

PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY, EASTERN CAPE PROVINCE

COMMENTS AND RESPONSE REPORT: I&APs & STAKEHOLDERS
Scoping Phase: Focus Group Meetings, Public Meeting & Written Comments

No.	Issue	Raised by	Response
General			
1.	Is the project and process in line with all regulatory requirements?	Sabelo Nkuhlu, Municipal Manager Koukamma Municipality, Comment at Public Meeting	The EIA will be conducted in line with all regulatory requirements.
2.	When would construction of the facility begin?	Bonnen Biggs, landowner, comment at Focus Group Meeting.	Ideally the developers would like to begin in the third quarter of next year. The Environmental Authorization is only one item that the developer must secure before construction can begin, a generation license and power purchase agreement must also be in place, among other required permits.
3.	Why are only certain land portions included on the locality map and not others that were also signed up?	Bonnen Biggs, landowner, comment at Focus Group Meeting.	The first phase of the project would only make use of the Tsitsikamma Community Trust land. Eventual plans are for expansion of the facility onto other areas and surrounding portions but that this will be the subject of a separate process. Timing is also an issue and the constant addition of extra farm portions to the development would have slowed the EIA process down.
4.	How long would construction take for the first phase of wind turbines?	Toby Cilliers, landowner, comment at Focus Group Meeting.	In the region of 15 – 18 months.

No.	Issue	Raised by	Response
5.	How many turbines are being proposed for the first phase?	Toby Cilliers, landowner, comment at Focus Group Meeting.	Up to 47 turbines were proposed for the first phase, but based on preliminary layout mapping the number would likely be less than this. It also depends on the turbine type selected and wind resources on the site itself.
6.	The Scoping Report summary states that the connection will be at Melkhout. This appears to be definite but it is most probably just an intention.	Duncan Ayling, Renewable Energy Systems, comment via email 27 May 2011.	At this stage the facility is proposed to connect at Eskom's existing Melkhout substation.
7.	Inconsistent hub heights are quoted in the Scoping Report. Sometimes 80m and other times 100m. Which is it?	Duncan Ayling, Renewable Energy Systems, comment via email 27 May 2011.	The turbines will have a maximum hub height of up to 100m.
Technical			
8.	How many wind turbines are generally installed per hectare of land?	Bonnen Biggs, landowner, comment at Focus Group Meeting.	Generally wind turbines are installed in rows which are a few hundred meters apart in order to prevent the "wake effects" of the turbines from potentially affecting any other wind turbines.
9.	Why are access roads required for the facility?	Wittekleybosch Community Trust member, Comment at Public Meeting	Access is important for maintenance and construction. At the moment there are only gravel roads on site and these may need to be upgraded for construction and maintenance of the wind turbines.
10.	What is the expected lifespan of the facility?	Wittekleybosch Community Trust member, Comment at Public Meeting	The facility would normally have a lifespan of 20 – 30 years, after which it would most likely be refitted with new components or alternatively decommissioned.
11.	The Scoping Report mentions the DEA&DP guidelines and states that "the methodology is intended to be used as a tool for regulating wind energy developments". This is incorrect as the guidelines are not for 'regulating' but are for 'informing'. Although the methodology is considered effective for locating wind farms, the criteria within are not all considered to be 'best	Duncan Ayling, Renewable Energy Systems, comment via email 27 May 2011.	Comment noted.

No.	Issue	Raised by	Response
	practice'. I ask that the author re-phrase this to ensure readers are not led to believe that the DEADP buffer guidelines are considered to be international or national best practice.		
Noise			
12.	What type of noise is associated with the wind turbines?	Toby Cilliers, landowner, comment at Focus Group Meeting.	The noise generated from modern turbines is generally quite low but with multiple turbines operating there may be a noticeable increase in ambient sound levels at receptors in close proximity to the facility. Noise is generated from the gearbox and from the compression of air as the blades pass the tower
Ecology			
13.	What types of animals are likely to be affected by the construction of the facility?	Litha Msizi, comment at Focus Group Meeting	Birds and terrestrial fauna would be affected by potential disturbance and habitat loss during construction. The other major issue is the potential for bird collision with turbine infrastructure during operation. The EIA would recommend mitigation measures in this regard to lower impacts to acceptable levels.
14.	What are the effects of wind turbines on cows?	Bonnen Biggs, landowner, comment at Focus Group Meeting.	There are no negative effects of operational facilities of this nature associated with cows (or livestock in general).
Visual			
15.	Will the potential for visual impact affect the decision taken by DEA to authorize the project?	Sabelo Nkuhlu, Municipal Manager Koukamma Municipality, Comment at Public Meeting	The national Department of Environmental Affairs would look at all factors when making their decision: positive and negative environmental impacts, comments from the public and stakeholders as well as the greater social benefits associated with the project.
Social & Economic			
16.	What is the job creation potential within the	Clarkson Community	The project is being run as a community project. The idea

No.	Issue	Raised by	Response
	<p>community associated with this project?</p> <p>What social benefits are expected for the local community?</p>	<p>Member, Comment at Public Meeting</p>	<p>is to create as many jobs as possible within the local community. The exact number of jobs to be created has not been determined yet. There will be range of job opportunities: from unskilled positions suitable for the majority of workers from the local communities, for example civil works during construction, to more skilled positions.</p> <p>There would be a "basket" of potential positive social impacts and spin-off effects including direct job creation as well as other potential benefits for locals and the greater social benefit of using clean, renewable energy.</p>
17.	<p>Regarding job creation: what skills are required for a project like this?</p>	<p>Wittekleibosch Community Trust member, Comment at Public Meeting</p>	<p>During construction unskilled workers would be required, mostly for civil works. During operation there would be a limited number of jobs available, most likely in the security and maintenance of the facility.</p>
Heritage			
18.	<p>The South African Heritage Resources Agency require a heritage assessment be conducted for the EIA phase of the project. The report should include a assessment of the archaeological and paleontological resources, as well as</p>	<p>Mariagrazia Galimberti, SAHRA, comment received via email, 19 May 2011</p>	<p>A full heritage assessment has been conducted in the EIA phase which addresses all concerns raised by SAHRA.</p>
Public Participation			
19.	<p>I feel the Afrikaans speaking people of the community have been excluded as the presentation at the public meeting was only given in English and Xhosa. Coloured</p>	<p>Wittekleibosch Community Trust member, Comment at Public Meeting</p>	<p>For a public meeting of this nature the environmental team would try invite as many people as possible and get all race communities involved. The public meeting presentation was given in English</p>

No.	Issue	Raised by	Response
	people in the community should also benefit from any positive aspects of the proposed development.		and Xhosa. Unfortunately it was not possible to accommodate everyone. The community newsletter which Watt Energy was providing the community to keep them informed of developments regarding the project was in all the languages (English, Xhosa and Afrikaans). Watt Energy are making an effort in this regard.
20.	The scoping should have identified I&AP in time to allow adequate consideration and submission of comments. Being a neighbouring wind project, known to you and to Savannah, I believe that it should have been easy to realise that RES SA are an I&AP. Unfortunately this did not happen and I am now submitting comments in haste.	Duncan Ayling, Renewable Energy Systems, comment via email 27 May 2011.	Comment noted.
Cumulative Impacts			
21.	<p>The St Francis Kromme Trust, an environmental NGO based in St Francis Bay, Eastern Cape Province, is currently registered as an Interested and Affected Party for the following wind farm developments situated within the Kouga Municipality:</p> <ul style="list-style-type: none"> • Dieprivier Mond DEA ref: 12/12/20/1863 • Happy Valley 	Chris Barrat, Chairperson, St. Francis Kromme Trust, comment by e-mail and pdf document, 04 August 2010. See appendix for the full pdf document.	<p>Comments Noted.</p> <p>Developing a regional regulatory framework dealing with issues around renewable energy developments would be the responsibility of the Eastern Cape provincial government.</p> <p>The EIA-phase of the project contains detailed, provisional layouts from the developer and the specialists will consider this layout in their EIA studies. The scoping studies referred to are broader desktop studies. This is the</p>

No.	Issue	Raised by	Response
	<p>DEA ref: 12/12/20/1861</p> <ul style="list-style-type: none"> • Jeffrey's Bay <p>DEA ref: 12/12/20/1718</p> <ul style="list-style-type: none"> • Broadlands <p>DEA ref: 12/12/20/1752</p> <ul style="list-style-type: none"> • Zuurbron <p>DEA ref: 12/12/20/1753</p> <ul style="list-style-type: none"> • Redcap Investments <p>DEA ref: 12/12/20/1756</p> <p>Several submissions relating to these wind farm developments, which are at various stages of the EIA process, have already been submitted. However it has become clear that collectively these will have a significant cumulative effect on a 2500 km² area situated within the heart of the present Kouga tourism precinct. In addition, several of these farms are within close proximity to three major towns Jeffrey's Bay, Humansdorp and St Francis Bay/Cape St Francis.</p> <p>Each wind farm applicant has assessed the impact of their proposed development on their specific sites, and as these applicants are acting independently of one another, no cumulative impact of these developments has been noted for the region as a whole. The St Francis Kromme Trust has initiated a two part study to examine these impacts and the conclusions are summarized below:</p>		<p>process followed for any EIA: where a detailed layout is required it is normally provided and assessed in the EIA-phase (and not the scoping phase).</p> <p>Cumulative impacts in terms of multiple wind farms in the area will be considered in the specialist EIA reports. The difficulty in assessing cumulative impacts of multiple facilities in the area should also be noted as no other facilities have been constructed yet. Therefore it is not possible to accurately assess these impacts as it is not known whether these other facilities will receive environmental authorization, power purchase agreements etc. or even be constructed.</p> <p>The DEA&DP Guidelines for siting wind energy facilities in the Western Cape were specifically formulated for use and application in the Western Cape province.</p> <p>The benefits of these developments are not only considered on a national basis, the benefits to the local community are considered in the Scoping and EIA reports.</p> <p>The Kouga Spatial Development Framework is considered in the Social Impact Assessment.</p>

No.	Issue	Raised by	Response
	<ul style="list-style-type: none"> » There is an absence of a regional regulatory framework regulating the implementation framework for wind farms in the Eastern Cape and more specifically the Kouga region. » The absence of this framework in our opinion is leading to applications for uncontrolled and haphazard wind farm development, without due consideration of their cumulative impacts on the region. » Borrowing set thresholds from a strategic initiative from the Western Cape it is clear that the above applications will saturate the Kouga region with turbines beyond accepted international norms (A Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; CNdV Africa planning & design; May 2006). » Experiences learned by other countries on wind farm development do not appear to have been taken into account in these applications. » The impacts and their mitigation specific to these sites are diluted in their applicability, as the cumulative view of several wind farms within a small area is not considered. » The benefits of these developments are only considered on a national basis and the benefits to the local community are considered insignificant. » Individual site studies cannot provide 		

No.	Issue	Raised by	Response
	<p>detailed site layouts, due to the absence of site specific wind data. In consequence, the actual size, positioning and capacity of wind turbines and associated specific infrastructure placement, are not known. This renders specialist studies, such as the visual impact of these wind farms, meaningless.</p> <ul style="list-style-type: none"> » The Kouga Spatial Development Framework (2009) is not taken into account on some applications. Vital information, such as bio-diversity and desired urban development is not included. This SDF framework is in need of an urgent upgrade to include the provision of renewable energy resources within the Kouga Region. » Specific site criteria and thresholds recommended by Western Cape initiative when applied to local applications are found to be non-compliant. <p>The St Francis Kromme Trust, whilst supportive of alternative renewable energy sources, submits that the applications listed are pre-emptive and should be placed on hold, until an equitable regional and national renewable energy policy framework is put in place. Our desire is to see an orderly and sustainable development of alternative energy resources for the benefit of the whole Kouga community, and is keen to assist where possible.</p>		



**SUSTAINABLE
FUTURES ZA**

PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY, EASTERN CAPE PROVINCE

PUBLIC MEETING

MINUTES OF MEETING

Savannah Environmental (Pty) Ltd

Address: PO Box 148
Sunninghill, 2157
Tel: 011 234 6621
Fax: 086 684 0547
E-mail: karen@savannahsa.com

Sustainable Futures ZA

Address: PO Box 749
Rondebosch,
Cape Town, 7701
Tel: 083 325 9965
Fax: 086 510 2537
E-mail: swjohnston@mweb.co.za

Held on
19 April 2011,
Clarkson Community Hall, Clarkson

Notes for the Record prepared by:

Sustainable Futures ZA & Savannah Environmental

Please address any comments to Shawn Johnston at the above address.

**EIA PROCESS PUBLIC MEETING:
PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY**

Venue: Clarkson Community Hall
Date: 19 April 2011
Time: 18h15 – 20h00

WELCOME AND INTRODUCTION

Shawn Johnston, process facilitator from Sustainable Futures, welcomed all the public and stakeholders to the public meeting. He asked the community leader to open the meeting with a prayer. Shawn then highlighted the objectives of the meeting and gave a brief outline of the proposed project. Mike Msizi from Watt Energy translated all the relevant information and presentations into isiXhosa for the non-English speakers in the community.

MEETING ATTENDEES

Name	Organisation & Position
Shawn Johnston	Sustainable Futures ZA- Public Participation Specialist
John Von Mayer	Savannah Environmental- Consultant
Mark Scheepers	Watt Energy
Mike Pearton	Watt Energy
Mike Msizi	Watt Energy
Aurelia Van Eeden	MAC Consulting
Litha Msizi	Watt Energy
Romaya Dorasamy	Exxaro Resources
Jason de Beer	Poyry SA
Tony Nonkonyana	Watt Energy
Bonakele Rola	Wittekleibosch Community Trust
Thobiled Didiza	Wittekleibosch Community Trust
Solomzi Mazani	Wittekleibosch Community Trust
Vuyani Mntiambo	Wittekleibosch Community Trust
Nogiwabo Mani	Clarkson Community
Sandile Thuda	Wittekleibosch Community Trust
Nomathemba Matroos	Wittekleibosch Community Trust
A. Miennie	Wittekleibosch Community Trust
Nomawabo Tanda	Wittekleibosch Community Trust
Regina Smattwuh	Wittekleibosch Community Trust
Zolani Matsaba	Wittekleibosch Community Trust
Xolisa Maweza	Clarkson Community
Maria Ncetezo	African National Congress Clarkson
M.W. Luzipo	Wittekleibosch Community Trust

Name	Organisation & Position
M.W. Zana	Clarkson Primary School
M.R. Duna	Wittekleibosch Community Trust
N.D. Njenje	Wittekleibosch Community Trust
X.C. Msizi	Wittekleibosch Community Trust
N.P. Hewu	Wittekleibosch Community Trust
S. Msizi	Wittekleibosch Community Trust
T.Diriza	Wittekleibosch Community Trust
W.M,. Matyolweni	Wittekleibosch Community Trust
N.P. Tsaoane	Wittekleibosch Community Trust
N. Matsaba	Wittekleibosch Community Trust
H.C. Du Plessis	Principal Clarkson Primary School
David Zewu	Wittekleibosch Community Trust
Mazizi Tanda	Wittekleibosch Community Trust
William Zoki	Wittekleibosch Community Trust
F. B. Karipa	Clarkson Community
Nozuko Mabudlu	Clarkson Community
P.F Thanda	Wittekleibosch Community Trust
T. Makamba	Tsitsikama Development Trust
Sabelo Nkuhlu	Municipal Manager Koukamma Municipality
Azola Matsaha	Wittekleibosch Community Trust
A. Nomaliza	Wittekleibosch Community Trust
Elizabeth Mrivefa	Wittekleibosch Community Trust
Nothembile Skosana	Wittekleibosch Community Trust
Momahomsa Mdevu	Wittekleibosch Community Trust
Nirginia Mrweld	Koukamma Municipality
Nomonde Lusipo	Koukamma Municipality
Nandipa Marali	Koukamma Municipality
Neliswa Msizi	Wittekleibosch Community Trust
Elizabeth Sono	Wittekleibosch Community Trust
Z.C. Thanda	Wittekleibosch Community Trust
B.H. Msizi	Fingo Community
N. Mnthambo	Fingo Community
S. Nkishuleko	Fingo Community
Z.J. Blou	Tsitsikama Community Trust
N. Didiza	Fingo Community

APOLOGIES

No apologies were received.

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

Romaya Dorasamy from Exxaro Resources provided an overview of Exxaro and the company's vision as well as the BEE makeup of this particular joint venture with Watt Energy. Mark Scheepers from Watt Energy also gave a brief overview of the company Watt Energy as well as information on the community aspect of the project. John von Mayer then provided a background to the project and EIA process and presented the preliminary findings of the environmental studies undertaken. The floor was then opened for questions from the community.

DISCUSSION SESSION

Question / Comment	Response
Is the project and process in line with all regulatory requirements?	Shawn Johnston replied that the EIA would be conducted in line with all regulatory requirements.
Will the potential for visual impact affect the decision taken by DEA to authorize the project?	Shawn Johnston replied that the department would look at all factors when making their decision: positive and negative environmental impacts, comments from the public and stakeholders as well as the greater social benefits associated with the project.
What is the job creation potential within the community associated with this project?	Mark Scheepers replied that this was being run as a community project. The idea is to create as many jobs as possible within the local community. Shawn Johnston replied that the exact number of jobs to be created has not been determined yet. There will be range of job opportunities: from unskilled positions suitable for the majority of workers from the local communities, for example civil works during construction, to more skilled positions.
What is the expected lifespan of the facility?	Shawn Johnston replied that the facility would normally have a lifespan of 20 – 30 years, after which it would most likely be refitted with new components or alternatively decommissioned.
What social benefits are expected for the local community?	Shawn Johnston replied that it would be a "basket" of potential positive social impacts and spin-off effects including direct job creation as well as other potential benefits for locals.
Why are access roads required for the facility?	Shawn Johnston replied that access is important. At the moment there are only gravel roads on site and these may need to be upgraded for construction and maintenance of the wind turbines.
I feel the Afrikaans speaking people of the	Shawn Johnston replied that this was a good point but for a public meeting of this nature the environmental team would

Question / Comment	Response
<p>community have been excluded as the presentation is only given in English and Xhosa. Why does it seem there so few coloured people here, they should also benefit from any positive aspects of the proposed development.</p>	<p>try invite as many people as possible and get all race communities involved. He apologized for excluding the Afrikaans language in the presentation.</p> <p>Mark Scheepers replied that the community newsletter which Watt Energy was providing the community to keep them informed of developments regarding the project was in all the languages (English, Xhosa and Afrikaans) so Watt Energy are making an effort in this regard but it is not possible to accommodate everyone.</p>
<p>Regarding job creation: what skills are required for a project like this?</p>	<p>Shawn Johnston replied that during construction unskilled workers would be required, mostly for civil works. During operation there would be a limited number of jobs available, most likely in the security and maintenance of the facility.</p>
<p>Perhaps children and students can learn <i>with</i> this project and can also position themselves to get jobs in the future associated with the proposed project.</p>	<p>Shawn Johnston noted the comment.</p>
<p>This is a project the community can develop itself. What potential is there for community building and support? We should train woman so they can also be involved with the project and benefit from the construction of the facility.</p>	<p>Shawn Johnston noted the comment.</p>
<p>I would like to encourage the local community to attend all meetings that are called. People only seem to want to come to meetings when we tell them there is a potential for job creation. People must support processes like these.</p>	<p>Shawn Johnston noted the comment.</p>
<p>I am confused – there is</p>	<p>Shawn Johnston replied that further information is available in</p>

Question / Comment	Response
talk about impacts on the natural environment and then talk about job creation. Two completely different things. Who is going to empower who? We want to know more about the process.	the EIA documentation. The EIA process looks at all impacts on the natural and social environment.

WAY FORWARD AND CLOSURE

John von Mayer indicated that the draft Scoping Report has been made available for public review at the following public places in the project area from **06 April 2011 to 13 May 2011** at Karreedouw Library, Clarkson Library and Savannah Environmental's website.

Shawn Johnston thanked all for their attendance and participation in the focus group meeting and stated that any queries or communication should be sent to him. The meeting closed with a prayer at 20h00.



**SUSTAINABLE
FUTURES ZA**

PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY, EASTERN CAPE PROVINCE

FOCUS GROUP MEETING

MINUTES OF MEETING WITH SURROUNDING LANDOWNERS

Savannah Environmental (Pty) Ltd

Address: PO Box 148
Sunninghill, 2157
Tel: 011 234 6621
Fax: 086 684 0547
E-mail: karen@savannahsa.com

Sustainable Futures ZA

Address: PO Box 749
Rondebosch,
Cape Town, 7701
Tel: 083 325 9965
Fax: 086 510 2537
E-mail: swjohnston@mweb.co.za

Held on
19 April 2011,
Tsitsikamma Community Trust Offices,
Wittekleibosch, Tsitsikamma Region

Notes for the Record prepared by:

Sustainable Futures ZA & Savannah Environmental

Please address any comments to Shawn Johnston at the above address.

**EIA PROCESS FOCUS GROUP MEETING:
PROPOSED TSITSIKAMMA COMMUNITY WIND ENERGY FACILITY**

Venue: Tsitsikamma Community Trust Offices, Wittekleibosch
Date: 19 April 2011
Time: 09h00 – 10h00

WELCOME AND INTRODUCTION

Shawn Johnston, process facilitator from Sustainable Futures, welcomed all the stakeholders to the focus group meeting. Shawn highlighted the objectives of the meeting and gave a brief outline of the proposed project.

MEETING ATTENDEES

Name	Organisation & Position
Shawn Johnston	Sustainable Futures ZA- Public Participation Specialist
John Von Mayer	Savannah Environmental- Consultant
Mark Scheepers	Watt Energy
Mike Msizi	Watt Energy
Mike Pearton	Watt Energy
Aurelia Van Eeden	MAC Consulting
Romaya Dorasamy	Exxaro
Jason de Beer	Poyry SA
Nico Anderson	Landowner
Toby Cilliers	Landowner Bloekomlaan Farm
Tony Nonkonyana	Watt Energy
Litha Msizi	Watt Energy
Mzimkulu Duna	Watt Energy
Bonnen Biggs	Landowner

APOLOGIES

None were received.

BACKGROUND & TECHNICAL ASPECTS REGARDING THE PROPOSED PROJECT

John von Mayer provided a brief background to the project and EIA process and presented the preliminary findings of the environmental studies undertaken.

DISCUSSION SESSION

Question / Comment	Response
Toby Cilliers: What type of noise is associated with the wind turbines?	John von Mayer replied that the noise generated from modern turbines is generally quite low but with multiple turbines operating there may be a noticeable increase in ambient sound levels at receptors in close proximity to the facility. Noise is generated from the gearbox and from the compression of air as the blades pass the tower.
Bonnen Biggs: Why are only certain land portions included on the locality map and not others that were also signed up?	Mark Scheepers replied that the first phase of the project would only make use of the Tsitsikamma Community Trust land. Eventual plans are for expansion of the facility onto other areas and surrounding portions but that this will be the subject of a separate process. Timing is also an issue and the constant addition of extra farm portions to the development would have slowed the EIA process down.
Litha Msizi: What type of animals are likely to be affected by the construction of the facility?	John von Mayer answered that birds and terrestrial fauna would be affected by potential disturbance and habitat loss during construction. The other major issue is the potential for bird collision with turbine infrastructure during operation. The EIA would recommend mitigation measures in this regard to lower impacts to acceptable levels.
Bonnen Biggs: What are the effects of wind turbines on cows?	John von Mayer replied that research has shown that there are no negative effects of facilities of this nature associated with cows (or livestock in general). We will make sure the ecology specialist includes something in this regard within his EIA specialist report.
Bonnen Biggs: When would construction of the facility begin?	Mark Scheepers replied that ideally they would like to begin in the third quarter of next year. Shawn Johnston replied that the Environmental Authorization is only one item that the developer must secure before construction can begin, a generation license and power purchase agreement must also be in place, among other required permits. Shawn also explained in more detail the EIA process and the associated appeals process.
Toby Cilliers: How long would construction take for the first phase of wind	Mark Scheepers replied it would be in the region of 15 – 18 months.

Question / Comment	Response
turbines?	
Toby Cilliers: How many turbines are being proposed for the first phase?	Romaya Dorasamy replied that up to 47 turbines were proposed for the first phase, but based on preliminary layout mapping the number would likely be less than this. It also depends on the turbine type selected and wind resources on the site itself.
Bonnen Biggs: How many wind turbines are generally installed per hectare of land?	Jason de Beer replied that he would get back to the farmer regarding the average number of turbines per hectare of land. Generally wind turbines are installed in rows which are a few hundred meters apart in order to prevent the "wake effects" of the turbines from potentially affecting any other wind turbines.
Toby Cilliers: Why is so much of the land under investigation land with center pivot irrigation systems? I have a lot of other land that is better suited for development that I do not see included in the locality map for the EIA?	Mark Scheepers replied that Phase 1 turbines are planned mostly for community land alone. This was mainly a timing issue. He assured the landowner that there would be future plans for expansion on surrounding land portions.
Bonnen Biggs: Have any negative comments been received on the project?	Shawn Johnston replied that no negative comments had been received through the public participation process as yet.

WAY FORWARD AND CLOSURE

John von Mayer indicated that the draft Scoping Report has been made available for public review at the following public places in the project area from **06 April 2011 to 13 May 2011** at:

- » Karreedouw Library
- » Kou-Kamma Municipal Offices
- » Clarkson Library

The report is also available on: www.savannahSA.com. Shawn Johnston thanked all for their attendance and participation in the focus group meeting and stated that any queries or communication should be sent to him.

The meeting closed at 10h00.



DRAFT AGENDA

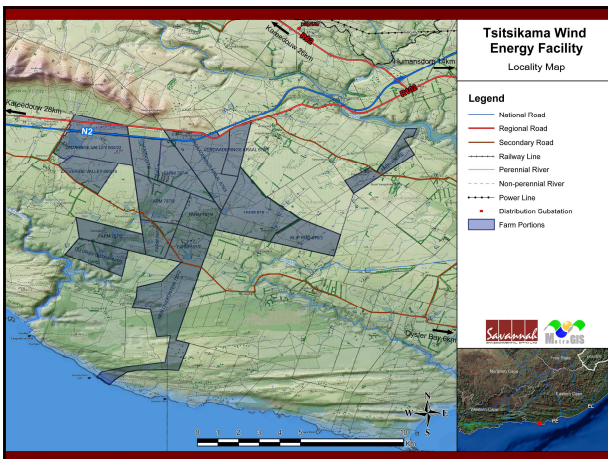
- Welcome, introduction
- Purpose of the meeting
- Background to the project and EIA process presentation
- Presentation by Savannah Environmental
- Question & Answer session

PURPOSE OF THE MEETING

- To provide background to the proposed project & the EIA process
- To provide I&APs and stakeholders with feedback regarding the findings of the Scoping study
- To provide I&APs and stakeholders with the opportunity to seek clarity regarding the proposed project
- To record comments, issues & concerns raised to inform the EIA Process

BACKGROUND TO THE PROJECT

- Applicants: **Exxaro Resources and Watt Energy**
- Favourable site identified from an extensive pre-feasibility analysis & site identification process
- Site located within Kouga Local Municipality
- Situated ~30 km west of Humansdorp, south of the N2
- Wind turbines with a capacity of up to **100 MW**
- Site ~**54 km²** in extent
- Existing wind monitoring masts on site



OVERVIEW OF THE PROJECT

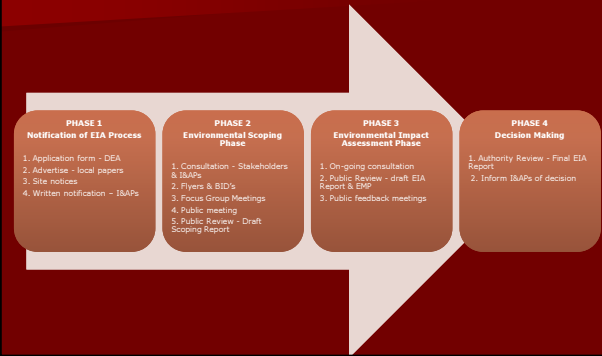
- Towers up to 100 m high with nacelle
- Three blades
- Foundations
- Access road(s) to the site
- On site substation
- Electrical cabling between turbines & substation
- 132 kV Dx line linking to Eskom's Melkhout substation
- Internal access roads
- Workshop area / admin building

LEGAL CONTEXT

- National Environmental Management Act (No 107 of 1998)
 - Overarching environmental legislation in South Africa
 - Specifies the EIA process
- Exxaro and Watt Energy require authorisation from DEA (in consultation with DEDEA)
- Independent environmental studies must be undertaken in accordance with the EIA Regulations



EIA PROCESS & PUBLIC INVOLVEMENT



EIA PROCESS

Biophysical Studies

Impacts on ecology, fauna and flora: the construction of the wind energy facility and the associated disturbance of vegetation may result in impacts on ecology.

Impacts on avifauna: birds and bats may be impacted through collision with the blades during operation of the wind energy facility.

Impacts associated with geology: impacts associated with geology relating to underlying soil conditions and erosion potential.

Impacts on agricultural potential: impacts on agricultural areas and potential, and land capability.

Social Studies

Visual quality and aesthetics: due to their size, wind turbines have the potential to have a visual impact on the surrounding area.

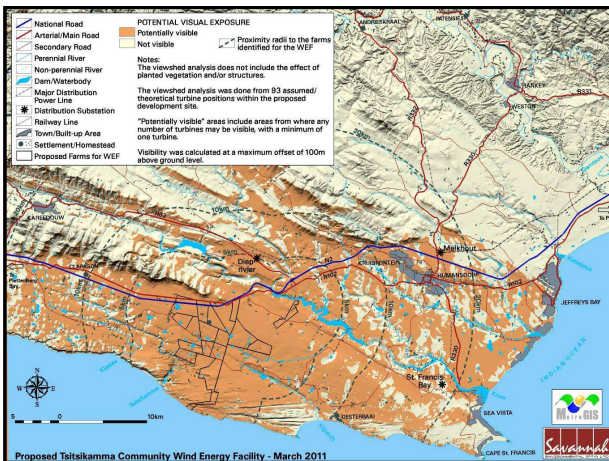
Impacts on heritage sites and fossils/paleontological: disturbance to or destruction of heritage sites and fossils/paleontology may result during the construction of the wind energy facility.

Noise impacts: the rotation of the blades may result in noise emissions which could impact on nearby residents.

Impacts on the social environment: the construction and operation of the facility may result in limited job opportunities and could impact on local land use.

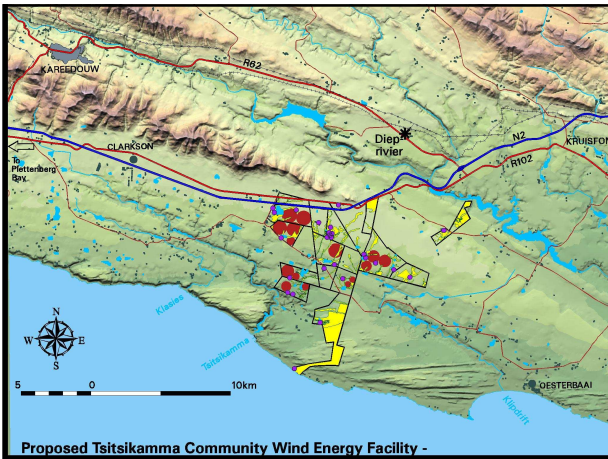
KEY FINDINGS OF SCOPING STUDY

- Majority of potential impacts identified - **localised & restricted to the proposed site**
- Potential **ecological impacts** on individual organisms & habitats:
 - Potential for red-data plant & animal species to occur
 - Habitat destruction & disturbance are considered the most important impacts on birds during the construction phase
 - Long-term programme for monitoring impacts on birds in EIA phase
- Potential for **soil erosion & degradation** impacts during construction
- Impacts on **agricultural potential / land use & productivity**
- Potential positive & negative **social impacts**
- Potential for **visual exposure**
- Potentially sensitive **noise receptors**



FINDINGS OF SCOPING STUDY cont.

- Potentially **sensitive areas** already identified through the scoping study include:
 - All natural wetlands, rivers, drainage lines & associated buffer zones
 - Potential **ecologically sensitive areas**
 - Potential sensitive **noise receptors** within the study area
 - Areas with **central pivot irrigation**
- **Cumulative impacts** (other wind energy facilities proposed for the area)



IN CONCLUSION

- No environmental fatal flaws identified at this stage which could prevent proposed project from proceeding
- Footprints of disturbance for facility are localised, small-scale disturbances
- Preliminary layouts & turbine positioning to follow in EIA phase
- Detailed public consultation process during EIA phase
- Detailed environmental studies & sensitivity maps in EIA phase
- The primary visual impact - the dimensions of the wind turbines is not possible to mitigate
- Other impact mitigation measures through EIA phase

WHO TO CONTACT?

Shawn Johnston: Sustainable Futures ZA

PO Box 749, Rondebosch,
CAPE TOWN, 7701

Phone: 083 325 9965

Fax: 086 510 2537

E-mail: swjohnston@mweb.co.za

Website: www.savannahsa.com





SOUTH AFRICAN HERITAGE RESOURCES AGENCY
111 HARRINGTON STREET, CAPE TOWN, 8001
PO BOX 4637, CAPE TOWN, 8000
TEL: 021 462 4502 FAX: 021 462 4509

FOR ATTENTION: **PHRA: Eastern Cape**

FOR OFFICIAL USE ONLY:

SAHRA File No: **9/2/044/0001**
Date Received: **6 April 2011**
Date of Comment: **19 May 2011**
Sent to Peer Review:
Date to Peer Review:
SAHRA Contact Person: **Dr Mariagrazia Galimberti**
DEA Ref. no: **12/12/20/2209**

REVIEW COMMENT ON ARCHAEOLOGICAL DESKTOP STUDY

BY ARCHAEOLOGY/ PALAEOONTOLOGY UNIT OF THE HERITAGE RESOURCES AGENCY

South Africa has a unique and non-renewable archaeological and palaeontological heritage. Archaeological and palaeontological sites are protected in terms of the National Heritage Resources Act (Act No 25 of 1999) and may not be disturbed without a permit. Archaeological Impact Assessments (AIAs) and Palaeontological Impact Assessments (PIAs) identify and assess the significance of the sites, assess the potential impact of developments upon such sites, and make recommendations concerning mitigation and management of these sites. On the basis of satisfactory specialist reports SAHRA or the relevant heritage resources agency can assess whether or not it has objection to a development and indicate the conditions upon which such development might proceed and assess whether or not to issue permission to destroy such sites. AIAs and PIAs often form part of the heritage component of an Environmental Impact Assessment or Environmental Management Plan. They may also form part of a Heritage Impact Assessment called for in terms of section 38 of the National Heritage Resources Act, Act No. 25, 1999. They may have other origins. In any event they should comply with basic minimum standards of reporting as indicated in SAHRA Regulations and Guidelines.

This form provides review comment from the Archaeologist of the relevant heritage resources authority for use by Heritage Managers, for example, when informing authorities that have applied to SAHRA for comment and for inclusion in documentation sent to environmental authorities. It may be used in conjunction with Form B, which provides relevant peer review comment.

- A. PROVINCIAL HERITAGE RESOURCES AUTHORITY: **Eastern Cape**
- B. AUTHOR(S) OF REPORT: **Dr Johan Binneman**
- C. ARCHAEOLOGY CONTRACT GROUP: **Eastern Cape heritage Consultants**
- D. CONTACT DETAILS: **PO Box 689, Jeffrey's Bay, 6330, Tel: 042 2960399, Email: kobusreichert@yahoo.com**
- E. DATE OF REPORT: **March 2011**
- F. TITLE OF REPORT: **An archaeological desktop study for the construction of the proposed Tsitsikamma community wind energy facility, Kouga Local Municipality, Humansdorp District, Eastern Cape Province**
- G. Please circle as relevant: Archaeological component of EIA / EMP / HIA / CMP/ Other (Specify) **Draft Scoping Report**
- H. REPORT COMMISSIONED BY (CONSULTANT OR DEVELOPER): **Savannah Environmental and Sustainable Futures ZA, Mr Shawn Johnston**
- I. CONTACT DETAILS: **PO Box 749, Rondebosch, Cape Town, 7701, Tel: 0833259965, email: swjohnston@mweb.co.za**
- J. COMMENTS:

Please see comment on next page.....

REVIEW COMMENT ON HERITAGE IMPACT ASSESSMENT

Dr J. Binneman

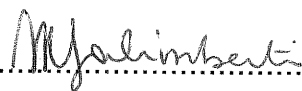
Dated: March 2011, Received: April 2011

An archaeological desktop study for the construction of the proposed Tsitsikamma community wind energy facility, Kouga Local Municipality, Humansdorp District, Eastern Cape Province


A wind energy facility is proposed by Exxaro Resources on eight farms located about 10 km northwest of Oyster Bay between the N2 and the coastline. The entire area proposed for hosting the wind energy facility covers about 54 km² and so far it has been used for farming and other rural purposes.

Dr Binneman undertook a Desktop Study and identified a series of archaeological resources which might be encountered during development as they have been previously identified in the general area. Amongst these, sites and scatters from the Early, Middle and Later Stone Age. In particular, belonging to the last period mentioned, are large stone features used for roasting, Khoi pastoralist shell middens and settlements and shell middens from the Kabeljous and Wilton groups. It is however possible that, since the area earmarked for development is at places further than 5 km from the coast line it is likely that shell middens will not be the main archaeological resource in the area.

SAHRA requires that a Heritage Impact Assessment is undertaken for the next stage of the HIA process. This report will include the assessment of archaeological and palaeontological resources, but it will also have to address issues related to cultural landscape, living heritage and viewsapes.

SIGNATURE OF ARCHAEOLOGIST PROCESSING REPORT: 

EMAIL: mgalimberti@sahra.org.za

SIGNATURE OF SAHRA HEAD ARCHAEOLOGIST: 

EMAIL: nndobochani@sahra.org.za

NAME OF HERITAGE RESOURCES AGENCY: SAHRA

PLEASE NOTE THAT THE COMMENT (ABOVE OR APPENDED) CONSTITUTES THE COMMENT OF THE HERITAGE RESOURCES AGENCY ARCHAEOLOGIST AND THAT ANY DEVELOPMENT THAT INVOLVES DESTRUCTION OF ANY ARCHAEOLOGICAL/PALAEONTOLOGICAL SITE IS STILL SUBJECT TO A PERMIT/PERMISSION FOR DESTRUCTION OF SUCH SITE GIVEN TO THE DEVELOPER BY THE RELEVANT HERITAGE RESOURCES AGENCY ARCHAEOLOGICAL AND PALAEONTOLOGICAL MITIGATION COMMITTEE (THIS WILL BE SUBJECT TO APPROVAL OF THE PHASE 2 OR ARCHAEOLOGICAL/ PALAEONTOLOGICAL MITIGATION AS NECESSARY). THIS REPORT MAY BE TAKEN ONLY AS APPROVAL IN TERMS OF SECTION 35 OF THE NATIONAL HERITAGE RESOURCES ACT. THE PROVINCIAL MANAGER OF THE HERITAGE RESOURCES AUTHORITY MUST ADVISE AS TO APPROVAL IN TERMS OF HERITAGE ISSUES ENCOMPASSED BY OTHER ASPECTS OF THE LEGISLATION, SUCH AS ISSUES OF THE BUILT ENVIRONMENT (STRUCTURES (E.G. FARM HOUSES), OVER 60 YEARS), INDIGENOUS KNOWLEDGE SYSTEMS OR OF CULTURAL LANDSCAPES AS THIS IS NOT WITHIN THE SCOPE OF THE ARCHAEOLOGIST.

PLEASE NOTE THAT SAHRA IS NOW RESPONSIBLE FOR GRADE I HERITAGE RESOURCES (AND EXPORT) AND THE PROVINCIAL HERITAGE RESOURCES ARE RESPONSIBLE FOR GRADE II AND GRADE III HERITAGE RESOURCES, EXCEPT WHERE THERE IS AN AGENCY ARRANGEMENT WITH THE PROVINCIAL HERITAGE RESOURCES AUTHORITY.

A COMMENTARY ON THE CUMULATIVE AND SITE IMPACTS OF CURRENT WIND FARM APPLICATIONS WITHIN THE KOUGA REGION, CACADU DISTRICT EASTERN CAPE PROVINCE.



This report is produced under the auspices of the St Francis Kromme Trust who is registered as an Interested and Affected Party for several proposed wind farms in the Kouga Region. The St Francis Kromme Trust, an NGO which represents individual landowners and interest groups within the St Francis Bay region, some of which have registered as I&APs for the proposed wind farm developments in their individual capacities and support this commentary.

Compiled by Frank Silberbauer of Infinity Consulting with the assistance of Chris Barratt, Hilton Thorpe, Bridget Elton and Maggie Langlands on behalf of the St Francis Kromme Trust. Their work is gratefully acknowledged.

Sections of this report have been directly sourced from an initiative commissioned by the Western Cape Provincial Government: A strategic initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; CNdV Africa planning & design (May 2006), and the Kouga Spatial Development Plan (2009) these works are acknowledged.

August 2010



St Francis Kromme Trust.
P O Box 76, St Francis Bay, 6312.
Telephone: +27 +42 294 0596; email: krommetrust@barratt.co.za





St Francis Kromme Trust

WIND FARM APPLICATIONS WITHIN THE KOUGA MUNICIPALITY

EXECUTIVE SUMMARY

The St Francis Kromme Trust, an environmental NGO based in St Francis Bay, Eastern Cape Province, is currently registered as an Interested and Affected Party for the following wind farm developments situated within the Kouga Municipality:

- Dieprivier Mond DEA ref: 12/12/20/1863
- Happy Valley DEA ref: 12/12/20/1861
- Jeffrey's Bay DEA ref: 12/12/20/1718
- Broadlands DEA ref: 12/12/20/1752
- Zuurbron DEA ref: 12/12/20/1753
- Redcap Investments DEA ref: 12/12/20/1756

Several submissions relating to these wind farm developments, which are at various stages of the EIA process, have already been submitted. However it has become clear that collectively these will have a significant cumulative effect on a 2500 km² area situated within the heart of the present Kouga tourism precinct. In addition, several of these farms are within close proximity to three major towns Jeffrey's Bay, Humansdorp and St Francis Bay/Cape St Francis.

Each wind farm applicant has assessed the impact of their proposed development on their specific sites, and as these applicants are acting independently of one another, no cumulative impact of these developments has been noted for the region as a whole. The St Francis Kromme Trust has initiated a two part study to examine these impacts and the conclusions are summarized below:

- There is an absence of a regional regulatory framework regulating the implementation framework for wind farms in the Eastern Cape and more specifically the Kouga region.
- The absence of this framework in our opinion is leading to applications for uncontrolled and haphazard wind farm development, without due consideration of their cumulative impacts on the region.
- Borrowing set thresholds from a strategic initiative from the Western Cape it is clear that the above applications will saturate the Kouga region with turbines beyond accepted international norms (A Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; CNdV Africa planning & design; May 2006).



St Francis Kromme Trust.
P O Box 76, St Francis Bay, 6312.

Telephone: +27 +42 294 0596; email: krommetrust@barratt.co.za





- Experiences learned by other countries on wind farm development do not appear to have been taken into account in these applications.
- The impacts and their mitigation specific to these sites are diluted in their applicability, as the cumulative view of several wind farms within a small area is not considered.
- The benefits of these developments are only considered on a national basis and the benefits to the local community are considered insignificant.
- Individual site studies cannot provide detailed site layouts, due to the absence of site specific wind data. In consequence, the actual size, positioning and capacity of wind turbines and associated specific infrastructure placement, are not known. This renders specialist studies, such as the visual impact of these wind farms, meaningless.
- The Kouga Spatial Development Framework (2009) is not taken into account on some applications. Vital information, such as bio-diversity and desired urban development is not included. This SDF framework is in need of an urgent upgrade to include the provision of renewable energy resources within the Kouga Region.
- Specific site criteria and thresholds recommended by Western Cape initiative when applied to local applications are found to be non-compliant.

The St Francis Kromme Trust, whilst supportive of alternative renewable energy sources, submits that the applications listed are pre-emptive and should be placed on hold, until an equitable regional and national renewable energy policy framework is put in place. Our desire is to see an orderly and sustainable development of alternative energy resources for the benefit of the whole Kouga community, and is keen to assist where possible.

Chris Barratt – Chairman

St Francis Kromme Trust.

August 4, 2010



St Francis Kromme Trust.
P O Box 76, St Francis Bay, 6312.
Telephone: +27 +42 294 0596; email: krommetrust@barratt.co.za



WINDFARM APPLICATIONS WITHIN THE KOUGA MUNICIPALITY: PART A

THE NEED FOR NATIONAL, REGIONAL AND MUNICIPAL POLICY GUIDELINES

INTRODUCTION:

Within the Kouga Municipality (EC108), several applications for the establishment of wind farms have been advertised for public participation over the last 8 months. The advent of such a renewable energy source is new and challenging for this region. These wind farm applicants are requesting environmental authorization in terms of current legislation and these EIAs focus primarily on the local site context.

What is absent from this process in the Kouga Region is any national, provincial or municipal policy to regulate this industry in terms of existing, future regional and local spatial development frameworks. On a municipal level the Kouga Spatial Development Framework (Kouga SDF; 2009) makes no mention of this technology and therefore by inference their impact has not as yet been thought through in terms of bio-diversity, population densities, landscape character, urbanization, key industries such as tourism, and public participation.

Given that most wind energy development will be taking place on land that is zoned for agricultural use, a rezoning in terms of Section 17 of LUPO to an alternative appropriate zone will be required. On the assumption that most wind energy developments will be made outside of local authority town planning schemes (where a host of different zoning categories would apply), it is anticipated that any wind energy development would require a rezoning to either: Industrial Zone 1 or Special Zone as defined in the Scheme Regulations in terms of Section 8 of LUPO. (Government Gazette December 1988): It is highly recommended that a new SPECIAL ZONE (Wind Energy) is created in the LUPO Scheme (Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; 2006). It is also anticipated that wind developers will ideally require separate title by means of freehold or long term lease to secure long term tenure of a wind energy site. In this case, the Subdivision of Agricultural Land Act (Act 70 of 70) will apply for subdivision of all agricultural land and will have to be in place prior to any subdivision approval in terms of Section 24 and 17 of LUPO.

On the wider regional level a similar situation prevails. On a national level white papers and international global carbon level requirements and treaties have been concluded. This aspect is well covered within the EIA's presented within the Kouga region and is the prime motivation for the development of these wind farms. While these applications could satisfy national policy on renewable energy the question is asked – 'are these wind farms fulfilling their obligations in terms of a regional and local context?'

The absence of any local and regional policy framework on wind farms within the Eastern Cape is an issue which needs to be dealt with immediately as we have several proposed wind farms, which will very possibly fulfill their responsibilities in terms of the

NEMA and will gain environmental authorization. Is this is a classic case of 'the cart before the horse'

Numerous countries now have extensive experience of wind farms. These include Denmark, Germany, Holland, the UK, Ireland, Switzerland, Spain, Australia and New Zealand. These countries have had both positive and negative impacts, and have developed policies based on experience. It would be helpful to have input from these countries in seeking to provide a suitable working framework for the prioritization of areas best suited for the placement of wind farms. Closer to home a strategic initiative was initiated by the Provincial Government of the Western Cape based on the following vision (Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; 2006):

The vision of this strategic initiative is to establish a policy on the implementation of a methodology to be used for the identification of areas suitable for the establishment of wind energy projects, and is supported by the following objectives:

- To facilitate the practical implementation of wind energy generation technology in a manner that meets the principles of the White Paper on Energy Policy for the Republic of South Africa;***
- To introduce wind energy developments to the Western Cape in a coordinated manner, that meets the requirements of sustainability as reflected in the National Environmental Management Act, 1998 (Act 107 of 1998), and which is based on international best practice;***
- To encourage responsible and rational wind energy developments, which are beneficial not only to developers, but to communities at large;***
- To discourage the investment of time and money in potentially unsuitable sites;***
- To introduce the wind energy industry to the public and thereby increase support for and interest in alternative renewable energy sources; and***
- To provide policy guidance in terms of the environmental impact assessment process.***

From: A Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; CNdV Africa planning & design; May 2006.
http://www.capegateway.gov.za/eng/pubs/reports_research/S/138757

The above initiative runs into several parts and its current status in terms of its applicability in the Western Cape is not known. However, it does provide insight into a potential establishment of a base framework on which wind farms are to be established within a region.

METHODOLOGY OF THE WESTERN CAPE PROVINCIAL STRATEGIC INITIATIVE - 2006:

Figure 1 provides a summary of a proposed regional methodology. Using this methodology, and relating it to our local context, the following observations can be made:

- *Level 3* - refers to site level EIA's are well advanced within the Kouga area.
- *Level 2* - the national level is incomplete with no definitive white paper on wind energy.
- *Level 1* – the regional level requires attention with regard to an overall strategic plan for wind energy.

A brief overview of this initiative is set out below:

In order to obtain the desired wind energy plan several key output maps are assembled as detailed in figure 2. This figure illustrates the key criteria to be used when building up the 8 recommended map layers, with an indication of the recommended buffers extracted from figure 2. The net results of this process are '**Preferred, Negotiated**' and '**Restricted**' locations for wind farm development.

Based on a similar model to the UK and Europe, which *Preferred Locations* do not specify any definitive boundaries but are broadly classified as general preferred locations. This should be based on a targeted output in accordance with natural or regional energy targets. Such a wind energy plan could differentiate between possible large (greater than 10 to 20 turbines) and small wind farms (less than 10 turbines). It is also recommended that the spacing between large wind farms be in the order of 50km and small wind farms 30km. This framework is a guideline and with the full motivation a wind farm could be located within the negotiated or restricted locations.

Conclusions

The following conclusions, which are relevant to the Eastern Cape Region, are taken verbatim from the Western Cape document:

1. It is crucial that the Provincial Government **publish formal guidelines and policy directives** relating to the Regional Assessment Method for Wind Energy in order to regulate the introduction of wind energy development to the Province.
2. The proposed Regional Method for determining suitable areas for Wind Energy developments (*the "Regional Wind Plan"*) should be accepted as complying with the objectives of a Strategic Environmental Assessment (SEA). Given that a Regional Wind Plan has **formal status as a SEA**, and ideally is incorporated into Regional and District Spatial Development Frameworks (SDFs), a "fast track" EIA process should be facilitated by appropriate guidelines.
3. Regional and district planning authorities must be encouraged, with the support of the Provincial Government, to embark upon the **Regional Landscape Character Assessment (RLCA)** incorporating visual resource mapping as part of the planning process.

4. **Formal policy guidance** should be published by the Provincial Government on landscape character assessment, including sensitivity and capacity analysis which should emphasise the value of expert opinion and professional judgments in preference to complex computer aided technology methods. This should include empirical observations made on the ground.
5. Appropriate **Public Information** on wind energy should be published to inform the public and assist in meaningful interaction in the planning process at regional and local level. Such public information should emphasise South Africa's climate change obligations and the need to accept certain landscape change at appropriate locations. It is important to engender a positive attitude to this technology.
6. It is recommended that, as South Africa a signatory to the Kyoto Protocol, a **Policy on Renewable Energy**, particularly wind, should be published at national level, similar to the Planning Policy 22 in the United Kingdom. The national perspective should establish targets at provincial level (PPS22; Office of the Deputy Prime Minister; 2004)
7. A **Positive Regulatory Framework** is required, along with financial incentives to support wind energy development.
8. Local and regional **Spatial Development Frameworks** must include a specific zonation for areas identified by the Regional Wind Plan, and ensure appropriate public participation at this level.
9. Government (DME) should **publish wind resource mapping** for South Africa, along with the regional targets referred to above, to support the efforts of the private sector.
10. Provincial policy while, on the one hand, encouraging large wind farms to be located in generally remote '**greenfield**' rural areas, should, on the other hand, also ensure that smaller scale projects can occur on urban and industrial '**brownfield**' sites.

Methodological Conclusions are listed below:

1. The assessment of **cumulative impact** is imperative and forms an important part of the proposed regional method. Minimum distances between large wind farms are recommended at 30km, with preference being greater than 50km.
2. Whilst encouraging large wind farms in appropriate rural locations, it is imperative to protect the **scenic value of landscapes** important to the tourism industry.
3. The methodology must include appropriate **public participation** with defined interest groups, particularly Biosphere Reserve Associations (if applicable) and other non-statutory organisations and environmental groups.
4. Locations for wind farms should where possible be placed in already '**visually compromised landscapes**'.
5. Reliable, up to date, and comprehensive information is a pre-requisite for the effective application of the Regional Method which is critically supported by GIS / 3D CAD technology, but this should not be a substitute for human intuition.

Site Level Conclusions:

1. Given that the Regional Wind Plan is effectively an SEA, the EIA process at the local level should be 'fast tracked' as far as possible for sites that conform to those identified in the Wind Plan.
2. A detailed policy guidance dealing with layout, siting, aesthetics, access and a host of other considerations should be published by regional authorities.
3. Figure 3 represents thresholds specific to the EIA process as recommended by the PGWC (Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape; CNdV Africa planning & design; May 2006).

DISCUSSION & CONCLUSIONS:

1. National and Regional Government must provide a clear cut and concise framework for the provision of renewable energy resources. The vision and conclusions detailed from the Western Cape initiative are a good starting point. It is important to note that the absence of this legislative framework can lead to opportunism from developers and decisions made which will have to be rectified at a later date. This could have negative consequences for the long term viability of this renewable energy source.
2. The methodology of the Western Cape initiative has merit as it sets out thresholds for the orderly development of wind farms, and the provision of map overlays assist in identifying preferred, negotiated and restricted areas. This is an important aspect of regional planning. These will assist in the calculation of the potential total wind farm output. What is of importance to wind farm developers through this type of analysis is the potential to fast track the regulatory approval of wind farms in preferred areas while the remaining locations, would need to be fully investigated and motivated.
3. A potentially positive aspect is that small wind farms can be used to bolster the energy needs of local communities. These small wind farms should be situated on 'brownfield sites' on the urban edge.
4. A point of concern is that having 8 wind farms within a confined area (2500 km² compared with the West Cape Study of 8 small wind farms over 5340 km²) is that the cumulative effects of 8 wind farms in the Kouga region are not addressed thus negating all the specialist reports as this is not factored into these applications.
5. There is a wealth of experience in other countries, not all of it positive, and we should learn from their experience. This is true of Denmark, Germany, Holland, the UK, U.S.A., Spain, Ireland, Australia and New Zealand. There is no doubt that mistakes have been made in these countries, which have led to a negative reaction to wind generation. Let us learn from these mistakes, and not duplicate them.

Environmental authorization is being sought for eight wind farms within the Kouga area and one wind farm of 16 turbines has already been authorized. This raises the following questions:

1. How can this process continue without the necessary national, provincial and regional legislative framework?
2. Are the applicants aware that, although environmental authorization may be granted, a future Eastern Cape regulatory framework could preclude the admissibility of these applications?
3. Who would be held liable for the wastage of this time and effort?
4. How can one part of the process continue when other key components are missing?

The absence of a regional framework compromises the validity of the assumed impacts and their mitigation, thus rendering these assessments invalid. *It is recommended that the current applications be placed on hold until such time as the required regulatory framework is put into place.*

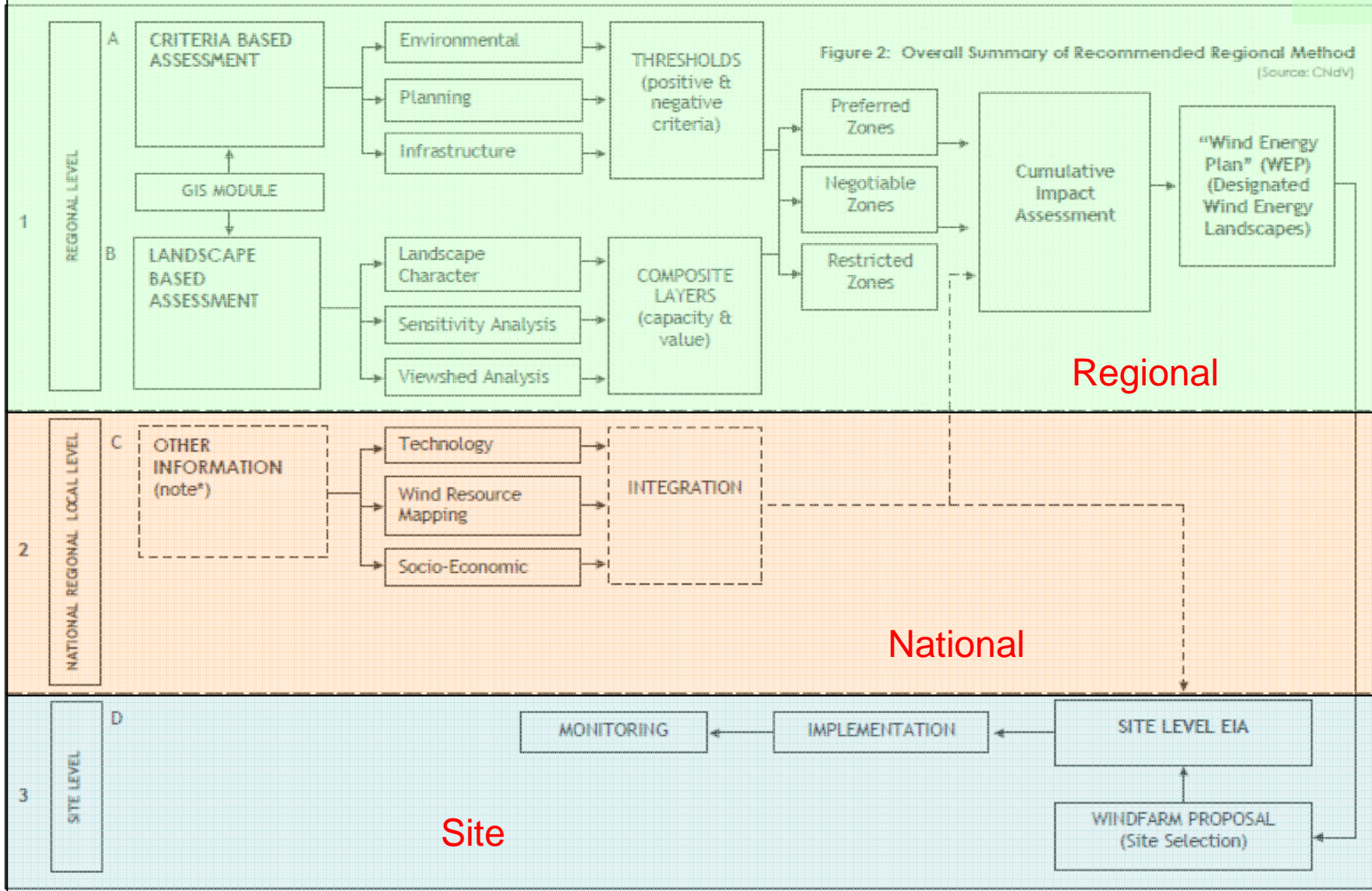


Figure 1 - Showing the 3 level approach to the authorization of a wind farm. In terms of the current 8 applications only Level 3 – Site Level is being complied with and Level 2 – National is partial and at this time Regional – Level 1 is not as yet available.

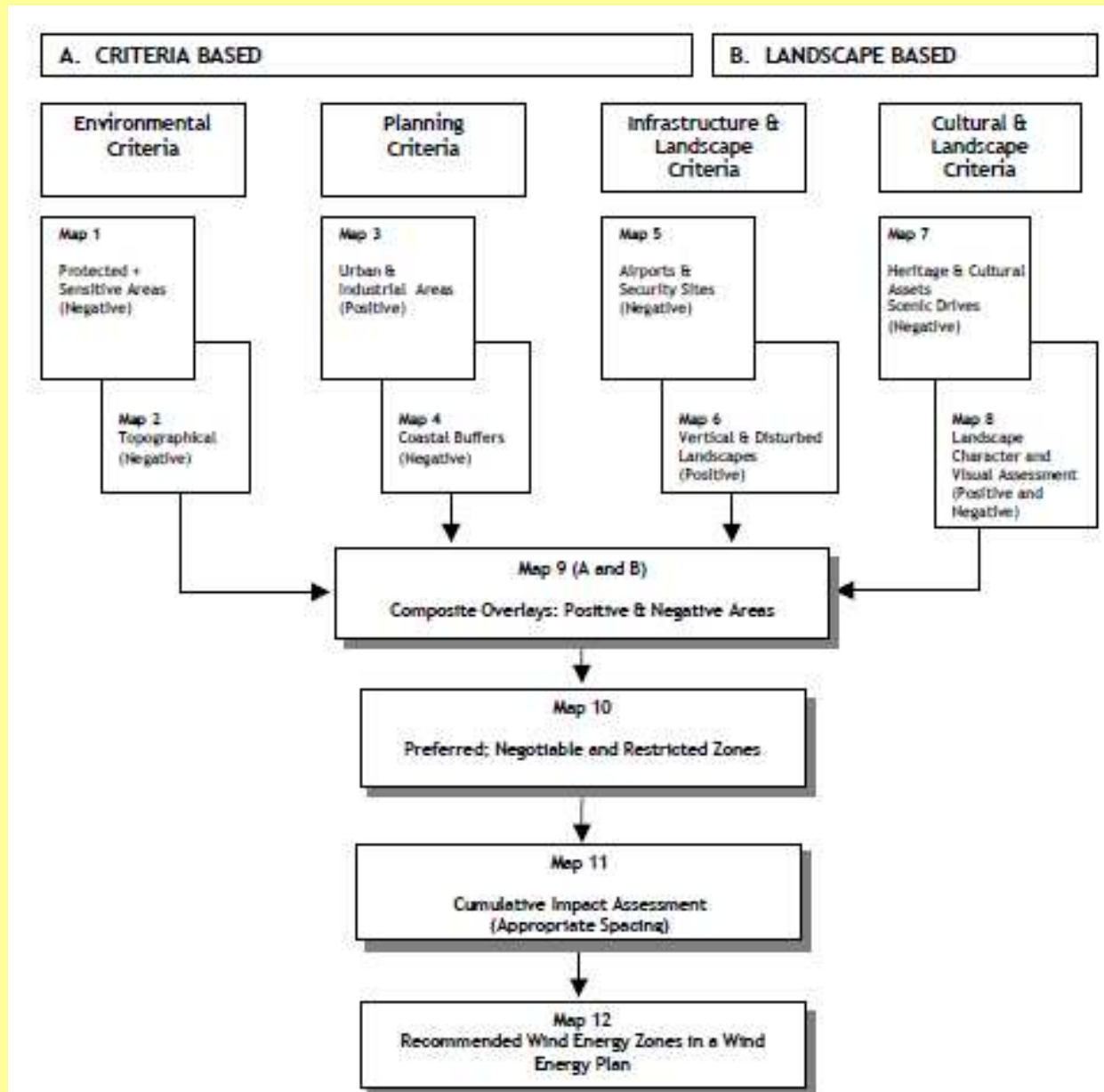


Figure 2 - illustrates in more detail the key criteria to be used when building up the 8 recommended map layers, with an indication of the recommended buffers extracted from Figure 3 to obtain a Preferred, Negotiated and Restricted wind farm zones within a Region

Figure 3 – This table is extracted from Wind Energy Landscape Study: Executive Summary - CNdV Africa May 2006; p XVI and provides thresholds to be used as guidelines for regional and site level assessments of wind farm installations.

No:	Criteria - distance from	Threshold Value	Notes / Data Source
1	Urban Areas	800m from urban edge	Urban edge lines assumed where necessary for rural towns with no formal urban edge. This distance adequately covers noise and flicker criteria.
2	Residential Areas (including rural dwellings)	400m	Threshold adequately covers noise and flicker criteria. All rural dwellings mapped from 1:50000 series, but these are not comprehensive or up to date.
3	Transport Routes		
3a	National roads	3 km	Should depend on scenic value of route can be reduced
3b	Local roads	500m	Review if high scenic value
3c	Provincial tourist route	4km	Statutory scenic drives
3d	Local tourist route	2.5km	Assumption made for local importance - could be reduced
3e	Railway Lines	250m	No distinction drawn between passenger and goods lines. Also rail corridors are usually visually disturbed. Safety consideration.
4	Transmission Lines		
4a	Major power lines	250m	Excluded gas lines (safety considerations)
4b	Cellphone masts & Communication towers	500m	no data available - should be mapped at local level
4c	Radio and navigation beacons	250m	digitized from aeronautical maps
5	Key Infrastructure		
5a	Airport with Primary radar	25km	To be confirmed with agency at local level
5b	Local airfield	2.5km	ditto above
5c	National security sites (Nuclear Power Station)	15km	To be reduced on confirmation with agency
6	National Parks & Provincial Nature Reserves	2km	Increased from 1km international standard
7	Protected Areas		
7a	Mountain catchments	500m	Not mapped. No defined info available
7b	Protected natural environment	2km	or as per statutory protection
7c	Private Nature Reserves (open space Zone II)	500m	Deal with at local level
7d	Heritage and Cultural sites	500m	Includes fossil sites national and provincial monument sites graves and memorials
8	Coast & Rivers		
8a	Distance to coastline of undisturbed scenic value	3 to 4km	Negotiable - may include areas of low scenic value
8b	Distance to rivers	500m	Only perennial rivers used at regional level
8c	Distance to 1:100 flood line	200m	Deal with at local level
9	Sensitive Areas (Avian)		
9a	Distance to major wetlands (RAMSAR sites)	2km	Assumed to increase bird safety
9b	Distance to local wetlands	500m	Bird safety
9c	Distance to bird habitats or avian flight paths	1km	Increased from 500m. Specific breeding sites to be dealt with at local level
10	Topographical		
10a	Elevation & slopes	Expl. 1:4 slopes & high mountain features	Map at a local level
10b	Distance from ridge lines	500m	Required and local scale
11	Vegetation		
11a	Distance from important indigenous / remnant vegetation areas.	locally determined	Mapped at a local scale.

WINDFARM APPLICATIONS WITHIN THE KOUGA REGION PART B

THE NEED FOR SITE GUIDELINES

INTRODUCTION:

Within the Kouga Municipality (EC108), several applications for the establishment of wind farms have been advertised for public participation over the last 8 months. The approximate locations of these wind farms are detailed on Map No: 14. It would appear that the Kouga Region falls within a 'favourable wind regime area' and it is expected that as time goes by, further applications for the erection of wind farms will be made.

The advent of such a renewable energy source is new and challenging to this region. The current wind farm applicants are attempting to fulfill their obligations in terms of current environmental legislation and the EIA's presented all focus on the immediate wind farm sites and their effect within the local context. This commentary attempts to utilize the criteria and thresholds used in the Strategic Initiative to Introduce Commercial Land Based Wind Energy Development to the Western Cape (2006) in order to provide a comparison with the actual data presented by the applicants. This initiative is available via the following link: <http://www.capegateway.gov.za/eng/pubs>. This initiative runs into several parts and its current status in terms of its applicability in the Western Cape is not known. However, it does provide insight into the potential establishment of a base framework on which wind farms are to be established within a region. A full regional framework is not within the scope of this commentary but in the absence of any alternative this initiative is the best option to date.

BACKGROUND TO PROPOSED WINDFARMS IN KOUGA REGION:

The locations of the proposed wind farms are presented in Table 1, as at the time of writing this commentary. The farm Dieprivier Mond situated in the Kou-Kamma Municipality (EC109) is included in this commentary as it is only 17km from Humansdorp on the border of the Kouga (EC108) & Kou-Kamma municipalities. This table is summarized below:

1. There are 8 different wind farm project areas and their locations are shown on Map No: 14 (Kouga SDF; 2009 - Rural Development).
2. The project areas cover 71 farms with an estimated total area of 15,558 Ha or 155.8 km².
3. The total known wind turbines to be erected are estimated at 300 turbines, varying from a column height of 60 to 100 with a blade length of up to 60 meters in height.
4. The max power generation capacity is estimated in the region of 610MW with an average output between 120 and 200MW.
5. The future numbers of wind turbines for the applicant Windcurrent are not included in these calculations; however an estimate of 30 additional turbines is made for Broadlands and 15 for Zuurbron, providing a total estimate of 345 units

and a possible increase in maximum generation power to 700MW with an average output of 140 to 230MW

6. Of the 8 applications only the Jeffery's Bay wind farm EIA is reaching the final stages of submission.
7. 5 applications are at the Draft Scoping Report Stage.
8. 2 applications are Basic Impact Assessments for masts

SITE CRITERIA AND REGIONAL TRESHOLDS COMPARED TO CURRENT APPLICATIONS:

As the Jeffery's Bay wind farm is the most advanced in the EIA process, this wind farm is used in this discussion. However, the points discussed are applicable to all other applicants.

Site Level:

Table 2 (2 pages) lists criteria to be covered in a typical wind farm application and are discussed with reference to the Jeffery's Bay wind farm:

1. Of the 50 criteria listed 14 (28.57%) are within the 'positive category'. This indicates that the report has provided sufficient information to adequately answer these criteria.
2. Of the 50 criteria listed 15 (30.61%) fall within the 'query category'. This is interpreted as there being insufficient information in the report to adequately satisfy these criteria. These criteria it is hoped can be satisfied with a written reply to these comments on Table 2.
3. Of the 50 criteria listed 20 (40.8%) cannot be satisfied from the information in the report. In order to explain the high 'no information' component further clarity is provided:
 - a. 2 criteria relating to the regional context cannot be evaluated due to the absence of a regional wind farm development plan.
 - b. 3 criteria related to ownership and land use issues are not addressed in the report. The view is held that some sort of agreement must have been entered into between the landowner and applicant and it would be a requirement to place this agreement into the public domain as the long term viability of any project will depend on adequate legal protection being provided to all parties. In addition this wind farm is a potential national energy resource. Therefore the same protection should be provided to the state. The third criterion relates to zoning and this must be sorted out in terms of current legislation within a regional and national context.
 - c. 15 criteria with no information relate to the turbine technical specifications, their specific layout, and substation and transmission corridors positions on the wind farm. This detail is vital to the determination of impacts and their mitigation, as the specialist studies must refer to specifics not generalizations. For instance the Visual Impact Assessment (a crucial variable) cannot be a valid representation until the

exact layout and turbine specifications (height and positions) are determined.

Regional Level: Table 3 lists thresholds used in the Western Cape initiative. A comparison of these thresholds with the wind farms in the area is presented in Table 4 (In many cases due to the status of these applications information is not available therefore some thresholds cannot be adequately answered). Other demographic information was derived from the Kouga SDF (2009). Areas of concern are blocked in 'Red' and discussed below:

- a. **Urban & Residential Areas:** The desired spatial form for Jeffrey's and Bay, Humansdorp (Kouga SDP; 2009, Maps 13A, B & C) has not been taken into account with regard to visual impact and urban edge for the following wind farms:
 - Jeffery's Bay wind farm - Jubilee Estate.
 - Jeffery's Bay wind farm - Cob Creek Estate.
 - Broadlands - Kwanomzamo Township.
 - Happy Valley - Kruisfontein Township.
- a. **Transport Routes:** Although these thresholds do not seem to figure prominently in the present applications the following areas are of importance;
 - i. The N2 national road which passes through the Jeffery's Bay wind farm. If the threshold of 3km was applied a large portion of this wind farm would be excluded. It is also important to note that the portion of the N2 that passes through this wind farm has a 'high accident rating'.
 - ii. The N2 also passes through Happy Valley and it would be appropriate to apply the same threshold at this point.
 - iii. The thresholds provide setback lines for official tourist routes. As tourism is an important component of the economy in this region, similar thresholds should be applied in the case of all wind farm applications. It is important that tourism routes are formalized by the Kouga Municipality, as is required by law.
- b. **Transmission Lines:** These thresholds should be applied to the present applications, including the possible impact of the proposed transmission line to and from Thyspunt. The impact of transmission lines from individual sites has not been adequately addressed.
- c. **Key Infrastructure:** All applicants should be aware of possible restrictions for key infrastructure such as airports, and national security. If the Thyspunt Nuclear facility is built then the issue of the 15km or 16km radius must be taken into account. If St Francis Bay in time decides to upgrade the airport what will the impact on the Red Cap Eastern Sector site be?
- d. **National Parks, Provincial Nature Reserves & Protected Areas:** Each application must take full cognisance of these. These are noted on Table 4 for each wind farm.
- e. **Coast, Rivers, and Wetlands:**
 - Distance to coastline applies to Redcap – Western & Eastern Sectors.

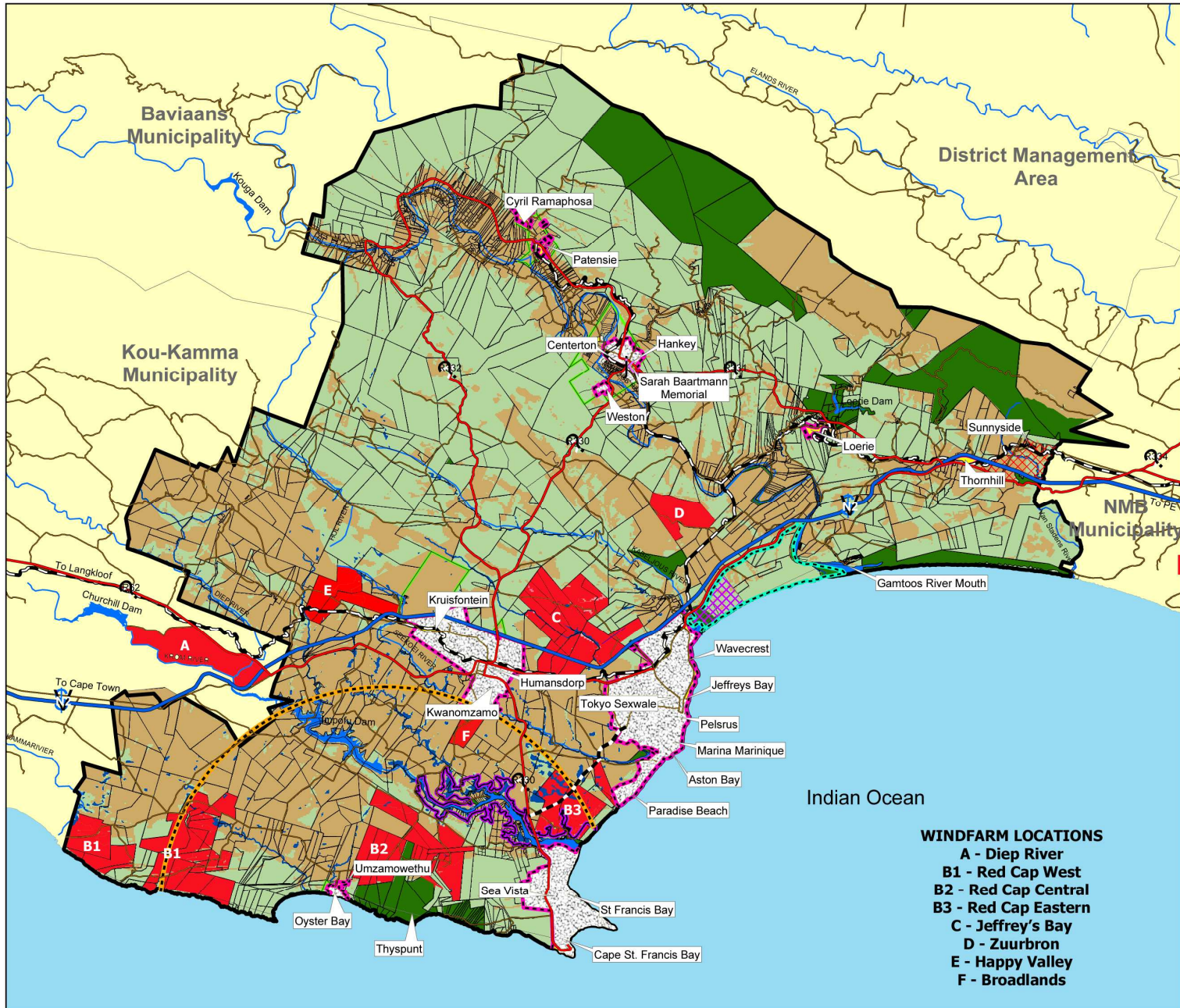
- No distinction is made for major or minor rivers. Broadlands and Redcap Eastern Sector wind farms are situated near major rivers.
 - The wetlands areas will most affect the Redcap Central and Eastern Sectors.
- f. **Topographical & Vegetation:** Both Happy Valley and Jeffrey's Bay will have possible topographical issues relating to slope and ridge lines.
- h. **Bio-diversity Regional:** Map No: 9 represents the official Bio-diversity of the Kouga Region with the 8 proposed wind farms as an overlay. Table 5 provides guidelines as to how areas are to be developed within the region. In most cases it is clear from the Kouga SDF that large areas situated within the wind farms should be managed for biodiversity conservation only with limited, small-scale tourism amenities. The implication is that these areas are not suitable for wind farms.
- i. **Visual Impacts Regional:** As the proposed wind farms are all in different stages of the EIA process it is pertinent to note that when 8 wind farms are viewed collectively covering an area of some 15,500 HA with associated infrastructure (buildings, workshops, and both the above and below ground provision of cabling, substations, burrow pits etc), the prime tourist coastal area will be irrevocably altered.

Prime resorts such as St Francis Bay will have a 240° vista interspersed with structures 80 to 100m high with a blade length of 60m. Humansdorp will also have a 240° vista of turbines. Paradise Beach will also be significantly affected. Jeffery's Bay and Oyster Bay are affected but, to a lesser extent. In every case the visual experts have attempted to satisfy this issue, but it does not negate the reality that these wind turbines will have a medium to high impact on the landscape for the lifetime of these projects.

DISCUSSION & CONCLUSIONS:

1. All the Kouga wind farms state that they will feed into the national grid. As employment opportunities on these wind farms are limited, would it not be of greater benefit if the farms situated in brownfield urban areas fed directly into the local urban grid? This will go along way to negate any negativity from communities arising from the visual impact and proximity of these wind farms to the urban edge.
2. A concern is the absence of any detailed layout plan revealing turbine specifications, their exact position, exact height, and associated infrastructure such as roads, buildings, cabling, overhead connections to the site substations and grid. The reasons provided this absence is that until specific site wind data is available these specifications cannot be determined. This negates the validity of some of the specialist reports such as the visual impact assessment, and those dealing with sensitive areas. How can one assess the impacts when data specific to the validity of these specialist reports is absent? It is clear that there are too many unknowns in the current applications such as mentioned above.

3. It is imperative that the wind data collected is site specific, before any application is considered.
4. The recommendation in the Western Cape guidelines that wind farms in rural areas be concentrated in intensive clusters at intervals of 50km is supported. This would provide protection to the landscape from wind-farm sprawl. A wind farm of 50 turbines will require in excess of 300 hectares (3 square kilometers). The capacity of the Kouga region to absorb such clusters, without major negative visual and landscape impact, is limited. The area of the Western Cape initiative is 5340 km² and on a 30km grid 8 small wind farms are proposed. In the Kouga region the wind farms are situated over a total area of 2500 km² and we have an application for 8 wind farms. Is this not overkill in trying to fit all these wind farms into an area 46% smaller in size to the Western Cape? There is no way that the Kouga area can accommodate 345 turbines without catastrophic degradation of the landscape.,
5. The Kouga Spatial Development Framework (2009) has been ignored by all applicants and this SDF has made no provision for wind farms.
6. It is clear that these wind farm applications have not adequately addressed specific site requirements and as a result diminishes the validity of stated impacts and their mitigation, thus leading to the conclusion that they be rejected until such time as proper scoping reports can be produced.
7. There is clearly an urgent need for policy guidelines at all levels for the handling of wind farm applications, with very specific criteria laid down and enforced. Until these are in place, it is proposed that no authorizations to construct wind farms be considered.



KOUGA MUNICIPALITY

RURAL DEVELOPMENT

- National Roads
- Secondary Roads
- Minor Roads
- Railway Line
- Town Allotment
- Rivers
- Dams
- Urban Area
- Thyspunt 16km Buffer Line
- Urban Edge
- Kromme River Setback Line
- GAMKAB SDF Area Boundary
- Proposed Coastal Road
- KDA Mandate Area
- Thornhill/Sunnyside Node
- Existing and Potential Agricultural
- Protected Areas
- Critical Biodiversity Areas
- Wetland
- Windfarm locations

KOUGA SPATIAL DEVELOPMENT FRAMEWORK



Date: December 2009
 Ref: D/GIS/Cacadu DM/Kouga/SDF/Maps/Final
 Created by Franco Cilliers



MAP NO.14

- WINDFARM LOCATIONS**
- A - Diep River
 - B1 - Red Cap West
 - B2 - Red Cap Central
 - B3 - Red Cap Eastern
 - C - Jeffrey's Bay
 - D - Zuurbron
 - E - Happy Valley
 - F - Broadlands

Table 1 – Proposed wind farms in the Kouga Region.

5 Applications – Draft Scoping Reports for comment – Blue

2 Applications – Basic Impact Assessment for comment – Brown.

1 Application – Draft Environmental Impact Assessment for comment – Yellow.

DATE of Application	Status	Applicant:	DEA Ref:	FARMS;	ERF No's:	SIZE HA	No of Turbines	Turbine Height m	Capacity MW	Mun.
Jul-10	Draft Scoping Regport for comment	VentuSA Energy Corp (Pty) Ltd	12/12/20/1863	Dieprivier Mond	358/4/16; 891	740	50	90	100	EC109
Jul-10	Draft Scoping Regport for comment	VentuSA Energy Corp (Pty) Ltd	12/12/20/1861	Happy Valley	810/1	500	15	90	30	
Jun-10	Draft EIA for comment	Mainstream SA	12/12/20/1718	Jeffrey's Bay	15 farms	3000	85	120	180	
Jun-10	Basic Impact Assessment for comment	Windcurrent SA	12/12/20/1752	Broadlands	688	1138	1 mast	80	n/a	
Jun-10	Basic Impact Assessment for comment	Windcurrent SA	12/12/20/1753	Zuurbron	845	825	1 mast	80	n/a	
Apr-10	Draft Scoping Regport for comment	Redcap Invest.	12/12/20/1756	Western Sector	25 farms	4578	50 to 150	80 to 90	100 to 300	
Apr-10	Draft Scoping Regport for comment	Redcap Invest.	12/12/20/1756	Central Sector	22 farms	3070				
Apr-10	Draft Scoping Regport for comment	Redcap Invest.	12/12/20/1756	Eastern Sector	4 farms	1734				
						15585				EC108

Table 2/1 – Criteria for specific to wind farm EIA submission: Jeffrey’s Bay

	Location		Specific Criteria for Wind farms	Jeffery's Bay wind farm	Comment
1	REGIONAL CONTEXT	a	A clear demonstration of how the proposed site fits into a Regional Plan for wind energy development must be presented	X	No regional plan exists
2	SITE INFORMATION	a	Location of the site - to be described and mapped on a locality indicating where the site fall on RWDP.	X	As no regional plan exists this information cannot be assessed.
		b	Area - This the area of the site, or sites if not contiguous separate areas must be given for the cadastral area of the property and the wind farm site itself.	√	OK - a list of all the farms and the owners should be supplied.
		c	The property must be described as per Title Deed description.	X	No information provided on this item
		d	The ownership of the site must be described in terms of freehold, leasehold or other contractual relationship with the property	X	On the assumption that most wind energy developments will be made outside of local authority town planning schemes (where a host of different zoning categories would apply), it is anticipated that any wind energy development would require a rezoning to either: Industrial Zone 1 or Special Zone as defined in the Scheme Regulations in terms of Section 8 of LUPG. Government Gazette (December 1988):
		e	Existing land uses – the existing land uses on the wind farm site and the property as a whole must be described and mapped at an appropriate scale	?	Not sure on this one should look at surrounding areas in terms of Kouga SDP 2009 and the desired spatial form.
		f	Built form – all buildings and major services should be described and mapped at the appropriate scale, inclusive of photographs	√	Not provided
		g	Zoning – all zoning in terms of Ordinances must be indicated.	?	Not provided
		h	Any land-use designation in terms of Draft or Statutory Land Use Plans must be indicated	X	Not provided
		i	Any historical or heritage information applicable.	√	
3	SITE ENVIRONMENT	a	A detailed description of the natural environment of the site must be provided.	√	
		b	Topography – contours to 1m intervals, slopes and landforms at appropriate scale	?	One cannot gauge the real topographical features of this site without contour map showing 1m intervals
		c	Rivers and streams – indicating which are perennial and flood lines in the case of major rivers (may require a specialist study)	?	Ok but don't like desktop studies.
		d	Dams and wetlands – constructed dams (all sizes) and all forms of wetlands (may require specialist study)	√	
		e	Soils and underlying geology (may require specialist study)	√	
		f	Natural vegetation (may require specialist study)	√	CRITICAL BIODIVERSITY AREA 1 and 2a
		g	Avian species with attention to nesting and migratory patterns (will require specialist study if relevant)	?	The studies of avian species is just too localised and really in order to gain a better understanding of this subject the wider regional context should be viewed.
		h	Faunal species with attention to special habitats (may require specialist study)	√	

Table 2/2 – Criteria for specific to wind farm EIA submission: Jeffery's Bay

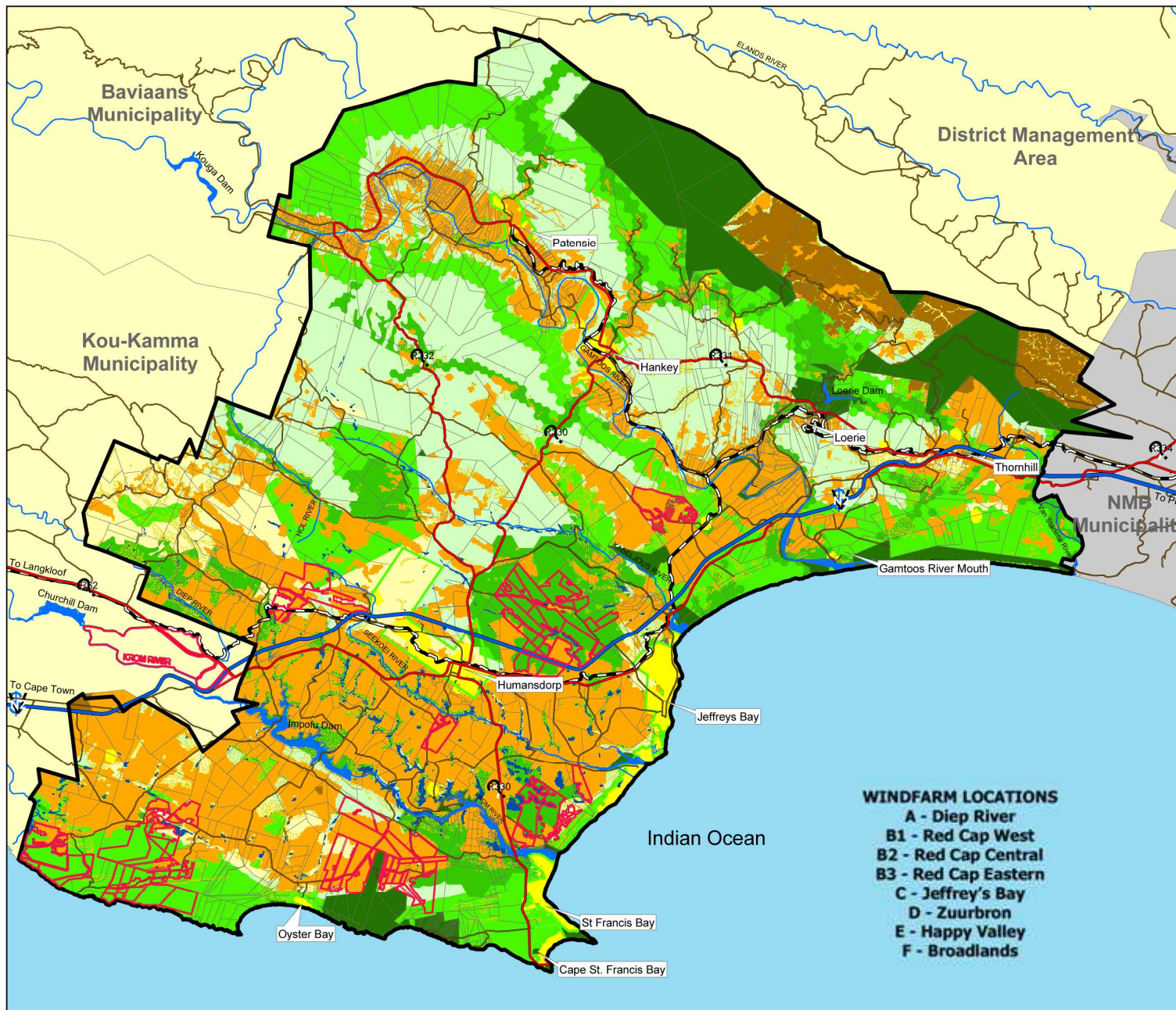
4	VISUAL AND CRITERIA BASED ANALYSIS	a	This is an area surrounding the proposed site in which a mapping exercise must be undertaken in terms of the criteria identified as both dependent on the nature of the wind farm. The study area may be expanded or reduced by DEA&DP depending on local conditions.	?	You have missed out of the Kouga 2009 desired spatial form - developments such as Jubilee and Cob Creek
		b	Small wind farms – turbines of less than 750kW and 10 in number – 15 kilometer radius	n/a	I am surprised that this alternative was not included in the study??
		c	Large wind farms – 30 kilometer radius	√	
		d	Viewshed analysis – within a zone of visual influence (ZVI) within a 20- 30km radius dependent on turbine sizes	?	Really does not tell us very much just that our views are going to be messed up and there is nothing we can do about it? Is this a Level 4 Visual assessment?
		e	Shadow flicker – on all main / provincial roads (other than internal site access roads) and any residence within a 500m radius of the turbines	√	
		f	Visually significant points – ridgelines and landforms within the study area	?	No ridgelines - your tentative layout holds no real planning or sensitivity.
		g	Key viewpoints within study area – from which visually significant points and wind farm will be visible	?	This Windfarm is going to have a significant impact on a high tourist area. Some sort of sensitivity must be adopted or we will end up like Palmerston North in New Zealand.
		h	Photomontages of turbines on the proposed Windfarm site – at the correct scale, colour and layout	?	Not qualified on this one, don't see any SANS mentioned
		i	Cumulative impact – of all other major industrial developments, or other wind farms within the study area	X	We have 8 others in the area and more which need to be accounted for?
5	TECHNICAL DATA	a	The following technical data must be submitted:		
		b	Total planned capacity of the wind farm (in phases if necessary)	√	Not exact - waiting for wind data
		c	Turbine manufacturer	X	Not sure
		d	Turbine type, output and model	X	not mentioned
		e	Tower type	X	not mentioned
		f	Hub height	X	not sure
		g	Rotor Diameter	X	Not sure
		h	Total tip height	X	Not sure
		i	Foundation details	X	We know they will be big?
6	WIND FARM LAYOUT	a	With reference to Appendix D and Section 4 above, the following information must be provided:		
		b	Site plan - mapped to appropriate scale	?	not specific enough
		c	Layout configuration – description and footprint analysis	?	not mentioned
		d	Exact position of turbines	X	not mentioned
		e	Turbine base heights (plan to note meters above sea level (MSL) for each turbine foundation)	X	not mentioned
		f	Substations	X	mentioned but where?
		g	Other buildings	X	mentioned but where?
		h	Access Roads	X	mentioned but where?
7	MAJOR SUBSTATION AND TRANSMISSION CORRIDORS	a	In the case of larger wind farms (where applicable), the following must be indicated:		
		b	Major substations – description and mapped to 1:10 000 scale, or as appropriate (to 1:50 000)	X	mentioned but where?
		c	New transmission corridors – mapped to 1:10 000 scale, or as appropriate (to 1:50 000)	X	mentioned but where?
8	SOCIO-ECONOMIC ASSESSMENT	a	Information on anticipated local job creation and local economic multipliers, procurement policies etc. must be provided and should form part of the overall assessment.	?	there must be more than a handful of permanent jobs or some other offset to the community
9	ENVIRONMENTAL MANAGEMENT	a	The EMP will be a fundamental component of any approval and must address:		
		b	Minimization of impact on the landscape	√	What about the barrow pits?
		c	Minimization of impact on avian and faunal species	?	This needs more detail and work
		d	Minimum disturbance of natural vegetation and wetlands	?	Is a desktop analysis enough?
		e	Minimum disturbance of cultural factors	√	
		f	Remediation of degraded vegetation and soils	√	

Table 3 – This table is extracted from Wind Energy Landscape Study: Executive Summary - CNdV Africa May 2006; p XVI and provides thresholds to be used as guidelines for regional and site level assessments of wind farm installations.

No:	Criteria - distance from	Threshold Value	Notes / Data Source
1	Urban Areas	800m from urban edge	Urban edge lines assumed where necessary for rural towns with no formal urban edge. This distance adequately covers noise and flicker criteria.
2	Residential Areas (including rural dwellings)	400m	Threshold adequately covers noise and flicker criteria. All rural dwellings mapped from 1:50000 series, but these are not comprehensive or up to date.
3	Transport Routes		
3a	National roads	3 km	Should depend on scenic value of route can be reduced
3b	Local roads	500m	Review if high scenic value
3c	Provincial tourist route	4km	Statutory scenic drives
3d	Local tourist route	2.5km	Assumption made for local importance - could be reduced
3e	Railway Lines	250m	No distinction drawn between passenger and goods lines. Also rail corridors are usually visually disturbed. Safety consideration.
4	Transmission Lines		
4a	Major power lines	250m	Excluded gas lines (safety considerations)
4b	Cellphone masts & Communication towers	500m	no data available - should be mapped at local level
4c	Radio and navigation beacons	250m	digitized from aeronautical maps
5	Key Infrastructure		
5a	Airport with Primary radar	25km	To be confirmed with agency at local level
5b	Local airfield	2.5km	ditto above
5c	National security sites (Nuclear Power Station)	15km	To be reduced on confirmation with agency
6	National Parks & Provincial Nature Reserves	2km	Increased from 1km international standard
7	Protected Areas		
7a	Mountain catchments	500m	Not mapped. No defined info available
7b	Protected natural environment	2km	or as per statutory protection
7c	Private Nature Reserves (open space Zone II)	500m	Deal with at local level
7d	Heritage and Cultural sites	500m	Includes fossil sites national and provincial monument sites graves and memorials
8	Coast & Rivers		
8a	Distance to coastline of undisturbed scenic value	3 to 4km	Negotiable - may include areas of low scenic value
8b	Distance to rivers	500m	Only perennial rivers used at regional level
8c	Distance to 1:100 flood line	200m	Deal with at local level
9	Sensitive Areas (Avian)		
9a	Distance to major wetlands (RAMSAR sites)	2km	Assumed to increase bird safety
9b	Distance to local wetlands	500m	Bird safety
9c	Distance to bird habitats or avian flight paths	1km	Increased from 500m. Specific breeding sites to be dealt with at local level
10	Topographical		
10a	Elevation & slopes	Expl. 1:4 slopes & high mountain features	Map at a local level
10b	Distance from ridge lines	500m	Required and local scale
11	Vegetation		
11a	Distance from important indigenous / remnant vegetation areas.	locally determined	Mapped at a local scale.

Table 4 – Comparative table showing Thresholds used in the Western Cape to determine Regional Guidelines applied to current applications.

No:	Criteria - distance from	Threshold Value	Jeffrey's Bay	Happy Valley	Redcap Western Sector	Redcap Central Sector	Redcap Eastern Sector	Broadlands	Zuurbron
1	Urban Areas	800m from urban edge	Refer Kouga 2009 SDP and Map No:14	Refer Kouga 2009 SDP Map No: 14	Refer Map No: 14	Umzamazowethu refer Map No:14	St Francis Bay	Kwanomzamo and Humansdorp	Kabeljous River Mouth
2	Residential Areas (including rural dwellings)	400m	Missed out Jubilee and Cob Creek estate in Kabeljous River.	Kruisfontein Township	Refer Map No: 14	As above	Krom River Mouth Shareblock & Osbosch	Kwanomzamo and Humansdorp	Kabeljous River Mouth
3	Transport Routes								
3a	National roads	3 km	Issue with high accident area and setback line	Should be taken into account	n/a	n/a	n/a	n/a	N2
3b	Local roads	500m	To be taken into account	Should be taken into account	Should be taken into account	Refer Thyspunt access road	MR381	MR381	R 103
3c	Provincial tourist route	4km	Not determined	Not determined	Not determined	Not determined	Proposed Jeffrey's Bay to St Francis Road cuts through this site	MR381	R 103
3d	Local tourist route	2,5km	Not determined	Not determined	Not determined	Not determined	MR381	MR381	R 103
3e	Railway Lines	250m	YES	YES	n/a	n/a	n/a	n/a	YES
4	Transmission Lines								
4a	Major power lines	250m	On layout plan	Cant find them on map	Cant find them on map	Thyspunt transmission lines	melkhout to Oyster bay Rd	Cant find them	Detailed on map
4b	Cell phone masts & Communication towers	500m	On layout plan	Humansdorp	Oyster Bay	Oyster Bay	St Francis Bay	Humansdorp?	Jeffrey's Bay
4c	Radio and navigation beacons	250m	Not sure if there are any?	Not sure if there are any?	Oyster Bay ?	Oyster Bay	not sure	Not sure if there are any?	Not sure?
5	Key Infrastructure								
5a	Airport with Primary radar	25km	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5b	Local airfield	2,5km	Humansdorp Airfield	n/a	n/a	Thyspunt?	St Francis Airpark	Humansdorp?	Jeffrey's Bay?
5c	National security sites (Nuclear Power Station)	15km	Not affected by Thyspunt	Not affected by Thyspunt	could be affected by Thyspunt within 15km radius	Thyspunt within 15km radius of Thyspunt	within 15km radius of Thyspunt	Within 15km Thyspunt radius	n/a
6	National Parks & Provincial Nature Reserves	2km	Kabeljous Park & KDA development area	Not sure if there are any?	not sure if there are any	Thyspunt?	Aston Bay	not known	Kabeljous River Mouth
7	Protected Areas		Not known	Not known	Not known	Thyspunt transmission lines and conservancy	Cape St Francis Conservancy	not known	KDA area
7a	Mountain catchments	500m	yes	yes	not sure	n/a	n/a	not known	n/a
7b	Protected natural environment	2km	Biodiversity area 1 and 2a	Predominantly cultivated	Cultivated and biodiversity area 2a	Cultivated and Sand River Dune bypass system	Krom River	Krom River?	Kabeljous River
7c	Private Nature Reserves (open space Zone II)	500m	Possibly areas of Cob Creek Estate	Not known	Not known	Not known	Sand River Nature Reserve	not known	not known
7d	Heritage and Cultural sites	500m	Might be something in Humansdorp?	Not known	How far from Klasiess River caves?	Not known	Osbosch	not known	KDA area
8	Coast & Rivers								
8a	Distance to coastline of undisturbed scenic value	3 to 4km	n/a	n/a	Applicable to this site	Applicable to this site	Applicable to this site	n/a	n/a
8b	Distance to rivers	500m	not sure if there are major rivers on site	what is the importance of the local river	n/a	Not known	Krom; Huis and Soutpan	Krom and Seekoei rivers	OK
8c	Distance to 1:100 flood line	200m	Not determined	Not determined	n/a	Not known	Applicable to this site	not known	Ok
9	Sensitive Areas (Avian)								
9a	Distance to major wetlands (RAMSAR sites)	2km	n/a	n/a	n/a	Sand River Northern Dune bypass system could be a future RAMSAR site	All over the area - Soutpan, Krom River Huis river and Osbosch	n/a	not known
9b	Distance to local wetlands	500m	local wetland	there are local wetlands	not sure if there are any	many in dune system	All over the area - Soutpan, Krom River Huis river and Osbosch	not known	not known
9c	Distance to bird habitats or avian flight paths	1km	possible areas specialist study not clear on this issue.	Not determined	Not determined	Not determined	Paradise/Aston Bay; Krom River; Soutpan and most of the coastal plain	not known	not known
10	Topographical								
10a	Elevation & slopes	Expl. 1:4 slopes & high mountain features	Not determined	there are slopes on this site	no	Not sure	Small river valleys	Krom & Seekoei rivers	not known
10b	Distance from ridge lines	500m	Not determined	there are ridge lines on this site	not sure	Not sure	n/s area is flat	flat area	flat area?
11	Vegetation								
11a	Distance from important indigenous / remnant vegetation areas.	locally determined	Biodiversity area 1 and 2a - Map 9	Cultivated land and Biodiversity areas 2a,2b and 3 Map 9	Biodiversity area 2a	Cultivated and Sand River Dune bypass system	Biodiversity area 2a	cultivated	Cultivated



KOUGA MUNICIPALITY

BIO-DIVERSITY

- National Roads
- Secondary Roads
- Minor Roads
- Railway Line
- Town Allotment
- Rivers
- Dams
- Urban Area

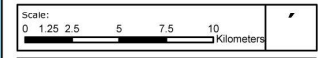
- Biodiversity**
- Cultivation
 - Plantations
 - Degraded
 - Protected Areas
 - Critical Biodiversity Area 1
 - Critical Biodiversity Area 2a
 - Critical Biodiversity Area 2b
 - Critical Biodiversity Area 3
 - Estuaries and Wetlands

KOUGA SPATIAL DEVELOPMENT FRAMEWORK

- WINDFARM LOCATIONS**
- A - Diep River
 - B1 - Red Cap West
 - B2 - Red Cap Central
 - B3 - Red Cap Eastern
 - C - Jeffrey's Bay
 - D - Zuurbron
 - E - Happy Valley
 - F - Broadlands



Date: December 2009
 Ref: D/GIS/Cacadu DM/Kouga/SDF/Maps/Final
 Created by Franco Cilliers



MAP NO.9

Table 5 - Guidelines for Urban Development Code Kouga Municipality.

Windfarm Name	Bio-diversity placing
<i>Dieprivier Mond</i>	<i>n/a as this wind farm falls within EC109</i>
<i>Happy Valley</i>	<i>Mix of predominantly cultivated and CRITICAL BIODIVERSITY AREA 2a, 2b and 3.</i>
<i>Jeffrey's Bay</i>	<i>Predominantly CRITICAL BIODIVERSITY AREA 1 and 2a</i>
<i>Broadlands</i>	<i>Predominantly cultivated lands</i>
<i>Zuurbron</i>	<i>Predominantly cultivated lands</i>
<i>Western Sector</i>	<i>Predominantly CRITICAL BIODIVERSITY AREA 2a</i>
<i>Central Sector</i>	<i>Predominantly cultivated lands & CRITICAL BIODIVERSITY AREA 3</i>
<i>Eastern Sector</i>	<i>Predominantly CRITICAL BIODIVERSITY AREA 1</i>

Guidelines for Urban Development Code	Guideline
National Parks , Provincial, Local, and Private Nature Reserves	To be managed for biodiversity conservation only. Limited, small-scale tourism amenities appropriate at some sites.
Critical Biodiversity Area 1	To be managed for biodiversity conservation only. Limited, small-scale tourism amenities appropriate at some sites.
Critical Biodiversity Area 2a	To be managed for biodiversity conservation only. Limited, small-scale tourism amenities appropriate at some sites.
Critical Biodiversity Area 2b	To be managed for biodiversity conservation only. Limited, small-scale tourism amenities appropriate at some sites.
Critical Biodiversity Area 3	Urban development appropriate in many areas, but loss of habitat must be compensated for by corresponding allocations of land for biodiversity conservation purposes.
Estuary/River/Wetland	To be managed for biodiversity conservation only. No development to be allowed on immediate river banks, floodplains or other wetlands. As a general rule, no development should take place within 50 m of estuaries, rivers or other wetlands, and no development below the 5m contour of estuaries.
GAENP Visual Interface Zone	Urban development appropriate if consistent with the underlying category. However, land use must not affect visual qualities and experiences associated with the GAENP beyond a minimum desirable state.
Degraded lands	Urban development may be possible on degraded CRITICAL BIODIVERSITY AREA 3 land, depending on the extent and type of degradation. All degraded CRITICAL BIODIVERSITY AREA 1, 2a & 2b land should be restored or rehabilitated.
Agricultural lands	Urban development is appropriate (from a biodiversity perspective), unless the agricultural land serves as an important linkage between adjacent protected areas, CRITICAL BIODIVERSITY AREA 1, 2a or 2b areas.
Urban development	Further urban development is appropriate.