	0.624	0.878	0.893	1.009	1.201	1.114
GVA	Direct	0.506	0.585	0.733	0.580	0.623	0.748
	Indirect	0.058	0.078	0.069	0.125	0.123	0.089
	Induced	0.168	0.237	0.241	0.285	0.339	0.314
GDP	Direct	0.557	0.662	0.762	0.638	0.704	0.779
	Indirect	0.064	0.087	0.078	0.138	0.138	0.099
	Induced	0.186	0.262	0.266	0.315	0.375	0.348
Compensation	Direct	0.150	0.212	0.218	0.183	0.229	0.223
	Indirect	0.024	0.033	0.031	0.055	0.054	0.039
	Induced	0.075	0.105	0.107	0.136	0.162	0.150
Employment	Direct	7.224	5.593	0.781	7.468	5.746	0.790
	Indirect	0.416	0.454	0.316	0.657	0.636	0.370
	Induced	1.082	1.400	1.548	1.272	1.447	1.403

All figures in table include initial impacts

Table 4-9: Multipliers obtained for Eastern Cape (EC) Province

		Regional			RSA		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	Direct	1.327	1.324	1.268	1.349	1.393	1.321
	Indirect	0.180	0.178	0.128	0.244	0.282	0.202
	Induced	0.761	0.901	0.856	0.985	1.228	1.135
GVA	Direct	0.560	0.580	0.722	0.569	0.607	0.752
	Indirect	0.078	0.076	0.055	0.105	0.120	0.088
	Induced	0.202	0.239	0.227	0.278	0.347	0.321
GDP	Direct	0.627	0.668	0.752	0.637	0.699	0.783
	Indirect	0.087	0.086	0.062	0.117	0.135	0.098
	Induced	0.225	0.266	0.253	0.308	0.384	0.355
Compensation	Direct	0.179	0.221	0.219	0.182	0.233	0.228
	Indirect	0.037	0.035	0.025	0.049	0.055	0.039
	Induced	0.097	0.115	0.109	0.134	0.167	0.154
Employment	Direct	6.567	4.674	0.608	6.608	4.735	0.621
	Indirect	0.272	0.260	0.171	0.361	0.393	0.261
	Induced	0.878	0.996	0.988	1.232	1.452	1.420

All figures in table include initial impacts

- 4.2 The multiplier sets can be rearranged to reflect the agricultural sector as reference, in order to demonstrate potential value added by tourism and electricity generation, if agricultural land is to be utilized for industrial use.
- 4.3 The comparative simple and total multipliers for the various sectors in the regions are provided in the following tables:

Table 4-10: Comparative simple and total multipliers for the various sectors – Dr Beyers Naudé

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.713	1.831	1.547	1.745	1.858	1.563
	D+I+I	2.628	2.982	2.569	2.717	3.072	2.634
GVA	D+I	0.688	0.735	0.813	0.701	0.747	0.821
	D+I+I	0.917	1.024	1.070	0.976	1.089	1.123
GDP	D+I	0.755	0.827	0.857	0.770	0.839	0.865
	D+I+I	1.010	1.147	1.141	1.074	1.218	1.199
Compensation	D+I	0.223	0.280	0.249	0.229	0.285	0.252
	D+I+I	0.325	0.409	0.363	0.360	0.449	0.396
Employment	D+I	10.035	7.286	1.203	10.257	7.435	1.262
	D+I+I	11.324	8.966	2.984	11.379	8.805	2.661

Table 4-11: Comparative simple and total multipliers for the various sectors – Blue Crane Route

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.597	1.779	1.527	1.620	1.788	1.531
	D+I+I	2.410	2.830	2.453	2.520	2.934	2.536
GVA	D+I	0.709	0.752	0.840	0.719	0.755	0.842
	D+I+I	0.929	1.036	1.091	0.972	1.077	1.125
GDP	D+I	0.780	0.848	0.884	0.792	0.852	0.886
	D+I+I	1.027	1.167	1.165	1.071	1.209	1.198
Compensation	D+I	0.207	0.268	0.236	0.212	0.270	0.237
	D+I+I	0.296	0.382	0.337	0.333	0.424	0.372
Employment	D+I	7.455	5.586	0.942	7.491	5.605	0.945
	D+I+I	8.182	6.467	1.770	8.619	6.956	2.206

Table 4-12: Comparative simple and total multipliers for the various sectors – Makana

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.541	1.688	1.556	1.550	1.703	1.568
	D+I+I	2.251	2.650	2.516	2.350	2.787	2.646
GVA	D+I	0.634	0.677	0.800	0.639	0.684	0.806
	D+I+I	0.811	0.916	1.038	0.863	0.988	1.108
GDP	D+I	0.718	0.786	0.848	0.722	0.794	0.854
	D+I+I	0.918	1.058	1.119	0.971	1.131	1.190
Compensation	D+I	0.188	0.254	0.254	0.190	0.257	0.256
	D+I+I	0.266	0.360	0.359	0.295	0.401	0.399
Employment	D+I	9.002	6.574	1.197	9.014	6.592	1.206
	D+I+I	10.314	8.222	2.971	10.034	7.875	2.583

Table 4-13: Comparative simple and total multipliers for the various sectors – Ndlambe

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.611	1.775	1.577	1.666	1.822	1.593
	D+I+I	2.605	3.018	2.777	2.632	3.007	2.712
GVA	D+I	0.625	0.676	0.818	0.650	0.696	0.825
	D+I+I	0.823	0.923	1.057	0.922	1.029	1.139
GDP	D+I	0.706	0.778	0.861	0.734	0.801	0.869
	D+I+I	0.932	1.061	1.134	1.035	1.170	1.217
Compensation	D+I	0.215	0.268	0.259	0.226	0.278	0.262
	D+I+I	0.310	0.388	0.375	0.357	0.438	0.413
Employment	D+I	6.390	5.198	1.233	6.477	5.273	1.250
	D+I+I	7.427	6.422	2.484	7.681	6.674	2.643

Table 4-14: Comparative simple and total multipliers for the various sectors – Sundays River Valley

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	2.064	1.988	1.613	2.162	2.041	1.625
	D+I+I	3.103	3.185	2.706	3.263	3.255	2.703
GVA	D+I	0.759	0.773	0.847	0.804	0.796	0.852
	D+I+I	1.018	1.071	1.119	1.116	1.140	1.157
GDP	D+I	0.798	0.843	0.880	0.848	0.869	0.886
	D+I+I	1.077	1.164	1.173	1.193	1.249	1.223
Compensation	D+I	0.238	0.274	0.251	0.258	0.285	0.253
	D+I+I	0.342	0.393	0.359	0.408	0.450	0.399
Employment	D+I	8.063	6.016	1.143	8.231	6.124	1.156
	D+I+I	9.103	7.170	2.237	9.608	7.603	2.503

Table 4-15: Comparative simple and total multipliers for the various sectors – Kouga

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.639	1.794	1.563	1.730	1.840	1.582
	D+I+I	2.555	2.990	2.699	2.715	3.066	2.724
GVA	D+I	0.634	0.691	0.793	0.673	0.711	0.802
	D+I+I	0.852	0.976	1.063	0.950	1.056	1.123
GDP	D+I	0.706	0.786	0.837	0.749	0.808	0.846
	D+I+I	0.949	1.104	1.138	1.056	1.190	1.202
Compensation	D+I	0.214	0.280	0.266	0.232	0.289	0.269
	D+I+I	0.319	0.417	0.396	0.365	0.453	0.422
Employment	D+I	7.967	5.956	1.134	8.097	6.040	1.149
	D+I+I	9.037	7.263	2.461	9.333	7.495	2.581

Table 4-16: Comparative simple and total multipliers for the various sectors – Kou-Kamma

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.559	1.675	1.545	1.703	1.756	1.599
	D+I+I	2.254	2.661	2.506	2.595	2.920	2.712
GVA	D+I	0.632	0.701	0.810	0.696	0.736	0.835
	D+I+I	0.812	0.956	1.059	0.948	1.065	1.150
GDP	D+I	0.693	0.795	0.849	0.764	0.834	0.876
	D+I+I	0.892	1.077	1.124	1.043	1.198	1.224
Compensation	D+I	0.182	0.258	0.252	0.210	0.274	0.261
	D+I+I	0.260	0.368	0.359	0.331	0.431	0.412
Employment	D+I	10.035	7.286	1.203	10.257	7.435	1.262
	D+I+I	11.324	8.966	2.984	11.379	8.805	2.661

Table 4-17: Comparative simple and total multipliers for the various sectors – Sarah Baartman District

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.357	1.522	1.477	1.679	1.717	1.551
	D+I+I	1.982	2.400	2.370	2.689	2.918	2.665
GVA	D+I	0.564	0.663	0.802	0.705	0.747	0.837
	D+I+I	0.733	0.900	1.043	0.989	1.086	1.151
GDP	D+I	0.621	0.749	0.841	0.776	0.842	0.878
	D+I+I	0.807	1.010	1.107	1.091	1.217	1.226
Compensation	D+I	0.174	0.245	0.249	0.238	0.283	0.262
	D+I+I	0.249	0.350	0.356	0.374	0.445	0.412
Employment	D+I	7.640	6.047	1.097	8.126	6.382	1.161
	D+I+I	8.722	7.447	2.645	9.397	7.829	2.564

Table 4-18: Comparative simple and total multipliers for the various sectors – Eastern Cape Province

		Regional multipliers			RSA multipliers		
		Agriculture	PGR	WEF	Agriculture	PGR	WEF
Output	D+I	1.507	1.503	1.395	1.593	1.675	1.523
	D+I+I	2.268	2.404	2.251	2.578	2.902	2.658
GVA	D+I	0.638	0.656	0.777	0.674	0.727	0.840
	D+I+I	0.840	0.895	1.004	0.952	1.074	1.161
GDP	D+I	0.715	0.754	0.813	0.754	0.834	0.881
	D+I+I	0.939	1.020	1.066	1.062	1.218	1.236
Compensation	D+I	0.216	0.256	0.243	0.231	0.288	0.266
	D+I+I	0.313	0.371	0.352	0.365	0.455	0.421
Employment	D+I	6.839	4.935	0.779	6.969	5.129	0.882
	D+I+I	7.717	5.930	1.767	8.201	6.581	2.302

- 4.4 Note that “D + I” indicates the simple multiplier obtained by adding the direct and indirect multipliers, while “D + I + I” denotes the total multipliers consisting of direct plus indirect plus induced impacts. The most comprehensive socio-economic view is provided by the total (“D + I + I”) multipliers as it incorporates the compensation and spending of households to supplement the intermediate consumption of industrial sectors. All comments in the remainder of this report refer to total multiplier impacts.
- 4.5 It is quite evident from the above that a marginal investment in agriculture offers the best option in terms of employment generation, but it would contribute less to GDP and compensation than what could be achieved from WEFs and PGRs.
- 4.6 An analysis of variance (ANOVA) estimation of PGR vs. WEF performance for the various socio-economic factors in the various municipalities elucidates the following comparison of PGRs and WEFs in the Sarah Baartman district:
- 4.6.1 WEFs perform significantly better than PGRs in terms of gross value addition – on average by ~9%.
- 4.6.2 In terms of GDP, WEFs and PGRs appear to yield similar outcomes. It is quite feasible to conclude that the differences between the two sectors are within the observational error and that it cannot be construed as significant. The ANOVA analysis corroborates this view as it yields a statistical p-value of 0,24 which indicates a high probability of erroneously rejecting a null hypothesis of no difference between the WEF and PGR outcomes.
- 4.6.3 In terms of compensation, PGRs might be seen as performing marginally better than WEFs, at a level of ~6%. However, the ANOVA analysis indicates no statistical significance between the compensation levels of WEFs and PGRs (statistical p-value of 0.19)
- 4.6.4 In terms of employment, PGRs perform almost three times better than WEFs. This is noteworthy in areas such as the noted municipal districts, where unemployment is especially rife. In this instance the ANOVA analysis supports the conclusion that employment levels differ significantly between WEFs and PGRs. However, it is noted that the deployment of neither PGRs, nor WEFs, are expected to put extensive agricultural job creation in peril – extensive agricultural jobs has typically been incorporated /transferred to PGR activity, while WEFs typically co-exist with extensive farming activities without impacting agricultural jobs.

5. CONCLUSION

- 5.1 The main economic concern of the Protected Area and Private Game Reserves (as well as potential Protected Area expansion) is the potential devaluation of their tourism offering if wind energy facilities (or any other highly intrusive developments) are allowed to encroach on the Indalo Protected Area environmental goods and service offerings.
- 5.2 Although nature and wildlife tourism services and products don't constitute the entire tourism product of the of Sundays River, Ndlambe and Makana, it contributes the majority of tourism products and services (and a large part of this is from Protected Area environmental goods and services, principally from Addo National Park, Indalo Protected Area and Great Fish Provincial Nature Reserve).
- 5.3 Degradation of the environmental goods and services upon which tourism is based would imply a certain “disinvestment” in the nature and wildlife sub-sector for the

- respective regions, the province and even on a national scale. Accordingly, due consideration is to be afforded to the biodiversity stewardship that nature and wildlife tourism affords the national estate.
- 5.4 The socio-economic assessment indicates that there is in terms of GDP no significant economic difference between WEFs and PGRs – they would contribute equally to the wealth of the region and to the South African economic domain. Investment in either sector would yield an economic improvement if it is to displace extensive agriculture. It is not clear if this statement would also be applicable for the potential case of intensive agriculture displacement as the agriculture multipliers reflect agriculture in general. It is however unlikely that nature and wildlife tourism typical of PGRs will displace intensive agriculture as it requires a natural environment and wilderness setting. This is in contrast with WEFs which could co-exist with intensive agriculture (and an optimal combination would seem to combine WEFs with intensive agriculture and to combine PGRs with a natural environment and wilderness setting).
 - 5.5 Although the WEF contribution to GVA is notably higher than that of the PGRs, the difference disappears when production taxes and subsidies are incorporated to derive the comprehensive (GDP) view on the economy.
 - 5.6 There is no significant difference between the labour compensation contributions of the WEF and PGR sectors.
 - 5.7 From an employment point of view, it would be distinctly better to promote PGRs than to deploy WEFs. Investment in PGRs would generate about three times as many employment opportunities than WEFs. The “disinvestment” argument is equally applicable, i.e. if PGRs should be devalued by the choice to deploy WEFs, it could lead to a significant reduction in net direct, indirect and induced employment in the region.
 - 5.8 A compromise between PGR and WEF development (investment) could be a desirable solution. It might be opportune to consider the deployment of PV technology rather than wind energy facilities, as this has a lower impact on the wilderness character of the region. Alternatively, if the WEFs could be deployed sufficiently distant from nature and wildlife tourism, so as to avoid impacting the wilderness character and its tourism value. Combined land use, that does not imply a reduction in environmental goods and services (or quality of environmental goods and services), should ideally be pursued.

APPENDIX A: A STUDY OF THE CONSERVATION, ECONOMIC AND SOCIAL ACTIVITIES OF INDALO PRIVATE GAME RESERVES

A study of the conservation, economic and social
activities of Indalo Private Game Reserves in the
Eastern Cape.

Commissioned by:

Indalo

The Eastern Cape Private Nature Reservation Association

August 2019

G. G. Antrobus and J.D. Snowball

Department of Economics and Economic History
Rhodes University
Grahamstown

A study of the conservation, economic and social activities of Indalo Private Game Reserves in the Eastern Cape

The present study is a follow-up on a 2008 report previously commissioned by Indalo, an association of Private Game Reserves (PGRs). Responses were received from its ten members in the form of a self-completion questionnaire and a limited number of face-to-face interviews with Reserve Managers.

The reserves range in size from less than 700ha to close on 30 000ha, which on average incorporated eight smaller properties. Indalo reserves were established between 1999 and 2007, nine of which had opened by 2004. Indalo Private Game Reserve Association was established separately from its members as a forum to discuss conservation of land and related social issues. In 2018 Indalo – an area of 70 000ha - was recognized and registered by the Department of Environmental Affairs in terms of its “National Protected Area Expansion Strategy for South Africa”, a 20-year plan to expand protected areas in South Africa to better represent the variety of ecosystems in the country. In that capacity Indalo contributes to the national plan in several bio-zones including Albany thicket and Nama Karoo, both of which are designated as either poorly or not protected. Indalo further contributing to the development of a sustainable South African tourist industry through their marketing activities, job creation and skills development, and value added to GDP.

The main focus of Indalo Private Game Reserves (PGRs) is wildlife tourism – especially the ‘big five - supported by the provision of accommodation, together averaging 90% of Gross Income. Tourists increased from 55 000 in 2014 to more than 72 000 in 2018. Indalo members employed 1 513 staff compared to 1 133 in 2008, which constituted a growth of 19% over the period. In addition, education levels of employees had improved with 52% having completed Grade 12 and above compared to 45% a decade earlier.

Significant community engagement is a feature of all the PGRs with several Foundations taking the lead on behalf of reserves. Community engagement at a local level has been achieved, for example, through the training in health care, skills training in finances, hospitality, parenting and leadership, and in assistance with providing computer skills, bursaries and the like at local primary schools.

Conservation plans that reserves are implementing and intend to continue include reserve management issues in its broadest sense in managing vegetation and wildlife in conformance of carrying capacity, collection of data for action based on evidence, mapping and removal of aliens and greater attention to water systems.

The main concerns expressed by reserves regarding their medium and long term sustainability was a very large increase in security and anti-poaching measures at great expense. Important obstacles faced in the foreseeable future include the ability to maintain tourism levels in the light of local and global uncertainties, the government’s attitude and lack of support towards tourism, land expropriation legislation, crime levels, political insecurity, rhino poaching, and the spill-over of projects, such as wind farms and the possibility of mining.

A study of the conservation, economic and social activities of Indalo Private Game Reserves in the Eastern Cape
G.G. Antrobus and J.D. Snowball

Table of Contents

		Page
1	The aims of the research and the methods used	4
2.	Indalo Private Game Reserve Association	5
3.	Indalo and the National Protected Area Expansion Strategy for South Africa	6
4.	The contribution of tourism to South Africa	10
5	Description of Indalo Private Game Reserves	12
6	The main focus of Indalo PGRs: wildlife tourism	13
	- Game, plants and birds	15
	- Accommodation	15
	-Visitors: Tourist origins	16
7	Income Generating Activities	17
8	Employment and Age profile	18
	- Experience in Sourcing staff	19
	-Staff health	20
9	Community Engagement	20
10	Future Plans	22
	Challenges faced by Reserves	24
	Code of Ethics	25
11	Policy issues: Current needs and future support	26
	- Challenges in PGR establishment	26
	- Current sustainability challenges	26
	- Received and desired external support	26
	- Government actions for sustainability	27
12	Conclusions	28
	List of references	29

1. The aims of the research and the methods used

This report was commissioned by Indalo members with the aims of:

- Providing useful comparative information on the ecotourism products offered, conservation management, financial and economic issues and social and community interaction of members, while keeping the individual results would remain confidential; and
- Updating of, and comparison with, the 2008 study

Research methods included:

- Initial interaction was with Messrs. Dale and Neale Howarth, to discuss the project; and Mr Neale Howarth, project leader, who examined and approved the proposed questionnaire and oversaw the distribution of these to members of Indalo.
- The self-completion questionnaires were returned by all members, on which the following report is based together with comparative data from the 2008 study. While not all of the present members were also members in 2008, a sufficient proportion allowed for a satisfactory comparison to enable conclusions to be drawn;
- Face-to-face interviews were conducted with a sample of member reserves to allow for discussion on specific points of interest.

2. INDALO PRIVATE GAME RESERVE ASSOCIATION

The membership of Indalo in 2018 was as follows:

Private Game Reserve (PGR)	Website
Amakhala	www.amakhala.co.za
Bergplaas	www.bergplaas.com
Hopewell Lodge	www.hopewell-lodge.com
Kariega	www.kariega.co.za
Kwandwe	www.kwandwereserve.co.za
Lalibela	www.lalibela.co.za
Oceana	www.oceanareserve.com
Pumba	www.pumbagamereserve.com
Shamwari	www.shamwari.co.za
Sibuya	www.sibuya.co.za

Indalo Private Game Reserve Association was established as a juridical association of Eastern Cape Private Game Reserves that exists separately from its members as a forum to discuss conservation of land and related social issues. The mission statement of the Organisation is: “to foster a pattern of land use that is ethically accepted and that is conducive to social responsibility, biodiversity preservation and ecologically sound wild area management on privately owned land. “

The primary objectives of the Organisation in terms of its Constitution are to:-

- form a network between private game reserves in the Eastern Cape (and predominantly, but not exclusively, in the greater Albany district of the Eastern Cape) providing and sharing technical information;
- identify and address threats to biodiversity and ecological sustainability and identify appropriate solutions;
- identify and develop programmes to enhance social sustainability and community involvement and development;
- be educated in biodiversity conservation and sustainable development;
- develop co-operative environmental management strategies and plans;
- constitute a forum for private game reserve land owners in the Eastern Cape (and predominantly, but not exclusively, in the greater Albany district of the Eastern Cape)
- identify challenges that may threaten the future of the private game reserve industry and develop strategies to minimize these;
- be the Management Authority (as defined in the National Environmental Management: Protected Areas Act, No. 57 of 2003, as amended (“the Act”)) in respect of any property/ies of members declared as Protected Areas in terms of the Act if the management of such

property/ies as a Protected Area has been assigned to Indalo in terms of the Act and such Indalo member has consented to such assignment;

- develop and implement co-operative security and anti-poaching strategies, plans and programmes (between members and possibly non-members and similar organizations).

Indalo (as an NPO) was initially administered by the Wilderness Foundation, but since the end of 2018 have their own management authority. As of 2019 their formal NPO registration application had been rejected, but their constitution is in the process of revision with a view to re- application.

The Board of Management for Indalo has its own bank account, which it manages. The Indalo Board serves on a voluntary basis, in a 2-year rotation. The Board has appointed a security coordinator to manage Indalo security (coordination and intelligence) to combat poaching and protect guests.

Indalo is funded by member payments. Meetings are held 2-3 times a year specifically to deal with budget issues, its constitution, and to report on activities.

Members compete (“competing businesses that come and chat around a table about common interests”), but co-operate, since they have common interests (such as opposition to poaching, wind farms, mining).

3. INDALO AND THE NATIONAL PROTECTED AREA EXPANSION STRATEGY FOR SOUTH AFRICA

In 2008, the Department of Environmental Affairs published the “National Protected Area Expansion Strategy for South Africa” (NPAES, 2008), which is a 20-year plan to expand protected areas in South Africa to better represent the variety of ecosystems in the country.

“The goal of the National Protected Area Expansion Strategy is to achieve cost effective protected area expansion for improved ecosystem representation, ecological sustainability and resilience to climate change” (NPAES, 2016).

The NPAES is updated periodically, the latest version being the NPAES (2016) for the period 2016-2020.

“Protected areas” are protected by law and carefully managed for

biodiversity conservation. In addition to fostering ecological sustainability and resilience to climate change, the NPAES (2016) also acknowledges that they provide important ecosystems services (clear water, flood moderation, prevention of erosion and carbon storage) to people,

and underpin rural livelihoods and local economic development. “Especially in marginal agricultural areas, conservation related industries have higher economic potential than agricultural activities such as stock farming” (NPEAS, 2016). It is thus acknowledged that “conservation related industries”, like the members of Indalo, can play an important role in diversifying rural livelihoods, and providing a cost effective way (through contract agreements, rather than through expensive land acquisition) to expand protected areas. The NPAES (2016) also sets targets at national and provincial level, for the protection of South Africa’s 969 ecosystems, across 26 bio-zones. Currently, 21% are “well protected”, 13% are “moderately protected”, 30% are “poorly protected” and 37% are “not protected”. To meet the long-term protected area targets, an additional 413 163km-squared needs to added to the protected area network (NPAES, 2016). Table 1 shows the representation of terrestrial ecosystem types in the protected areas network in 2014 (NPAES, 2016:11).

Table 1. Status of representation of ecosystem types in the protected area network (as of 2014)

Bio-zone	Total area (ha)	20-year target (% of total area)	Area contributing to meeting target as of 2014 (%)
<i>Albany Thicket</i>	2 912 754	10.3	6.7
<i>Azonal Vegetation</i>	2 894 983	13.8	5.3
<i>Desert</i>	716 565	18	4.7
<i>Forest</i>	44 4371	17.2	16.3
<i>Fynbos</i>	8 394 437	14.8	7.3
<i>Grassland</i>	31 987 116	13.2	2.7
<i>Indian Ocean Coastal Belt</i>	1 428 197	13.5	5.7
<i>Nama-Karoo</i>	24827996	11	1
<i>Polar desert</i>	10 825	10.8	10.8
<i>Savannah</i>	39 966 563	10.1	5.4
<i>Sub-Antarctic tundra</i>	23 240	10.8	10.8
<i>Succulent Karoo</i>	8 328 395	12.1	4.5
<i>Water bodies</i>	67 322	13	12.7

The NPAES (2016) also identifies the levels of protection of the various bio-zones by type. For example, as shown in Table 2 (NPAES, 2016:29), the Nama-Karoo is the least protected bio-zone, with 8 types (57%) Not Protected and an additional 5 types (36%) Poorly Protected. The NPAES (2016: 37) acknowledges that the Nama-Karoo was originally not regarded as threatened, but that recent shale gas explorations could potentially limit protected area

designations in the future. One of the Indalo members (Bergplaas) protects 5 200ha of Nama Karoo, thus significantly adding to the protection of this vulnerable ecosystem type. Albany Thicket, which is included in the land area protected by most Indalo members, has no Well Protected types and only 36% of types classified as Moderately Protected.

Table 2. Protection levels for ecosystem types by bio-zone

Bio-zone	Well Protected %	Moderately Protected %	Poorly Protected %	Not Protected %
<i>Albany Thicket</i>	0	36	50	14
<i>Azonal Vegetation</i>	22	14	31	33
<i>Desert</i>	40	0	7	53
<i>Forest</i>	75	25	0	0
<i>Fynbos</i>	35	6	34	25
<i>Grassland</i>	13	3	51	33
<i>Indian Ocean Coastal Belt</i>	0	33	17	50
<i>Nama-Karoo</i>	7	0	36	57
<i>Savannah</i>	28	19	33	20
<i>Succulent Karoo</i>	16	14	23	47

The National Protected Area Expansion Strategy (2016), also identifies priority areas for protected area expansion for each province (Figure 1, NPAES, 2016: 36). In the Eastern Cape, much of the area remains “severely under-protected”. Some of the main priority areas identified (such as areas around Addo National Park) are part of the land protected by Indalo members.

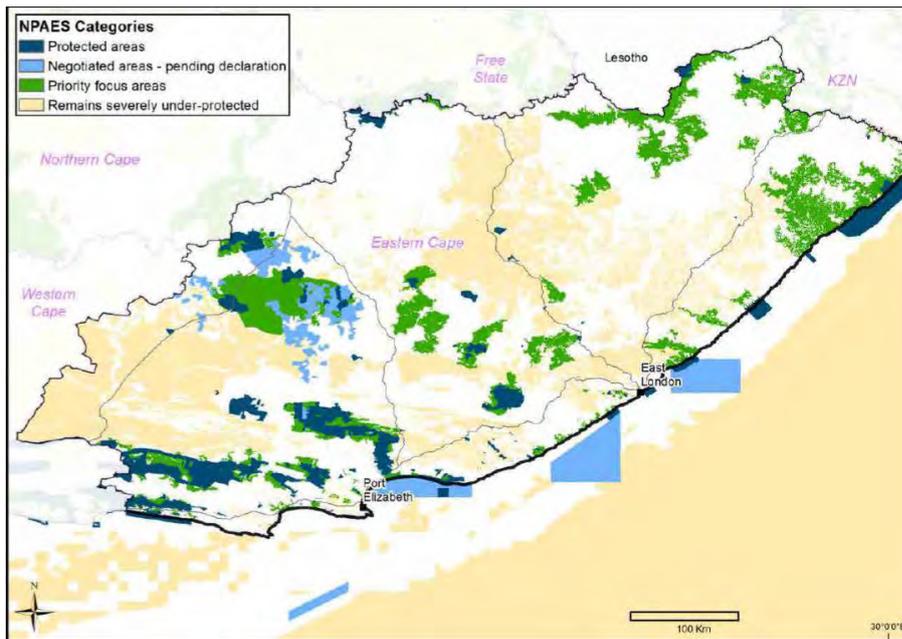


Figure 1. Protected areas in the Eastern Cape

In October 2018, Indalo (as a non-profit organisation representing its members), signed an agreement with the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) to declare the 70 000ha of land owned by Indalo members as a “Protected Environment”.

As explained in the NPAES (2016), such formal, contractual agreements between landowners and protected area agencies are a much more cost effective way to improve biodiversity stewardship and expanding protected areas than land acquisition. Incentives used to support landowners entering to such arrangements can include: “Fiscal incentives, technical and professional advice and support, management assistance and support, partnerships in

“The mission of Indalo is to foster a pattern of land use that is ethically accepted and that is conducive to social responsibility, biodiversity preservation and ecologically sound wild area management on privately owned land” (Indalo Constitution, 2019).

nature-based commercial ventures, and access to marketing resources” (NEPAES, 2016:55). In exchange, the landowners agree to certain biodiversity management practices, and restrictions on land use for other

purposes.

With Indalo now designated as a 'Protected Area' its designation could be used to argue against mining operations, for example, Shell exploration on its boundaries relating to fracking and windfarms. It is also hoped that it would provide some protection from land appropriation.

The establishment of the 'Protected Area' status (facilitated by ECPTA, in an agreement with DEDEAT) required that each individual reserve appointed Indalo as the management authority to enable Indalo to sign the agreement with DEDEAT MEC. The properties are no longer seen as farmland, but as conservation land. Also planned is to have tax/VAT benefits, but these have not yet been implemented. The formal designation as 'protected environment' has advantages, but it is uncertain as to how effective it will be as it still has to be tested in practice. While conservation of animals is seen as important by DEDEAT, its focus is mostly related to vegetation types being protected, rather than animal species.

For members, the 'Protected Area' designation has no additional costs (as members should have been involved in conservation management practices already). Members are audited, but it is a self-regulated audit (paid for by Indalo). It is not anticipated that the new designation would change environmental management practices or conservation practices going forward.

4. THE CONTRIBUTION OF TOURISM TO SOUTH AFRICA

In 2018, Statistics South Africa released the Tourism Satellite Account (TSA) for South Africa (StatsSA, 2018). Satellite accounts are based on the National System of Accounts that each country has, and by which the size and growth of national Gross Domestic Product (GDP) is calculated. "Satellite" accounts are used to track the contribution of sectors, like tourism, that are not analysed specifically in the National System of Accounts. Tourism activities (supply

"The Tourism Satellite Account provides stakeholders (governments, entrepreneurs and citizens) with reliable data to assist them in the design of public policies and business strategies for tourism and for the evaluation of their efficiency" (Statistics South Africa, 2018:4).

and demand of tourism goods and services) are included in GDP, but are embedded in other sectors, and are thus not directly observable.

The TSA (StatsSA, 2018) showed that tourism direct GDP grew from

R124 963 million in 2016, to R130 250 million in 2017. This represents an annual growth rate of 4.2%, which is much faster than the national GDP growth rate in this period. The tourism

sector directly employed 722 000 people in 2017, which represent 4.5% of all jobs in South Africa. Employment in the sector is also growing quickly, with a growth rate of 4.6% between 2016 and 2017. In 2017, there were nearly 15 million non-resident (foreign) visitors to South Africa, 68.7% of whom were tourists. Spending by foreign (inbound) tourists totaled nearly R121 million, and domestic tourism expenditure added an additional R156.4 million. As shown in Table 3 (StatsSA, 2018:2), the provisional figures for 2017 show a slight decline in inbound tourism expenditure, although domestic tourism expenditure continued to grow. As a percentage of GDP, tourism contributed 2.8% in 2017, which compares favourably with the contribution of Agriculture, Forestry and Fishing, which had a 2.4% contribution in 2017 (StatsSA, 2017).

Table 3. Finding of the Tourism Satellite Account for South Africa for 2013 to 2017

		2013	2014	2015	2016	2017
<i>Inbound tourism expenditure</i>	Rm	94 183	106 728	108 760	121 400	120 979
<i>Annual growth in inbound tourism expenditure</i>	%	10.3	13.3	1.9	11.6	-0.3
<i>Domestic tourism expenditure</i>	Rm	124 137	133 990	122 835	143 562	156 437
<i>Annual growth in domestic tourism expenditure</i>	%	8.4	7.9	-8.3	16.9	9.0
<i>Tourism direct gross domestic product</i>	Rm	103 349	112 571	109 503	124 963	130 250
<i>Tourism direct gross domestic product as</i>	% GDP	2.9	3.0	2.7	2.9	2.8
<i>Jobs in producing goods and services purchased by visitors</i>	No.	657 766	681 915	669 653	690 261	722 013
<i>Jobs in producing goods and services purchased by visitors</i>	% growth	4.4	4.5	4.3	4.4	4.5

The tourist goods and services provided by Indalo members to both foreign and domestic tourists are captured in a number of categories in the TSAs including: Tourist guide services, Nature reserve services including wildlife preservation services, Hotel and motel lodging services (amongst other accommodation services), and food and beverage services.

In 2016, the Department of Tourism released its Tourism Strategy (2016/16 – 2019/20), in which it acknowledged the growing role of the sector in economic growth and job creation as

South Africa transitions from a resource-based to a services economy. The mission of the Department of Tourism is “To grow an inclusive and sustainable tourism economy through good corporate and cooperative governance; strategic partnerships and collaboration; innovation and knowledge management; and effective stakeholder communication” (Department of Tourism, 2016:7).

In addition to contributing the National Protected Area Expansion Strategy, Indalo members are thus also contributing to the development of a sustainable South African tourist industry through their marketing activities, job creation and skills development, and value added to GDP.

5. DESCRIPTION OF INDALO PRIVATE GAME RESERVES

All ten reserves responded to the questionnaire. Of these eight were members in 2008. Nine reserves are situated between 75 and 160km from Port Elizabeth in the Eastern Cape with one in the Nieu Bethesda/Graaff-Reinet region of the Great Karoo, 350km away.

Member reserves can be considered as ‘mature’ – significant experience in the game industry - having been established between 1990 and 2007. Of these half were established by 1999 and nine out of ten by 2004. While there has been a change in ownership over the period since establishment, in some instances the Reserve Managers have been in place for a considerable period and in at least one case, for more than a quarter of a century. The 10 Reserves collectively can claim more than 200 years of experience.

As in the 2008 sample, Indalo PGRs are mostly private registered companies with several shareholders, but includes the owners of the land previously commercially farmed that created a partnership to form the PGRs with up to 10 lodges run as independent businesses (employing their own staff), but having a single Reserve Manager and undertaking various operations as a unit.

The Indalo member reserves were established typically by incorporating between three and ten (on average eight) surrounding properties and converting the land from mainly extensive

livestock farming to game reserves. As reported in 2008 the reasons for establishment were chiefly as a result of declining profitability of livestock farming following severe drought conditions experienced in the late 1990s, an interest in wildlife conservancy and top-end tourism. Each reserve followed a different path from first established. These paths include a reserve established partly with foreign funding primarily to uplift local communities through the eco-tourism by establishing a luxury safari destination as the means through which increased employment and economic benefits could be realized for rural Eastern Cape communities. In the case of two reserves the original aim was to create a game farm with upmarket accommodation as a holiday property, but later changed focus. Another reserve was initially proposed as a development to build 30 houses but also later the focus was changed to tourism. Another initially had education as the primary motivation for establishment.

The reserves vary considerably in size, ranging from 672ha to 28 000ha, the median being 7 700ha. The total area covered is 94 438ha. Where comparisons are made in this report, the same classification was used as for the 2008 report, the reserves were divided by size: small being less than 4 000ha; medium between 4 000 and 14 000 and large classified as more than 14 000ha. Divided into the three groups, the 'small' averages 1 933ha, the medium-sized 8 156ha, whilst the 'large' (23 900) are twelve-fold the size of the 'small' reserves. The average of all the reserves is 9 438ha compared to the 2008 sample average of 10 106ha.

Ninety per cent of the surface area of the reserves is classified as 'veld' (natural grazing) with less than 8% devoted to cropland, planted pastures and plantations, while the remainder of the area consists of buildings and internal roads. In terms of veld types, thicket vegetation occupied 41%, savanna 19%, grass 18%, forest 7%, Nama Karoo 6%, Fynbos 4%, 'other' 11%.

6. THE MAIN FOCUS OF INDALO PGRs: WILD-LIFE TOURISM

With two exceptions, game viewing – especially the 'big five' – was the most important revenue source for the reserves, with accommodation next most important, although the two are complementary as game viewing without accommodation is the exception rather than the norm. Several PGRs reported 'game viewing and accommodation' as the income source,

averaging 90% of Gross Income. Where 'game viewing' and 'accommodation' was separately reported, the former was typically estimated as producing 60% of Gross Income, while accommodation contributed 30%. In one case the game is complementary to accommodation and in a second, game is integral to education and training, which is the main income source. Other lesser sources of income of the eight PGRs focus on game, included hiking, conferences and sales of game and memorabilia and education and training.

One Indalo member stands apart in two major respects. It is a non-commercial nature reserve that for two decades of its existence relied on funding from abroad; and its focus on education, training and skills development with wildlife being the context and environment in which the training is conducted. The training, which is recognized by the Field Guides Association of Southern Africa, includes the placement of South African tertiary education students for a year's internship as well as accommodating MBA students from Erasmus University. The aim now is to shift to a more business-oriented focus.

Each reserve claimed specific features that differentiates it. For example, the proximity to a 13km stretch of pristine beach; forest and a riverine estuary of 10km in the reserve; spectacular natural scenery; its topography; a diversity/density of wildlife; frequent sighting of big cats; easy proximity to Port Elizabeth's airport; good roads; luxury lodges; a diversity of lodges; being malaria free; the quietness of the wilderness; and the clear night sky uninterrupted by light pollution. A member of the Amakhala PGR successfully had a lodge "Fair Trade certified" in 2008, which was a first for PGRs in the Eastern Cape. The advantage is that has given the lodge owners "peace of mind that their business is operating in a good and responsible way." It offers a unique selling point and delivers guests making it financially beneficial. Others have subsequently attained or are in the process of obtaining Fairtrade certification.

Tourism at PGRs is invariably seasonal. High season is typically from November to March, with the 'in-season' period stretching from September/October to April/May. Some PGRs offer 'low season' rates from after the Easter public and school holidays (April) to the end of August.

Game, plants and birds

For security reasons PGRs did not report on their rhino holdings, if any. In one case, all rhino had been disposed of, in order to obviate the risk of poaching. Game species within the reserves include: lion, rhino, elephant, buffalo, giraffe, zebra, wildebeest, leopard, cheetah, hippo, kudu, impala, springbok, bontebok, blesbuck, eland, sable and oribi. Many bird species are present, including Blue Crane in the reserve in the Karoo.

Eight reserves supplied species lists. Mammals headed the list, followed by birds, invertebrates, reptiles and trees and other plants. In some cases the actual numbers were not available, but they were known to be present. Clearly, the reserves are a haven for much else besides mammals, which is mostly what tourists wish to see, but serve to enrich the experience.

Accommodation

Visitors on average spent 2.4 nights and 2.7 days at the Reserves. The type of accommodation offered was typically in the form of Lodges that were able to cater for 622 visitors in total, Guest Houses for 32 and 64 in Tented Camps. Lodge accommodation, which includes game viewing, at the top of the range were priced at between R5 000pp/n and R12 500pp/n, while a few Reserves offered lower range lodge accommodation at between R3 500 and R8 000. Tented camping ranged from R4 000 to R5 000pp/n.

Table 4: Average Lodge rates, by reserve size

Reserve size	Rand pp/n
Small	6 100
Medium	7 690
Large	10 750
All (average)	7 840

Some reserves offer different levels of services at lodges and tented accommodation, with rates set accordingly, but there was too limited information to provide average data.

The total number of beds at 718 constitutes an increase of 46% on the 491 beds available in nine reserves that returned data in 2008 in which year the unadjusted average person per night charge was R3 606.

Visitors: Tourist Origins

The majority of visitors – 83% - are from abroad, with 78% from Europe, 13% from the United States of America and ‘other’ foreign countries (9%). Of local South Africans, 53% hailed from the Eastern Cape, with the remainder from further afield. The total number of tourists rose from an estimated 55 000 in 2014 to 72 000 in 2018.

Table 5. Total number of Tourists 2014 to 2018

Year	TOTAL
2014	55 440*
2015	59 010*
2016	65 038
2017	71 929
2018	72 119
% Change	30

*estimate calculated on less than a full sample

It is interesting to note that while small and medium-sized reserves on average had increased numbers of visitors over the five-year period, three of the ten reserves had fewer tourists in 2018 than the previous year, and ‘large’ reserves suffered a 8% decline between 2014 and 2015, which is most likely to be an indicator of prevailing economic conditions rather than a decreased interest in wildlife tourism.

Table 6. Average Tourist numbers by PGR size, 2014 to 2018

Year	Small	Medium	Large
2014	1 486	7 203*	7 483
2015	1 835	7 896*	7 013
2016	2 174	8 377	8 316
2017	2 489	9 635	8 144
2018	2 523	10 144	6 916
% Change	70	40	(8)

*estimate calculated on less than a full sample

While there was an 8% decline in tourists to the large reserves, no concomitant decrease in the Gross Revenue was experienced during those years, as seen in table 6.

7. INCOME GENERATING ACTIVITIES

Over the five years, 2014 to 2018, Gross Revenue rose from R282m to R570m per annum thanks to a growing number of visitors per year (61 400 on average over the period) of whom 89% were foreign. Table 7 shows the average Gross Revenue by reserve size with medium-sized reserves competing well with larger reserves, although not too much should be read into the figures given the relatively small sample.

Table 7: Average Gross Revenue per PGR (Rm)

Year	Small	Medium	Large	Median	TOTAL
2014	7	38*	48	18	282*
2015	8	50*	56	24	347*
2016	8	50	73	24	422
2017	10	65	98	29	550
2018	12	66	101	38	570

*estimate calculated on less than full sample

Based on a very conservative assumption that all visitors, local and foreign, contributed equal revenue per person, of the Total Gross Revenue of R2.2bn over the five year period, at least R1.9bn would have been brought into the country. What this does not account for is the additional spending in South Africa by foreign tourists. While an inadequate indicator, 6 of

the 10 Reserves were aware of visits to the National Addo Elephant Park by 17% of their visitors. South Africans would have numbered among these, but even if every single local had visited Addo, there would have been at the very least 11% of the foreign visitors – about 7 000 in 2018 - that would have spent elsewhere in the country.

8. EMPLOYMENT AND AGE PROFILE

Indalo members employed 1 531 people in 2018 compared to 1 133 in the Indalo sample ten years earlier. The increase in employees was most notable in small and large reserves, which doubled and increased by nearly half as much respectively, as seen in Table 7.

Table 8. Average Number of employees 2008 and 2018

Year	Small Ave	Medium Ave	Large Ave	All Average
2008	23	147	210	129
2018	50	154	307	153
Ratio 2018/2008	2.17	1.05	1.46	1.19

In 2018, 80% of the employees were black and 20% white. This is compared to 75% and 25% respectively in 2008.

Of the total labour force, 17% had a tertiary or other qualification; 35% had completed Grade 12 Secondary education, while the remaining 48% had been educated at a level below Grade 12. A comparison with the 2008 sample shows increased levels of employee education with a larger proportion completing secondary and tertiary education.

Table 9. Employee levels of education, 2008 and 2018

Year	Less than Gde 12 %	Grade 12 completed %	Tertiary & Other %
2008	55	31	14
2018	48	35	17

In 2008 nearly two-thirds of employees were in the 'less than 35 year old' category compared to 40% in 2018 indicating the stability of employment in the reserves. In 2018 33% were between the ages of 36 and 55 (36% in 2008); while 6% were 56 years or older (3% in 2008). Seventy percent of employees were primary wage earners, with an estimated number of dependants that ranged from two to eight, with an average of 5.3. A survey conducted by the Amakhala Foundation determined the dependency to be 3.6 persons in 2018.

Typically, employees were housed by the PGRs either on the Reserve itself or on surrounding properties; five provided food as part of the remuneration package; pension and medical aid contributions were made by four and three reserves respectively. These benefits were reckoned at R12,6m, excluding statutory Workmen's Compensation and Unemployment Insurance contributions .

Some tasks are outsourced, in particular, the purchase of fuel, WiFi, game capture, installation of water and solar systems. Veld assessments had been conducted for three reserves. Eighty eight per cent of outsourcing was to Eastern Cape suppliers; 11% from the Rest of South Africa and 1% from suppliers abroad.

Experience in Sourcing staff

Staff are generally sourced from local communities, although reserves report that it is not easy to find appropriately experienced staff across all roles/tasks required. Semi-skilled staff are not as easily recruited locally, while skilled staff, in particular posts as Chief Chef, Game Guides, rangers and managers need to be advertised nationally. At the same time reserves are working on in-house training and internal promotion of present staff and recruiting local community members to fill more skilled positions, which is regarded not only as an ethical responsibility, but to ensure long-term sustainability.

Staff health

An issue faced by some reserves is the prevalence of HIV/AIDs. Reserves varied in their experience with 'poor' health status as being fairly limited to a handful of individuals, [but that] it was very difficult to pinpoint as only one or two individuals had disclosed their status." On the other end of the scale it was stated that "there are numerous working staff with HIV, and many have died of AIDS. Overall the infection rate is lower than what would be found in a larger town. Staff are offered support and a mobile clinic comes to the reserve to dispense retro-virals." A clinic had recently been established in a nearby village, which enabled staff to receive medication, while others were transported to Grahamstown quarterly. The major impact to date was the extent of sick leave taken. One of the larger reserves found it necessary to employ a full-time social worker to provide prophylactics and ongoing education and awareness campaigns.

9. COMMUNITY ENGAGEMENT

Indalo members are actively engaged in a variety of community projects. Community engagement at a local level has been achieved by Indalo members, for example, by training their own staff that live in surrounding villages and towns, in health care of domestic animals, particularly dogs; skills training in finances, hospitality, parenting and leadership; the deployment of students-in-training, for example, to assist with providing computer skills at local primary schools.

Managing expectations of communities has proved to be difficult, for example, reserve outreach programmes for local livestock health care and meetings between local communities and reserve staff have been taken over – hijacked - by political functionaries who have claimed the programmes to have been provided by 'the party.' A recent request has been made to a reserve to provide land, livestock pens and water supply systems.

All members have programmes. In several cases Foundations have been established, for example, the Born Free sanctuary operated by Shamwari, the Amakhala Foundation, Kwandwe's Ubunye Foundation, the Kariega Foundation, Pumba's Conservation & Social

Responsibility Foundation and the Bergplaas van Lippe-Biesterfeld Foundation. By way of example only, a few cases are explored in more detail.

The Born Free Sanctuary, accommodates up to 20 animals that have been rescued from a range of plights in captivity. The focus is on education and awareness – usually including a reserve tour - through an outreach programme for local schools and communities on 4 to 5 days a week under the leadership of a Senior Education Officer. The educational focus is mostly on animal rights rather than on rehabilitation as, typically, it is not possible for abused animals to be released successfully. The operational budget of R1.5m annually is covered on a 50/50 basis by the reserve and international sponsors. The reserve is in the process of establishing a Rehabilitation Centre as a separate exercise to treat injured animals for release into the wild. It is the intention of the reserve that visits to the Centre will be offered as an optional extra for tourists. Clearly, both initiatives would make a positive contribution to marketing.

The Amakhala Foundation, run by Dr Jennifer Gush, established in 2009 is funded in part by 50% of a Conservation Levy of R125 a night paid by guests in the accommodation at the PGR. Its programmes, conducted from the Amakhala Conservation Centre, which reach more than 2 000 young people a year, include:

- Environmental education for local primary school children
- Secondary school pupils that learn about habitats and ecosystems, and rhino
- University students from Rhodes and Nelson Mandela University involved in specialized research in the reserve
- Crafting for unemployed members of the local community, the products of which are sold
- Assistance in financing the purchase of property and developing the independent Isipho Charity Trust, operating in Paterson, that supports 300 pre-school children
- A volunteer programme that assists in conducting an after-care programme, computer classes and general maintenance of the Isipho property;
- Reserve staff member in-house training and up-skilling; and
- A bursary programme to cover fees for primary school children of staff at a local school.

Bergplaas Nature Reserve is particular in that it stands alone in its structure and purpose in its membership of Indalo in that education and training, rather than Wildlife Tourism is its focus. In 2006 the owner, Princess Irene von Lippe-Biesterfeld of the Netherlands, started

The *Spirit of the Wild* certificate programme that aims to develop “a deep and personal experience of the wild.” The aim to “connect people to the wild” is achieved through one- to three-week programmes with up to 20 participants at a time. The not-for-profit programme can be viewed as community outreach as it is supported solely by donations and grants, which has enabled wide participation, ranging from conservation students who grew up in squatter camps to senior executives.

Kwandwe established a rural development trust, the Ubunye Foundation, in 2002 that operates in approximately 40 communities in and surrounding the reserve. It contributes to the work of the foundation through levies raised from visitors (over R1m in 2019) and more than R2.5m over the last three years through initiatives in the agricultural sector. It is involved in Early Childhood Development services, improving rural health care systems, supporting rural micro enterprises and improving the financial resilience of rural households through community based savings schemes and financial education. The Ubunye Foundation is said to benefit over 4000 people living in the rural communities in its area of the Eastern Cape.

10. Future Plans

In response to a statement that “there are too many private game reserves in the Eastern Cape for the number of tourists who come here” five of the ten Reserves indicated that they ‘strongly disagreed’ with the statement, four ‘mildly disagreed’, while one ‘mildly agree.’ None reported ‘strong disagreement.’

In terms of plans for the coming five years (2019/20 to 2024/25) there was no obvious differentiation by reserve size. Five reserves intended increasing the number of beds, nine intended increasing the size of the reserve, eight proposed to expand both their community engagement and environmental education. Five reserves would seek to expand the range of species and five would explore further their BEE status.

Conservation plans currently in operation and matters of concern to reserves are reported in Table 10. The most prominent are dealing with alien vegetation, water availability, soil erosion and problem animals. Whereas the chief concerns and motivation for the establishment of Indalo a decade ago were the need to make a case for the use of farm land

for reserves, to show that jobs had been created, and had contributed to community development, the concerns had shifted to the potential visual impact of wind farms and to a lesser extent the possibility of mining/fracking on the experience of guests.

Table 10. Conservation plans in place and issues experience by reserves, 2018

Plan Items	Reserves with current plans	Issues experienced	Reserves with issues
Key species	10	Rare plants	5
Stocking rate	10	Problem animals	7
Carrying capacity	10	Carrying capacity	5
Alien plant removal	9	Invasive plants	10
Water management	9	Water availability	8
Soil conservation	9	Soil erosion	8
Ecological assessments	8	Biodiversity	5
Monitoring programmes	8	Poaching	6
Other programmes	4	Other	1

Conservation plans that reserves are implementing and intend to continue include reserve management issues in its broadest sense, that is, managing vegetation and wildlife in conformance of carrying capacity, collection of data for action based on evidence, mapping and removal of aliens, such as *Lantana camara*, *Cestrum laevigatum*, *Acacia measii*, *Melia azedarach*, *Acacia saligna*, *Sesbania punicea*, *Agave Americana*, *Opuntia spp.*, *Eucalyptus spp.*, *Pinus spp.* The introduction of cheetah and leopard, the addition of a lion pride and expansion of black rhino, and the introduction a breeding programme for white rhino.

The current drought had resulted in the degradation in veld condition and a corresponding decline in population performance (breeding rates and general condition). Most reserves reported that there had been no major losses due to malnutrition as of April 2019, although one reserve had tallied 300 animals that had perished. Some reserves were forced to buy in supplementary fodder, the first time in 17 years in one case. There had been a decline in availability of surface water from rivers in the area and a number of boreholes had dried up. Several reserves had expended considerable amounts on water reticulation systems.

Reserves were investigating the viability of less water and better maintained water points with reduced evaporation. A high quality road system was being investigated for improved run-off. A further consequence of the drought was an increase in veld damage due to fire.

Challenges faced by Reserves

The main concerns expressed by reserves regarding their medium and long term sustainability was a “radical increase in security and anti-poaching at enormous expense, [which] now occupied 50% of the reserve operational budget.”

There had been a rapid increase in warthog population growth. A reserve had experienced problems with an elephant bull charging game vehicles and rhino bulls fighting and causing injuries.

Clearing invasive vegetation was proving to be a major source of expenditure which had exceeded R5m over a 3-year period.

The way in which rhino poaching has impacted operations is that Indalo has upped the security for its members. Rhino poaching in the Eastern Cape became a major issue from about 2008 and has continued sporadically since. For example, a member reserve had two rhino poached in 2011, which was followed by an armed attack on the Reserve Office with the attackers demanding rhino horn. It is estimated that Indalo members spend in excess the region of R20m annually on anti-poaching. The employment of an expert on human and drug trafficking, has led to important prevention measures – uncovering poaching gangs - and have been instrumental in arrests of poachers with the assistance of the SA Police Services. Individual high profile cases in the Eastern Cape have involved game reserve staff, for example, in the case of a non-Indalo member, the poachers arrested in possession of rhino horn, equipment and rifles, had actually reconnoitred several reserves before striking. Poaching has necessitated stepping up the very careful screening of staff and gate guards to obviate the possibility of bribery. A reserve reported an expenditure of R15m since 2010 in its rhino security measures. Another put its annual expenditure at R2m to R3m/annum on rhino security. A reserve manager expressed the opinion that “the problem will never be

tackled effectively without government support in policing and policy making, especially legalizing trade in rhino horn to ensure proceeds are ploughed back into conservation.” It was noted that Indalo’s Rhino Poaching Unit’s efforts in gathering intelligence and its work with the Authorities had served as a good deterrent.

Another concern of reserves is international perception of safety for tourists visiting SA and the government’s approach to understanding the need to create an attractive and sound tourism marketing plan that can be confidently and effectively executed.

The increase in the number of wind farms and visual impairment, the threat of expropriation without compensation, the unreliability of energy supply and its affordability, the decay of national infrastructure, and political instability were all listed as concerns for the future.

Code of Ethics

Reserve managers were requested to list up to five practices that should be encouraged/discouraged in a ‘code of ethics’ that would guide the behaviour of game reserve owners. These ranged across a wide spectrum and clearly members of Indalo would require a good degree of debating to reach a consensus. Among those that found traction were statements regarding:

- Ethical management of wildlife on scientifically based data
- Non-consumptive reserves
- Mandatory ‘green’ practices
- Staff recognition and skills development
- Strategic community engagement/ social responsibility /stewardship
- Greater respect for animal privacy
- Grading of the game drive experience
- Support for Fair Trade Tourism

11. POLICY ISSUES

Challenges in the Establishment of Reserves

The most difficult aspects of establishing a reserve were suitable land acquisition, the rehabilitation of agricultural ground and removing of farming infrastructure, the costs involved in fencing, lodge development, forging a name in the competitive eco-tourism environment, disabling legislation and cumbersome EIA processes and long delays in decision-making in obtaining permission and approvals, for example, a three year wait for the approval of the opening of a lodge.

On the other hand, the easiest, least troublesome aspects were that wildlife is hardier and more resilient than domestic livestock, even in drought conditions and therefore less management intensive. The rapid way in which nature returns to a good condition once give the opportunity; continuity once a (good) reputation has been established, the introduction of wildlife. A manager who had been in the profession for a long time observed that given the length of time that reserves have been in operation, there were now plenty of people to ask for advice.

Current Sustainability Challenges

Important obstacles faced in the foreseeable future include the ability to maintain tourism levels in the light of local and global uncertainties, the government's attitude and perceived lack of support towards tourism, land expropriation, crime levels, political insecurity, rhino poaching, and the spill-over of 'unsuitable' projects, such as wind farms.

Received and Desirable External Support

The support received that has been received by national and local government, tourism agencies, local authorities and other institutions ranged from 'nil' to 'good' by reserve managers. Positive support from ECPTA was noted in the process of the Protected

Environment declaration and other Indalo members, despite being competing businesses, were prepared to offer advice and support.

Government Actions for Sustainability

The ways in which agencies could support PGRs was 'greater policy clarity and engagement in policy formulation,' greater engagement in the issuing of permits and issues facing game reserves that would reduce the frustrations in efforts to follow the letter of the law. Game reserves are of the opinion that they are overlooked when it comes to financial incentives and support, such as drought relief. That game reserves employ more people per hectare or do more for communities than other businesses is overlooked as PGRs are still looked at as 'a rich man's playground.' More promotion and effective marketing of both national and private game reserves, the upgrade of the Port Elizabeth airport and promotion of the Eastern Cape as a tourist destination for foreign visitors, the upgrade and maintenance of roads, safety and security.

Finally, the three most important actions that the government could take to assist in the establishment and medium term sustainability are: stable political and financial stability, industry specific laws and incentives for game reserves, an overhaul of the legal aspects of permits and procedures, land security, crime prevention and safety.

12. CONCLUSIONS

This report has reviewed the social, economic and environmental contributions of the Indalo association of private game reserves (PGRs). Results show that Indalo members play an increasingly important role in biodiversity stewardship, which has been formalized through the declaration of a “Protected Area Environment” through DEDEAT in 2019. Together, Indalo members protect more than 90 000 ha, much of which is part of currently only “Moderately” or “Poorly” protected bio-zones.

Through their anti-poaching activities, Indalo members also play a role in protecting endangered wildlife, especially rhinos. The rise in poaching activities in recent years has necessitated considerable spending by PGRs on the protection of their animals. Poaching also causes guest security concerns, and Indalo members spend a considerable portion of their budget working against such illegal activities. In some cases, they have been highly successful in working with local police to prosecute offenders.

Indalo members can now be regarded as part of a well-established or mature sector. Most of their revenue (90%) comes from game viewing and accommodation provision (tourist services). Other sources of income include the provision of education and training, hiking, conferences and game sales.

Indalo members also contribute significantly to the tourism sector, which is growing more quickly than the rest of the economy. This can be seen in a 46% increase in capacity (beds) amongst Indalo members since the last study in 2008, and a rise in the total number of tourists from 55 000 in 2008 to 72 000 in 2018. Indalo members also contribute to job creation and transformation: they employ 1531 people, 80% of whom are black South Africans, and 40% of whom are youth (under 35 years old). It is estimated that Indalo guests brought in R1.9 billion in foreign exchange in the last 5 years. PGRs, like Indalo, also play a role in diversifying rural livelihoods, which is an important consideration given the declining profitability of livestock farming, and the drought.

References

ARCC Community Report (ca 2019). Amakhala Private Game Reserve.

Department of Tourism (2016). *Tourism Strategy (2016/16 – 2019/20)*. Department of Tourism, Republic of South Africa.

Langholz, JA and Kerley, GIH 2006. *Combining conservation and development on private lands: an assessment of eco-tourism based game reserves in the Eastern Cape*. Center for African Conservation Ecology, Nelson Mandela Metropolitan University, Port Elizabeth.

NPAES (2016). *National Protected Area Expansion Strategy for South Africa*. Department of Environmental Affairs, Republic of South Africa.

Snowball, JD and Antrobus, GG (2008). *Ecotourism and Socio-economic development: The impact of the conservation, economic and social activities of private game reserves in the Eastern Cape*. Unpublished Report commissioned by Indalo. Department of Economics and Economic History, Rhodes University, Grahamstown.

StatsSA (2017). *Gross Domestic Product: 4th Quarter 2017*. Statistical Release, P0441. Statistics South Africa.

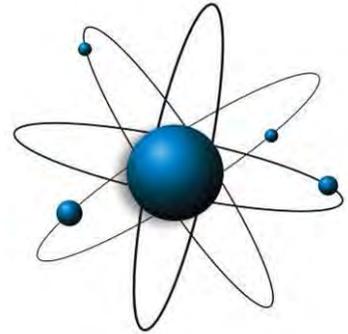
StatsSA (2018). *Tourism Satellite Account for South Africa, final 2015 and provisional 2016 and 2017*. Report number 04-05-07. Statistics South Africa.

VISUAL IMPACT ASSESSMENT REPORT

VIEW SIMULATION AND MOTIVATION
FOR

Of
Grahamstown, Eastern Cape

On Behalf of Indalo



ESCIENCE
ASSOCIATES
(PTY) LTD

POSTAL
ADDRESS:
PO Box 2950
Saxonwold
2132

PHYSICAL
ADDRESS:
9 Victoria Street
Oaklands
Johannesburg
2192

TEL:
+27 (0)11 718 6380

FAX:
086 610 6703

July 2020

E-MAIL:
info@escience.co.za

WEBSITE:
www.escience.co.za

TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	OBJECTIVES.....	1
1.2	AUTHORS AND RELEVANT EXPERIENCE.....	1
2	SCOPE OF STUDY.....	2
2.1	TASKS.....	2
3	APPROACH.....	2
3.1	NATURE OF THE DEVELOPMENT.....	2
3.2	NATURE OF THE AREA PRE-DEVELOPMENT.....	2
3.3	NATURE OF VIEWER TYPES EXPOSED TO THE DEVELOPMENT.....	5
3.4	POTENTIAL VISUAL EXPOSURE.....	5
3.5	LANDSCAPE SENSITIVITY.....	5
3.6	EXPECTED LEVEL OF IMPACT/TYPE OF ASSESSMENT.....	6
3.7	SENSITIVE RECEPTORS AND ZONE OF VISUAL INFLUENCE.....	7
3.8	PRINCIPLES AND GUIDELINES.....	14
4	VIEW SIMULATIONS.....	15
5	CONCLUSIONS.....	18
5.1	IDENTIFICATION OF SENSITIVE RECEPTORS AND ZONE OF VISUAL INFLUENCE.....	18
5.2	VANTAGE POINTS.....	22
5.3	ASSESSMENT OF SIGNIFICANCE OF VISUAL IMPACT.....	22
5.4	DEFICIENCIES IN VISUAL IMPACT CONSIDERATION:.....	23
5.5	ERRONEOUS CONSIDERATION OF LIFESPAN OF WIND ENERGY FACILITY.....	23
5.6	LACK OF MITIGATION.....	24
5.7	EXTERNAL REVIEWER.....	24
5.8	CONSIDERATION OF ALTERNATIVES.....	24
	ANNEXURE A – SENSE OF PLACE.....	25
	ANNEXURE B - VIEW SIMULATION: GREAT FISH PROVINCIAL NATURE RESERVE.....	26
	ANNEXURE C - VIEW SIMULATION: KWANDWE PROTECTED ENVIRONMENT.....	27
	ANNEXURE D - POSSIBLE ADDITIONAL VIEW SIMULATIONS.....	28
	ANNEXURE E - VIEW SIMULATION: VERIFICATION VIEWS OF THE VIA REPORT.....	29

LIST OF FIGURES

Figure 3-1:	Views from Adams Krans Great Fish Provincial Nature Reserve.....	4
Figure 3-2:	Highland grassland plateau Lalibela Private Game Reserve.....	4
Figure 3-3:	Cookhouse REDZ visual sensitivity mapping.....	6
Figure 3-4:	Potentially affected visual receptors in relation to Albany WEF.....	10
Figure 3-5:	Affected visual receptors in relation to Albany WEF, displaying the amount of turbines visible at any location.....	13
Figure 3-6:	Turbine visibility within Great Fish River Nature Reserve.....	13
Figure 5-1:	Albany WEF Affected Visual Receptors.....	19
Figure 5-2:	Albany WEF Affected Visual Receptors – Number of turbines visible.....	20
Figure 5-3:	Albany WEF Affected Visual Receptors according to CES VIA.....	21

LIST OF TABLES

Table 1-1: List of Abbreviations	ii
Table 3-1: Derivative table aiding the determination of the level of specialist involvement and expected impact	7
Table 3-2: Affected Main places	9
Table 3-3: Affected Sub places	9
Table 3-4: Affected Formal Protected Areas – Nature Reserves	11
Table 3-5: Affected Formal Protected Areas – Protected Environments (Game Reserves) ..	11
Table 3-6: Affected Game Farms and Ecotourism Related Operations.....	11

ABBREVIATIONS

Table 1-1: List of Abbreviations	
CES	Coastal and Environmental Services
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EScience	EScience Associates (Pty) Ltd
GIS	Geographic Information Systems
Ha	Hectare
MP	Mainplaces
REDZ	Renewable Energy Development Zone
SP	Subplace
VIA	Visual Impact Assessment
WEF	Wind Energy Facility

1 INTRODUCTION

An exploration of possible impacts on additional sensitive receptors, and associated findings, was requested by Indalo Private Game Reserve Association (which manages the Indalo Protected Environment comprised of 9 private game reserves) in order to provide additional insight and/or commentary to the Albany Visual Impact Assessment (hereinafter referred to as 'The VIA Report', prepared by Coastal and Environmental Services(CES) in (March 2020), as part of their Draft Environmental Impact Report(EIR).

EScience associates hereby submits a summary of findings, based on the execution of Visual Impact Assessment for the construction of the proposed Albany Wind Energy Facility north of Grahamstown, Eastern Cape, South Africa.

1.1 OBJECTIVES

The objective is (1) to recreate high quality view simulations from the same viewpoints identified by CES in The VIA Report in order to assess the accuracy of their findings, and (2) to execute additional high quality view simulations from additional sensitive receptors, accompanied by a visual impact assessment/appraisal motivating the view simulation results.

While taking heed of the aspects covered in the VIA, the following aspects form the primary focus of this study:

- Accuracy of current view simulations of The VIA Report;
- Addition of night-time view simulations of all viewpoints of The VIA Report in order to assess lighting impacts;
- Adequacy of the scenic quality of the environment pre development;

1.2 AUTHORS AND RELEVANT EXPERIENCE

This report has been compiled on behalf of EScience Associates and Mr JK Geldenhuys (visual specialist and Associate of EScience), with relevant associations and experience listed below:

Authors	Experience
Theo Fischer- Environmental Specialist	20 Years
Kotie Geldenhuys- Visual Impact Assessor	10 Years
James Pugin-Geographic Information Systems	5 Years

2 SCOPE OF STUDY

2.1 TASKS

The following tasks have been performed:

- Familiarisation with project background;
- Preliminary desktop study, incorporating the generation of GIS data (locality, land use, vegetation, morphology, biomes, general sensitivity);
- Preparation of GIS data, pertaining to the topography, vegetation and land use of the area, as well as viewshed analyses and cross sections indicating the visibility of the development;
- Daytime and night-time recordings of VIA selected views and the securing of additional, representative scenic resources as deemed appropriate;
- An extensive audit of the receiving environment's **Sense of Place**;
- The execution of daytime and night-time view simulations as viewed from current and additional vantage points, providing decision makers with a realistic, representative visual reference of what may be expected.

3 APPROACH

3.1 NATURE OF THE DEVELOPMENT

Guideline for involving visual & aesthetic specialists in EIA processes: Edition 1, by Bernard Oberholzer (2005), classifies this type of development as a Category 5 Development.

The proposed development covers a large area, measuring approximately 19.6 km east-west, by 9 km north-south. It comprises 66 turbines with a hub height of 130m and combined height (tower plus blade radius) of 215 m each, situated on elevated ground, rendering it visible across great distances.

3.2 NATURE OF THE AREA PRE-DEVELOPMENT

- Because of the development's footprint, height, elevation, and subsequent visibility across great distances, the receiving environment is very large, and cannot be characterised easily;
- An area to the south of Grahamstown area is already characterised by the similar, albeit smaller, Waainek WEF (comprising 9 turbines at 84 m hub height), and about

20% of the proposed development area is situated within the Cookhouse REDZ (although stipulated as an area with 'very high visual sensitivity'), thus similar adjacent developments are present or provisionally accommodated for;

- The town of Grahamstown, with all of its functions, including residential, business, waste disposal and limited light industrial facilities is situated in the area;
- The receiving environment is characterised by agriculture;
- Importantly, a large, almost uninterrupted portion of the receiving area, especially towards the northwest to northeast, measuring approximately 55 km east-west by 40 km north-south is characterised almost entirely by nature tourism, in the form of private game reserves, ecotourist facilities, hunting farms and The Great Fish River Nature Reserve. The southern border of Kwandwe Private Game Reserve, an area of approximately 22 500 Ha, is situated directly adjacent to the north-western part of the proposed development.
- While stating that "Overall, the visual impact of the Albany WEF is considered to be HIGH, mostly due to the potential impact on sensitive visual receptors such as nearby game farm and nature reserve operators", and acknowledging that the potential losses of scenic resources are high, the VIA Report seems to not take into account the high visual exposure of the development to The Great Fish River Nature Reserve, a Regional Park.
- In an attempt to categorise the anticipated level of intensity of the development, The VIA Report erroneously attempts to summarise a very large receiving environment (comprising a mix of protected areas of regional significance, high cultural and historical significance, medium scenic, low scenic and degraded land) into a categorisation of medium scenic, cultural or historical significance. Again, The VIA Report seems to not take into account the high visual exposure of the development to The Great Fish River Nature Reserve, an area of regional significance.



Figure 3-1: Views from Adams Krans Great Fish Provincial Nature Reserve



Figure 3-2: Highland grassland plateau Lalibela Private Game Reserve

3.3 NATURE OF VIEWER TYPES EXPOSED TO THE DEVELOPMENT

- The types of viewers potentially exposed to the development are expected to be commuters and residents, as well as tourists, whose attitudes may range between being positively inclined to very adverse to visual change in the area;
- Because of the abundance of eco-tourism facilities, recreational facilities and a Regional Park enjoying significant exposure, public interest or possibility for controversy of the proposed development is anticipated to be very high.

3.4 POTENTIAL VISUAL EXPOSURE

- The proposed development is directly adjacent to an elevated part of the N2 national road, and adjacent to the R67, thus viewer frequency and visibility is anticipated to be very high;
- Structures are expected to be excessively high, thus facilities over great distances will suffer significant exposure to the development.

3.5 LANDSCAPE SENSITIVITY

Landscape sensitivity was determined as part of this study through the identification of natural, scenic and cultural resources which have aesthetic and economic value to the local community, the region, and society as a whole.

- The resources considered include features of topographic, geological or cultural interest, together with landscape grain or complexity.
- Protected landscapes, such as national parks, nature reserves, game parks or game farms, as well as heritage sites, add to the cultural value of an area and were thus considered as essential criteria in the determination of landscape sensitivities.

Much about the fact that the development is in part located within the Cookhouse REDZ, it should be noted that the REDZ visual sensitivity mapping at the regional scale indicate that the Albany WEF receiving environment is categorised as 'very high visual sensitivity', as shown in Figure 3-3. This means that it is not ideally suitable for wind farm development where the wilderness character forms the basis for wildlife and nature tourism (and more so if this is the basis for Protected Area establishment and upkeep by biodiversity stewardship).

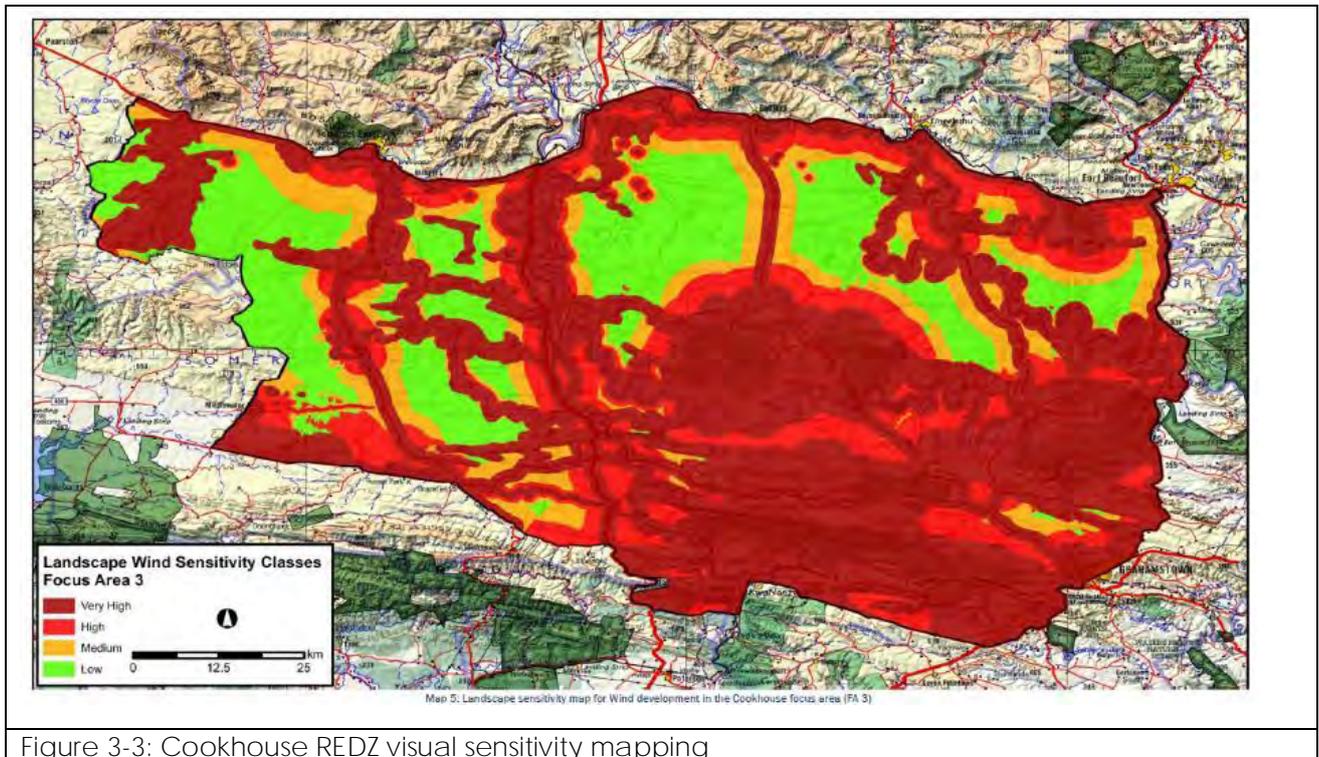


Figure 3-3: Cookhouse REDZ visual sensitivity mapping

3.6 EXPECTED LEVEL OF IMPACT/TYPE OF ASSESSMENT

The following derivative table can serve as a guideline to determine the intensity of specialist involvement appropriate for this development. Correlating the development types with the types of environment indicates that a Very High Visual Impact can be expected, and it is likely that no mitigation will be effective.

Table 3-1: Derivative table aiding the determination of the level of specialist involvement and expected impact					
TYPE OF ENVIRONMENT	TYPE OF DEVELOPMENT (LOW TO HIGH INTENSITY)				
	Category 1	Category 2	Category 3	Category 4	Category 5
Protected/wild areas of international, national, or regional significance	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected	Very high visual impact expected
Areas or routes of high scenic, cultural, historical significance	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected	Very high visual impact expected
Areas or routes of medium scenic, cultural or historical significance	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected	High visual impact expected
Areas or routes of low scenic, cultural, historical significance / disturbed	Little or no visual impact expected - possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected	High visual impact expected
Disturbed or degraded sites / run-down urban areas / wasteland	Little or no visual impact expected - Possible benefits	Little or no visual impact expected - Possible benefits	Little or no visual impact expected	Minimal visual impact expected	Moderate visual impact expected

3.7 SENSITIVE RECEPTORS AND ZONE OF VISUAL INFLUENCE

There are many views and opinions about distances within which wind farm visual impact should be assessed some of which has been set out in guidelines and locally adopted eg REDZ SEA Landscape Assessment and there are theoretical positions which are not always well considered. There are however a number of research studies that have been published which can be used to form sound opinion and inform best practise.

A study by the University of Newcastle Study (2002)¹ commissioned by Scottish Natural Heritage (based on their assessment of the eight wind farm) recommended a height-distance relationship for Zone of Visual Influence (ZVI) as shown in the following table (with increased heights relevant to Albany WEF VIA added by extrapolation).

Height of turbines (total including rotors)(m)	Recommended ZVI distance (km)
50	15
70	20
85	25
100	30
200	60 (by extrapolation)

A study by the Argonne National Laboratory for US Department of Energy Bureau of Land Management (BLM)² in 2012 gave a report on visual impact of wind and guidance on visibility. The study was a systematic examination of the visual impact of five existing wind farms in Wyoming and Colorado, with turbines 90 – 120m in tip height and most of them close to 120m (thus just more than half of proposed Albany at 215m) and It was found that:

- “Under favorable viewing conditions, the wind facilities were judged to be major foci of visual attention at up to 19 km and likely to be noticed by casual observers at >37 km”; and
- “A conservative interpretation suggests that for such facilities, an appropriate radius for visual impact analyses would be 48 km, that the facilities would be unlikely to be missed by casual observers at up to 32 km...the facilities could be major sources of visual contrast at up to 16 km.”

The study further classified situations rated 5 or 6 as being of high impact and, on that basis, specified a *Limit of visual pre-eminence* which was 16 kms for turbines 120 m high such that:

- “At this distance, the wind facility is a major focus of visual attention, drawing and holding visual attention. . . . The facility as a whole is likely to be perceived by some viewers as having a large visual impact.”

¹ University of Newcastle. 2002. Visual Assessment of Windfarms Best Practice. Scottish Natural Heritage Commissioned Report F01AA303A

² 10 Sullivan, Robert G., et. al., 2012. Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes. Argonne National Laboratory and the U.S. Department of the Interior, Bureau of Land Management. USA [BLM Study].

For the scale of the Albany WEF with 66 turbines with a hub height of 130m and combined height (tower plus blade radius) of 215 m each, situated on elevated ground the above can be more or less doubled. At the hand of these considerations various visual receptors have been identified in relation to the Albany WEF, with additional receptors located further than 20km away listed below within Table 3-2.

Table 3-2:Affected Main places							
Affected Places	Main	Distance from Albany	Affected Places	Main	Distance from Albany	Affected Main Places	Distance from Albany
Grahamstown		5km	eMxaxa		30km	Ntloko	30km
Makana NU		5km	Glenmore		30km	Pikoli	30km
Ndlambe NU		5km	Gwabeni		30km	Port Alfred	30km
Rhini		5km	Kwandwane		30km	Qamnyana	30km
Bathurst		20km	KwaPikoli		30km	Themba	30km
Enxuba		20km	Lujiko		30km	Zweledinga	30km
KwaNdwanyana		20km	Ngqushwa NU		30km		
Ngqushwa NU		20km	Nkonkobe NU		30km		
Nolukhanyo		20km	Nolukhanyo		30km		

Various subplaces have also been identified and these are outlined within Table 3-3.

Table 3-3:Affected Sub places							
Affected Places	Sub	Distance from Albany	Affected Places	Sub	Distance from Albany	Affected Sub Places	Distance from Albany
Beaconsfield Mine		5km	Belmont Valley		10km	Bathurst SP	20km
Eluxolweni		5km	Eluxolweni		10km	Enxuba SP	20km
Grahamstown SP1		5km	Fortengland		10km	Grahamstown SP2	20km
Hlalani		5km	Grahamstown Military Base		10km	KwaNdwanyana SP	20km
Hooggenoeg		5km	Grahamstown SP1		10km	Langholm Estate	20km
Joza		5km	Grahamstown SP2		10km	Makana NU	20km
King Flats		5km	Hlalani		10km	Ndlambe NU	20km
Makana NU		5km	Hooggenoeg		10km	Ngqushwa NU	20km
Ndlambe NU		5km	Kingswood		10km	Nolukhanyo SP	20km
Phaphamani		5km	Makana NU		10km		

Affected Places	Sub	Distance from Albany	Affected Places	Sub	Distance from Albany	Affected Places	Sub	Distance from Albany
Rhini SP		5km	Mary Waters		10km			
			Ndlambe NU		10km			
			Rhodes		10km			
			Vukani		10km			

Further receptors have been identified in the forms of nature and wildlife tourism /ecotourism operators, game and hunting related activities in the area and these are outlined within Figure 3-4. In terms of the actual visual impact to be expected at these locations, a viewshed was compiled to determine the impact and was used to determine the how many turbines would be visible in each location.

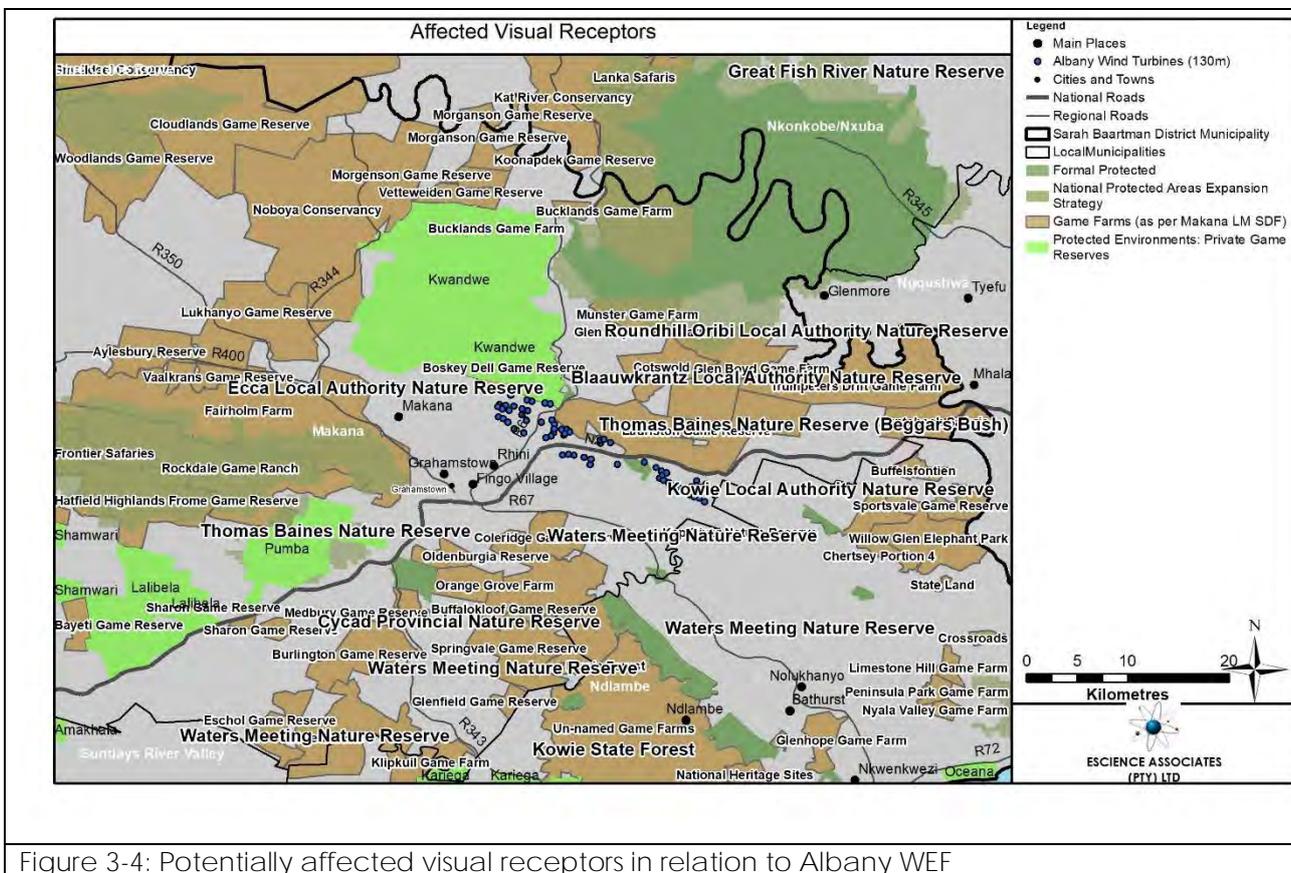


Figure 3-4: Potentially affected visual receptors in relation to Albany WEF

Assessing this impact to other receptors is key to determine the extent to which the viewshed will be impacted and as demonstrated within these areas.

Various areas are expected to be impacted and these are outlined below within Tables Table 3-4 to Table 3-6.

Table 3-4: Affected Formal Protected Areas – Nature Reserves		
Great Fish River Nature Reserve	Ghio Wetland Local Authority Nature Reserve	Waters Meeting Nature Reserve
Kowie Local Authority Nature Reserve	Waters Meeting Nature Reserve	Cycad Provincial Nature Reserve
Kowie State Forest	Roundhill Oribi Local Authority Nature Reserve	Blaauwkrantz Local Authority Nature Reserve
Thomas Baines Nature Reserve	Thomas Baines Nature Reserve (Beggars Bush)	Ecca Local Authority Nature Reserve

Table 3-5: Affected Formal Protected Areas – Protected Environments (Game Reserves)		
Oceana	Pumba	Shamwari
Sibuya	Kariega	Lalibela
Kwandwe		

Table 3-6: Affected Game Farms and Ecotourism Related Operations		
Aylesbury Reserve	Hatfield Highlands Frome Game Reserve	
Bayeti Game Reserve	Huntshoek Safaris	
Boskey Dell Game Reserve	Kap River Nature Reserve	Orange Grove Farm
Bucklands Game Farm	Kat River Conservancy	oune Safaris
Buffalokloof Game Reserve	Klipkuil Game Farm	Peninsula Park Game Farm
Buffelsfontien	Koonapdek Game Reserve	Rockdale Game Ranch
Burchells Game Reserve	Lanka Safaris	Sharon Game Reserve
Burlington Game Reserve	Lauriston Game Reserve	Smalldeel Conservancy
Chertsey Portion 4	Limestone Hill Game Farm	Sportsvale Game Reserve
Cloudlands Game Reserve	Lukhanyo Game Reserve	Springvale Game Reserve
Coleridge Game Reserve	Medbury Game Reserve	State Land

Table 3-6: Affected Game Farms and Ecotourism Related Operations		
Cotswold	Morganson Game Reserve	Terry Fitzgerald Private Nature Reserve
Crossroads	Morgenson Game Reserve	Trumpeters Drift Game Farm
Eschol Game Reserve	Munster Game Farm	Additional Un-named Game Farms
Fairholm Farm	National Heritage Sites	Vaalkrans Game Reserve
Frontier Safaries	Noboya Conservancy	Vetteweiden Game Reserve
Glen Boyd Game Farm	Nyala Valley Game Farm	Willow Glen Elephant Park
Glenfield Game Reserve	Oldenburgia Reserve	Willowfountain
Glenhope Game Farm	Olienhout Game Farm	Woodlands Game Reserve

The overlay of turbine visibility against these areas is illustrated in Figure 3-5 and in terms of the impact to the Great Fish River Nature Reserve (refer to Figure 3-6), it is illustrated the various viewpoints throughout the reserve will be impacted in a negative manner as some of these viewpoints will have as many as all Albany Turbines visible on the horizon. Furthermore, various infrastructure at Great Fish will be detrimentally impacted upon with places such as Adam's Krans viewpoint, Mbabela Lodge, Sam Knott Memorial Church, a proposed campsite and a proposed picnic site affected most.

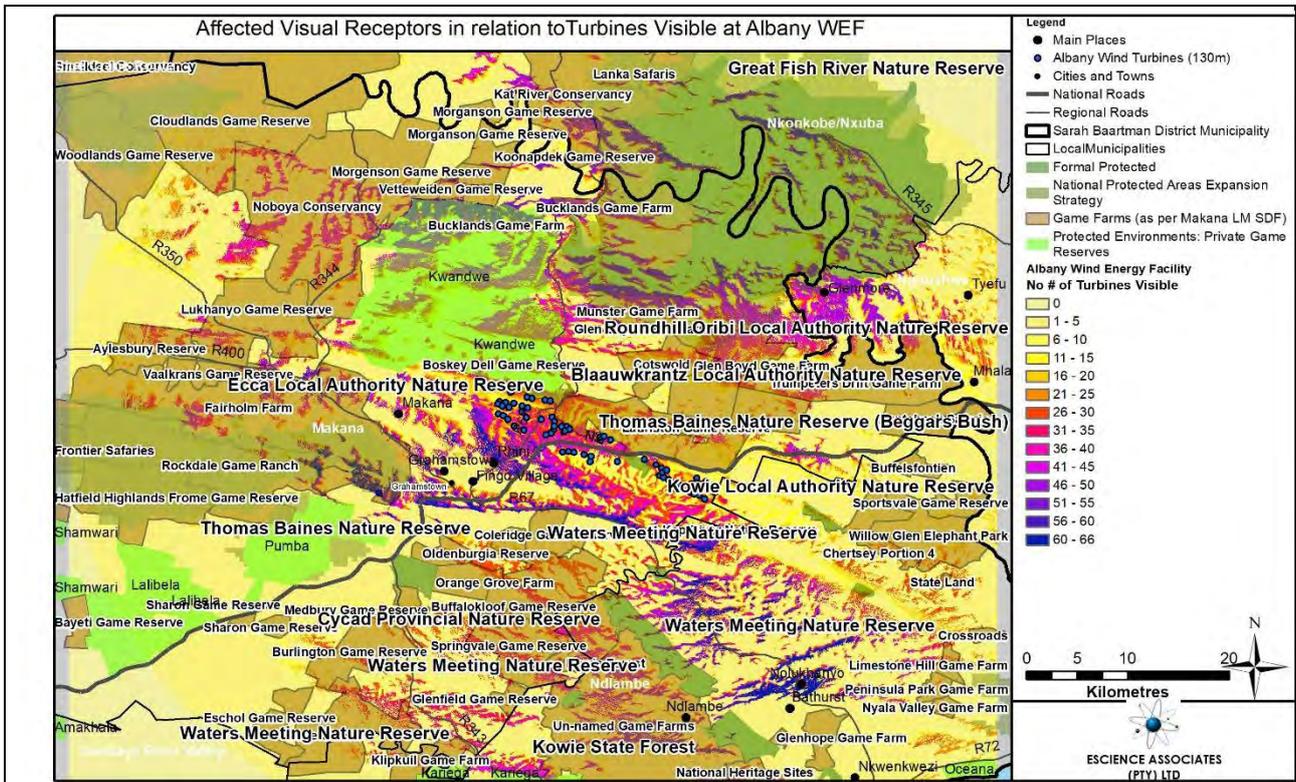


Figure 3-5: Affected visual receptors in relation to Albany WEF, displaying the amount of turbines visible at any location

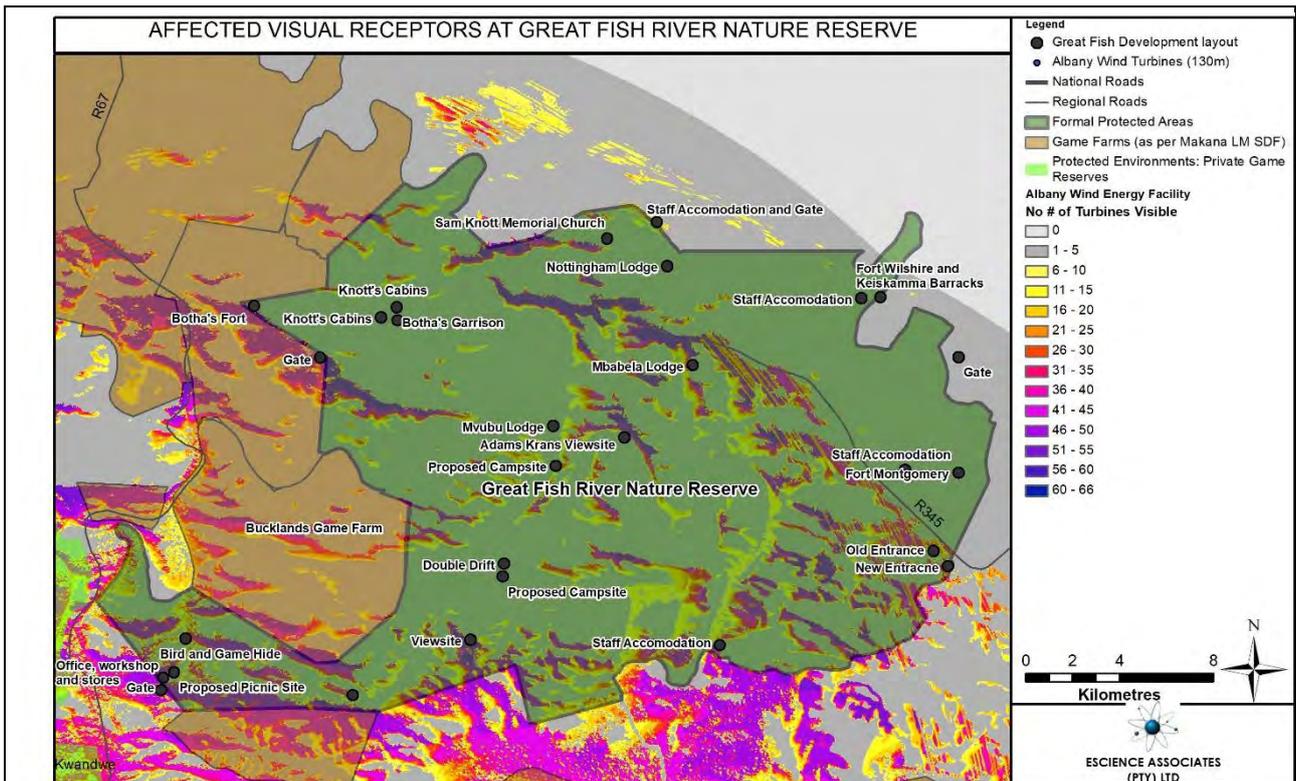


Figure 3-6: Turbine visibility within Great Fish River Nature Reserve

3.8 PRINCIPLES AND GUIDELINES

The specialist in undertaking the VIA should be aware of the following principles and concepts underpinning visual input:

- An awareness that 'visual' implies the full range of visual, aesthetic, cultural and spiritual aspects of the environment that contribute to the area's sense of place;
- The consideration of both the natural and the cultural landscape, and their inter-relatedness;
- The identification of all scenic resources, protected areas and sites of special interest, together with their relative importance in the region;
- An understanding of the landscape processes, including geological, vegetation and settlement patterns, which give the landscape its particular character or scenic attributes;
- The need to include both quantitative criteria, such as 'visibility', and qualitative criteria, such as landscape or townscape 'character';
- The need to include visual input as an integral part of the project planning and design process, so that the findings and recommended mitigation measures can inform the final design and quality of the project.

4 VIEW SIMULATIONS

Below are view simulations from two key vantage points from inside the Great Fish River Nature Reserve and from the Kwandwe Protected Environment. For a full list of viewpoints of the development, please refer to Annexures A to E.

<p>AlbanyWEF - Viewpoint 1 - Adam's Krantz</p>	
	<p>GREAT FISH RIVER GAME RESERVE</p> <p>Adam's Krantz Viewpoint</p> <p>DAY AFTER DEVELOPMENT</p> <p>33°2'3.94"S 26°49'34.96"E Distance: 31km Heading: 221,0°</p>
	<p>GREAT FISH PROVINCIAL NATURE RESERVE</p> <p>Adam's Krantz Viewpoint</p> <p>TWILIGHT AFTER DEVELOPMENT</p> <p>33°2'3.94"S 26°49'34.96"E Distance: 31km Heading: 221,0°</p>
<p>AlbanyWEF - Viewpoint 1 - Adam's Krantz</p>	
	<p>GREAT FISH PROVINCIAL NATURE RESERVE</p> <p>Adam's Krantz Viewpoint</p> <p>TWILIGHT AFTER DEVELOPMENT</p> <p>33°2'3.94"S 26°49'34.96"E Distance: 31km Heading: 221,0°</p>
	<p>GREAT FISH RIVER GAME RESERVE</p> <p>Adam's Krantz Viewpoint</p> <p>DAY AFTER DEVELOPMENT</p> <p>33°2'3.94"S 26°49'34.96"E Distance: 31km Heading: 221,0°</p>

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE
Research Station/Recreational
DAY
AFTER DEVELOPMENT
33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE
Research Station/Recreational
TWILIGHT
AFTER DEVELOPMENT
33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



DAY
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



NIGHT
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

5 CONCLUSIONS

Modern wind farms are highly visible structures because of both the height of turbines and their number and geographic distribution in a wind farm.

VIA by and large are comprised of three main considerations:

1. how visible is it from a series of specific viewpoints;
2. how substantial is the impact on viewers;
3. and how much attention should be given to those viewers.

A VIA for a wind farm development has to adequately consider the above and has to be tailored to be fit for purpose and needs to determine visual impact "significance" with respect to both the local as well as regional importance of the landscape and features the landscape is comprised of, the relative pristineness of landscape and features comprising and their contribution to sense of place.

The VIA in the EIR for the Albany WEF did not meet these objectives, is defective and must be rejected at the hand of reasons set out below.

5.1 IDENTIFICATION OF SENSITIVE RECEPTORS AND ZONE OF VISUAL INFLUENCE

Empirical research now available on wind farm visual impact shows a consistent and essentially linear relationship between turbine height, distance and wind farm visual impact. For any degree of visual impact (such as the zone of visual influence, or threshold for visual dominance), if turbine height is doubled, the distance threshold for that degree of impact also typically doubles.

The VIA indicates that "Based on potential sensitivity, visibility and exposure, the following sensitive receptors (Figure 7) were identified within the study area." However, the identification of the receptors is totally inadequate as can be gleaned by comparing the maps prepared by EScience for Indalo (Figure 5-1 and Figure 5-2) to the map within the CES VIA (Figure 5-3).

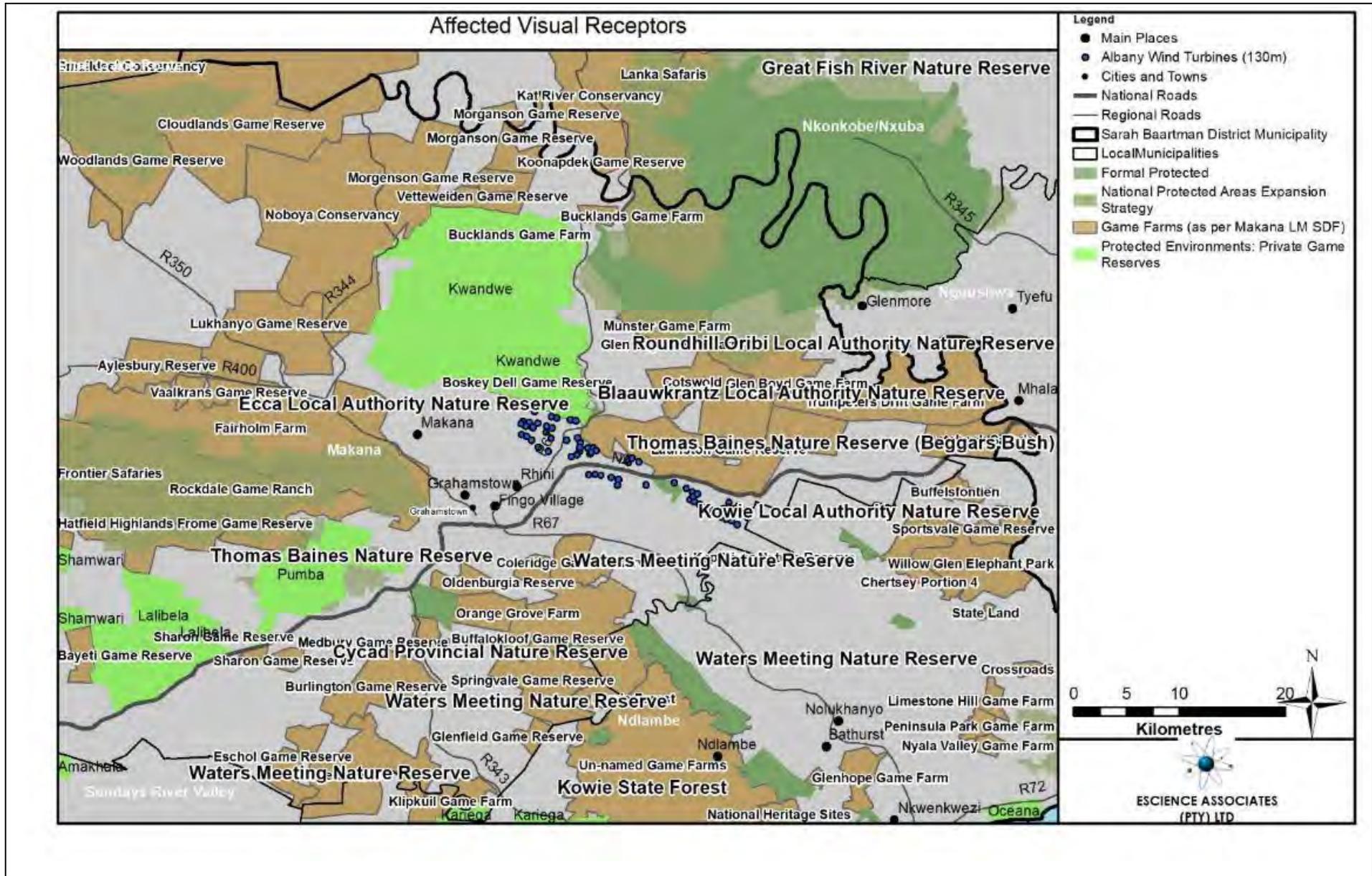


Figure 5-1:Albany WEF Affected Visual Receptors

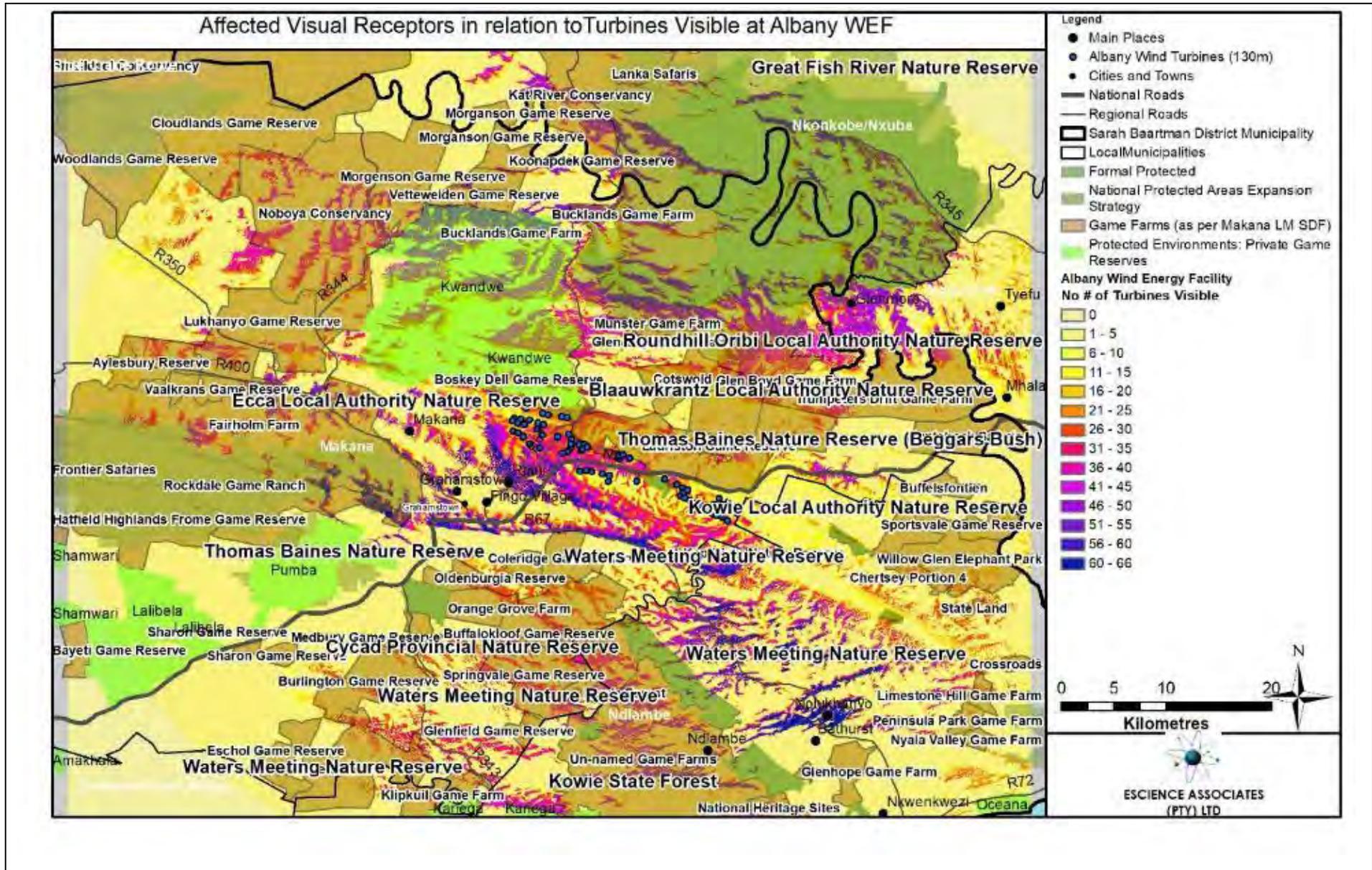


Figure 5-2: Albany WEF Affected Visual Receptors – Number of turbines visible

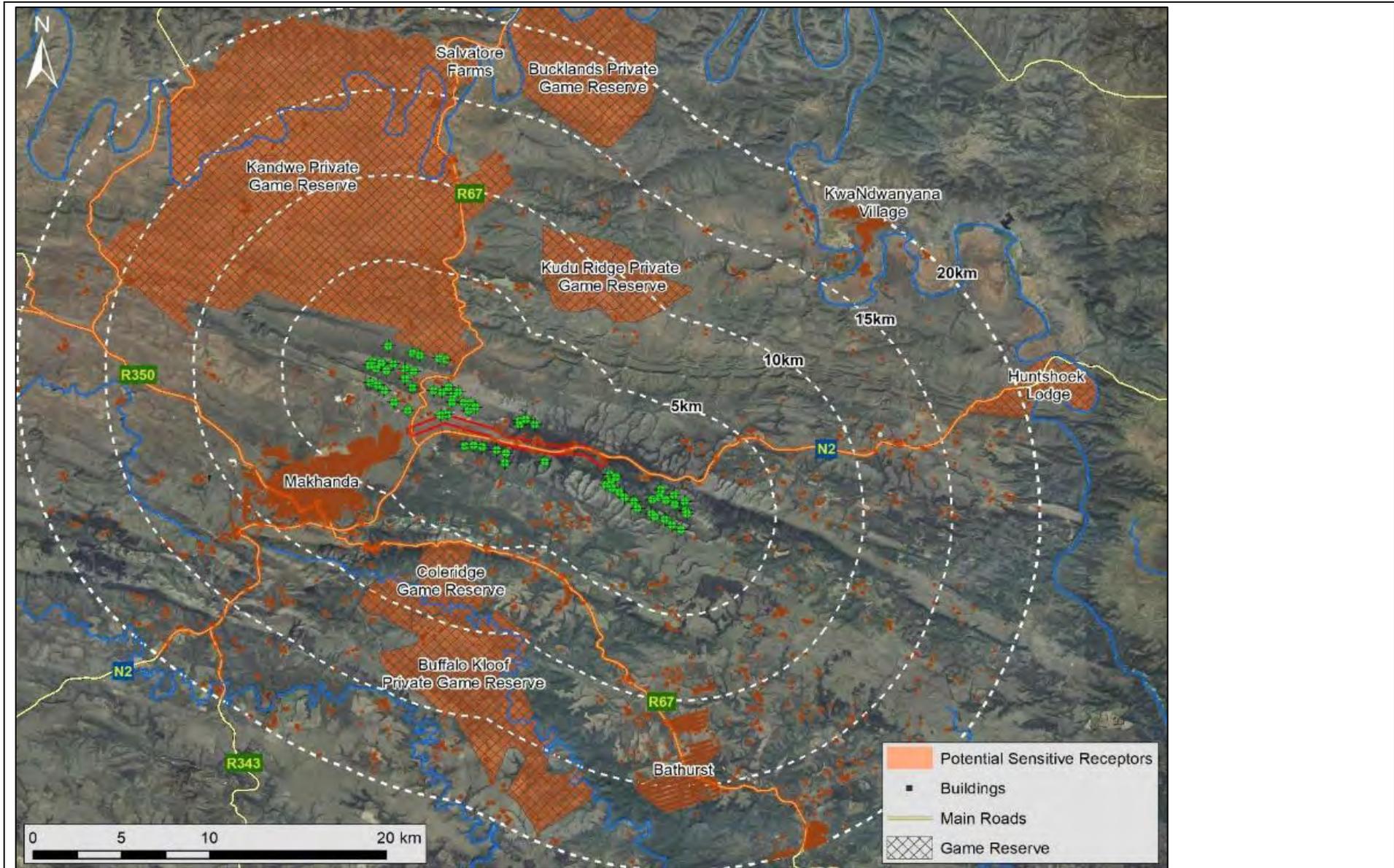


Figure 5-3: Albany WEF Affected Visual Receptors according to CES VIA

5.2 VANTAGE POINTS

Poor selection of vantage points and complete omission of the Great Fish Provincial Nature Reserve are material deficiencies in the Report. The absence of the Great Fish Provincial Nature reserve is conspicuous, and the deficiency is of such a nature that it beggars belief. The actual impact on the Great Fish reserve and the Adams Krans view point as determined by independent specialist alone constitutes a fatal flaw, the aggregated visual impact on wildlife and nature tourism operations in the area would be an externality of fatal proportions.

5.3 ASSESSMENT OF SIGNIFICANCE OF VISUAL IMPACT

Firstly, the EIR omits/ hides the impact to views that generally have both a high scenic and wilderness value that may be appreciated from Great Fish and Kwandwe. Secondly, the EIR specifically hides the impact from a viewing deck constructed in Great Fish for the purposes of appreciating the great and largely unspoilt scenery from Adam's Krans. The view from Adam's Krans has been described as "*The most beautiful landscape in South Africa*"³ and "*The Adam's Krantz viewpoint over the twisting Fish river canyon is one of the most iconic Eastern Cape vistas*".⁴ The failure of the EIR to identify the significant impact of the WEF on the general views of the Great Fish and Kwandwe and specifically on the Adam's Krans view is a material and fatal flaw in the EIR. The proposed WEF is a long linear development spanning 20 km with the Sentech tower having a height of 204 m which creates a significant visual impact on the vistas from surrounding Protected Areas. The viewpoint from Adams Krans in the Great Fish is particularly severely affected. The independent viewsheds that were prepared by EScience for Indalo clearly demonstrate that the WEF takes up two thirds in the middle of the vista from Adam's Krans and will amount to a blight on a landscape of national importance. These undisturbed landscape views form part of the unique wilderness experience for ecotourism to the Great Fish and Indalo Protected Areas that would be permanently disturbed by the WEF. For this reason alone, the application to develop the WEF is not desirable at this location and should be refused by the DEFF.

³ <https://www.grocotts.co.za/2015/02/18/the-most-beautiful-landscape-in-south-africa/>.

⁴ <https://www.visiteasterncape.co.za/parks/great-fish-river/>.

5.4 DEFICIENCIES IN VISUAL IMPACT CONSIDERATION:

Additionally, the following problems with the veracity of the VIA need to be pointed out :

- Turbine blade and their dynamics: The dynamic aspect of wind turbine blade motion has not been considered as a contributor to visual impact whereas Sullivan found that contributed significantly to visual prominence of wind turbines at distances of up to 24 km;⁵ others have identified wind turbine blade as a significant attractor of visual attention and a factor that increases perceived visual contrast from wind facilities.⁶
- Atmospheric perspective: It is well understood that humans judge distance to objects in the landscape in part by assessing the effects of atmospheric perspective, the decrease in contrast between an object and its background as distance increases. As distance increases, the colours of the object become less distinct and shift toward the background colour, usually blue or gray. Atmospheric perspective is an important cue for an observer to determine relative distance of objects in the landscape. The loss of sharpness and lower contrast of photographs relative to in-situ viewing may exaggerate the effects of atmospheric perspective, thus may affect the perception of scale and distance to objects in the landscape, making them appear farther away than they actually are.⁷

5.5 ERRONEOUS CONSIDERATION OF LIFESPAN OF WIND ENERGY FACILITY

Consideration of the likely development lifespan and future of the wind farm indicates a project life of 20-25 years which is flawed. The Report does not consider the reality of turbines and wind energy technology development and turbine tower and blade advances which make application of taller and larger bladed turbines more economical. Typically wind farms are redeveloped during their productive lifespans for example by raising and increasing blade diameter. This means that the expected lifespan of the WEF is longer than 25 years and can even be permanent but with increasing visual impacts as the towers are lifted.

⁵ Sullivan et al (2012).

⁶ Bishop & Miller (2007).

⁷ Palmer & Sullivan 2020.

5.6 LACK OF MITIGATION

The VIA indicates that there is limited mitigation potential due to the extreme size of turbines. However, the alternatives evaluation is neglected and specifically omits to consider turbines of lower hub-height and reduced visibility. A reduced hub height operating at a site of good wind resource may still compete with a turbine of higher hub height at a site with poorer wind resource. The omission to investigate a reduced hub-height along with the failure to consider the no-go alternative mean the EIR has not considered the minimum requirements for “alternatives” as prescribed in the EIA Regulations. We submit that proper assessment and consideration of these alternatives will most likely have demonstrated that the proposed location for the WEF is not suitable for the development but was avoided to prevent this conclusion from being reached.

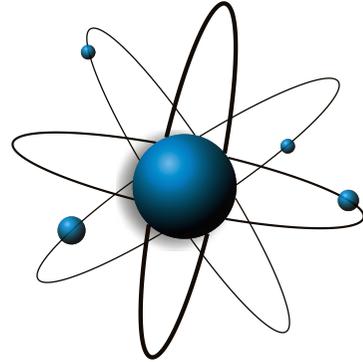
5.7 EXTERNAL REVIEWER

It is problematic that the external specialist review notes that the “*peer reviewer received the VIA report at a very late stage in the process and has had very limited time to produce this peer review report*”. This statement confirms that the specialist review cannot be upheld as verification of the veracity of the study. In fact, the external specialist himself admits so much. “*The review...may require an additional opportunity and sufficient time to make specific recommendations regarding additions or alterations to the report, or whether the proposed development is acceptable in nature or fatally-flawed*”. This statement means the external specialist review report is inadequate, should be rejected and referred back to the specialist to perform a proper independent review that meet independent scientific standards.

5.8 CONSIDERATION OF ALTERNATIVES

The VIA is deficient in considering alternatives and specifically not considering the no-go option, with the inadequacy being carried over into the SIA and EIR where neither the no-go option or the option (and benefits) of protected area expansion.

ANNEXURE A – SENSE OF PLACE



**ESCIENCE
ASSOCIATES**
escience associates (pty) ltd

COMPARITIVE VISUAL IMPACT ASSESSMENT

PROPOSED ALBANY WIND ENERGY FACILITY,
EASTERN CAPE, SOUTH AFRICA

ANNEXURE A

Sense of Place

BY JA GELDENHUYS & THEO FISCHER

APRIL 2020

POSTAL ADDRESS: PO Box 2950, Saxonwold, 2132, Johannesburg

PHYSICAL ADDRESS: 09 Victoria Street, Oaklands, 2192, Johannesburg

TEL: +27 11 728 2683

AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



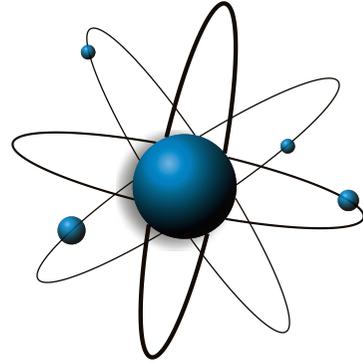
AlbanyWEF - Sense of Place



AlbanyWEF - Sense of Place



ANNEXURE B - VIEW SIMULATION: GREAT FISH PROVINCIAL NATURE RESERVE



**ESCIENCE
ASSOCIATES**
escience associates (pty) ltd

COMPARITIVE VISUAL IMPACT ASSESSMENT

PROPOSED ALBANY WIND ENERGY FACILITY,
EASTERN CAPE, SOUTH AFRICA

ANNEXURE B

View Simulation: Great Fish Provincial Nature Reserve

BY JA GELDENHUYS & THEO FISCHER

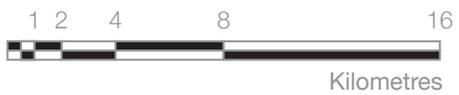
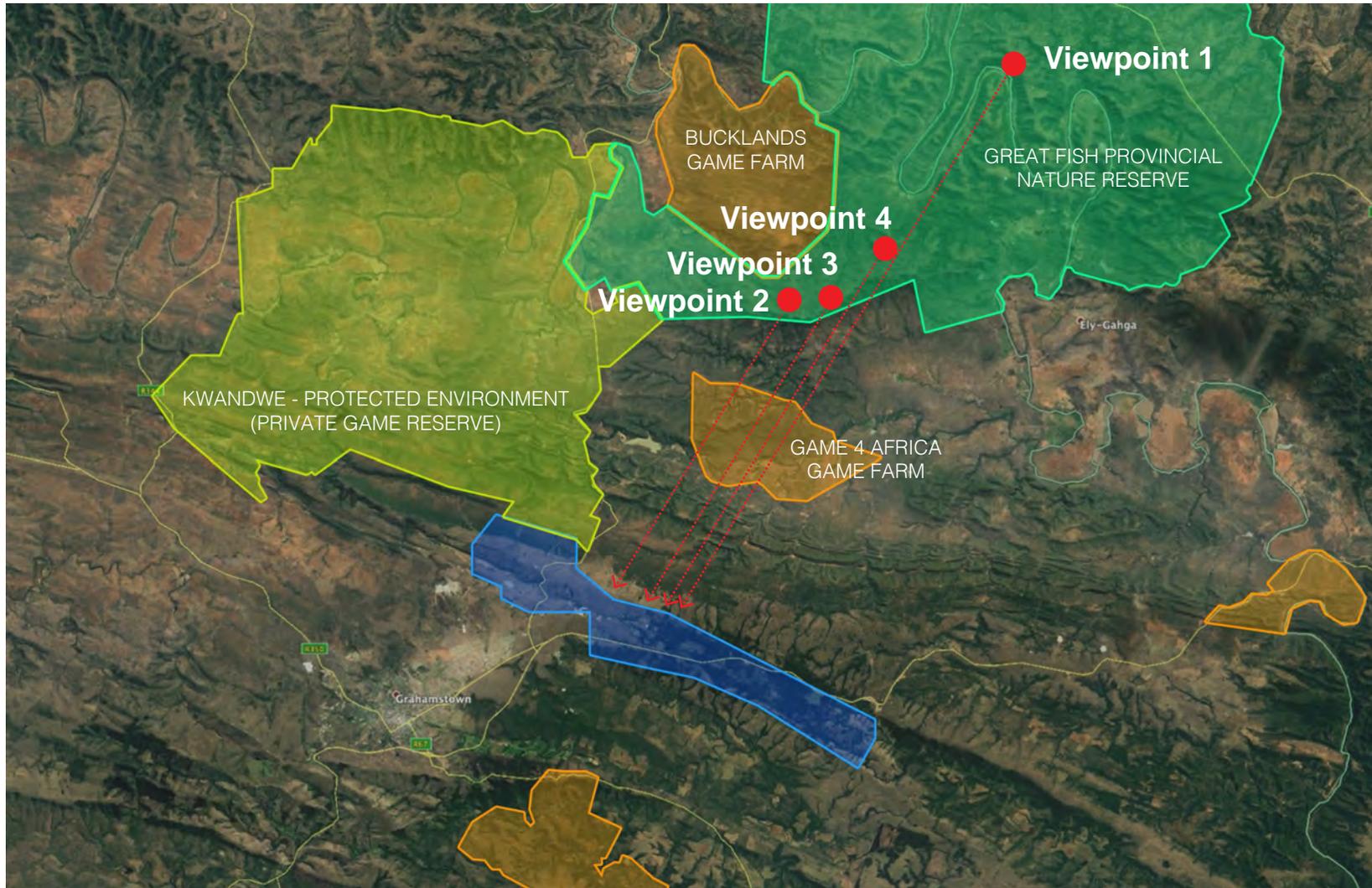
JULY 2020

POSTAL ADDRESS: PO Box 2950, Saxonwold, 2132, Johannesburg

PHYSICAL ADDRESS: 09 Victoria Street, Oaklands, 2192, Johannesburg

TEL: +27 11 728 2683

AlbanyWEF - Great Fish Provincial Nature Reserve Viewpoints



LEGEND

- Proposed Development
- Great Fish Provincial Nature Reserve
- Kwandwe - Protected Environment
- Game Farms

- Viewpoint 1 (Adam's Krans)
33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°
- Viewpoint 2 (Research Station)
33°08'09.4"S 26°43'13.6"E
Distance: 15,3km
Heading: 203,23°
- Viewpoint 3 (Game Trail)
33°08'18.7"S 26°44'03.5"E
Distance: 14,9km
Heading: 203°
- Viewpoint 4 (Game Trail)
33°06'52.8"S 26°45'55.5"E
Distance: 18,2km
Heading: 203°



AlbanyWEF - Viewpoint 1 - Adam's Krantz



GREAT FISH PROVINCIAL
NATURE RESERVE

Adam's Krantz Viewpoint

DAY
BEFORE DEVELOPMENT

33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°

AlbanyWEF - Viewpoint 1 - Adam's Krantz



GREAT FISH PROVINCIAL
NATURE RESERVE

Adam's Krantz Viewpoint

DAY
AFTER DEVELOPMENT

33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°

AlbanyWEF - Viewpoint 1 - Adam's Krantz



GREAT FISH PROVINCIAL
NATURE RESERVE

Adam's Krantz Viewpoint

TWILIGHT
BEFORE DEVELOPMENT

33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°

AlbanyWEF - Viewpoint 1 - Adam's Krantz



GREAT FISH PROVINCIAL
NATURE RESERVE

Adam's Krantz Viewpoint

TWILIGHT
AFTER DEVELOPMENT

33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°

AlbanyWEF - Viewpoint 1 - Adam's Krantz



GREAT FISH PROVINCIAL
NATURE RESERVE

Adam's Krantz Viewpoint

NIGHT
BEFORE DEVELOPMENT

33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°

AlbanyWEF - Viewpoint 1 - Adam's Krantz



GREAT FISH PROVINCIAL
NATURE RESERVE

Adam's Krantz Viewpoint

NIGHT
AFTER DEVELOPMENT

33°2'3.94"S 26°49'34.95"E
Distance: 31km
Heading: 221,9°

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE

Research Station/Recreational

DAY
BEFORE DEVELOPMENT

33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE

Research Station/Recreational

DAY
AFTER DEVELOPMENT

33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE

Research Station/Recreational

TWILIGHT
BEFORE DEVELOPMENT

33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE

Research Station/Recreational

TWILIGHT
AFTER DEVELOPMENT

33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE

Research Station/Recreational

NIGHT
BEFORE DEVELOPMENT

33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 2



GREAT FISH PROVINCIAL
NATURE RESERVE

Research Station/Recreational

NIGHT
BEFORE DEVELOPMENT

33°08'09.4"S 26°43'13.6"E

AlbanyWEF - Viewpoint 3



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

DAY
BEFORE DEVELOPMENT

33°08'18.7"S 26°44'03.5"E

AlbanyWEF - Viewpoint 3



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

DAY
AFTER DEVELOPMENT

33°08'18.7"S 26°44'03.5"E

AlbanyWEF - Viewpoint 3



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

NIGHT
BEFORE DEVELOPMENT

33°08'18.7"S 26°44'03.5"E

AlbanyWEF - Viewpoint 3



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

NIGHT
AFTER DEVELOPMENT

33°08'18.7"S 26°44'03.5"E

AlbanyWEF - Viewpoint 4



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

DAY
BEFORE DEVELOPMENT

33°06'52.8"S 26°45'55.5"E

AlbanyWEF - Viewpoint 4



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

DAY
AFTER DEVELOPMENT

33°06'52.8"S 26°45'55.5"E

AlbanyWEF - Viewpoint 4



GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

NIGHT
BEFORE DEVELOPMENT

33°06'52.8"S 26°45'55.5"E

AlbanyWEF - Viewpoint 4



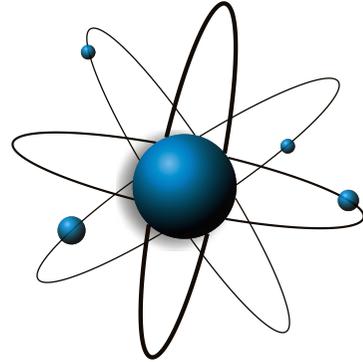
GREAT FISH PROVINCIAL
NATURE RESERVE

Viewpoint Game Trail

NIGHT
AFTER DEVELOPMENT

33°06'52.8"S 26°45'55.5"E

ANNEXURE C - VIEW SIMULATION: KWANDWE PROTECTED ENVIRONMENT



**ESCIENCE
ASSOCIATES**
escience associates (pty) ltd

COMPARITIVE VISUAL IMPACT ASSESSMENT

PROPOSED ALBANY WIND ENERGY FACILITY,
EASTERN CAPE, SOUTH AFRICA

ANNEXURE C

View Simulation: Kwandwe Protected Environment

BY JA GELDENHUYS & THEO FISCHER

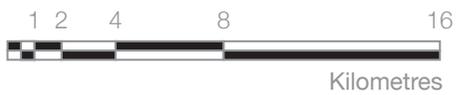
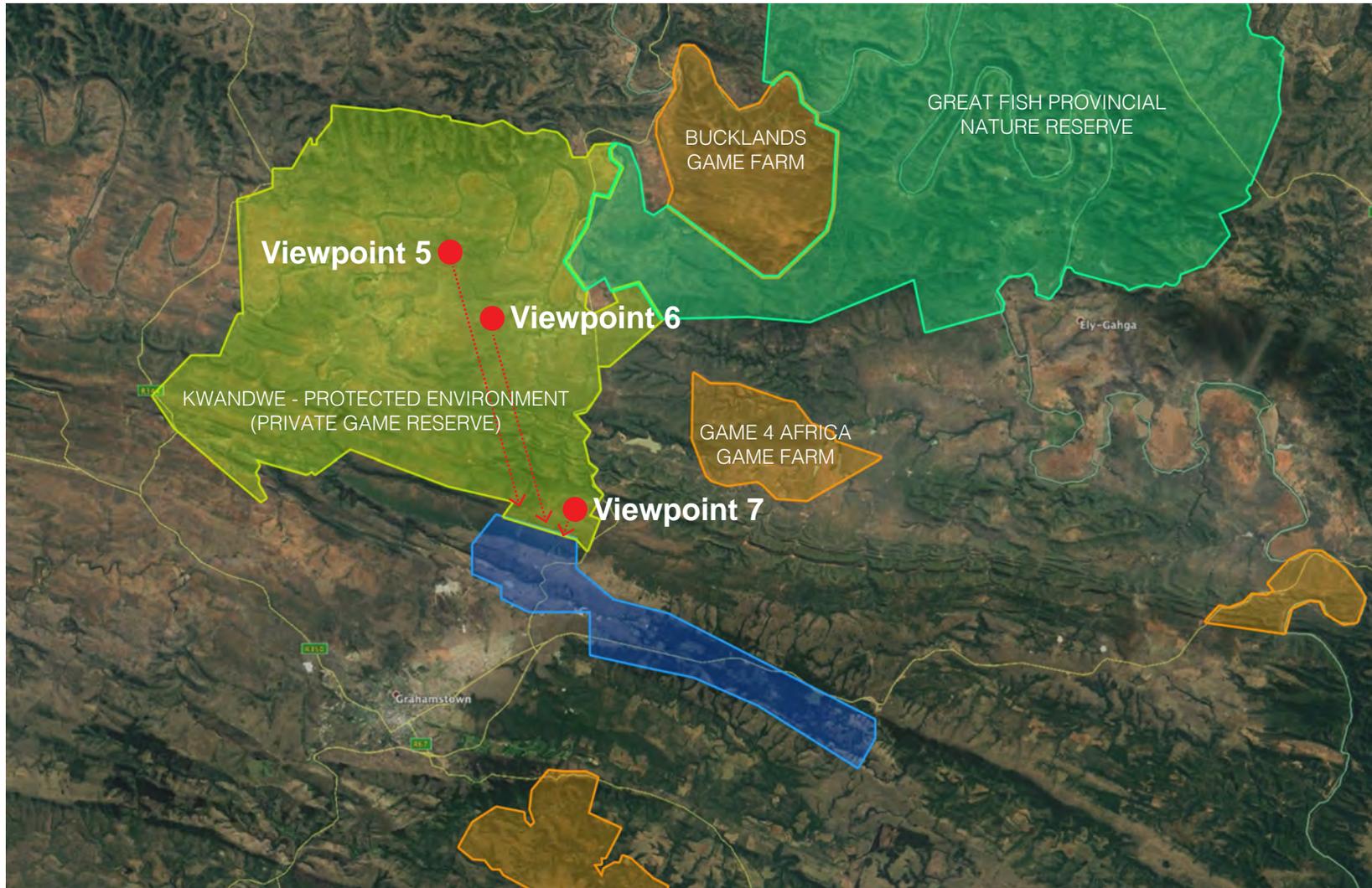
JULY 2020

POSTAL ADDRESS: PO Box 2950, Saxonwold, 2132, Johannesburg

PHYSICAL ADDRESS: 09 Victoria Street, Oaklands, 2192, Johannesburg

TEL: +27 11 728 2683

AlbanyWEF - Additional Viewpoints (Phase 1)



LEGEND

- Proposed Development
- Great Fish Provincial Nature Reserve
- Kwandwe - Protected Environment
- Game Farms

- **Viewpoint 5**
33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°
- **Viewpoint 6 (Kwandwe 6)**
33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°
- **Viewpoint 7 (Kwandwe South)**
33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°
Heading: 221,9°



AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



DAY
BEFORE DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



DAY
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



DAY
BEFORE DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



DAY
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



TWILIGHT
BEFORE DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



TWILIGHT
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



NIGHT
BEFORE DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



NIGHT
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



NIGHT
BEFORE DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 5 (Kwandwe Protected Environment)



NIGHT
AFTER DEVELOPMENT

33° 7'2.69"S 26°33'11.70"E
Distance: 13.5km
Heading: 170°

AlbanyWEF - Viewpoint 6 (Kwandwe Protected Environment)



DAY
BEFORE DEVELOPMENT

33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°

AlbanyWEF - Viewpoint 6 (Kwandwe Protected Environment)



DAY
AFTER DEVELOPMENT

33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°

AlbanyWEF - Viewpoint 6 (Kwandwe Protected Environment)



TWILIGHT
BEFORE DEVELOPMENT

33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°

AlbanyWEF - Viewpoint 6 (Kwandwe Protected Environment)



TWILIGHT
AFTER DEVELOPMENT

33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°

AlbanyWEF - Viewpoint 6 (Kwandwe Protected Environment)



NIGHT
BEFORE DEVELOPMENT

33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°

AlbanyWEF - Viewpoint 6 (Kwandwe Protected Environment)



NIGHT
AFTER DEVELOPMENT

33°8'52.11"S 26°33'55.81"E
Distance: 9,85km
Heading: 177°

AlbanyWEF - Viewpoint 7 (Kwandwe Protected Environment)



DAY
BEFORE DEVELOPMENT

33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°

AlbanyWEF - Viewpoint 7 (Kwandwe Protected Environment)



DAY
AFTER DEVELOPMENT

33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°

AlbanyWEF - Viewpoint 7 (Kwandwe Protected Environment)



TWILIGHT
BEFORE DEVELOPMENT

33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°

AlbanyWEF - Viewpoint 7 (Kwandwe Protected Environment)



TWILIGHT
AFTER DEVELOPMENT

33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°

AlbanyWEF - Viewpoint 7 (Kwandwe Protected Environment)



NIGHT
BEFORE DEVELOPMENT

33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°

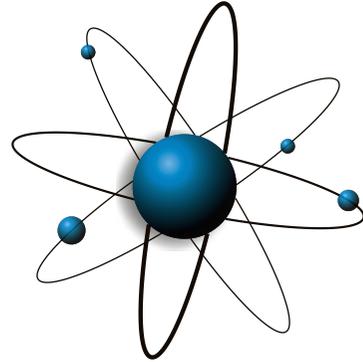
AlbanyWEF - Viewpoint 7 (Kwandwe Protected Environment)



NIGHT
AFTER DEVELOPMENT

33°13'36.41"S 26°36'18.21"E
Distance: 1km
Heading: 193°

ANNEXURE D - POSSIBLE ADDITIONAL VIEW SIMULATIONS



**ESCIENCE
ASSOCIATES**
escience associates (pty) ltd

COMPARITIVE VISUAL IMPACT ASSESSMENT

PROPOSED ALBANY WIND ENERGY FACILITY,
EASTERN CAPE, SOUTH AFRICA

ANNEXURE D

Possible additional view smulations

BY JA GELDENHUYS & THEO FISCHER

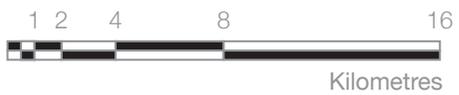
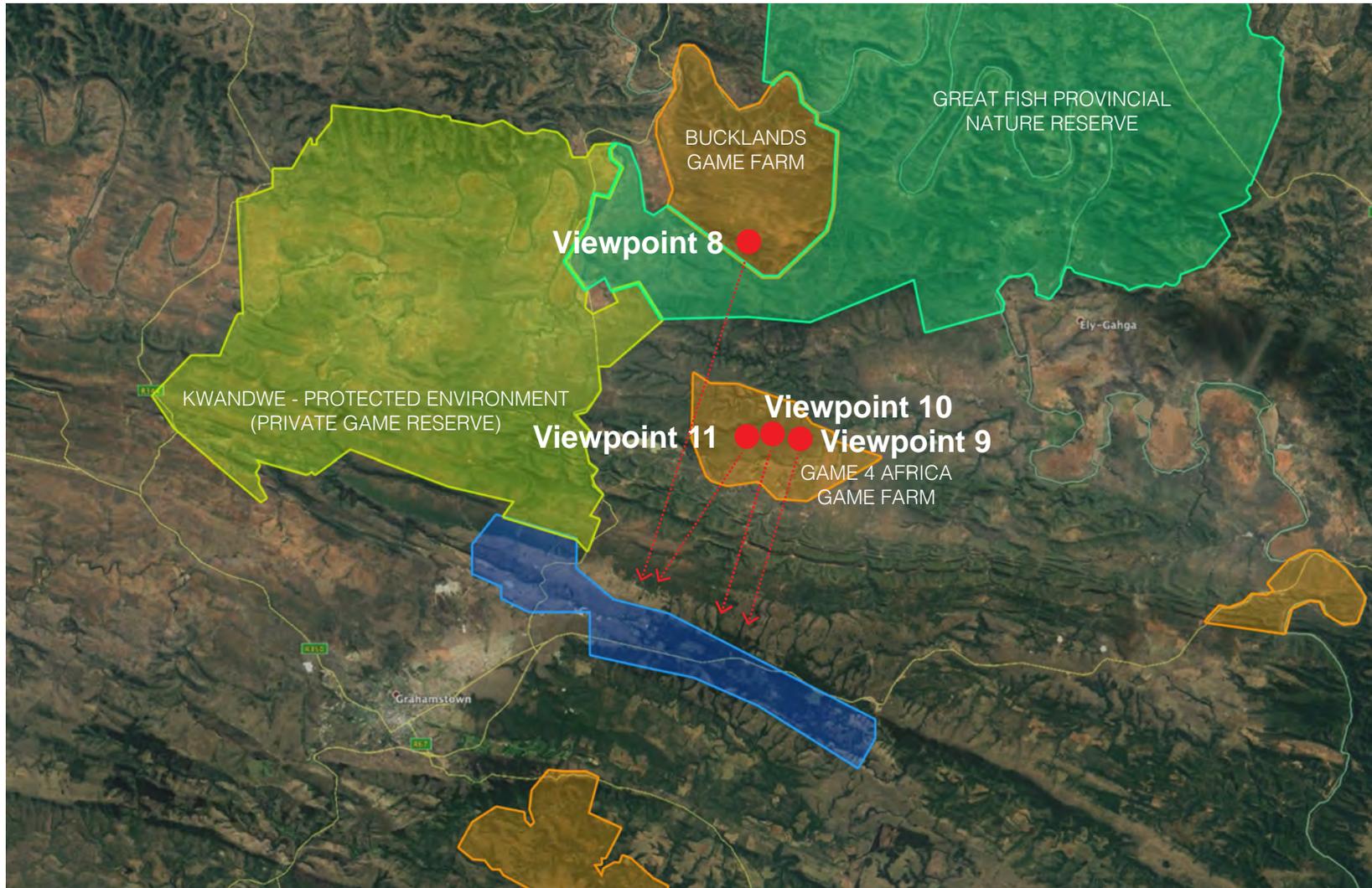
JULY 2020

POSTAL ADDRESS: PO Box 2950, Saxonwold, 2132, Johannesburg

PHYSICAL ADDRESS: 09 Victoria Street, Oaklands, 2192, Johannesburg

TEL: +27 11 728 2683

AlbanyWEF - Additional Viewpoints (Phase 1)



LEGEND

- Proposed Development
- Great Fish Provincial Nature Reserve
- Kwandwe - Protected Environment
- Game Farms

- Viewpoint 8 (Bucklands)
33°06'41.1"S 26°41'46.2"E
Distance: 16.9km
Heading: 192°
- Viewpoint 9 (Game 4 Africa)
33°11'39.9"S 26°44'30.4"E
Distance: 9km
Heading: 198°
- Viewpoint 10 (Game 4 Africa)
33°11'29.3"S 26°43'19.2"E
Distance: 9.5km
Heading: 185°
- Viewpoint 11 (Game 4 Africa)
33°11'29.8"S 26°43'44.0"E
Distance: 9,2km
Heading: 194°



AlbanyWEF - Viewpoint 8 (Bucklands Game Farm)



BUCKLANDS PRIVATE
GAME RESERVE

Main Access Road

DAY
BEFORE DEVELOPMENT

33°06'41.1"S 26°41'46.2"E

AlbanyWEF - Viewpoint 8 (Bucklands Game Farm)



BUCKLANDS PRIVATE
GAME RESERVE

Main Access Road

DAY
AFTER DEVELOPMENT

33°06'41.1"S 26°41'46.2"E

AlbanyWEF - Viewpoint 8 (Bucklands Game Farm)



BUCKLANDS PRIVATE
GAME RESERVE

Main Access Road

NIGHT
BEFORE DEVELOPMENT

33°06'41.1"S 26°41'46.2"E

AlbanyWEF - Viewpoint 8 (Bucklands Game Farm)



BUCKLANDS PRIVATE
GAME RESERVE

Main Access Road

NIGHT
AFTER DEVELOPMENT

33°06'41.1"S 26°41'46.2"E

AlbanyWEF - Viewpoint 9 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

DAY
BEFORE DEVELOPMENT

33°11'39.9"S 26°44'30.4"E

AlbanyWEF - Viewpoint 9 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

DAY
AFTER DEVELOPMENT

33°11'39.9"S 26°44'30.4"E

AlbanyWEF - Viewpoint 9 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

NIGHT
BEFORE DEVELOPMENT

33°11'39.9"S 26°44'30.4"E

AlbanyWEF - Viewpoint 9 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

DAY
AFTER DEVELOPMENT

33°11'39.9"S 26°44'30.4"E

AlbanyWEF - Viewpoint 10 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Hunting Trail

DAY
BEFORE DEVELOPMENT

33°11'29.3"S 26°43'19.2"E

AlbanyWEF - Viewpoint 10 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Hunting Trail

DAY
AFTER DEVELOPMENT

33°11'29.3"S 26°43'19.2"E

AlbanyWEF - Viewpoint 10 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Hunting Trail

NIGHT
BEFORE DEVELOPMENT

33°11'29.3"S 26°43'19.2"E

AlbanyWEF - Viewpoint 10 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Hunting Trail

NIGHT
AFTER DEVELOPMENT

33°11'29.3"S 26°43'19.2"E

AlbanyWEF - Viewpoint 11 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

DAY
BEFORE DEVELOPMENT

33°11'29.8"S 26°43'44.0"E

AlbanyWEF - Viewpoint 11 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

DAY
AFTER DEVELOPMENT

33°11'29.8"S 26°43'44.0"E

AlbanyWEF - Viewpoint 11 (Game 4 Africa)



GAME 4 AFRICA
HUNTING FARM

Recreational Facility

NIGHT
BEFORE DEVELOPMENT

33°11'29.8"S 26°43'44.0"E

AlbanyWEF - Viewpoint 11 (Game 4 Africa)



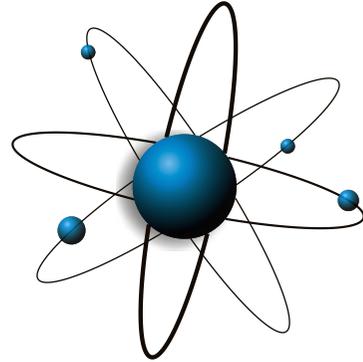
GAME 4 AFRICA
HUNTING FARM

Recreational Facility

NIGHT
AFTER DEVELOPMENT

33°11'29.8"S 26°43'44.0"E

ANNEXURE E - VIEW SIMULATION: VERIFICATION VIEWS OF THE VIA REPORT



**ESCIENCE
ASSOCIATES**
escience associates (pty) ltd

COMPARITIVE VISUAL IMPACT ASSESSMENT

PROPOSED ALBANY WIND ENERGY FACILITY,
EASTERN CAPE, SOUTH AFRICA

ANNEXURE E

View Simulation: Verification Views of The VIA Report

BY JA GELDENHUYS & THEO FISCHER

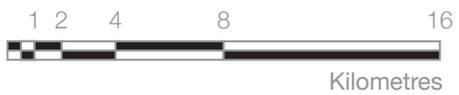
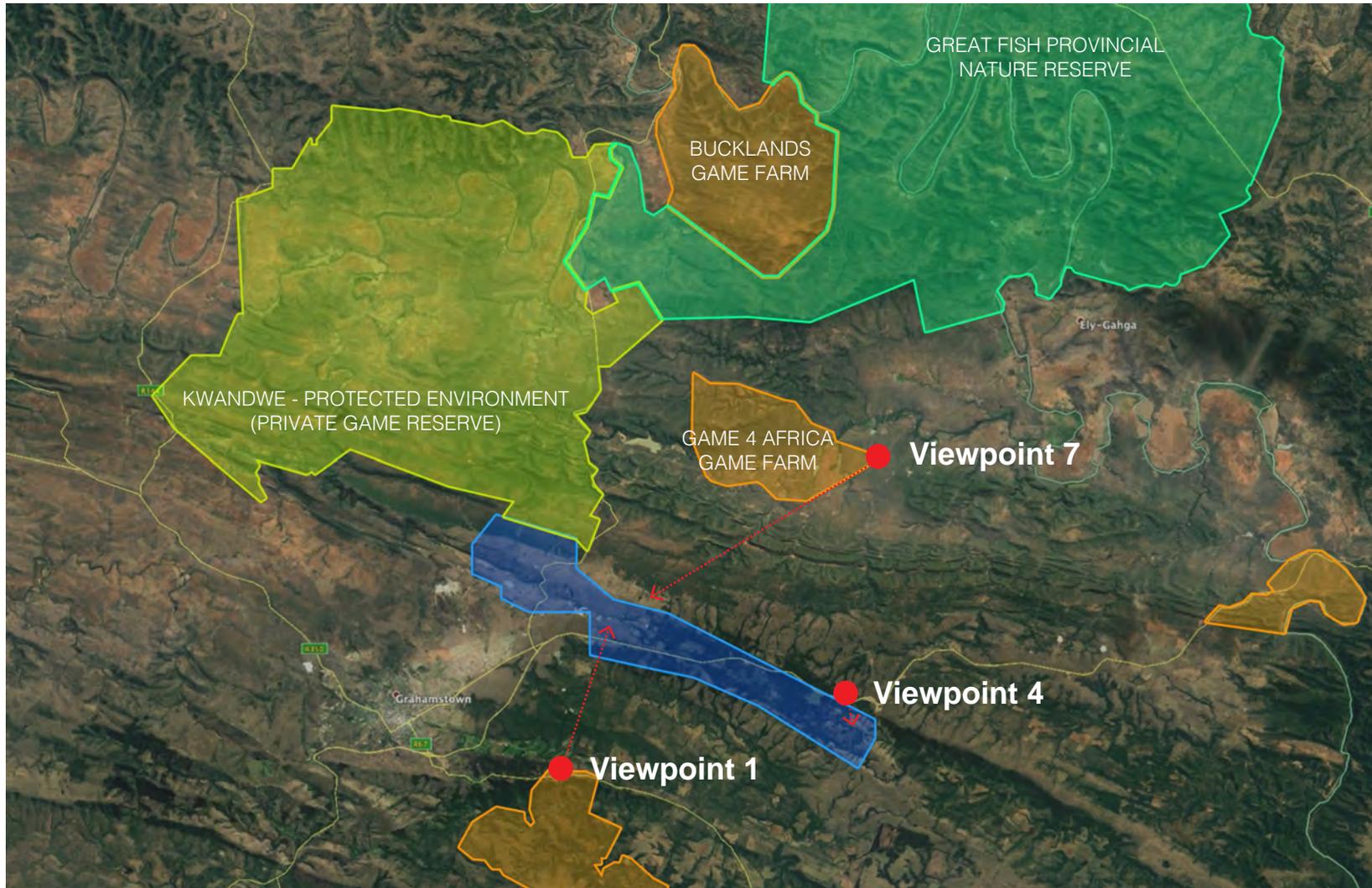
APRIL 2020

POSTAL ADDRESS: PO Box 2950, Saxonwold, 2132, Johannesburg

PHYSICAL ADDRESS: 09 Victoria Street, Oaklands, 2192, Johannesburg

TEL: +27 11 728 2683

AlbanyWEF - Current Viewpoints



LEGEND

- Proposed Development
- Great Fish Provincial Nature Reserve
- Kwandwe - Protected Environment
- Game Farms

- Viewpoint 1 (R67)
33°19'54.07"S 26°36'32.23"E
Distance: 15,8km
Heading: 17,2°
- Viewpoint 4 (N2)
33°17'56.29"S 26°44'56.41"E
Distance: 1km
Heading: 145°
- Viewpoint 7
33°11'53.13"S 26°45'49.55"E
Distance: 14km
Heading: 242,5°



AlbanyWEF - Viewpoint 1



DAY
BEFORE DEVELOPMENT

33°19'54.07"S 26°36'32.23"E
Distance: 1 5,8km
Heading: 17,2°

AlbanyWEF - Viewpoint 1



DAY
AFTER DEVELOPMENT

33°19'54.07"S 26°36'32.23"E
Distance: 1 5,8km
Heading: 17,2°

AlbanyWEF - Viewpoint 1



NIGHT
BEFORE DEVELOPMENT

33°19'54.07"S 26°36'32.23"E
Distance: 1 5,8km
Heading: 17,2°

AlbanyWEF - Viewpoint 1



NIGHT
AFTER DEVELOPMENT

33°19'54.07"S 26°36'32.23"E
Distance: 1 5,8km
Heading: 17,2°

AlbanyWEF - Viewpoint 4



DAY
BEFORE DEVELOPMENT

33°17'56.29"S 26°44'56.41"E
Distance: 1km
Heading: 145°

AlbanyWEF - Viewpoint 4



DAY
AFTER DEVELOPMENT

33°17'56.29"S 26°44'56.41"E
Distance: 1km
Heading: 145°

AlbanyWEF - Viewpoint 4



NIGHT
BEFORE DEVELOPMENT

33°17'56.29"S 26°44'56.41"E
Distance: 1km
Heading: 145°

AlbanyWEF - Viewpoint 4



NIGHT
AFTER DEVELOPMENT

33°17'56.29"S 26°44'56.41"E
Distance: 1km
Heading: 145°

AlbanyWEF - Viewpoint 7



DAY
BEFORE DEVELOPMENT

33°11'53.13"S 26°45'49.55"E
Distance: 14km
Heading: 242,5°

AlbanyWEF - Viewpoint 7



DAY
AFTER DEVELOPMENT

33°11'53.13"S 26°45'49.55"E
Distance: 14km
Heading: 242,5°

AlbanyWEF - Viewpoint 7



NIGHT
BEFORE DEVELOPMENT

33°11'53.13"S 26°45'49.55"E
Distance: 14km
Heading: 242,5°

AlbanyWEF - Viewpoint 7



NIGHT
AFTER DEVELOPMENT

33°11'53.13"S 26°45'49.55"E
Distance: 14km
Heading: 242,5°