

**PROPOSED WAINEK WIND ENERGY PROJECT  
GRAHAMSTOWN, EASTERN CAPE PROVINCE OF SOUTH  
AFRICA**

**ENVIRONMENTAL IMPACT ASSESSMENT  
FINAL ISSUES AND RESPONSE TRAIL**

<p><b>Prepared for:</b></p> 	<p><b>Prepared by:</b></p> 
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<p>South Africa</p>	<p>South Africa</p>

**June 2010**

Raised By:	Event & Date	Issue, Concern, Comment	Response
<b>Electricity Supply Issues</b>			
Nikki Kohly	Public Meeting (22.7.09)	How secure will this electricity supply be if the wind farm cannot store excess electricity?	The turbines will be connected onto the Eskom or municipal grid; therefore, if the turbines are not running or not running at full power (on less windy days), the power supply situation will be closer to what it is now. However, electricity usage is highest over cold periods, and this is also when it is very windy and the turbines will be running at full power. This is a natural off-set that will ensure Grahamstown has power at times of peak demand.
Br Andrew	Public Meeting (22.7.09)	There is a difference between Eskom load shedding, and the Municipality's load shedding- what will happen if the Municipality turns the electricity off?	The power will be fed into the Grahamstown Substation, from where it will flow to the closest towns first. To give an example, it works like water in a stream, where the towns closest to the substation needing electricity will receive the flow first, and any excess will run on to the next town, etc therefore increasing Grahamstown's power security and decreasing the need for either Eskom or the Municipality to undertake load sheddings.
Jim Saunders	Public Meeting (22.7.09)	Will there be a dedicated supply going to Grahamstown, or will the power just be sold to Eskom to distribute?	See above response.
Grahamstown Resident	Public Meeting (22.7.09)	Some houses in Grahamstown are connected to the Municipal supply, and some to Eskom, (there is a divide between east and west). The prices for electricity are different (Municipal electricity is more expensive). Can we apply to InnoWind or Eskom for local Eskom distribution throughout the whole of Grahamstown?	We (InnoWind) are unsure of the Municipal tariffs, and will just be selling the electricity produced by the turbines to the System Operator (Eskom, the municipality or other), as per current legislation stands,. I think you would need to approach Eskom on this matter. Legislation could change in the future with the establishment of Regional Electricity Distribution companies and the Independent System Operator.
Mark Hazell	Public Meeting (22.7.09)	You say the Wind Farm will produce 20- 25 MW of power, and currently, Grahamstown needs 20MW at peak demands. Rhodes is planning to expand over the next couple of years, therefore we would need that extra 5	The limiting factor on how much electricity is generated depends on the Eskom lines. Right now, they can take up to 25MW. The power will be fed into the Grahamstown substation, where it is distributed to the closest towns first. To give an example, it works like a stream, where the towns

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		MW in the long term. Where does that spare capacity go?	closest to the substation needing electricity will receive the flow first, and any excess will run on to the next town, etc. So if there is a higher need in Grahamstown, it will receive the power first.
Makana Municipality	Public Meeting (22.7.09)	I refer to the issue of electricity security. We would like to apply for another transmission line from the Albany substation (currently there are 2 lines). Would we apply to Eskom for this, or InnoWind?	InnoWind will upgrade what needs to be upgraded at the Albany substation (should this be the ultimate connection point). The relationship between Eskom and the Municipality will not change, therefore you would need to apply to Eskom for an additional line.
June Walters	Public Meeting (06.05.2010)	Will Grahamstown get the electricity that is produced by the wind farm?	Yes, the electricity will go to the closest place first, and what Grahamstown does not use will go onto the national grid.
<b>Noise &amp; Vibration Issues</b>			
Grahamstown Resident	Public Meeting (22.7.09)	What about the vibration/ noise impacts?	<p>This has been raised a few times in Europe and in America. It has been concluded that there are no vibration impacts, although there have been some rare cases of vibrations in the soil if the turbine has been poorly designed, however, turbine design and engineering has evolved and drastically improved over the years. Thousands of megawatts of wind farms have been erected in the vicinity of populated areas in France and Europe generally, the vast majority of which have by and large not created any noise problems. The noise generated by the turbines and the potential impacts will nevertheless be assessed in greater detail during the EIA.</p> <p>A noise specialist study was included in the EIA phase and the full specialist report is available for review. The impact on sensitive receptors with mitigation was assessed as being high for Layout 1 (11 turbines) but low for Alternatives 2, 3 and 4 if mitigation measures are applied. Infrasound was measured by the specialist at facilities in France and the potential impacts associated with low frequency sound</p>

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			<p>from the proposed facility was rated as being of low significance. It was recommended that all turbines be set back at least 500 meters from any homestead.</p>
<p>F.F. Jacot-Guillarmod</p>	<p>Per Correspondence (16.7.09)</p>	<p>What are the noise implications of the proposed facility? Is there a possibility of simulating the noise levels of a set of turbines on a recording that could be played back to interested parties?</p>	<p>Original response: The noise impact will be modeled using dedicated software and recordings of the ambient/background noise levels (without the wind turbines). We will then produce a 'sound map' giving the noise increase in all surrounding areas, with a correspondent scale. For instance, a house situated 500m from the closest wind turbine may see an increase of 4dB from the prevailing ambient noise level without a wind turbine. This might add to typical existing 45dB, and be similar to a low voice conversation. However during the detailed Environmental Impact Assessment (EIA), a detailed noise assessment will be conducted – one of the focus areas of this study will be to determine the significance of potential noise impacts on surrounding landowners in line with South African Noise Regulations.</p> <p>Updated response: A noise specialist study was included in the EIA phase and the full specialist report is available for review. The impact on sensitive receptors with mitigation was assessed as being high for Layout 1 (11 turbines) but low for Alternatives 2, 3 and 4 if mitigation measures are applied. Infrasound was measured by the specialist at facilities in France and the impact was considered of low significance. It was recommended that all turbines be set back at least 500 meters from any homestead.</p>

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Nick Fox	E-mail (14.04.2010)	Noise may have a negative effect on people living nearby	A noise specialist study was included in the EIA phase and the full specialist report is available for review. The impact on sensitive receptors with mitigation was assessed as being high for Layout 1 (11 turbines) but low for Alternatives 2, 3 and 4 if mitigation measures are applied. Infrasound was measured by the specialist at facilities in France and the impact was considered of low significance. It was recommended that all turbines be set back at least 500 meters from any homestead.
Nick Fox	E-mail (14.04.2010)	Noise may have a negative effect on animals living nearby	There is evidence in the literature that animals, including elephants communicate over long distances (perhaps up to 4km in the case of elephants) by low frequency sound. However, a literature / internet search did not yield any scientific reports on the potential impact of low frequency sound from wind turbines on wild animals. Thus, the potential significance of the impact of noise, and particularly infrasound, from wind turbines on wild animals is unknown.
Russell Field	Letter (10.5.2010)	Another factor that could cause a problem for us is the noise factor from the turbines and towers. I know that this is supposed to not be “that loud”, but NO-ONE except me and my family will have to listen to it. Apparently the sound tests were done with two stations on my property (SR1 and SR3). I do not believe that this occurred as my gates are usually locked and my staff would have informed me of anyone on the property	The results of the noise models in the noise specialist report show that the level of noise at Cold Springs will be within acceptable limits. The noise level at the dwellings would be below 45dB.
Pumba Game Reserve	Letter (28.5.2010)	The specialist report on noise appears only to have dealt with the impact on human receptors. There is no record in chapters 4 or 5 of investigations into the effect of noise pollution on wildlife during the operational phase and this must be remedied by way of a	These issues have now been addressed in section 8.5.4.6 of the EIR. In summary, there is a paucity of scientific on the impact of turbine-induced vibrations on fauna. However, there is evidence in the scientific literature that a large number of animals rely on vibrations or infrasound for communication. As discussed in the noise specialist report,

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		further specialist report.	
Pumba Game Reserve	Letter (28.5.2010)	No specialist report has been undertaken regarding the effect of vibrations caused by the wind farm either on humans or animal life. A specialist report into this matter is required. Specific emphasis should be placed on the possible negative impact on wildlife found on surrounding game farms and at eco-tourist sites, as certain of the species established there may be more susceptible to vibrations than others.	vibrations and infrasound are produced from a number of other sources including road traffic. Considering that the proposed Waainek wind farm will be located in close proximity to the busy N2 national road, it is expected that any negative impact of vibrations or infrasound from the wind farm on fauna will be, at most, incremental over those from existing sources of vibrations. It should also be noted that as a result of refinement of design of turbines, vibrations have been minimized.
<b>Visual Impact Issues</b>			
F.F. Jacot-Guillarmod		What are the light flicker implications? Clearly the impact of this will depend on the precise location of the towers, but it could become extremely irritating for residents in the immediate vicinity	(Reply from specialist 19.04.2010): The flicker effect is discussed in the specialist report with maps and showed which residents will potentially be affected. The flicker effect is only really an issue for houses very close to a turbine. The effect is much reduced for houses with trees surrounding them (most in the affected area appears to be surrounded by high trees).

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Roger Roswell	E-mail (15.01.2010)	Rotor blade shadow flicker at sunset onto N2 at and near the infamous Waainek corner and light flicker at sunrise at same N2 position.	(Reply from specialist 19.04.2010): It is suggested by the specialist that the turbine (WT05) directly across from that Waainek corner be excluded from the wind farm, although more because of its proximity to two residences on the same hill. The shadow flicker modelling shows that the N2 will be too far away from the turbines to be significantly affected by it (especially the Waainek corner). As for light flicker it is doubtful that this will be an issue. The turbines are painted in a mat finish and are unlikely to be highly reflective. There are also high trees along the N2 near the Waainek corner and if light flicker does happen at all its effect will be very brief.
Nick Fox	E-mail (14.04.2010)	There will be a negative effect on surrounding eco-tourism operations. It is suggested that any wind facility in the Albany area be situated at least 10km away from any eco-tourism operation.	(Reply from specialist 19.04.2010): The visual assessment report covers the potential visibility, visual exposure and visual intrusion and there is a section on the protected areas surrounding the proposed wind farm. In most cases it is recommended that wind farms be located away from landscapes valued for their scenic views and natural heritage. The Waainek wind farm location is not ideal in this respect in that there are protected areas and natural heritage sites in fairly close proximity to the proposed site. Details of the visual impact assessment are provided in the specialist volume.
Russell Field	Letter (10.5.2010)	The visual impact of the turbines from the lodge on Cold Springs farm will be significant. The intrusive view of the turbines from the lodge would drive away clients.	A photomontage showing the view from the lodge towards the wind farm has been prepared and is included as Document G7 (this volume). While some of the turbines are visible, they appear relatively inconspicuous. In addition, given the extensive growth of alien trees and grazing paddocks in the immediate vicinity of the lodge, the view cannot be considered as pristine African bush even without the turbines.
Mike Palmer	Email (19.5.2010)	The visibility of the proposed wind farm as presented in the draft EIR needs to be checked. After a visit to the area, it is my opinion that towers 1 – 6 would not be visible	The concern is noted. The viewshed maps indicate that a large part of the wind farm (i.e. parts or all of most of the towers) will be visible from Grahamstown and the Monument. They also show that there is very little difference

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		<p>from Mountain Drive or most of Grahamstown as indicated in Figures 6-12 and 6-14. With such emphasis placed by game farmers on the visibility issue, the whole visibility report needs to be re-assessed.</p>	<p>(relative to the size of the viewshed) in overall visibility between layout alternatives. Two different software packages were used to calculate viewsheds and the results differed negligibly. The specialist also visited many sites to verify as best he could (looking at the capacity of vegetation and buildings surrounding the sites to conceal the wind farm) whether the viewshed represents an accurate model for wind farm visibility. In the specialists opinion the viewshed is therefore as accurate as possible taking into consideration the possible inaccuracies and generalisations of the source data (as mentioned in the Assumptions and Limitations section of the database).</p>
<p>Petro Rossouw</p>	<p>Letter (8.05.2010)</p>	<p>How many of the remaining turbines will be visible from the Monastery grounds? Not enough attention has been given to the guest house at the Monastery? What would the wind farm do to the income generated by this specific and specialized group of visitors? How would the wind farm affect the income of the Monastery?</p>	<p>Given the extent and topography of the grounds of the Monastery, certain turbines will be visible from different locations on the property. It is expected that all of the turbines will be visible (although at varying distance) from the higher areas of the property. The noise models show that there will be no noise impact on the Monastery during the operation phase but there will probably be some noise impact during the construction phase. It is difficult to say how the proximity to the turbines will impact on the business element of the Monastery over the long term but it may be negative or positive.</p>
<p>Pumba Game Reserve</p>	<p>Letter (28.5.2010)</p>	<p>The potential negative impact of the proposed development on the surrounding eco-tourism sector, as a result of the visual impact of the turbines, has not been addressed adequately. With such high stakes at play, we submit that the draft EIR and EMP are fatally flawed due to the absence of an in-depth study on the likely effects the wind farm will have on the eco-tourism industry in the area.</p>	<p>The viewshed analysis and visual exposure assessment indicates that the proposed develop will not be visible from a significant portion of the Pumba Reserve and where is will theoretically be visible, the exposure will be medium to low. A photomontage from Coldsprings farm, approximately 700m from the closest turbines (See Document G7) i.e. significantly closer than the Pumba Reserve, indicates that while some of the turbines will be visible, they would probably not be regarded as visually intrusive by many. It is likely that from the Pumba Reserve they would be less noticeable than other man-made features such as cellphone towers or the N2 national road. As discussed with Indalo, it</p>

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			<p>is unlikely that any study at this stage would be able to provide an accurate assessment of the economic impact of the proposed development on the eco-tourism sector in the Eastern Cape. There is evidence from extensive studies on the impact of wind farms on tourism to natural areas of Europe which indicates that the presence of wind farms would not have any negative impact.</p>
<p><b>Global Environmental Issues</b></p>			
<p>Tony Fluxman</p>	<p>Public Meeting (22.7.09)</p>	<p>What will the effect be on global warming? For example, what reductions will there be in Carbon Dioxide emissions?</p>	<p>75 000 tons of CO<sub>2</sub> will not be emitted into the atmosphere when using wind energy. To put this into perspective, this is equivalent to 150 000 trips to Port Elizabeth, from Grahamstown (Based on a calculation of 1 MWh = 1 ton CO<sub>2</sub>, 3000 hours/year at 25 MW output, 0.6 ton CO<sub>2</sub> emitted every 100 miles). As wind turbines do not generate electricity 100% of the time, it is necessary to have a base load capacity provided by other sources such as nuclear or coal. However, once a number of wind energy facilities are in operation around the country, it is highly probable that at least some will be spinning at any given time. As such, collectively they will provide a reliable “green” input to the national grid (although less than their theoretical maximum combined generating capacity). Initial modeling has been performed and shows a likely 30% capacity base-load from installed wind capacity in SA, thanks to its geographically dispersed different wind regimes.</p> <p>Wind energy plants, as with any other independently produced sources of power, will be prioritized over conventional Eskom-sourced power. As such, each MW generated from a wind farm will equate to a MW not being produced by a conventional source (coal), and thus avoiding the emission of approximately 1 ton of CO<sub>2</sub> into the atmosphere.</p>

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Petro Rossouw	Letter (8.05.2010)	What about the carbon footprint? How long in operating time will it take for the carbon footprint to be negated?	See answer above and below
Jacot Guillarmod	E-mail (30.04.2010)	<p>The politically correct claim is made in several places about wind power being "green", and thereby somehow reducing Grahamstown's (or Eskom's) carbon footprint.</p> <p>This claim is nonsense, for the following reason: Assume the wind farm is generating X megawatts of power injected into the national electricity grid, and the grid is depending on this X megawatts for distribution stability. (This clearly assumes that the second part of question (4) above has been satisfactorily answered.)</p> <p>Now, what happens if a dead calm settles over Grahamstown – or the more likely scenario that the X megawatts being generated falls to a fraction of a megawatt? Are we supposed to believe that someone in Eskom gets a message from Grahamstown about the balmy conditions, then rushes out to light a fire under one of their turbine boilers to make up the shortfall?</p> <p>Or is it more likely that Eskom keep their turbines spinning at full speed but only inject the requisite amount of power from the attached generators at any time? This would imply they continue using just as much coal to drive their turbines as they did before the</p>	<p>As wind turbines do not generate electricity 100% of the time, it is necessary to have a base load capacity provided by other sources such as nuclear or coal. However, once a number of wind energy facilities are in operation around the country, it's highly probable that at least some will be spinning at any given time. As such, collectively they will provide a reliable "green" input to the national grid (although less than their theoretical maximum combined generating capacity). Initial modeling has been performed and shows a likely 30% capacity base-load from installed wind capacity in SA, thanks to its geographically dispersed different wind regimes.</p> <p>Wind energy plants, as with any other independently produced sources of power, will be prioritized over conventional Eskom-sourced power. As such, each MW generated from a wind farm will equate to a MW not being produced by a conventional source (coal), and thus avoiding the emission of approximately 1 ton of CO<sub>2</sub> into the atmosphere.</p>

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		<p>Grahamstown wind farm? The only change will be how much of the available power is distributed at any instant.</p> <p>The honest answer to this, I believe, is that there will be no measurable reduction in carbon footprint. Therefore claims that this particular wind farm is the slightest little bit green will not actually be true, and should be discounted in any motivation. Does the truth matter?</p>	
<b>Construction Issues</b>			
F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	What sort, and frequency, of access will be required to construct the towers?	<p>Preliminary civil works will comprise access roads, foundations etc. For one turbine the following will be required: a 4m wide access road, 25m inner radius in curve – crane platforms 40 m x 25 m and many trucks during the 10-day construction period. The erection of towers will take approximately 3 working days per tower in good weather. The construction phase is the most labor-intensive and requires the most machines on site. However, given the daily operation costs, it is also in our best interests to try and keep the length of the construction phase as short as is possible.</p>

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F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	And to maintain the towers?	Wind turbines require very little maintenance as compared to other power generators and generally no permanent staffing on-site. On average, a wind farm requires access by one light vehicle every 2 weeks. Every 5 years a more thorough servicing is required, but always using light vehicles, for a short period of time. In the event of a major repair (e.g. replacing of blades), a crawler crane is required
F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	And to decommission the towers?	This phase takes place at the end of the wind farm's operational lifetime, i.e. probably around 40 years. The decommissioning phase is very similar to the construction phase, thus it is quick to perform
Grahamstown Resident	Public Meeting (22.7.09)	And what about the life expectancy of the turbines?	Today, none of the modern turbines have reached their life span. It is estimated that they have a life span of approximately 40 years. You can then take them down and refurbish them, or you can re-power them by changing all the electrical parts. This will enable them to go on for several more years.
Geoff Antrobus	Public Meeting (22.7.09)	What about the disposal of the soil that needs to be excavated for the foundation of the turbines?	It is specified in the Construction Environmental Management Plan (CEMP) that a suitable location for the disposal of surplus rock and soil would need to be confirmed prior to initiation of construction activities. The Draft CEMP is available for public review.
<b>Financial Issues</b>			
Grahamstown Resident	Public Meeting (22.7.09)	What is the financial life span?	Current guidelines for the establishment of a PPA indicate that Eskom would be required to sign a contract for 20 years at the least.
Don Hendry		Do the estimated costs include the purchase of the land?	The model used to assess the financial feasibility of the project includes the costs associated with the rental of land for the turbines.
Grahamstown Resident	Public Meeting (22.7.09)	So the wind power will still be linked to the grid, therefore we pay Eskom for the power, and Eskom buys the power from InnoWind	Yes, that is correct. Part of this profit will go into a BBBEE trust. There is quite a substantial difference between the price that Eskom buys electricity for, and the price that they

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		which is the income stream for the project.	sell it for, and this price will also increase over the next few years as the national and international price of power generation equipment and fuel has gone up substantially. From a local economic perspective, it will be good to get this project going as soon as possible.
Russell Field (Coldsprings)	Public Meeting (06.05.2010)	As part of a socio-economic study I would like a professional opinion on property values and their likely decline as this has not been included in the EIA.	(Ted Avis – CES): This is not in the EIA as it is exceptionally difficult to assess. (Kevin Minkoff – Innowind): It is very difficult to assess future property values and there are very opposite opinions on the matter, so it cannot be predicted with scientific accuracy. There have been occasions where property values near a wind farm have increased, and instances where they have decreased.
Russell Field (Coldsprings)	Public Meeting (06.05.2010)	How much money do the farmers get per turbine?	(Kevin Minkoff – Innowind): The financial arrangements between InnoWind and the various land owners is subject to confidentiality agreements and the details are not relevant to the EIA process.
Russell Field (Coldsprings)	Public Meeting (06.05.2010)	What is the estimated cost of the project?	(Kevin Minkoff – Innowind): 3 to 3.5 Million Euros (35m Rand) per turbine.
Russell Field (Coldsprings)	Public Meeting (06.05.2010)	I have heard that there is a turnaround time of five to six years on the money, is this true?	(Kevin Minkoff – Innowind): This is not certain until a year of wind measurement data is gathered and assessed.
Christelle Hutchinson	Public Meeting (06.05.2010)	If 9 turbines go up, how much will the community benefit, will these figures be available to the public? Will the wind farm be based on how much the community would be getting?	(Kevin Minkoff – Innowind): The community will begin to benefit from the first or second year of production of the wind farm. It is difficult to give figures at this stage, but it will be likely in the millions. Yes, once the figures are known they will be available to the public, the trust will be run in a transparent way. (Ted Avis – CES): The Makana Winds of Change Trust is a huge benefit but how big needs to be determined. CES will do a best and worst case scenario calculation to present in the final report.
Petro Rossouw	Letter (5.08.2010)	The Winds of Change Trust is being used as a big 'carrot' but depends on the wind farm generating a profit.	The Winds of Change Trust model developed by InnoWind in collaboration with Rhodes University is at the heart of the wind farm project to ensure local communities gain a

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			<p>substantial profit through the venture. Indeed, this depends on the actual profit which will be generated by the find farm, whose magnitude is still uncertain. However, InnoWind will only go to construction should sufficient financial securities for the project be in place, thus ensuring that profits will flow into the Trust.</p>
Br John (Monastery)	Public Meeting (06.05.2010)	About the Winds of Change Trust: who will manage it and how will the community benefit?	(Kevin Minkoff – Innowind): The board of trustees will consist of organisations (not individuals) with different interests and so will vote on where the money should be directed. The board will consist of at least nine people from different backgrounds. The details have not been finalised yet, but as soon as they are, this information will be available to the public.
Garth Cambray	Public Meeting (06.05.2010)	The idea is that the trust will be stable, and consist of people who care about education in Makana and contributing to the community.	(Ted Avis – CES): Yes, but the trust has not yet been finalised and will be over a few months.
Br John (monastery)	Public Meeting (06.05.2010)	Where will the money go?	(Kevin Minkoff – Innowind): The trust deeds state clearly where the money should go and will make sure there is accountability. The money cannot be used for things other than the main objectives. The trustees are all unpaid.
Russell Field	Public Meeting (06.05.2010)	The Innowind power is much more expensive.	(Kevin Minkoff – Innowind): it is only perceived expensive at this day in time in South Africa. The reality is that Eksom is increasing its pricing so the consumer will be paying the same price in 5 years, the reason being that the power generated by current coal-fired power stations is much more expensive than what is currently charged by Eskom and thus perceived by its customers. Eskom price doesn't reflect actual costs. Many experts (including NERSA) agree that currently wind energy costs little more than 5-10c/kWh compared to conventional power plants in SA, taking all externalities into account. The price of power is decided at national level (by NERSA), thus a wind farm in Grahamstown will not have more impact on the price of power to its residents than a wind farm in the Western Cape.

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Russell Field	Public Meeting (06.05.2010)	How will you make money if we will be paying the same for electricity?	(Ted Avis – CES): Eskom is making a loss; they will still sell the electricity to you at the normal rate. However, it is estimated that in 20 years the cost of coal-generated power will be more expensive than wind-generated power.
Russell Field	Public meeting (06.05.2010)	Is the electricity sold to Eskom or the municipality?	(Kevin Minkoff – Innowind): This has not yet been established as the laws governing this are still being decided upon. It is most likely that power will be sold to a body (the Independent System Operator) housed within the Department of Energy who will then deal with the municipality or Eskom.
Christelle Hutchinson	Public Meeting (06.05.2010)	Will there be an assessment to deal with loss due to reputation in international markets, we will lose money?	(Marc Hardy – CES): That is very difficult to assess. (Ted Avis – CES): The economy is not stable at the moment, there is no contingency measure and it is thus too difficult to assess.
Br Timothy (Monastery)	Public Meeting (06.05.2010)	I am concerned about the transparency of the money, is there an example of a working trust?	(Kevin Minkoff – Innowind): There are no examples of such a working trust as there are no wind farms in South Africa and no business model such as this in France. Grahamstown is a pilot project.
Br Timothy (Monastery)	Public Meeting (06.05.2010)	You say that the trust will get 26% of the profits, if there were no BEE requirements, would there be a trust at all?	(Kevin Minkoff – Innowind): This community inclusion business model was developed by InnoWind at the very beginning of our developments in SA, with no specific BEE requirements in place for Independent Power Producers. The drive was more philanthropical than for economic reasons. Moreover, the Trust will not invest any funds to get the equity, unlike conventional BEE partners.
Caroline Field (Coldsprings)	Public Meeting (06.05.2010)	Coldsprings is a commercial lodge, we will be affected economically by the wind farm.	(Ted Avis – CES): As with all projects such as this, there has to be compromise. There may be losses but you have the right to appeal the decision. But be aware your concerns may not be met.
Russell Field	Public meeting (06.05.2010) Typed letter and letter dated 10.5.2010	I, and other neighbours, require a written undertaking regarding the following: As part of the socio-economic section of the study, I need an undertaking that professional and	It is unlikely that anyone will be able to provide a reliable estimate as to the significance of any value changes (positive or negative) due to wind farms. The primary reason for this is that there are currently no wind farms in the Eastern Cape and so it is not possible to accurately assess

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		<p>unbiased opinion is obtained on the DE-VALUATION of neighbouring property values following erection of wind towers in highly visible locations close to the boundaries thereof.</p>	<p>the extent to which the value of local private properties have been affected. While estate agents may be able to offer a subjective opinion on the matter, the only really reliable source of information is from studies that have reviewed actual property price trends over a number of years. The most comprehensive study on the impact of wind farms on nearby property values was produced by the Berkeley Laboratory in 2009 (<a href="http://eetd.lbl.gov/ea/ems/re-pubs.html">http://eetd.lbl.gov/ea/ems/re-pubs.html</a>). It included a detailed statistical analysis of property transactions for 7500 home sales for the period 1996 – 2007 in the USA and concluded that the view of wind farm facilities did not demonstrably impact sales prices. A similar study for Cornwall in the UK concluded that although house prices initially appeared to be impacted negatively, this was not due to the proximity to turbines.</p>
<p>Petro Rossouw</p>	<p>Letter (8.05.2010)</p>	<p>Who will benefit most financially from the establishment of the wind farm? Why the rush? Why not wait until we have all of the information on various sites? Will there be another public meeting to discuss the final data and how long will I have to raise objections after such a meeting?</p>	<p>The development of wind farms is the core business of InnoWind and projects will be developed if financially viable. However, their business model also allows 26% of the profit from the wind farm to be given to the Makana Winds of Change Trust for the benefit of the local community. All comments received during the public review period will be incorporated into the revised EIA report that will then be submitted for review by the authorities. All registered I&amp;APs will be notified of the outcome of the process as well as the steps to be followed should they wish to appeal the decision.</p>
<p><b>Health and Safety Issues</b></p>			
<p>F.F. Jacot-Guillarmod</p>	<p>Per Correspondence (16.7.09)</p>	<p>If a tower fails, or rotors fall off, what processes would be followed to resolve the problem, and who would be responsible for damage, if any? What failure scenarios are likely?</p>	<p>Depending on the cause of the failure, InnoWind or the manufacturer will be responsible. During the service contract life, the manufacturer of the wind turbine is most likely to be responsible. Project Insurance for third party damage is one of the common financial instruments used to cover these extremely rare eventualities. Turbines are costly and it is in the best interests of the developers to ensure that they are</p>

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			<p>designed to the highest specifications. The turbines for the Waainek project will meet the stringent European design criteria. Relevant certificates are available upon request. In addition, a thorough geotechnical assessment will be conducted prior to final design and construction of the facility. One of the objectives of this assessment is to ensure that the design factors in local geological conditions in order to minimize the risk of failure of the towers. The Terms of reference for this geotechnical investigation are provided in the EIR report and the full report will need to be submitted to the Competent Authority for approval.</p>
Mark Hazell	Public Meeting (22.7.09)	What happens if a propeller takes off?	<p>This is highly unlikely- the turbines planned to be used are Class-2 machines that comply with all EU and US safety and security standards. They can withstand 185km per hour gusts of wind.</p>
Alan Stephenson	Public Meeting (22.7.09)	What about the vortex/ turbulence behind the turbines?	<p>The Wind Farms are planned according to the wake they create. There typically needs to be an 800m radius (buffer) between each turbine to ensure one doesn't block off the wind for the next one. InnoWind will require approval of the Civil Aviation Authority (CAA) for the proposed facility prior to construction. They are currently engaging with the CAA.</p>
F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	<p>All technology has a useful life span. What is the lifespan of this equipment, and what happens to it when it is either irretrievably damaged, or wears out? i.e. who blows dismantles it and cuts it into small chunks of scrap metal? Also, when new the equipment should not prove problematic, but what happens as it ages?</p>	<p>At the present moment, no modern wind turbine has reached the end of its useful life. The machines are designed to operate for over 40 years with little maintenance. Upon decommissioning, each turbine is dismantled and the steel from the towers is sold for scrap to cover the decommissioning expenses, assuming no re-powering is desired. As wind turbines age, they require more maintenance, just like with an old car. We consider the end of the operational life of a turbine to have been reached when the maintenance costs outweigh the production costs whereby it makes more sense either to 're-power' the turbines (i.e. replace existing electrical equipment with new</p>

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			ones) or to build a new wind farm.
F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	What is the survivability of such equipment to freak weather conditions? What is the frequency of freak weather conditions in this area?	The wind turbines we are planning to erect can withstand winds of up to 51 m/s (or 185 km/h) for 5 seconds (Class-2 turbines) before bearing the risk of major damages or falling down. However, these scenarios have hardly ever happened since the beginning of wind farming as a commercial activity over 20 years ago. To date, there have been no fatalities linked to the breaking of a wind turbine, although approximately 100,000 wind turbines have been installed worldwide. The frequency of freak weather conditions will be determined by our wind measurement campaign.
Nikki Kohly	Public Meeting (22.7.09)	It would be worth contacting all those people who fly in the area with [regard to their safety]	Noted. The Grahamstown Flying Club was identified by CES as an important stakeholder at the start of the environmental process and are a registered I&AP.
Adrienne Whisson	Per Correspondence (1.09.09)	What about the health issues – e.g. vertigo related to non-audible noise (infrasound) and effects on sleep?	A noise specialist study was included in the EIA phase and the full specialist report is available for review. Infrasound originating from operational wind farms in France was measured first-hand by the specialist and the impact on human health was considered of low significance. The specialist report discusses reported health impacts associated with infrasound and provides reasons as to why it is highly unlikely that such impacts will be associated with the proposed project. In addition, it was recommended that all turbines be set back at least 500 meters from any homestead.
Roger Roswell	E-mail (15.01.2010)	Fire potential or do they intend to clear all the hill-tops of all vegetation?	The fire hazard is very low and the same as any electrical infrastructure. Normal engineering safeguards are put in place and the design and construction meets stringent international standards. There is a smoke detector in each

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			turbine. Initial vegetation clearing will be limited to the actual footprint of the turbine foundation and this will then be allowed to recover. Further clearing will be extremely limited and has been discussed in the ecological specialist report.
Roger Roswell	E-mail (15.01.2010)	Potential damage to rotors by lightning strikes and safety aspects	A considerable amount of research has been directed at development of lightning protection systems for wind turbines and many of these reports are available on the internet. Modern turbines have in-built lightning protection from the tips of the blades to the foundation to earth the entire structure, thus minimizing risk of damage by lightning. This is a relatively new development in wind turbine design.
Roger Roswell	E-mail (15.01.2010)	Potential damage to rotors by wind turbulence and resulting power generation inefficiency.	The wind turbines we are planning to erect can withstand winds of up to 51 m/s (or 185 km/h) for 5 seconds (Class-2 turbines) before bearing the risk of major damages or falling down. However, these scenarios have hardly ever happened since the beginning of wind farming as a commercial activity over 20 years ago. To date, there have been no fatalities linked to the breaking of a wind turbine, although approximately 100,000 wind turbines have been installed worldwide. The frequency of freak weather conditions will be determined by our wind measurement campaign. The blades themselves are designed and constructed with high precision to ensure maximum efficiency. As such, damage to blades will result in reduced efficiency. Efficiency will be closely monitored and in the unlikely event of damage to blades, they will be replaced.
Russell Field	Letter (10.5.2010)	According to the maps and graphs shown, we will be in the “Red” flicker zone for an abnormal amount of time. This is apparently detrimental to ones health and another reason for seriously opposing the project. We have two young boys in their critical developmental	The guideline document for the selection of sites for wind farm developments produced for the Provincial Government of the Western Cape indicates that a buffer of 400 meters adequately covers flicker criteria. Based on the proposed location of turbines for the Waainek wind farm, the closest would be close to 700 meters from any of the dwellings on

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		stage and this will have more effect on them.	Cold Springs. In addition, as mentioned in the visual impact assessment specialist report, the dwellings are surrounded by high trees that would reduce any flicker effects.
Nick Fox	Email (27.5.2010)	Please attach the attached map to the EIR so that it is clear what a dangerous obstruction the proposed Windfarm will be to GHT aerodrome and in particular the approach to the N-S runway. (See Letter 7, Document G6) of this volume for picture)	<p>InnoWind has already engaged with the Civil Aviation Authority (CAA) about the proximity of the airfield to the proposed wind farm. The CAA will assess the implications and InnoWind will require formal approval from them before any construction can take place.</p> <p>The guideline document for the selection of sites for wind farm developments produced for the Provincial Government of the Western Cape indicates that wind farms should not be situated closer than 2.5 kilometers from a local airfield. Based on the latest layout, the closest turbine will be at least 4.5 kilometers from the nearest point of the runway.</p>
Mike Palmer	Email (19.5.2010)	The Scoping Report states that wind farms should not be closer than 35 kilometers from an aerodrome. How will this be overcome?	<p>See answer above.</p> <p>The 35km buffer zone is a recommendation in the case of airfields equipped with radars, which isn't the case for Grahamstown (the closest radar is in Port Elizabeth)</p>
Br. Timothy	Letter (11.10.2009)	Our principal objection is the "ecology of the human spirit". We feel that the wind farm, which would literally surround our property on top of neighbouring ridges, would jeopardise our ministry and indeed possibly the continued presence of monks on this property.	Noted.
<b>Local Environmental Issues</b>			
Alan Stephenson	Public Meeting (22.7.09)	There are big eagles that move along that ridge. If you are only looking at a 6 month study, what about the juvenile birds that move into the area at the other times of the year?	The study has taken all raptors into account, not only eagles. The specialist is aware that raptors move along the ridges, and has suggested as a mitigation measure that the turbines are not placed on the leading edge of the ridges as that is the favoured area along which raptors move depending on the direction of the wind. It was also taken into account that due to the low incidence of raptors along the

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			<p>ridge, six turbines would not be a great threat to the resident populations. The specialist took into account that in Europe, the number of birds killed at the Tarifa wind farm was low — an estimated 0.03 birds per turbine per year. It has been estimated that about 45 000 vultures and 2 500 Short-toed Eagles fly over that wind farm per year. Yet only one Griffon Vulture and one Short-toed Eagle were found dead near turbines during a 14-month study, which included two autumn migration seasons. During the winter before the study, four Griffon Vultures and one Eagle Owl collided with turbines on the same wind farm. These death rates are comparable to those reported from central California (0.04 birds/turbine/ year).</p>
F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	<p>Is there any impact on the surrounding ecosystem due to the operation of such equipment (i.e. oil leaks, disposal of items after maintenance, etc). I understand that the loss of bird life while not zero, will not be abnormal other than for birds following a migration path. However, there are several large raptors that are quite fond of hunting along that ridge (Grahamstown), and these will be affected.</p>	<p>For the potential impact on bird populations, please see the above response. A review of literature has not provided any evidence that turbines contribute to the pollution of the environment through leaks. These machines need to be as efficient as possible and will therefore be maintained to the highest possible standards. As such, the chance that leaks will occur during operation is minimal.</p>
Roger Rowswell	E-mail (15.01.2010)	<p>Serious environmental affects in what could be considered a natural area</p>	<p>The wide spectrum of potential environmental impacts associated with the proposed development is addressed in detail in the specialist reports and are summarized in the EIR.</p>
Roger Rowswell	E-mail (15.01.2010)	<p>Pollution of the catchment area, by turbine and transmitter oil, of the Howiesons Poort, Jamieson and Milner Dams.</p>	<p>A review of literature has not provided any evidence that turbines contribute to the pollution of the environment through leaks. These machines need to be as efficient as possible and will therefore be maintained to the highest</p>

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			<p>possible standards. As such, the chance that leaks will occur during operation is minimal. There is an Environmental Management Plan in place for the development. Such a plan makes sure that pollution such as oil spills are controlled and thus such impacts, particularly during the construction phase, are minimised.</p>
Roger Rowswell	Via e-mail – 20 January 2010	<p>Inno Wind should spell out all the irreversable environmental damage that the two towers will bring about</p> <p>i.e: - Massive reinforced concrete foundation, possibly necessitating blasting,                      - Clearing of indigenous vegetation,                      - Rainwater runoff as a result of cleared vegetation and potential erosion (Grahamstown's water catchment area)                      - Damage and potential eradication of wildlife in the area,                      - Potential pollution to Grahamstown's water catchment area from transformer and turbine oils,                      - Damage to environment as a result of access roads to be constructed.</p>	<p>These factors are taken into account in the EIA. Apart from the visual impact, impacts on the environment will be low overall and are discussed in detail in the specialist reports. A comparatively small amount of indigenous vegetation will be cleared and much of this is degraded due to grazing. Impacts on wildlife, including avi-fauna, are also likely to be low if appropriate mitigation measures are employed. As mentioned above, the potential contamination of water resources as a result of the proposed development is extremely low as the machines need to be carefully maintained to ensure maximum efficiency.</p>
Nick Fox	email (14.04.2010)	<p>The wind farm will have negative impacts on birds; especially impacts on migrating of water fowl of the Eastern Cape as well as storks and raptors.</p>	<p>The local freshwater bird species may fly across the development area when moving from one water body to another. However, very few collisions have been recorded relating to water birds, water fowl, and shore birds. A radar study of the movement of ducks and geese in the vicinity of an off-shore wind facility in Denmark has shown that less than 1% of bird flights were close enough to be at risk.</p>

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William Fowlds (landowner) Amakala	Public Meeting (06.05.2010)	According to the viewshed, one neighbour is directly affected, and also an immediate landowner was never informed – Pumba game reserve. The wind farm can be seen from at least 30% of the game reserve.	(Garth Cambray): There are actually two landowners between Pumba and the wind farm. (Ted Avis – CES): People who go to game reserves are happy to be able to see the N2 and associated traffic as well as powerlines, the wind farm does not have such a high visual impact.
William Fowlds (landowner) Amakala	Public Meeting (06.05.2010)	We are an example where our land use has a negative carbon footprint because of the vegetation types we conserve, so we don't need the windfarm to assure this for us. The wind farm will seriously negatively impact on game reserves.	(Ted Avis – CES): The green energy is a marketing strategy.
Harold Guess (resident)	Public Meeting (06.05.2010)	The impact of the wind farm on Game reserves has been presented as necessarily negative but this makes no sense. People who go to game reserves should be aware of the environment and want to offset the carbon they used to get there. The game reserves can sell it through a positive rather than a negative perspective. Have there been studies done on the impact of wind farms on ecotourism?	(Kevin Whittington-Jones – CES): It has not been looked at, but CES will do so and include the results in the final report.  Updated response: The potential to develop a marketing strategy to capitalise on the proximity of local game farms to the proposed wind farm was discussed with Indalo but in their opinion, is without merit. While the actual impact on the local eco-tourism industry cannot be accurately determined at this stage, it is the opinion of Indalo and their agents that the impact would be negative. However, there are case studies on the internet that suggest that in the European context that the impact of wind farms on tourism are either neutral or positive.
Mike Mullunt	Public Meeting (06.05.2010)	All pictures of the wind turbines show them as white, are there less intrusive colours?	(Kevin Minkoff – Innowind): The specific standard colour of the turbines is internationally accepted to be the least reflective colour as well as being the colour that blends in with most weather conditions. It is the most non-intrusive colour.  This is also a requirement of the Civil Aviation Act.

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Dr Nick Stavrakis	Public Meeting (06.05.2010)	There is clearly insufficient consultation with the public and issues have been swept under the carpet. The government can withdraw the application if issues have not been adequately dealt with.	(Kevin Whittington-Jones – CES): This is not true, there have been several meetings, discussions with stakeholders and the public. All correspondence has thus far been included in the reports. Long letters have been included in their entirety, including those of the Monks and Nick Fox. (Ted Avis – CES): The Public Participation Process has definitely flushed out all the issues, which have been adequately discussed. The game farm impacts are difficult to assess, and unquantifiable issues such as this are permitted to go un-assessed and can be left to the government. We will consult the authority.
Russell Field	Letter (10.5.2010)	The birdlife on this farm and surrounds will be affected by the turbines. We have a fish eagle breeding pair living on our farm near the dam and we have sighted crowned and long-crested eagles. There is also a large amount of waterfowl utilizing the dam on ours and neighboring properties.	The potential impact of the proposed development on avi-fauna has been addressed in the avi-fauna specialist report. Mortalities due to collision with turbines is considered to be of moderate significance (with and without mitigation) and disruption of bird movements is considered to be of moderate significance without mitigation. The significance of the latter could be reduced to low with appropriate mitigation.
Russell Field	Letter (10.5.2010)	I run a breeding project for Disease free Cape Buffalo and Sable antelope and I believe that these towers are going to negatively affect my project as they will be within about 300 meters of where the animals occur. I have spent in excess of R8 million on the fencing and purchasing of these animals and should they be affected, I stand to lose large sums of money. This will also be monitored to see what effect it has on the reproduction and behavior of the animals.	To the best knowledge of the study team, no formal studies have been conducted anywhere in the world on the potential impacts of wind turbines on the reproductive success of mammals. As such it is not possible to provide an assessment of this impact.
Nick Fox	email (14.04.2010)	The wind farm will have negative impacts on bats. (Appendix H-13)	The wind turbines may have an impact on bats; however, there are no endangered species in the area. In addition to this, bat fatalities as a result of wind turbines are mainly migrating bats and Waainek is not within a migratory path. Impacts on bats have also not yet been quantified within the

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			<p>South African context. The specialist report refers to literature that confirms the effectiveness of certain mitigation measures, such as the restriction of cut-in speeds of the turbines, on reduction of bat mortality.</p>
Herbert (from DWA)	Public meeting (06.05.2010)	From a water perspective, how will the wind farm affect the dams nearby?	(Kevin Whittington-Jones – CES): There has not been a surface-water assessment as this was not identified as an issue that needed further investigation.
Pumba Game Reserve	Letter (28.5.2010)	<p>As part of the avian impact assessment study, only two days was spent surveying sites along the turbine corridor and no detailed avian collision modelling has been undertaken. We are not convinced that the true extent of bird life or of species of special concern have been established in the area or that it can be concluded that the wind farm will not pose any significant environmental threat if all mitigation measures are implemented. This lack of in-depth on-site investigation is unacceptable if one considers the unusually high number of bird species known to occupy the Makana region. If an in-depth on-site study will take longer than 8 months to finalise then so be it.</p> <p>Furthermore, certain of the measures suggested in mitigation of the lack of visibility of the turbines for bird life will exacerbate the negative visual impact for humans.</p>	<p>The avi-fauna specialist report was prepared by two specialist who have lived in Grahamstown for a number of years and who know the local distribution of birds extremely well. One of the specialist is regarded internationally as an expert in his field. As such, the field observations undertaken as part of the EIA were confirmatory rather than the sole source of data. In addition, a local raptor specialist was also consulted during the preparation of the specialist report. Thus, it is considered unlikely that further time in the field would yield significantly more reliable data with respect to bird species frequenting the area. Thus, even with more detailed site surveys it is unlikely that the significance ratings for the impacts would change.</p> <p>As the site was not regarded by the specialists as a migration corridor and, based on collision statistics from wind farms in the United States of America and Europe, (where death rates are approximately 0.04 birds/turbine/year), detailed collision modeling was considered unnecessary.</p> <p>It is true that some of the suggested mitigation measures aimed at improving the visibility of the turbines for birds will increase the negative visual impact to human receptors.</p>

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Pumba Game Reserve	Letter (28.5.2010)	Surely the suggested mitigation measure of fire breaks would further exacerbate the loss of flora in the area during the construction phase? In addition, the negative impact of a fire on nearby flora, fauna, game farms and eco-tourism attractions has not been given sufficient weight in the draft EIR and EMP.	<p>The location of the small construction will be determined in consultation with the botanical specialist to ensure minimal destruction of sensitive vegetation.</p> <p>The turbines themselves will be fitted with lightning conductors and sensitive monitoring equipment that will be monitored. There is no reason to expect that the proposed development will pose an increased fire risk to the area that already experiences fires on a regular basis.</p>
<b>Location Issues</b>			
Rhodes University	Public Meeting (22.7.09)	Isn't the EIA meant to allow us to find the best way forward for all involved? It seems that the sites have already been chosen. Shouldn't the scoping process ensure alternative sites?	Yes, and if you have any suggestions for alternative sites we would like to hear them. The geography and the environmental features of the chosen sites are ideal for the wind farms, however the EIA deals with fundamental alternatives.
Grahamstown Resident	Public Meeting (22.7.09)	Is the substation next to Waainek?	There is an old substation (the Grahamstown substation) in the area which will be upgraded if used to connect into the grid. This substation is part of the Municipal grid. There are also 66KV lines running close to one of the properties.
Br Andrew	Public Meeting (22.7.09)	Wind farms are very big, there are many more open spaces that are less intrusive to surrounding land owners. Why did you pick Waainek as your site?	Waainek was determined to be the best area due to many environmental factors (vegetation, slope, etc) and due to its proximity to the existing municipal substation and availability and consistency of wind. An alternative site on the opposite side of Grahamstown was considered during the pre-feasibility assessment but the Waainek site was considered more favorable for technical reasons. The location of this alternative is discussed in the EIR.
Andrew Hutchinson (Landowner and developer)	Public Meeting (06.05.2010)	Is there a minimum distance between a wind turbine and a residence? Is there a global governing body minimising effects of wind turbines on people?	<p>(Kevin Whittington-Jones – CES): There is a 500m buffer provided for noise, but it is a guideline only, there is no international body governing distance.</p> <p>(Marc Hardy – CES): There is research on the effects of wind turbines on people and so the assessment is based on this research.</p>

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			(Kevin Minkoff – Innowind): Wind farm development has been occurring for the last 20 years. It has now reached a mature level and a large amount of research has been accumulated. One has to be careful what studies one reads as the technology has advanced really quickly, research done in the last 5 years is likely to be relevant, anything before that, outdated.
Jürge Richner (Resident)	Public Meeting (06.05.2010)	Why did you not consider building the wind farm on Mountain Drive?	(Kevin Minkoff – Innowind): There was limited access to that ridge, as well as the problem of having to run cables over the N2 and the wind farm being split like that. The visual impact would also be the same or worse.
Petro Rossouw	Letter (8.05.2010)	How can anyone say with certainty that this is the perfect position for a wind farm when the wind factor has not yet been tested for a year? Has the fact that this general region has in recent months been under the influence of the El Niño been taken into consideration?	The decision to choose the Waainek site as the preferred location is based on general wind data for the area as well as the experience of the InnoWind team who have already developed numerous wind farms in Europe. They are confident that the wind resources at Waainek are excellent and the measurement of wind at the site for a period of a year is to fulfil the requirements of potential financial institutions. One years worth of data will yield very reliable results. Given the high cost of the turbines, InnoWind needs to be confident that the wind resources are indeed sufficient to ensure that the venture is profitable.
Petro Rossouw	Letter (8.05.2010)	The other areas to the east of Grahamstown were quickly excluded due to accessibility. Were any other studies or surveys done in these areas to establish suitability to build a wind farm?  Why was the ridge along Mountain Drive not considered? What about the area at the junction of the roads to Peddie (N2) and Fort Beaufort (R65)?	There are numerous other potential sites for wind farms in the Makana area and many are already being considered by other developers. It is not viable for a single developer to consider all potentially viable sites in the EIA process. While it may well be possible to develop a wind farm on the eastern side of Grahamstown, for ease of access <u>and</u> the expected quality of the wind resources the Waainek site was considered the preferred site and therefore the focus of this EIA.
<b>General Issues</b>			

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Br Andrew	Public Meeting (22.7.09)	We can't get ADSL out there, our only option is wireless	We can assure you that we will find a way to get internet to you should the communication be disrupted. The Wind Farms electronics will need to be connected to the internet as well for remote access and control.
Br Andrew	Public Meeting (22.7.09)	We have wireless internet at the Monastery. Will the Wind Farms interfere with the transmission?	In France, we do have some issues with inference with Hz TV reception. In those cases, we install cable internet or DSTV for the concerned people.
Ken Ried	Per Correspondence (16.7.09)	Well done to Rhodes and Grahamstown, I hope you get the necessary approval and can start the project very soon	Noted
Liesl Knott	Per Correspondence (28.7.09)	Sounds amazing	Noted
Khanya Ngonyama	Per Correspondence (22.7.09)	I think this project can be a catalyst for the Eastern Cape in alternative energy.	Noted
Geoff Antrobus	Public Meeting (22.7.09)	Something will need to be done about the state of the roads in the highlands area. Negotiations will also need to take place with the Roads Authority to upgrade the regional roads in the area.	InnoWind will cover the expenses linked to the upgrading of the roads in the area. We have very specific guidelines about the roads leading to the Wind Farms in terms of turns, width etc.
F.F. Jacot-Guillarmod	Per Correspondence (16.7.09)	What servitudes will be necessary in order to connect these towers to Eskom? Will Eskom have any additional environmental requirements to support connections to the towers?	We will run buried cables between 0.8 and 1.2 meters deep from the wind farm to an electrical connection point, which may be a substation or the existing power lines. The connection will be virtually invisible, so should not require any further environmental requirements. Eskom will be responsible for adapting its grid protections to connect to the turbines
Nikki Kohly	Public Meeting (22.7.09)	I can send this information out to the environmental listserv if you like?	Thank you
Br John	Public Meeting (22.7.09)	Will we be notified every time we can comment on the EIA?	Yes, we have registered the Monastery as an I&AP and will keep you notified

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John Gant	Per Correspondence (25.7.09)	I am a consulting electrical engineer in Port Elizabeth, and with the current state of affairs with Eskom and the local municipalities, I believe that this is a viable solution. I have been looking into possible wind energy solutions to developments in the E/Cape I look forward to seeing the wind turbines on the horizon	Noted
Nikki Kohly	e-mail (20.01.2010)	<p>May I publicise this info further, e.g. via the Makana Enviro-News column in Grocott's Mail?</p> <p>I am not sure if you were planning to email all interested and affected parties about the Draft Scoping Report on the CES website, or is it premature?</p>	<p>Yes, please publicise the info further...we always aim to make sure that as many people as possible are kept in the loop. We are preparing a separate BID as this is for a single temporary 60m wind measurement mast and a single turbine – both of which are the subject of a totally separate application from the proposed Waainek Wind Energy Project.</p> <p>Following the release of the Draft Scoping Report (DSR) – adverts were placed in the EP Herald and the Grocotts Mail – emails should also have been sent out to I&amp;APs – this report has now been finalized and submitted to the authorities for review. The proposed Waainek Wind Energy Project Draft Environmental Impact Assessment Report (EIR) should be released for public review sometime next month and we will email you to notify you of the date of release and where the report can be found so that you can pass onto all and they can provide us with comments on the EIA etc.</p>

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Dr Dwyer	e-mail (26.01.2010)	<p>We have a farm across the road from this project - the Highlands Health Hydro. We are greatly supportive of this project and have no objections to your proposals.</p> <p>We would like to get in touch with the operators of this project with a view to their possibly using land on our side of the road - should this be required for more turbines. If possible, could you send me their contact details - e.g. email address.</p>	Noted
Nick Fox	email (14.04.2010)	There may be a negative effect of the vibrations of the wind turbines on important historical buildings in Grahamstown. (Appendix H-13)	The Terms of Reference for the geotechnical assessment state specifically that the potential for physical damage to existing infrastructure must be assessed.
Nick Fox	email (14.04.2010)	There may be fire issues caused by the wind farm. (Appendix H-13)	The fire hazard is very low and the same as any electrical infrastructure. Normal engineering safeguards are put in place and the design and construction meets stringent international standards. Initial vegetation clearing will be limited to the actual footprint of the turbine foundation and this will then be allowed to recover. Further clearing will be extremely limited and has been discussed in the ecological specialist report.

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Nick Fox	email (14.04.2010)	<p>Objection to the wind farm being placed so close to the monastery.</p> <p>Furthermore this proposed farm is on the border of Phumba Game Reserve and also within the Albany biodiversity hotspot, and as such will impact heavily on tourism and conservation in the area and accordingly I wish to register my objection to it. (See Appendix H-13 for the original email and supporting report)</p>	<p>Noted and a copy of the original email and Mr Fox's report ("Wind Farms in the Albany District and their likely effect on the Game Reserve and Eco-Tourism Industries" are included in the EIR for submission to the relevant authorities.</p>
Roger Rowswell	E-mail (15.01.2010)	<p>Originally I was in favour of the wind power project, but when one weighs up the negative aspects of these wind farms I have to give it a <b>no</b> vote</p>	<p>Noted</p>
Andrew Hutchinson (Landowner and developer)	Public Meeting (06.05.2010)	<p>Besides this windfarm are there any others planned for the area?</p>	<p>(Kevin Monkoff – Innowind): Innowind is aware of two who are interested but they are in early stages. (Kevin Whittington-Jones – CES): There are developers putting up a wind measurement mast on Hilton farm outside Grahamstown.</p>
Caroline Field (Coldsprings)	Public Meeting (06.05.2010)	<p>I am aware that this is a low population area but the windfarm affects us at Coldsprings. Innowind haven't been to our farm; the monastery has been visited but we haven't even though the wind farm affects us directly.</p>	<p>(Ted Avis – CES): You will find that the EIA has assessed the impacts, however you do have a legal right to appeal should you have any issues with the process after the final decision is made by the authorities. (Kevin Whittington-Jones – CES): You are encouraged to send formal correspondence to CES which will then be incorporated into the final report for the authorities, who have to take your concerns into account when making the final decision.</p>

Raised By:	Event & Date	Issue, Concern, Comment	Response
Joe Cloete (Shamwari)	Public Meeting (06.05.2010)	The current report does not highlight the negative impact on ecotourism; the loss of international business. Please look at the socio-economic impacts as they are not in the report.	(Ted Avis – CES): This is primarily a secondary impact generated by the visual impact of the wind farm, which has been assessed by the EIA. These are hard to quantify and are irrelevant in terms of the EIA.
Joe Cloete (Shamwari)	Public Meeting (06.05.2010)	Will the decision made on this farm set precedence for all other wind farms in the future?	(Marc Hardy – CES): No, each wind farm EIA is assessed on a case-by-case basis. There should be a Strategic Environmental Assessment for the province but who would do it, and with what funding?
Andrew Hutchinson	Public Meeting 906.05.2010)	I think these tourism issues are being swept under the carpet. What if we want to start a game farm in the future? This has not been taken into account.	(Marc Hardy – CES): If you have issues with how CES has conducted the EIA, you need to take that up with the government and will get a chance to do so.
Br. Timothy	Letter (11.10.2009)	I am aware that one of the perks for Grahamstown is the Makana Winds of Change Educational Trust. The trust will receive 20% of the profits generated through the sale of electricity to Eskom. Such an initiative is laudable and desperately needed but at what cost to the overall quality of life for the community? Surely the wind farm could have been placed in a less obtrusive location with the same benefit to the education of our children.	Noted. The consideration of alternative locations was considered and is addressed in the main report. The current location is expected to have the best wind resources in the area and, as a result, will result in the greatest financial benefit to the Trust. Based on the result of the specialist studies, the EAP is of the opinion that benefits of the proposed development exceed the disadvantages.
Petro Rossouw	Letter (8.05.2010)	Who will be in charge of the mitigation measures during the construction period to ensure least damage to the environment? Who will check if all the measures are in place and properly maintained?	As per the Environmental Management Plan (EMP; see Volume 4) the developer will be legally obliged to appoint an <u>independent</u> Environmental Control Officer (ECO) who will visit the site regularly during construction and operation to ensure that the mitigation measures are adhered to.

Raised By:	Event & Date	Issue, Concern, Comment	Response
<b>Technical Issues</b>			
Russell Field	Public meeting (06.05.2010) (typed letter)	How much is this power going to cost us (the consumer)	Power generated by any new power facility in the vicinity of Grahamstown (whether a wind farm or some other form of power station) will tend to flow to supply loads in or near Grahamstown regardless of the contracting party to power purchase agreement (whether the municipality or someone else). The offtaker (or purchaser) of the electricity generated by the farm will be finalized once NERSA establishes clear rules as to who constitutes an eligible buyer. It is likely that the power purchase agreement will be signed with the Independent System Operator, an entity currently being created by the government, but there is a possibility that either the Municipality of Makana or Eskom may ultimately sit at the opposite end of such an agreement. The price of electricity is regulated by the National Energy Regulator of South Africa (NERSA) at national level; as such this wind farm will not specifically impact the price of electricity to Grahamstown residents.
Russell Field	Public meeting (06.05.2010) (typed letter)	With the project set to cost around R570 million, does this mean you are going to make around R100 million per year plus a profit. Who gets to pay all of that to you the shareholders?	The details of the financial returns on such a project are not believed to form part of the scope of this report. However NERSA in its REFIT public consultation documents provide pro-forma economic returns for wind farms in order to set the wind farm power tariffs. As discussed in the report, a significant proportion of the project's profits (however large or small they may turn out to be) will go to the Makana Winds of Change Trust.

Raised By:	Event & Date	Issue, Concern, Comment	Response
Russell Field	Public meeting (06.05.2010)	What are the landowners getting per tower that is erected on their properties and thereafter per month or year?	This information is not relevant to the EIA process
Russell Field	Public meeting (06.05.2010)	What is Garth Cambery getting out of the deal? I have heard it was 1%. That makes it around R5 700 000. (Worth convincing the general public for that)	This information is not relevant to the EIA process
Russell Field	Public meeting (06.05.2010)	Has any other area in the Grahamstown district been Studied and thereafter used as a comparison to Waainek. We are told this is a perfect site for the project, but there are probably many of these “perfect sites” around. It seems to be all about the money.	As indicated in the main report, InnoWind initially considered the current Waainek site as well as another site on the east of Grahamstown. The wind resources to the east of the town may be good, however they are known to be significantly less plentiful than the current site at Waainek which has been characterized as a “natural wind tunnel”. In addition, accessibility to the alternative site for construction of turbines is considerably more complex and vegetation density much higher. This would pose a challenge to flat-bed trucks with a length in excess of 40m that are required to transport turbine components to the sites. As such, it was decided to instead consider four different layout options at Waainek.
Russell Field	Public meeting (06.05.2010)	Why has municipality land close to town not been considered for the wind project?	There are numerous potential sites for wind farms in the Makana area. Some are more favorable than others depending on a number of factors. As indicated above, another site was considered during the pre-feasibility phase but the Waainek site was regarded as more appropriate.

Raised By:	Event & Date	Issue, Concern, Comment	Response
Jacot Guillarmod	E-mail (30.04.2010) See Appendix A-7	<p>What are the qualifications of the individual(s) giving answers to questions about electrical reticulation and distribution?</p> <p>What is (are) the affiliations of this individual? The reason for my concern is that the explanation given in your documents - that electricity is "like a stream, the further away, or downstream you are from the source the less power/electricity you'll get" is used to justify why the wind towers need to be located near Grahamstown.</p> <p>This "explanation", or analogy, is infantile, and just plain doesn't make sense on all sorts of levels.</p> <p>As an example of how it doesn't make sense, where is the nearest power generation station to Grahamstown right now? My understanding is that this is probably somewhere in the Free State. If so, how is Grahamstown getting any electricity at all, being about as "downstream" as you can get from the Free State?</p>	<p>Thank you for your email and list of questions related to the proposed wind farm development. I'm not sure if you were at the last public meeting but similar questions were raised by other stakeholders and we will be capturing all in the issues and response trail for inclusion in the final project report.</p> <p>You are correct that many of your questions are outside the scope of the EIA itself so will have to be answered by our client and / or Eskom. We did provide an answer to the question of alternative sites at the last public meeting but will probably expand the justification for the Waainek site over the alternative along the East London road in the final version of the report. Both alternatives were discussed with the authorities when they visited Grahamstown after we submitted the Scoping Report.</p> <p>InnoWind has a team of qualified and experienced engineers that have successfully conducted wind farm grid integrations for over 25 operating wind farms over the past 12 years.</p> <p>The analogy made between electricity and water, although very simplistic, is often used to illustrate the theory of the 'path of least resistance' for electricity flows to anyone with no specific electrical background.</p>
Jacot Guillarmod	E-mail (30.04.2010)	<p>If the generated power is being sold to Eskom, and not to the municipality, why does this wind farm need to be located on Grahamstown's doorstep? Grahamstown would get just as much benefit if it were built in Pofadder.</p>	<p>Power generated by any new power facility in the vicinity of Grahamstown (whether a wind farm or some other form of power station) will tend to flow to supply loads in or near Grahamstown regardless of the contracting party to power purchase agreement (whether the municipality or someone else). The offtaker (or purchaser) of the electricity generated by the farm will be finalized once NERSA establishes clear rules as to who constitutes an eligible buyer. It is likely that</p>

Raised By:	Event & Date	Issue, Concern, Comment	Response
			<p>the power purchase agreement will be signed with the Independent System Operator, an entity currently being created by the government, but there is a possibility that either the Municipality of Makana or Eskom may ultimately sit at the opposite end of such an agreement. The price of electricity is regulated by the National Energy Regulator of South Africa (NERSA) at national level; as such this wind farm will not specifically impact the price of electricity to Grahamstown residents.</p> <p>Furthermore, the presence of a wind farm in the proximity of Grahamstown will ordinarily, and in most cases, increase the reliability and availability of supply of power to the area.</p> <p>With respect to the location being in the proximity of Grahamstown, rather than elsewhere, there are a limited number of locations in the country that meet the minimum technical prerequisites for a viable wind farm (amongst others locations where wind resources are generous enough to support the wind farming activity). There are a large number of wind farm developers investigating the feasibility of these other areas (some will be optimal and many will no doubt be suboptimal) and EIAs are already underway for wind farms around the country.</p>
Petro Rossouw	Letter (8.05.2010)	Except for electricity supply there does not seem to be any other benefit to the city of Grahamstown and the Makana District. We will still be subjected to huge price hikes by Eskom.	See previous answer. Also, as discussed in the EIA Report , there are numerous potential benefits to Grahamstown and the surrounding area including the benefits associated with the Winds of Change Trust.

Raised By:	Event & Date	Issue, Concern, Comment	Response
Jacot Guillarmod	E-mail (30.04.2010)	<p>It's claimed the only place wind generated electricity can be fed into the Eskom grid is at the Albany sub-station. The Albany sub station is situated at the Fort Beaufort turn off on the East London road. This is right on the other side of Grahamstown from the proposed wind farm.</p> <p>If the claim in (1) above is based on any sort of reality, shouldn't the wind farm be located as close to the Albany substation as possible, i.e, out along the East London road? Has this been considered? Isn't it just as windy along the ridge where the FM tower is?</p>	<p>As indicated above, an alternative site along the N2 to the east of Grahamstown was considered during the pre-feasibility phase but Waainek was considered a better site. Both alternatives were discussed with the authorities when they visited Grahamstown after submission of the Scoping Report.</p> <p>The sub-station considered as point of connection is the Grahamstown substation, next to the old power station and next to the proposed location of the wind farm. This substation belongs to the Municipality.</p>
Jacot Guillarmod	E-mail (30.04.2010)	<p>What mechanisms currently exist for selling third party power to Eskom?</p> <p>What, on a technical level, is required?</p> <p>What regulatory issues are there?</p> <p>Where is this currently being done in South Africa, and what are the pricing structures/initiatives associated with any such projects?</p> <p>Part two of this is the question of what experience Eskom has in balancing transient power injections, if any? Weren't the last series of outages/brownouts partially due to Eskoms inability to do this? So what's changed in the interim?</p>	<p>Answer #1 above refers. There is currently no mechanism in place for Independent Power Producers to sell electricity into the national grid. However, government is currently working on this framework. Legislation is currently under review by NERSA and the Department of Energy. Early indications are that these bodies will be drawing on power industry sector models that will ultimately allow for the direct sale of power between willing buyers and willing sellers.</p> <p>The question related to integration of transient power would need to be answered by Eskom.</p>

Raised By:	Event & Date	Issue, Concern, Comment	Response
		<p>In Europe, it appears that the Scandinavians are most successful at integrating transient wind power into their power grids only because they have considerable hydro-electric power that can be shed and re-instated very quickly. How will this work in South Africa?</p>	
Jacot Guillarmod	E-mail (30.04.2010)	<p>How can it be claimed that if local residents lose wireless Internet connectivity because of interference from the wind towers, that they will be provided with alternative DSL connectivity?</p> <p>What about other things dependent on radio communication – for example Hi-Tech burglar alarm systems?</p>	<p>Wind farms require a highly reliable telecommunication connection in order to be remotely operated. A lasting technical solution will therefore be found.</p> <p>Worldwide, the only recorded interference generated from wind turbines is for terrestrial TV receivers, which only affects receivers in exact line with the wind farm.</p>
Russell Field	Letter (10.5.2010)	<p>Our email and internet connectivity will be interfered with as well as radio phones from Telkom which we are hoping to get. Email is our main form of communication with our clients and so if this is hindered in any way it will affect the fluidity of our business. Further study is needed in this regard</p>	<p>Wind farms require a highly reliable telecommunication connection in order to be remotely operated. A lasting technical solution will therefore be found.</p> <p>Worldwide, the only recorded interference generated from wind turbines is for terrestrial TV receivers, which only affects receivers in exact line with the wind farm.</p>
Jacot Guillarmod	E-mail (30.04.2010)	<p>What job creation opportunities are there?</p> <p>Is it possible to quantify the number, type, and duration of jobs that will be associated with this project? How many, and what type, will go to locals?</p>	<p>We are estimating a minimum 100-125 people during construction, followed by 8-10 permanent staff (direct jobs) and up to 150 indirect jobs for South Africa (source: former Department of Minerals and Energy) for a 10-turbine project. Significant skill transfer will need to take place in order to ensure local availability of skilled workers and permanent jobs.</p>

Raised By:	Event & Date	Issue, Concern, Comment	Response
Jacot Guillarmod	E-mail (30.04.2010)	What association or memorandum of understanding is there with Rhodes University? Other, that is than "Gosh, that sounds like an interesting idea. Let us know if there any research opportunities."?	Rhodes University has given their formal support for the project. A letter from the Office of the Deputy Vice-Chancellor: Research to this effect has been included in Volume 5 of the EIA report (Public Participation Documents).
Jacot Guillarmod	E-mail (30.04.2010)	Someone mentioned that a similar scheme in Darling is no longer operational, and has been discontinued. What further information is there on this?	InnoWind is not involved with the Darling project.
Jacot Guillarmod	E-mail (30.04.2010)	What other such initiatives are planned in South Africa, and what is the relationship of these initiatives with Eskom?	Many other initiatives are taking place, most of which we are not aware of. Eskom have provided support to many wind developers, including InnoWind.
Jacot Guillarmod	E-mail (30.04.2010)	Are there any indications as to the cost of implementing such a wind farm, and information about the likely methods of financing it? What is the business model on which this project is based?	The overall cost of the proposed Waainek wind farm is planned to be around R 450m if 30 MW. The actual business model is not relevant to the EIA process.
Jacot Guillarmod	E-mail (30.04.2010)	How much of this money goes overseas and how much stays in South Africa. How much of this goes to Grahamstown?	26% of the wind farm shares will be owned by a Makana-based Trust which will administer the funds towards initiatives within the Makana district.

Raised By:	Event & Date	Issue, Concern, Comment	Response
Jacot Guillarmod	E-mail (30.04.2010)	What sort of compensation/inducement is there for having a tower on ones property? Is this an open process where everyone get the same deal, or are different landowners treated differently?	The financial arrangements between InnoWind and the various land owners is subject to confidentiality agreements and the details are not relevant to the EIA process.
Jacot Guillarmod	E-mail (30.04.2010)	<p>If the wind is strongest at Waainek, how come most of the towers are not going to be located along that ridge</p> <p>Have "windy" places been identified? Does Mountain Drive feature amongst them? Where does it rank comparatively? Where do the proposed sites rank in a hierarchy of windiness?</p> <p>In light of the likely answers to the above questions, what are the real motivations for locating this wind farm at Waainek? Other, that is, than annoying an inordinate number of people for no apparent reason?</p> <p>Aren't there a whole lot of low population, low environmental impact coastal areas ideally situated for the installation of wind generators by the hundreds?</p> <p>Have these possibilities been investigated? Presumably these would also "sell their power to Eskom", and thus Grahamstown would get as much benefit from them as if they were located slap bang on our doorstep, irritating the hell out of everyone?</p>	There are numerous potential sites for wind farms in the Makana area. Some are more favorable than others depending on a number of factors. As indicated above, another site was considered during the pre-feasibility phase but the Waainek site was regarded as more appropriate.

Raised By:	Event & Date	Issue, Concern, Comment	Response
Brian Kemp	E-mail (10.05.2010) See Appendix A-8	<p>I have recently viewed the Waainek Wind Farm Project documents on your web site and have noticed a change in the placement of the proposed wind turbine towers (Draft Environmental Management Plan Vol.4 pages 5/6/7/8).</p> <p>I wish to object to the placement of Wind Turbine 'WT4' as it places both my dwelling and boundary fence within the 800m* radius exclusion zone (*Specialist Vol 2.8 p211). E.M.P. Vol.4 p36 contains a Sensitivity Map showing the 'Waainek Project boundary' - both my boundaries and my dwelling are omitted from this map.</p> <p>Could you please send me: 1/ a Wind Turbine placement map including the scale used with exclusion zones clearly indicated. 2/ a Sensitivity Map including my farm and dwellings.</p>	<p>As discussed over the phone, your house was referred to as sensitive receptor 4 (SR4) in the noise specialist report and its location relative to WT4 is shown on page 159 of the specialist volume (Figure 7-6). Based on Google Earth, the distance from the house to the turbine is just short of 500m and although the noise models show that the noise from the turbines at the house would not exceed the limit of 45dB even at wind speeds of 10m/s, in terms of the recommendations of the noise specialist study, this turbine should be moved slightly further from your house.</p> <p>As discussed (<i>over the phone</i>), your primary concern is the safe distance from the turbines in the event that it did experience a problem. Please note that the sensitivity maps to which you refer show the distribution of sensitive vegetation types and are not related to safety and the 800m zone that you refer to is for aircraft to avoid turbulence.</p> <p>There is a lot of information on safety setback distances available on the internet and one comprehensive review (<a href="http://www.wind-works.org/largeturbines/PublicSafetySetbacks.html">www.wind-works.org/largeturbines/PublicSafetySetbacks.html</a>) indicates that setbacks for noise are normally twice that required for safety. In California, safety setbacks are sometimes related to a multiple of the turbine height, specifically 1.5 x hub height + rotor radius. As such, for a turbine of 90m height with a rotor radius of 45m, a safety buffer of 200 meters from any dwelling (or in this case, the farm boundary) would be appropriate.</p>
Mike Palmer (landowner)	Public meeting (06.05.2010)	What studies have been done on the current wind resource?	Kevin Minkoff – Innwind): There is wind measurement equipment on the MTN mast nearby and Innwind has two month's worth of wind data from that equipment and so far (at 18m) is very good. There is also a Basic Assessment in the pipeline to put up a 60m wind measurement mast to measure the wind. Financial close will only be reached with

Raised By:	Event & Date	Issue, Concern, Comment	Response
			valid wind data that proves the project viable (this usually requires 12 months of wind measuring)
William Fowlds (Amakhala Game Reserve)	Public meeting (06.05.2010)	What is the position of the wind measurement equipment? It seems to be at one end of the wind farm, what about measuring the wind at the other end?	Kevin Minkoff – Innowind): That is why a proper wind measurement mast is required. However, current data can already be correlated with other wind measurements in the vicinity to build a wind model over the proposed area. (Kevin Whittington-Jones – CES): A Basic Assessment has been conducted for the building on one wind measurement mast, and is almost ready to be submitted. It is up to the authorities to make a decision regarding the building of the mast.
Russell Field (Coldsprings)	Public meeting (06.05.2010)	If you only have 2 months worth of wind data, how can you know that there is enough wind	(Kevin Minkoff – Innowind): Innowind has information from other weather stations in the area. Innowind is fairly confident about the wind resource but has conducted the EIA at risk. The wind resource shall be measured for a year before the entire wind farm is built.
Richard Gush	Public meeting (06.05.2010)	Has there been an independent electrical study determining whether or not the project is feasible and, if so, does it form part of the reports? Can the local grid handle the additional power?	(Kevin Minkoff – Innowind): Innowind has already studied the connection and it is suitable, the report is not public knowledge. It was found that the most viable way is to upgrade the Waainek substation which can absorb the power. The main upgrade necessary are the transformers, breakers and security system then the electricity will be routed from the Waainek substation to the Albany substation. Eskom and the municipality helped with the studies. (Ted Avis- CES): Electrical technicalities are not part of the Environmental Impact Assessment Process.
Caroline Field (Coldprings)	Public Meeting (06.05.2010)	How will the turbines affect wireless networks?	(Kevin Minkoff – Innowind): wind turbines rarely affect wireless transmissions, but Innowind needs the internet to have remote access to the turbines and so will bare the cost of an alternative should you need one. (Kevin Whittington-Jones – CES): The Final Scoping Report discusses how a relay can be set up to go round any interference there may be.

Raised By:	Event & Date	Issue, Concern, Comment	Response
			(Kevin Minkoff – Innowind): Innowind has had problems with the turbines interfering with television maximum 2 to 3 houses in France, but Innowind will finance a solution, should this happen.
Br. Timothy	Letter (11.10.2009)	The benefits to Grahamstown are dependent on the municipality upgrading and maintaining the municipal electrical grid. There is no guarantee that this will happen.	Noted
Petro Rossouw	Letter (8.05.2010)	Are people to taken with the money that InnoWind are waving around to investigate other, more stable, alternative energy resources that could be more beneficial? Concentrated solar power stations for instance.	The business of InnoWind is to develop wind farms. As such, the development of concentrated solar power as an alternative could not be considered in the current EIA.
<b>Geological Issues</b>			
Dr Nick Stavrakis	e-mail (23.05.2010)	Raised objection to the proposed wind farm on the basis of insufficient geological work done on the proposed locations (see supporting letter in section 4). However, the I&AP is not opposed to the principle of establishing a wind farm in the vicinity of Grahamstown so as to benefit its people directly and indirectly	Noted
Dr Nick Stavrakis (Grahamstown resident)	Public meeting (06.05.2010)	How sure are you about the geology under each of the turbines, this should have been researched first as there is clay that is likely to slump. Boreholes should be drilled, the geology is extremely variable and it may not be a coherent ridge.	(Kevin Whittington-Jones – CES): There will be a detailed geotechnical study done before the wind farm is built to make sure that the geology is taken into account. (Ted Avis – CES): The geotechnical assessment will be done, but the EIA needed to be conducted first in order to narrow down the possibilities of where the turbines could be placed. (Kevin Minkoff – Innowind): The turbine foundations are very versatile with several different types. The foundations are straightforward in France as the geology is the same but wind farms have been developed worldwide in all types of

Raised By:	Event & Date	Issue, Concern, Comment	Response
			<p>terrains, so engineers have developed ways of building turbines on all kinds of geology. Innwind can only decide what kind of foundations will be used once a geotechnical study has been undertaken.</p>
<p>Dr Nick Stavrakis (Grahamstown resident)</p>	<p>Public meeting (06.05.2010)</p>	<p>On what basis were the alternative sites rejected, as they are more geologically suitable? Surely the wind does not vary that much – Innwind should have chosen one of the alternative sites, the open space that is municipality land is ideal, Innwind should speak to the municipality.</p>	<p>(Kevin Minkoff – Innwind): There is a forest there, which affects the wind. (Ted Avis – CES): There is more detail in the Environmental Impact Report but the decision was also based on experience.</p>
<p>Herbert (from DWA)</p>	<p>Public meeting (06.05.2010)</p>	<p>What about the effect of the turbines on soil erosion?</p>	<p>(Kevin Whittington-Jones – CES): The Environmental Management Plan has clear mitigation measures to deal with potential erosion issues.</p>
<p>Petro Rossouw</p>	<p>Letter (8.05.2010)</p>	<p>My concern is that a whole lot of work has been done by experts before it was established beyond doubt that the soil and rock formations at Waainek could actually support these giant turbines. Should this not have been the first order of business? Has an independent geologist with no vested interest been appointed by CES to undertake the survey? When would the survey be done and when will the findings be available for public review?</p>	<p>There will be a detailed geotechnical study done before the wind farm is built to make sure that the geology is taken into account. The terms of reference have been included in the draft and final EIA report and the results of this study will need to be submitted to and approved by the regulatory authority prior to construction. The geotechnical assessment will be done by an independent consultant, but the EIA needed to be conducted first in order to narrow down the possibilities of where the turbines could be placed.</p>

Raised By:	Event & Date	Issue, Concern, Comment	Response
Petro Rossouw	Letter (8.05.2010)	Why hold the public meeting before the survey was completed? Would the public have enough time to appeal, if necessary, to the findings of the survey?	As mentioned above, the final geotechnical assessment report will be submitted to the regulatory authority for review. Given the cost of each turbine, the developer would not proceed if the findings of the report were that the site was unsuitable for construction of turbines.