

19 December 2016 - Stake holders

Political				
Organisation	Name	email	Position	Phone no.
Hauraki District Council	John Tredigda	JohnT@hauraki-dc.govt.nz	Mayor	
Matamata Piako District Council	Jan Barnes	JBarnes@mpdc.govt.nz	Mayor	027 439 1545
Waikato Regional Council	Alan Livingston	alan.livingston@waikatoregion.govt.nz	Chair	027 572 0060
Waikato Regional Council	Vaughan Payne	Vaughan.Payne@waikatoregion.govt.nz Crystalle.Burton@waikatoregion.govt.nz	CEO	07 859 0574
Hauraki District Council	Marina Van Steenberger	marina@hauraki-dc.govt.nz	Planning Manager	
Parliament	Lindsay Tisch	haurakiwaikato@parliament.govt.nz tisch.matamata@parliament.govt.nz	MP	07 888 8675
Ministry of Energy	Judith Collins	office@judithcollins.co.nz	Minister of Energy	09 299 7428

IWI – updated 23/07/15						
	First Name	Last Name	Position	Address 1	Address 2	Email
Te Rūnanga a Iwi o Ngāti Tamaterā	Liane	Ngamane	Trustee and Environment, Conservation portfolio holder			liane@tamatera.co.nz
Hauraki Maori Trust Board	Josie	Anderson	Chief Executive	PO Box 33	Paeroa	josiea@hauraki.iwi.nz
Ngati Rahiri Tumutumu	Greg	Thorne	Chairperson			drgrthorne@gmail.com
	Jill	Taylor	Treaty Negotiator	14 Sutherland Road	Point Chevalier Auckland 1025	jilltaylor@vodafone.co.nz
Te Kupenga o Ngāti Hako Inc	Pauline	Clarkin		P O Box 114	Paeroa 3640	hako@xtra.co.nz
Ngāti Tara Tokanui Trust	Paora	Raharaha		PO Box 181	Paeroa 3640	taratokanui@gmail.com
	CC: Caroline	Karu				cakaru@gmail.com
	Russell	Karu				russellkaru@xtra.co.nz
Ngāti Maru ki Hauraki Inc	David	Taipari	General Manager	PO Box 37	Thames 3540	taipari@wave.co.nz
	CC: Wiremu	Peters	Environment Unit Manager			eungatimaru@wave.co.nz
tepunekokiri	Emilia Williams		Treaty Negotiator - ??			

Landowners				
Organisation	Name	email	Address	Phone no.
Mat Denize		matdenize@yahoo.com		
Richard Thorpe		richarddeidrethorp@gmail.com		
Rob and Maureen Jackson			6356 Highway 26 R D 3 Paeroa	07 862 7719
DOC			Tauranga Area Office, PO Box 253 Greerton	

- Landowners
 - Local council
 - Regional Council
 - Local pollies
 - DoC
 - IWI
 - Neighbours
 - Press
- Everyone else

December 2017 community update



Ventus Energy
Unit 6 Ward St, New Lynn, Auckland 0600
M338 Private Bag 300987, Albany, Auckland 0632

18 December 2017

Dear resident

By the time you receive this you will, hopefully, be in the wind-down to Christmas and the holiday season.

I hope 2017 has been a good year for you and your family. It's certainly been a very busy one for the Ventus Energy team with a huge amount of time devoted to meeting with local residents and stakeholders to outline the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

In September we held two very successful, well attended Public Information Days at the offices of Positive Paeroa and we recently met with residents of Rotokohu and Thorp Roads to hear and respond to their concerns. We have also met, and continue to talk with, local Iwi to understand areas of cultural value and possible concern.

At this stage, we are hoping to file the Consent Application with the Hauraki District Council in January 2018. At that point, the application will be publicly declared and you will have the opportunity to go onto the Council website and read the raft of expert reports which have been prepared on the proposal. Research topics range from a six year research study on the impact on ecology, to noise levels, impact on property values and traffic management.

The latest information on the proposal is available to you now, however, on the Kaimai Wind Farm website – www.kaimiwind.nz. Resources include answers to questions which have been posed by residents, to a series of photomontages which depict how the wind farm will look from various vantage points in the region. If you have a question, which hasn't been answered in the Q&A, please get it to us via the contact page on the website. We will answer directly to you, and add it to the Q&A.

I look forward to coming back to you in the New Year to confirm the application has been filed, but in the meantime want to wish you and your families a very happy and safe Christmas and New Year.

Yours sincerely

Glenn Starr
Director
Ventus Energy (NZ)

Dear Madam/Sir,

We write this letter to provide you with an update on the recent developments and progress Ventus Energy (NZ) has made with the Kaimai Wind project, which follows:

We have commissioned a sound and vibration specialist - Dr Stephen Chiles - an independent acoustics engineer with 20 years experience in his field. Dr Chiles will soon be making a site visit and will also meet with Hauraki District Council Staff. This will be followed by on-site background noise monitoring at two selected house locations - on Rawhiti Road and Thorp Road. These sites will be selected to be representative of the background sound environment.

Kessels Ecology, a company specialising in ecological effects assessment, is currently completing analysis of data that has been collected on the site over several years – notably bird flight observations.

The geotechnical site investigation (which has included site boreholes) is largely complete. Preliminary results indicate that the site is quite stable and the risk is manageable.

Siemens, a possible turbines supplier, is carrying out a preliminary sub-station design for connection into the existing Transpower lines that pass over the site.

Ventus Energy carried out community engagement activities, which included door knocking, flyer drops and face to face meetings, with a special focus on the immediate neighbours to the project. The purpose was to introduce the project and receive or invite feedback. We also issued a media release to the two NZ media companies (Fairfax and NZME). They chose to report the story in the Waikato Times and Bay of Plenty news papers.

An encouraging response was received from the Minister of Energy and Resources, Hon Judith Collins. In her letter, which can be found on our website, www.kaimaiwind.nz, Ms Collins makes reference to the NZ government objective for electricity to be produced from 90% renewable resources by 2025.

We will be holding a public consultation day at the Tirohia School hall on Thursday, 16 March 2017 from 3pm onwards. Members of the public are most welcome to come along, to meet us, ask questions and provide us with their feedback.

Yours Sincerely,

Glenn Starr

Director

Ventus Energy

Ventus Energy

Unit 6 Ward St, New Lynn, Auckland, 0600
M338 Private Bag 300987, Albany, Auckland 0632



13 June 2017

Dear resident,

I hope this finds you warm and cosy as we approach the mid-winter period.

Over recent months we have devoted a great deal of effort into engaging with the local community - listening and understanding the concerns of residents and other interested parties.

We want to be as transparent as possible as we investigate the development of the Kaimai Wind Farm and have condensed all questions we have received from the community, into a Q & A (questions and answers) on the website.

A common focus has been concern over the noise the turbines will generate so acoustics engineer, Dr Stephen Chiles, has compared this to common everyday sounds eg -

- At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low-level sound, sometimes compared to the sound of waves on a beach.
- When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.
- At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices."

Noise is just one concern which has been answered in the Q&A – check it out on [\[add link\]](#).

When visiting the website you will also notice a series of photo-montages, on the resources page, which simulate the visual impact of the turbines from four different perspectives.

In other news, a meeting was recently held with the Piako Soaring Club in Matamata and we now have a better understanding of the needs of paragliders, hang-gliders and fixed wing gliders. One consequence of that meeting was a request to wind energy specialist (Energy3) asking them to determine the likely turbulent effect behind wind turbines at key wind speeds required by the soaring disciplines. We are also investigating a possible mitigation plan to enable continued use of the soaring amenity.

Kessels Ecology - a company specialising in environmental effects assessment, ecological monitoring and ecological restoration - have been carrying out an in-depth analysis along the bush line for several years. Their research collecting methods have included visual observation and listening devices to monitor birdsong with the object of identifying possible impacts and recommending mitigation measures. Key measures to improve bat populations would, for

example, include predatory pest control eg rats, stoats etc. The analysis will be completed very soon and will be shared with you.

We also have a comprehensive consultation programme planned with local Iwi where we will meet with local representatives to discuss the project and understand whether they have any concerns of cultural significance.

We will keep you updated on any further development on our website and via these letters. If you have any questions please ask them via the website - <http://www.kaimaiwind.nz/> - so we can answer direct to you, and add it to the Q&A.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Glenn Starr', with a long horizontal flourish extending to the right.

Glenn Starr
Director
Ventus Energy (NZ)



Kaimai Wind Farm

Ventus Energy is about to complete investigations and submit a resource consent application for a proposed 100mw wind farm on the northern reaches of the Kaimai Ranges.

The original proposal sought to install up to 26 wind turbines. However, after consultation with affected parties, this has now been reduced to 24.

Initially, the turbines were to have a hub height up to 109m with a rotor diameter of between 130 and 142m. However, after more detailed wind analysis the average wind speed estimate was down-graded. In order to keep the project economically viable we therefore need to increase the turbine hub height to catch more wind and are proposing that the lower elevation turbines be increased to 150m diameter and 132m hub height while the upper ridgeline turbines increase to 112m hub height and 136m diameter.

The final number of turbines, exact location and size will be determined following further investigation and consultation.

The site is privately owned and farmed by three separate landowners. The grid connection will be via the existing 110kV lines that pass over part of the landholding.

Investigations and consultation

Ventus Energy has been investigating the wind farm potential of the Northern Kaimai Ranges since 2005. The initial viability analysis involved installation of a 20m tall monitoring mast along with access and grid connection investigations.

When these initial investigations showed positive results, a bird and wildlife investigation commenced in 2007. Data has been collected since then and was recently completed by specialist acoustic receivers. Initial analysis shows little bird life exists on, as well as adjacent to, the site. The detailed analysis is being completed now and will be made available to the public.

Local Iwi have been contacted for discussion on the project, some contact began in 2008 mainly around the installation of a taller monitoring mast.

The following key investigations are either in progress or will soon be conducted:

Geotechnical – slope stability analysis by specialist engineers

Landscape and Visual – photo-montages and visibility analysis.

Birds – data collection by acoustic sensor and visual sightings.

Background Noise – installation of sound meters and modelling of noise propagation.

Wind – monitoring with 50 and 60m tall masts

The proposed site is strategically placed to improve security of supply to the major demand centres of Tauranga, Hamilton and Auckland. Wind Energy is well suited to complement the hydro resource of the Waikato Region as it is possible to store energy (as water) behind dam walls. When the wind is light water can be released to fill the demand.

The site was chosen after a regional investigation for the best sites. A successful wind farm in NZ must have:

- Strong wind resource
- Be close to the existing electricity network
- Not too steep (for practical access)
- Acceptable impact on the landscape
- Low ecological impact
- Sufficient size for economy of scale

The intention of the monitoring mast installation is to investigate the suitability of the general area for wind turbines. Ventus Energy envisages turbines similar to those installed at [Te Uku in the Waikato](#). However, the results from the wind energy assessment will further inform the decision of size and number of turbines.

The proposal involves the installation of up to five temporary monitoring masts at the site for up to 4 years. Ventus Energy may only have one or two masts installed at a time.

Should investigations and feedback from the local community and interest groups prove positive, Ventus Energy will make planning application to the Hauraki District Council and Waikato Regional Council. This would likely occur mid 2017 and will be publicly notified.

Who is Ventus Energy?

Auckland based Ventus Energy (NZ) Ltd was formed in 2004 to develop wind energy projects in New Zealand. It is affiliated with Ventus Energy Ltd, an Irish company formed in 2000 which has set up a 7.5MW and a 24MW project in the west of Ireland.

Kaimai Wind Farm

Q&A

How much noise do wind turbines generate?

The main source of sound from wind turbines is aerodynamic sound, which is created as air passes around the blades. This sound is heard as a swishing or whooshing near to the turbines. Turbines can also produce mechanical sound from the generator and gear box (if present), and adjacent to the turbine the electrical transformer can be heard.

At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low level sound, sometimes compared to the sound of waves on a beach.

When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.

At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices.

Does the geography of the area proposed for the turbines add to the noise they emit?

Topographic contours are integral to the acoustics computer model for the wind farm, and the interaction of sound waves with the ground between each wind turbine and each house is included in the calculations. At some frequencies the sound is partially absorbed by the ground, but at other frequencies it is amplified. These effects are included in sound level predictions.

Reflections from surrounding terrain in the wider area do not noticeably increase sound levels because of the increased propagation distance of sound travelling out to the valley side and back compared to the direct sound path, and losses due to absorption and scattering at the reflection from the valley side.

Also, the inclination of valley sides is such that sound is reflected predominantly upwards rather than down towards houses. Reflections from hillsides of impulsive or short duration sound are often clearly audible as echoes, but this does not relate to a significant increase in level for continuous wind farm sound.

In rural valleys people often refer to experiencing 'amphitheatre' effects. In many cases this relates to the fact that the area is quiet at times so sounds from surrounding activities are still audible at a significant distance. Another reason is that sheltered valleys can support the development of temperature inversions, under which condition sound propagation is enhanced. However, with respect to wind farms, strong temperature inversions only develop in stable air conditions which can only exist with low wind speeds when wind farms do not operate.

What noise monitoring takes place to ensure the wind farm operates within consent conditions?

There is a standardised process defined in NZS 6808:2010 that specifies how sound level measurements are to be conducted during commissioning to verify that an operational wind farm is complying with appropriate noise limits. This process has been successfully used on existing wind farms in New Zealand, and the same process is used in other countries including Australia and the United Kingdom.

Unlike commissioning for other common sound sources, this process cannot be achieved with a short-duration measurement as wind turbines only generate sound when there is wind; and when there is wind other sound sources (such as vegetation – tree leaves rustling) also generate sound, which ‘contaminates’ measurements. Furthermore, wind farm noise limits are relatively stringent and therefore the wind farm sound levels at houses are relatively low and measurements are more prone to contamination by other sound sources.

To overcome the measurement difficulties outlined above, the process in NZS 6808:2010 requires extensive sound level measurements so that reliable average values can be determined. Firstly, prior to operation of the wind farm baseline measurements are made over two to three weeks at three or four representative houses around the wind farm. These would be similar to the sound level measurements already undertaken for this project at two houses in March 2017, but would be for a slightly longer period and in a season not affected by cicada sound. Then, when the wind farm is being commissioned the measurements would be repeated while the wind turbines are operating. From comparison of the two sets of measurements, it can be determined whether the wind turbines comply with the noise limits. The process includes controls for matters such as differing wind conditions during measurements.

What impact will the turbines have on the ecology, fauna and birdlife in the area?

The proposed wind turbines are located entirely within the existing pastureland and will not overhang the DoC estate or any native bush area. There is no need for new stream crossings with the upgraded access road coming from Rawhiti Road. The key potential effect from the wind turbines is therefore on birds and bats.

Kessels Ecology (specialists in environmental effects assessment, ecological monitoring and ecological restoration) have been carrying out surveys along the bush line for several years by different modalities – notably visual observation, listening for birdsong and listening devices. The data from the listening devices is still being processed to determine species that may be affected by the turbines. Normally key species at risk from turbines are bats, NZ Falcon and migratory birds. Preliminary results show some bat life further south of the site and no presence of NZ Falcon or migration birds.

The analysis will be completed mid 2017 and will be shared with the public.

How will Ventus Energy measure and respond to any adverse impacts on the local ecology, fauna and birdlife?

Ventus Energy understands and shares the concerns expressed by people about any adverse impact of the turbines on local ecology, fauna and birdlife. This is why the company is investing in the in-depth analysis by Kessels Ecology. That study will identify impacts and recommend mitigation measures. Key measures to improve bat populations would, for example, include predatory pest control – eg rats, stoats etc.

What impact have windfarms had on property values where they have been established in New Zealand?

There is no evidence in New Zealand that well designed and standards compliant windfarms devalue adjacent properties.

The value of the properties that the wind farm is upon will increase in value due to the additional revenue stream - the landowners will have more cash to spend on property improvements which will filter into, and benefit, the local community. The increased value in the property will also increase the rating base for the district council so there is more money available to spend on local infrastructure and services.

Will the construction of the windfarm generate more heavy traffic on local roads which were not constructed or this?

A standard consent condition for these type of projects is for the developer to get an independent condition survey of the roads before and after construction and lodge a bond with the council to maintain the condition of local roading.

We are proposing that any heavy transportation is limited to one route – Rawhiti Road - to contain any effects. Lighter traffic – utes, cars and light trucks – will be encouraged to use Rotokohu Road which is particularly convenient for staff accommodation and supply of equipment from outlets in Paeroa.

How will the local community benefit from the establishment of the windfarm?

We expect a good level of commerce will be generated in Paeroa during pre-construction, construction and commissioning of the wind farm.

We anticipate at least two staff will reside in Paeroa and we will also establish a warehouse in the town to store key parts and consumables. There will therefore be advantage to the local community from personnel living in town and from local people being employed and trained for the wind farm).

The rating base for the Hauraki District Council will also increase with potential benefit via council services.

Aren't there more remote locations where the windfarm could be established?

There are lots of remote locations in New Zealand, however the main constraint, when it comes to developing a wind farm, is remoteness from a grid connection and transport routes. To justify a remote wind farm (which has a high cost of grid connection and roads) wind farm projects have to be larger – often much larger – eg the now cancelled HMR project on the west coast of the Waikato. A wind farm in New Zealand needs to be of moderate scale (to fit into a demand gap in the market) and needs to be close to roads and grid connection. It also needs to have an excellent wind resource and be consentable.

How will you keep the local and wider community informed?

Communication is a two-way path – the first part is ours, providing you with regular updates on what is happening so you feel informed. The second part is yours – if you have questions or concerns, let us know so we can answer them.

One tactic won't achieve the level of engagement we want with the local community so we will be using a variety – from regular update letters to neighbours, to regular updates on our website, public information days and via local media. Our aim is to be as transparent as possible so you understand what is proposed for your district.

Will the turbines be lit at night?

We understand this could be a condition from the district council after consultation with the Civil Aviation Authority. This could see two lights at each end of the wind farm and will be confirmed through the consent process.

Do you plan to extend the windfarm beyond the current proposal?

Should this project be successful we would welcome the opportunity to extend the project to the south. However, we do not currently have land rights on Pukeroa Station which has some possible constraints including higher visibility, more bat life, DoC boundaries and steeper terrain.

Will public meetings be held to provide local people with an opportunity to have their questions answered?

Public meetings have a place in public consultation and engagement – not simply as a means for us to tell you about the project, but to provide you with an opportunity to meet the people behind the project, and have your questions and concerns answered. So yes, we will hold future meetings and will publicize these widely to enable as wide a representation as possible from interested communities.

Are you talking with local Iwi?

Yes, we are consulting with local Iwi.

The Kaimai Range is popular with paragliders – what steps are you taking to talk to, and answer, their concerns?

We recently met with the Piako Soaring Club in Matamata and now have a better understanding of the needs of paragliders, hang-gliders and fixed wing gliders. We consequently instructed the wind energy specialist (Energy3) to determine the likely turbulent effect behind wind turbines at key wind speeds that the soaring disciplines need and are also investigating a possible mitigation plan to allow the soaring amenity to continue to be used.

What considerations are you able to give for people who have an emotional or special affiliation with the area proposed for the turbines?

We understand that people may have emotional connections to the land that we are proposing for the wind farm. If you, or someone you know, has particular concerns about any area of the proposed windfarm (see attached map), then we want to know. Please contact us via the website.

Got any questions?

If you have any questions about any aspect of the proposal to construct and operate a wind farm on the lower Kaimai Ranges, please let us know – simply fill out the form on the website www.kaimaiwind.nz and we will respond to you directly and include your question and our answer in this Q&A.

June 2017 community update

Ventus Energy

Unit 6 Ward St, New Lynn, Auckland, 0600
M338 Private Bag 300987, Albany, Auckland 0632
13 June 2017



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We also have a comprehensive consultation programme planned with local Iwi where we will meet with local representatives to discuss the project and understand whether they have any concerns of cultural significance.

We will keep you updated on any further development on our website and via these letters. If you have any questions please ask them via the website - <http://www.kaimaiwind.nz/> - so we can answer direct to you, and add it to the Q&A.

Yours sincerely,

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Glenn Starr
Director
Ventus Energy (NZ)

Kaimai Wind Farm – ecological impacts

A five year study on the ecological impacts of the Kaimai Wind Farm was conducted by ecological effects assessment specialists, Kessels Ecology.

Findings –

- No indigenous vegetation will be removed by the turbine footprint.
- No direct effect to ecologically significant or legally protected natural features.
- **Flora:** No effects to ecologically significant indigenous vegetation or nationally threatened plant species.
- **Fish:** No adverse effects to fish or aquatic macroinvertebrate habitats.
- **Lizards:** Minimal adverse ecological effects on lizards and indigenous terrestrial invertebrates.
- **Birds & bats:** Low to moderate risk of turbine blade strike impact on bird and bat life at local level, minor risk at regional and international scale.

In mitigation, Ventus Energy commits to -

- Ensuring all aspects of construction and operation minimise adverse effects associated with indigenous flora and fauna habitat disturbance, sediment runoff, water abstraction and stream crossings.
- Regular monitoring of key fauna species and carcass searches under operational turbines to minimise risk and allow adaptive management risk minimisation contingencies.
- Protect the ecological health of existing indigenous vegetation. All machinery and aggregate will be cleaned, or guaranteed free of seed or plant matter before being brought on to site.
- Carry out weed and run off control, prevent slumping of batters, cuts and side casting, maintain slope stability and contingency measures for heavy rainfall. It will also adopt appropriate sediment control measures and incorporate fish passage provisions within culvert design.
- Contribute to habitat restoration and local animal pest control to increase bird productivity and enhance the local long-tailed bat population and to conservation activities by community groups at Miranda – a key site for wader birds.

Email to Hauraki iwi

To be sent to

Ngati Tara Tokanui

- Sonny Te Karu tekaruharawira@gmail.com
- Amelia Williams amelia.w@vodafone.co.nz
- Nancy Gage, Te Moananui Flats Road, Paeroa (kuia - Ngati Ngahutoitoi)

Ngati Tamatera

- Liane Ngamane liane.ngamane@hotmail.com

Ngati Hako

- Pauline Clarkin hako@xtra.co.nz

Ngati Maru Runanga

- Nikky Fisher nikky@ngatimaru.iwi.nz

Ngati Rahiri-Tumutumu

- Jill Taylor jilltaylor@vodafone.co.nz

Hauraki Maori Trust Board

- David Taipari taipari@wave.co.nz (fyi – David wants to be kept informed, but does not want to be actively involved, so a courtesy to send him the message which has gone to iwi.

Kia ora [name]

I want to thank you for engaging with Clare Bayly over the last year or more around the proposal to build a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

I am the CEO of the company behind the proposal – Ventus Energy – and want to personally convey my desire to build on the consultation with you to this point. As well as being willing to meet with you personally, and any other representatives of [insert appropriate name of Iwi eg Ngati Tara] to discuss the proposal in more detail, the company is proposing to convene an independently facilitated hui involving all relevant iwi/hapu to korero on the potential effects of the proposal, and identify areas of common perspective on the cultural values of the site and its surrounding landscape. The purpose of the hui would also be to identify any points of difference between the respective iwi/hapu about these issues, along with any possible mitigations for potential effects of concern.

I appreciate that the timing of this offer coincides with a critical phase in the resolution of Hauraki's Treaty claim but want to put the suggestion to you for consideration, if not now, hopefully, at a later date.

Ventus Energy is currently completing its application to construct the wind farm on the basis of the consultation undertaken, and feedback received, to date. This will be lodged with the Hauraki District Council in coming weeks and will then be publicly notified. I will personally contact you when I know a filing date.

In the meantime, I would be grateful if you would consider our desire to meet with your people, either individually as to [state eg Ngati Tara], or at the combined hui as proposed above, preferably during the early stage of the application's processing, but certainly before it proceeds to a formal hearing.

Nga mihi

[add signature]

Glenn Starr
CEO
Ventus Energy

STANDFIRST

Living on the side of a mountain range ensures great views - and plenty of wind. A Waikato couple are in line for another income source from Mother Nature.

MAIN TEXT

Wind farming could turn out to be one of the most straightforward ventures in the diversification strategy of Kaimai Range farmers Mat and Jo Denize.

“It won’t take up much space, we’ll just be a landlord and we’ll get royalties and a good road,” says Mat of Ventus Energy’s plan to install about 10 wind turbines on the couple’s property between Te Aroha and Paeroa at the northern end of the Kaimai Ranges.

The Kaimai Wind Farm project would involve building a total of 24 turbines across three farms, including the Denizes. The proposal, now the subject of resource consent applications to the Hauraki district and Waikato regional councils, has been on Ventus’ drawing board for more than 10 years, and aims to improve the security of power supply to Hamilton, Tauranga and Auckland and complement the Waikato region’s hydro resource.

Needless to say, the Denizes’ 594 hectare (592ha effective) farm Waitoki Downs is a hilly business. Rolling to steep and previously a dairy run-off, it climbs to 495 metres at its highest point, from which the couple can see in one sweep the Hauraki Gulf, White Island, Waihi Beach, and the Ruapehu and Ngauruhoe mountains. From their home at 173m on the western side of the range they have a glorious view of the Hauraki Plains and can see the lights of Thames at night. Over the top and down the other side is the Karangahake Gorge which winds between Paeroa and Waihi.

The Denizes have been on the farm since 2012 and carry 650 to 800 dairy grazers – R1 year old heifers and carryover cows from May to May – 150 beef steers and heifers, 1500 romney ewes, 440 ewe hogget replacements and 25 romney rams. Between 100 and 200 dairy calves are bought in November to be carried over until May.

The couple, with Mat’s brother Hamish, recently purchased a 290ha dairy farm at Patetonga, about half an hour away. The system 2 farm, operated by a manager, carries 730 cows and supplies Open Country Dairy from once-a-day milking.

The trio are also one quarter shareholders in six King Country dairy farms carrying 5300 cows and supplying Fonterra. **MAT, WHAT IS APPROX TOTAL PRODUCTION OF THESE FARMS?**

These dairy farms employ managers and their operations are overseen by FarmRight. All are system 2 and the focus is on profitability, not productivity, says Mat.

He also owns 292ha of the Denize family sheep and beef farm at Whangapoua on the Coromandel Peninsula where he was born and raised. He’s the fourth generation to farm the property, on 110ha of which his parents Rob and Wendy today farm beef cattle.

After earning a farm management diploma from Lincoln University and working in Canada for a year, Mat subdivided part of his share of the family farm for lifestyle blocks and with the proceeds bought his first farm, a 250ha bull beef operation near Taupo. During this time he and Hamish bought into an equity partnership dairy farm in Southland, which was eventually sold to help fund an initial stakeholding in the King Country dairy farms.

The Taupo farm was sold to finance a step up to a 560ha sheep and beef property off the Forgotten Highway, about 40km from Taumarunui.

While farming here Mat met Jo, a senior registered nurse from Hastings. The isolation and distance from population centres proved a challenge for Jo working hospital shifts and after getting flooded in when she was 23 weeks pregnant, the decision was made to move north closer to the Denize home farm and their respective families.

While the long and winding unsealed driveway up to the Denize homestead brings to mind the Forgotten Highway for the first time visitor, it is well-maintained and for Jo, these days a fulltime mum to three children under 5, the farm's location is practically urban compared to their previous home.

Mat, who runs the Kaimai farm with casual help from Gus Connelly, says the property was pretty well-developed when they arrived, but he's put in more fencing, water sources and planted shelter trees.

The farm has volcanic Waihi ash soils and gets around 1500mm of rain a year, and up to 1800mm at the highest point. Lambing percentage is between 125 and 140 per cent. Beef animals for finishing are normally angus or angus-cross and as with lambs, are bought in as prime or store stock depending on market prices and grass supply.

Wool is sold privately on-farm. Dairy heifers are weighed every two months and ewe weights are also monitored regularly. Prime lambs exit the farm in December and January and Mat aims to grow store lambs to 30kg liveweight with all lambs off the property by April. Facial eczema-tolerant rams are sourced from the Reeves family's Waimai Romney stud.

Lambing was brought forward to July this year from the usual late August to beat the summer dry and ewe numbers cut from 1750 to provide more pasture for beef cattle, mostly steers, which bring in a higher income. Beef cattle are sold as prime or store.

Replacement dairy heifers from the newly-purchased Patetonga farm will go to the Denize family farm up the coast. Mat is considering rearing dairy beef calves from the new farm.

The fertiliser regime is dictated by soil test results with DAP phosphate usually applied each autumn and a urea-potassium mix in spring.

While the Ventus wind farm plan was well in the making when the Denizes' bought their Kaimai Ranges farm, they were happy to join the scheme in line with their business philosophy of having several income streams.

While the venture is still a way off – it has yet to secure investors as well as regulatory approvals - the parade of consultants from archaeologists to scientists and wildlife monitoring specialists though the property has been interesting, say the couple. A bird and wildlife – notably bats – investigation started 10 years ago. Collected data has since been completed by specialist acoustic receivers and detailed analysis is under way. Ventus says initial analysis shows there is little bird life on, and adjacent to, the site. Consultation with local iwi began in 2008.

Other investigations have included geotechnical analysis, landscape and visual analysis, installation of sound meters and noise modelling and of course, wind speed monitoring.

Ventus says a successful wind farm must have strong winds, be close to the electricity network, not too steep for practical access, low ecological impact and sufficient size for economy of scale. The Kaimai Ranges site was chosen after a regional investigation.

The proposed turbines would have a hub height up to 109m with a rotor diameter of between 130 and 142m. The grid connection would be via existing 110kV lines that pass over the three privately owned farms involved. The power generated is envisaged to supply clean energy for up to 49,000 houses, the company says.

Ventus says the royalties to be paid to the farmers are subject to confidential commercial contracts.



Ventus Energy
Unit 6 Ward St, New Lynn, Auckland 0600
M338 Private Bag 300987, Albany, Auckland 0632

1 May 2018

Mr and Mrs Parkinson
680 Rawhiti Road
PAEROA

Dear Mr and Mrs Parkinson

You may be aware of the proposal, by Ventus Energy, to construct a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

We want to understand the visual effect this could have on properties in the immediate vicinity. The most effective way to gauge this is by having a professional photographer visit your property and take photographs looking towards the proposed site of the wind farm.

On behalf of Ventus Energy, I would be very grateful if you would allow the photographer to visit your property – on a day and time to be agreed with you.

The photographer, Jamie Wright, will ring you before he calls to discuss the optimum vantage point for the photographs, and to confirm how long this will take.

Please let me know your thoughts by contacting me on

Email clare@baylyandco.co.nz, or

Mobile 027 499 8862

With best wishes

Clare Bayly
For Ventus Energy

KAIMAI WIND FARM



The Proposed Project

The proposal is to install up to 27 wind turbines on farmland at the northern end of the Kaimai Ranges. Nominally, the turbines will have a hub height up to 180m with a rotor diameter of between 130 and 142m. The final number of turbines, exact location and size will be determined following further investigation and consultation. The site is privately owned and farmed by three separate landowners. The grid connection will be via the existing 110kV lines that pass over part of the landholding.

Positive outcomes envisaged for the community:

- ✓ Increased security of electricity supply for the Waikato and Bay of Plenty regions
- ✓ Materials supply – notably concrete and aggregate
- ✓ Construction and maintenance jobs
- ✓ Increased rating base
- ✓ Clean energy for up to 49,000 houses
- ✓ Reduction of CO2 emissions in the Waikato Region
- ✓ Contribution to NZ climate change obligations

The site was chosen after a regional investigation for the best sites. A successful wind farm in NZ must have:

- ✓ Strong wind resource
- ✓ Be close to the existing electricity network
- ✓ Not too steep (for practical access)
- ✓ Acceptable impact on the landscape
- ✓ Low ecological impact
- ✓ Sufficient size for economy of scale

Planning Phase and Consultation

Should investigations and feedback from the local community and interest groups prove positive, planning application will be made to the Hauraki District Council and Waikato Regional Council. This would likely occur in April 2017 and will be publicly notified.

Site Layout

This layout was completed as the next iteration of design. We are interested to hear your feedback.

Consultation Open Day

We will be holding an open consultation day on Saturday, 4 February 2017 at 10am at the ... hall in Paeroa to find out more about the project.



One of the monitoring masts.



Public consultation day: 4 February at 10am , Tirohia School Hall, Paeroa

Ventus Energy

Auckland based Ventus Energy (NZ) Ltd was formed in 2004 to develop wind energy projects in New Zealand. It is affiliated with Ventus Energy Ltd, an Irish company formed in 2000 which has set up a 7.5MW and a 24MW project in the west of Ireland.



CONTACT: Jack Turner, Ventus Energy
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p+64 9 827 1191, m +64 21 1434 874
e info@tektus.nz,

Kaimai Wind Farm



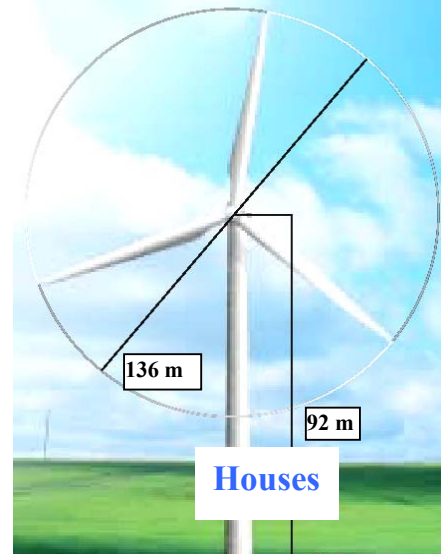
The Project

The proposal is to install up to 27 wind turbines on farmland at the northern end of the Kaimai Ranges. Nominally, the turbines will have a hub height up to 90m with a rotor diameter of between 117 and 136m. The final number of turbines, exact location and size will be determined following further investigation and consultation. The site is privately owned and farmed by three separate landowners. The grid connection will be via the existing 110kV lines that pass over part of the landholding.

Investigations

The following key investigations are either in progress or will soon be conducted:

- Geotechnical – slope stability analysis by specialist engineers
- Landscape and Visual – photomontages and visibility analysis
- Birds – data collection by acoustic sensor and visual sitings
- Background Noise – installation of sound meters and modelling of noise propagation
- Wind – monitoring with 50 and 60m tall masts



Planning Phase and Consultation

Should investigations prove positive and feedback has been received from the local community and interest groups then a planning application will be made to the Hauraki District Council and Waikato Regional Council. This would likely occur in April 2017 and will be publicly notified.

Benefits

- Increased supply electricity security for the Waikato and BOP Regions
- Reduction of CO2 emissions in the Waikato Region
- Construction and materials supply opportunities
- Servicing and maintenance industry

Photo of Mon Mast

Existing Wind Monitoring Mast

Consultation Open Day

Come and join us at on Saturday 4th of February at

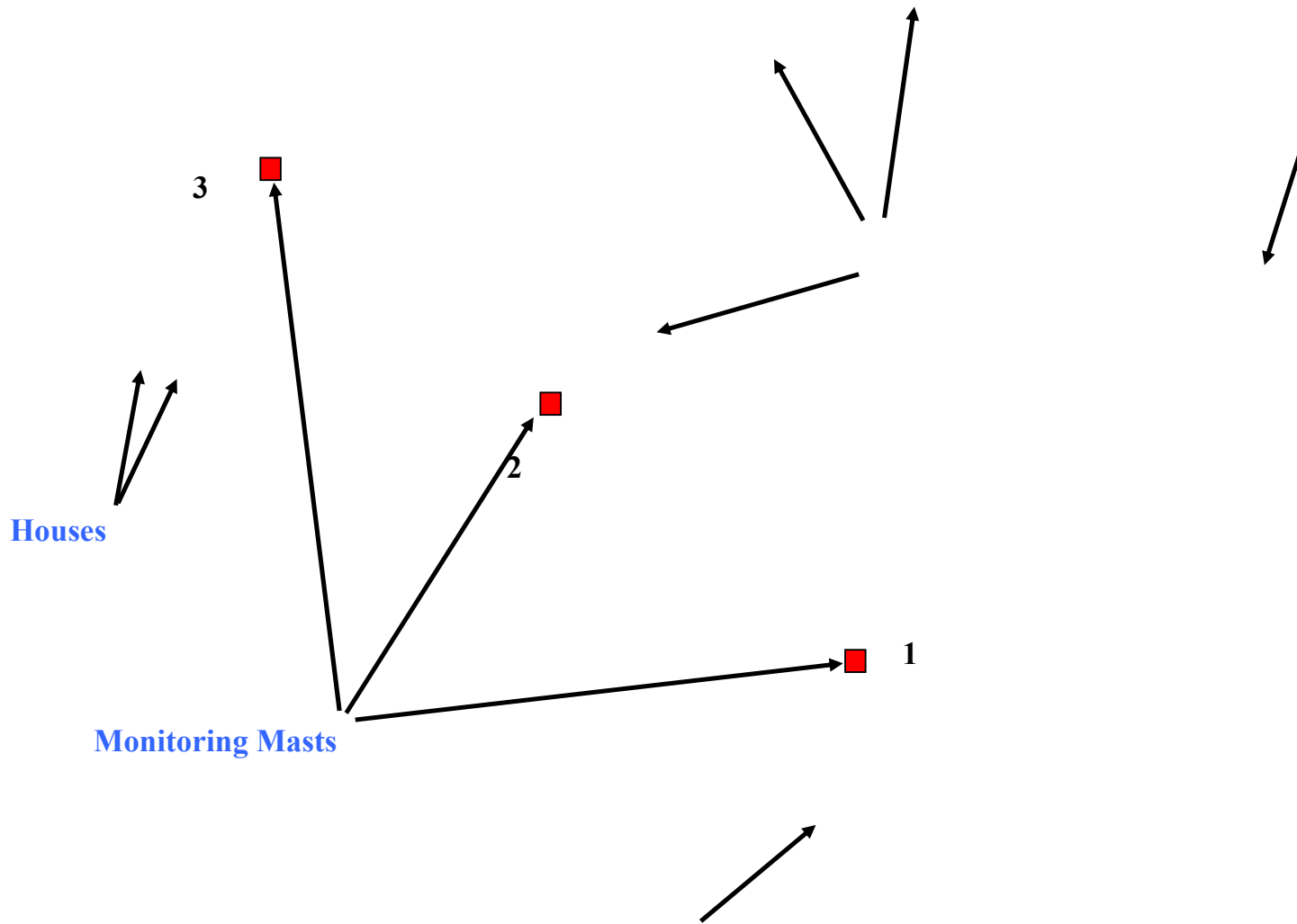
..... to find out more about the project.

Ventus Energy

Auckland based Ventus Energy (NZ) Ltd was formed in 2004 to develop wind energy projects in New Zealand. It is affiliated with Ventus Energy Ltd, an Irish company formed in 2000 which has developed a 7.5MW and a 24MW project in the west of Ireland.

Jack Turner,

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Site Layout

This layout was completed as the next iteration of design. We are interested to hear your feed back on the turbine siting.

How much noise do wind turbines generate?

The main source of sound from wind turbines is aerodynamic sound, which is created as air passes around the blades. This sound is heard as a swishing or whooshing near to the turbines. Turbines can also produce mechanical sound from the generator and gear box (if present), and adjacent to the turbine the electrical transformer can be heard.

Image – turbine

person standing within 100m of the turbine

55 to 60 dB ie normal conversation between people.

House 500m to 1km

35 to 40 dB outside houses, similar to sound levels in a quiet library or people talking in hushed voices.

Media statement

11 September 2017

Wind farm proposal draws Paeroa residents

Around 50 Paeroa residents attended two information days held in Paeroa on 6 and 7 September to learn about the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

The information days were promoted, in late August, with flyers delivered by NZ Post to residents living within a 2km radius of the site along with email invitations to people who have logged questions on the Kaimai Wind Farm website.

Glenn Starr, the CEO of the company behind the proposal, Ventus Energy, said the purpose of the information days was to provide the public with an opportunity to come in, learn about the proposal and discuss any concerns with the company.

“Wind energy is clean and abundant in New Zealand and features strongly in the country’s energy strategy with a number of wind farms operating around the country,” Glenn Starr said.

“We understand that people do have concerns however, and the opportunity to express these was the prime motivation for the information days so we could hear, first hand, any concerns or issues enabling us to consider possible mitigations.

“The most common concerns shared by people who came to the information days related to noise, visual impacts and possible effects on property values.

“Our application for a Resource Consent requires us to conduct in-depth, specialist analyses into these and other issues including impacts on recreation, tourism, ecology and sites of historical value to Maori. As a result we have objective, quantitative research which answers these concerns. In the main we were able to provide this information to people at the information days and where reports are not to hand, we have undertaken to provide that insight as reports come to hand.”

Glenn Starr said the company is consulting with the wider Paeroa community on a number of fronts to explain the proposal and hear concerns.

“We have engaged with local Iwi and met with various stakeholder groups and will continue to hold information days up to and beyond the lodgement of our Resource Consent Application. A detailed Q&A on the Kaimai Wind Farm website (www.kaimaiwind.nz) provides answers to residents’ questions we have received to date and we will continue to add to this as questions come to hand.

“I want to invite residents unable to attend the information days or who have questions to contact us via the website – we will get back to you,” Glenn Starr said.

Ventus Energy hopes to submit its Resource Consent Application to the Hauraki District Council in late October 2017 with an optimum commencement date for development in September/October 2018 with completion in 2020.

Ends



Kaimai Wind Farm Q&A

How much noise do wind turbines generate?

The main source of sound from wind turbines is aerodynamic sound, which is created as air passes around the blades. This sound is heard as a swishing or whooshing near to the turbines. Turbines can also produce mechanical sound from the generator and gear box (if present), and adjacent to the turbine the electrical transformer can be heard.

At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low level sound, sometimes compared to the sound of waves on a beach.

When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.

At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices.

Does the geography of the area proposed for the turbines add to the noise they emit?

Topographic contours are integral to the acoustics computer model for the wind farm, and the interaction of sound waves with the ground between each wind turbine and each house is included in the calculations. At some frequencies the sound is partially absorbed by the ground, but at other frequencies it is amplified. These effects are included in sound level predictions.

Reflections from surrounding terrain in the wider area do not noticeably increase sound levels because of the increased propagation distance of sound travelling out to the valley side and back compared to the direct sound path, and losses due to absorption and scattering at the reflection from the valley side.

Also, the inclination of valley sides is such that sound is reflected predominantly upwards rather than down towards houses. Reflections from hillsides of impulsive or short duration sound are often clearly audible as echoes, but this does not relate to a significant increase in level for continuous wind farm sound.

In rural valleys people often refer to experiencing 'amphitheatre' effects. In many cases this relates to the fact that the area is quiet at times so sounds from surrounding activities are still audible at a

significant distance. Another reason is that sheltered valleys can support the development of temperature inversions, under which condition sound propagation is enhanced. However, with respect to wind farms, strong temperature inversions only develop in stable air conditions which can only exist with low wind speeds when wind farms do not operate.

What noise monitoring takes place to ensure the wind farm operates within consent conditions?

There is a standardised process defined in NZS 6808:2010 that specifies how sound level measurements are to be conducted during commissioning to verify that an operational wind farm is complying with appropriate noise limits. This process has been successfully used on existing wind farms in New Zealand, and the same process is used in other countries including Australia and the United Kingdom.

Unlike commissioning for other common sound sources, this process cannot be achieved with a short-duration measurement as wind turbines only generate sound when there is wind; and when there is wind other sound sources (such as vegetation – tree leaves rustling) also generate sound, which ‘contaminates’ measurements. Furthermore, wind farm noise limits are relatively stringent and therefore the wind farm sound levels at houses are relatively low and measurements are more prone to contamination by other sound sources.

To overcome the measurement difficulties outlined above, the process in NZS 6808:2010 requires extensive sound level measurements so that reliable average values can be determined. Firstly, prior to operation of the wind farm baseline measurements are made over two to three weeks at three or four representative houses around the wind farm. These would be similar to the sound level measurements already undertaken for this project at two houses in March 2017, but would be for a slightly longer period and in a season not affected by cicada sound. Then, when the wind farm is being commissioned the measurements would be repeated while the wind turbines are operating. From comparison of the two sets of measurements, it can be determined whether the wind turbines comply with the noise limits. The process includes controls for matters such as differing wind conditions during measurements.

What impact will the turbines have on the ecology, fauna and birdlife in the area?

The proposed wind turbines are located entirely within the existing pastureland and will not overhang the DoC estate or any native bush area. There is no need for new stream crossings with the upgraded access road coming from Rawhiti Road. The key potential effect from the wind turbines is therefore on birds and bats.

Kessels Ecology (specialists in environmental effects assessment, ecological monitoring and ecological restoration) have been carrying out surveys along the bush line for several years by different modalities – notably visual observation, listening for birdsong and listening devices. The data from the listening devices is still being processed to determine species that may be affected by the turbines. Normally key species at risk from turbines are bats, NZ Falcon and migratory birds. Preliminary results show some bat life further south of the site and no presence of NZ Falcon or migration birds.

The analysis will be completed mid 2017 and will be shared with the public.

How will Ventus Energy measure and respond to any adverse impacts on the local ecology, fauna and birdlife?

Ventus Energy understands and shares the concerns expressed by people about any adverse impact of the turbines on local ecology, fauna and birdlife. This is why the company is investing in the in-depth analysis by Kessels Ecology. That study will identify impacts and recommend mitigation measures. Key measures to improve bat populations would, for example, include predatory pest control – eg rats, stoats etc.

What impact have windfarms had on property values where they have been established in New Zealand?

There is no evidence in New Zealand that well designed and standards compliant windfarms devalue adjacent properties.

The value of the properties that the wind farm is upon will increase in value due to the additional revenue stream - the landowners will have more cash to spend on property improvements which will filter into, and benefit, the local community. The increased value in the property will also increase the rating base for the district council so there is more money available to spend on local infrastructure and services.

Will the construction of the windfarm generate more heavy traffic on local roads which were not constructed or this?

A standard consent condition for these type of projects is for the developer to get an independent condition survey of the roads before and after construction and lodge a bond with the council to maintain the condition of local roading.

We are proposing that any heavy transportation is limited to one route – Rawhiti Road - to contain any effects. Lighter traffic – utes, cars and light trucks – will be encouraged to use Rotokohu Road which is particularly convenient for staff accommodation and supply of equipment from outlets in Paeroa.

How will the local community benefit from the establishment of the windfarm?

We expect a good level of commerce will be generated in Paeroa during pre-construction, construction and commissioning of the wind farm.

We anticipate at least two staff will reside in Paeroa and we will also establish a warehouse in the town to store key parts and consumables. There will therefore be advantage to the local community from personnel living in town and from local people being employed and trained for the wind farm).

The rating base for the Hauraki District Council will also increase with potential benefit via council services.

Aren't there more remote locations where the windfarm could be established?

There are lots of remote locations in New Zealand, however the main constraint, when it comes to developing a wind farm, is remoteness from a grid connection and transport routes. To justify a remote wind farm (which has a high cost of grid connection and roads) wind farm projects have to be larger – often much larger – eg the now cancelled HMR project on the west coast of the Waikato. A wind farm in New Zealand needs to be of moderate scale (to fit into a demand gap in the market) and needs to be close to roads and grid connection. It also needs to have an excellent wind resource and be consentable.

How will you keep the local and wider community informed?

Communication is a two-way path – the first part is ours, providing you with regular updates on what is happening so you feel informed. The second part is yours – if you have questions or concerns, let us know so we can answer them.

One tactic won't achieve the level of engagement we want with the local community so we will be using a variety – from regular update letters to neighbours, to regular updates on our website, public information days and via local media. Our aim is to be as transparent as possible so you understand what is proposed for your district.

Will the turbines be lit at night?

We understand this could be a condition from the district council after consultation with the Civil Aviation Authority. This could see two lights at each end of the wind farm and will be confirmed through the consent process.

Do you plan to extend the windfarm beyond the current proposal?

Should this project be successful we would welcome the opportunity to extend the project to the south. However, we do not currently have land rights on Pukeroa Station which has some possible constraints including higher visibility, more bat life, DoC boundaries and steeper terrain.

Will public meetings be held to provide local people with an opportunity to have their questions answered?

Public meetings have a place in public consultation and engagement – not simply as a means for us to tell you about the project, but to provide you with an opportunity to meet the people behind the project, and have your questions and concerns answered. So yes, we will hold future meetings and will publicize these widely to enable as wide a representation as possible from interested communities.

Are you talking with local Iwi?

Yes, we are consulting with local Iwi.

The Kaimai Range is popular with paragliders – what steps are you taking to talk to, and answer, their concerns?

We recently met with the Piako Soaring Club in Matamata and now have a better understanding of the needs of paragliders, hang-gliders and fixed wing gliders. We consequently instructed the wind energy specialist (Energy3) to determine the likely turbulent effect behind wind turbines at key wind speeds that the soaring disciplines need and are also investigating a possible mitigation plan to allow the soaring amenity to continue to be used.

What considerations are you able to give for people who have an emotional or special affiliation with the area proposed for the turbines?

We understand that people may have emotional connections to the land that we are proposing for the wind farm. If you, or someone you know, has particular concerns about any area of the proposed windfarm (see attached map), then we want to know. Please contact us via the website.

Got any questions?

If you have any questions about any aspect of the proposal to construct and operate a wind farm on the lower Kaimai Ranges, please let us know – simply fill out the form on the website www.kaimaiwind.nz and we will respond to you directly and include your question and our answer in this Q&A.

Invitation to residents of Rotokohu and Thorp Roads

Kaimai Wind Farm (logo)

Dear resident of Rotokohu and Thorp Roads

A number of you attended the recent public information days in Paeroa to learn more about the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia. But we are aware that a number of you were unable to attend, and so we have organised a meeting for local residents.

The meeting has been organised in response to a request from residents for an opportunity to learn more about the proposal.

We will share a number of reports with you at that meeting – including an analysis of impact of similar proposals on property values, ecology - and will provide insight to traffic management.

If you have concerns outside these areas that you would like addressed, please contact Clare Bayly on 027 499 8862 or clare@baylyandco.co.nz so we can add them to the agenda.

Details of the meeting are as follows :

Date	Monday 13 November 2017
Time	7 pm to 8.30 pm
Venue	Paeroa Golf Club, Rotokohu Road

We look forward to talking with you on the 13th.

With best wishes

Glenn Starr
Ventus Energy

Kaimai Wind Farm Community Updates

21 February 2017

Dear Madam/Sir,

We write this letter to provide you with an update on the recent developments and progress Ventus Energy (NZ) has made with the Kaimai Wind project.

We have commissioned a sound and vibration specialist - Dr Stephen Chiles - an independent acoustics engineer with 20 years experience in his field. Dr Chiles will soon be making a site visit and will also meet with Hauraki District Council Staff. This will be followed by on-site background noise monitoring at two selected house locations - on Rawhiti Road and Thorp Road. These sites will be selected to be representative of the background sound environment.

Kessels Ecology, a company specialising in ecological effects assessment, is currently completing analysis of data that has been collected on the site over several years – notably bird flight observations.

The geotechnical site investigation (which has included site boreholes) is largely complete. Preliminary results indicate that the site is quite stable and the risk is manageable.

Siemens, a possible turbines supplier, is carrying out a preliminary sub-station design for connection into the existing Transpower lines that pass over the site.

Ventus Energy carried out community engagement activities, which included door knocking, flyer drops and face to face meetings, with a special focus on the immediate neighbours to the project. The purpose was to introduce the project and receive or invite feedback. We also issued a media release to the two NZ media companies (Fairfax and NZME). They chose to report the story in the Waikato Times and Bay of Plenty newspapers.

An encouraging response was received from the Minister of Energy and Resources, Hon Judith Collins. In her letter, which can be found on our website, www.kaimaiwind.nz, Ms Collins makes reference to the NZ government objective for electricity to be produced from 90% renewable resources by 2025.

We will be holding a public consultation day at the Tirohia School hall on Thursday, 16 March 2017 from 3pm onwards. Members of the public are most welcome to come along, to meet us, ask questions and provide us with their feedback.

Yours Sincerely,

Glenn Starr
Director
Ventus Energy

31 March 2017

Dear Madam/Sir,

We write this letter to provide you with another update on the recent developments and progress Ventus Energy (NZ) has made with the Kaimai Wind project.

We held a public meeting on 16 March at the Tirohia School Hall. We were very pleased to see many members of the community attended and shared their concerns. Most queries were to do with the possible noise impact, the visual effect and access of suppliers and operators to the site. Our team, myself included, addressed the presenting concerns - that led to a lively discussion. Dr Stephen Chiles, an independent acoustics engineer was present to answer questions pertaining to noise impact.

Noise monitors have been deployed in two selected house sites. They will be retrieved next week for the collected data to be analysed. We will publish the findings once we have them.

We are currently analysing bird-life data. More on that in our next update.

Initial photo-montages have been developed and will soon be available on the project's website. These provide a visual simulation of the expected visibility of the proposed turbines, from several different perspectives, in the existing landscape,.

A more detailed wind energy analysis is now taking place on site.

Following on from the feedback at the public meeting, we are planning to hold another public meeting and information day. Details will be announced by email, on the project's website and advertised in the local media.

Yours Sincerely,

Glenn Starr
Director
Ventus Energy (NZ)

14 June 2017

Dear resident,

I hope this finds you warm and cosy as we approach the mid-winter period.

Over recent months we have devoted a great deal of effort into engaging with the local community - listening and understanding the concerns of residents and other interested parties.

We want to be as transparent as possible as we investigate the development of the Kaimai Wind Farm and have condensed all questions we have received from the community, into a Q & A (questions and answers) on the website.

A common focus has been concern over the noise the turbines will generate so acoustics engineer, Dr Stephen Chiles, has compared this to common everyday sounds eg

- At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low-level sound, sometimes compared to the sound of waves on a beach.
- When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.
- At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices.”

Noise is just one concern which has been answered in the Q&A – check it out on <http://www.kaimaiwind.nz/qna>.

When visiting the website you will also notice a series of photo-montages, on the resources page, which simulate the visual impact of the turbines from four different perspectives.

In other news, a meeting was recently held with the Piako Soaring Club in Matamata and we now have a better understanding of the needs of paragliders, hang-gliders and fixed wing gliders. One consequence of that meeting was a request to wind energy specialist (Energy3) asking them to determine the likely turbulent effect behind wind turbines at key wind speeds required by the soaring disciplines. We are also investigating a possible mitigation plan to enable continued use of the soaring amenity.

Kessels Ecology - a company specialising in environmental effects assessment, ecological monitoring and ecological restoration - have been carrying out an in-depth analysis along the bush line for several years. Their research collecting methods have included visual observation and listening devices to monitor birdsong with the object of identifying possible impacts and recommending mitigation measures. Key measures to improve bat populations would, for example, include predatory pest control eg rats, stoats etc. The analysis will be completed very soon and will be shared with you.

We also have a comprehensive consultation programme planned with local Iwi where we will meet with local representatives to discuss the project and understand whether they have any concerns of cultural significance.

We will keep you updated on any further development on our website and via these letters. If you have any questions please ask them via the website <http://www.kaimaiwind.nz/> so can answer direct to you, and add it to the Q&A.

Yours sincerely,

Glenn Starr
Director
Ventus Energy (NZ)

18 December 2017

Dear resident

By the time you receive this you will, hopefully, be in the wind-down to Christmas and the holiday season.

I hope 2017 has been a good year for you and your family. It's certainly been a very busy one for the Ventus Energy team with a huge amount of time devoted to meeting with local residents and stakeholders to outline the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

In September we held two very successful, well attended Public Information Days at the offices of Positive Paeroa and we recently met with residents of Rotokohu and Thorp Roads to hear and respond to their concerns. We have also met, and continue to talk with, local Iwi to understand areas of cultural value and possible concern.

At this stage, we are hoping to file the Consent Application with the Hauraki District Council in January 2018. At that point, the application will be publicly declared and you will have the opportunity to go onto the Council website and read the range of expert reports which have been prepared on the proposal. Research topics range from a six year research study on the impact on ecology, to noise levels, impact on property values and traffic management.

The latest information on the proposal is available to you now, however, on the Kaimai Wind Farm website – www.kaimiwind.nz. Resources include answers to questions which have been posed by residents, to a series of photomontages which depict how the wind farm will look from various vantage points in the region. If you have a question, which hasn't been answered in the Q&A, please get it to us via the contact page on the website. We will answer directly to you, and add it to the Q&A.

I look forward to coming back to you in the New Year to confirm the application has been filed, but in the meantime want to wish you and your families a very happy and safe Christmas and New Year.

Yours sincerely

Glenn Starr
Director
Ventus Energy (NZ)

Ventus Energy Media releases

19 January 2017

A proposed wind farm at the northern end of the Kaimai Ranges will be supplying clean energy to up to 49,000 households in the Waikato and Bay of Plenty regions.

The proposal is for turbines that will have a hub height of up to 109m with a rotor diameter between 130 and 142m.

The final number of turbines, exact location and size will be determined following further investigation and consultation. Auckland based company, Ventus Energy (NZ) Ltd, proposes to install 28 wind turbines with an output of 100MW on privately owned farmland.

The company has been investigating the viability for a wind farm in this area since 2005 and is now consulting with local landowners, Iwi, districts' councils and all interested parties.

The company's Director, Glenn Starr, says the windfarm will ensure greater security of electricity supply for the region and will provide construction and maintenance jobs, as well as reduce the nett CO2 emissions from the Waikato.

The site is privately owned and farmed by three land owners. The grid connection will be via the existing Transpower 110kV lines that pass over parts of the site.

Mr Starr says that a successful wind-farm in NZ must have a number of factors in alignment. It must have a strong wind resource, be close to an existing electricity network, have a low/acceptable impact on the environment and the landscape and be of sufficient scale.

“There are very few viable sites close to the major demand centres of Auckland, Hamilton and Tauranga that fulfil these criteria.

“In recent years the increased size of modern turbines has reduced the unit cost of electricity. The turbines we are proposing will allow the project to be competitive within the wholesale market pricing. There are a number of projects consented in NZ. However, these are all in the lower half of the North Island or the South Island. They are also for smaller turbines, which are not as financially viable as the new generation machines.

“The timing feels positive to proceed to consultation on the back of 500MW of thermal plant closures in the Waikato and Auckland regions – including Otahuhu Southdown and part of Huntly. There has also been increasing electricity demand driven by strong population growth.

“Given the recent gas and coal generation plant closures, there is now a heightened risk of electricity supply shortages during dry years.

“We have conducted wind resource data collection over many years as well as carrying out investigations on birdlife, geotechnical, archaeology, access, background noise and visibility analyses. Given this, I am confident the proposed windfarm can proceed successfully through the consent process and then through financing and construction.” says Mr Starr.

Auckland based Ventus Energy (NZ) Ltd was formed in 2004 to develop wind energy projects in New Zealand. It is affiliated with Ventus Energy Ltd, an Irish company formed in 2000 which has developed a 7.5MW and a 24MW project in the west of Ireland.

Ventus Energy will be holding a public information day at the Tirohia School hall at a date to be announced soon. Members of the local community and anyone who wants to hear more and ask questions are welcome to attend. The date will be announced on the website: www.kaimaiwind.nz

For more information visit:

kaimaiwind.nz or contact: Glenn starr m: 021416305 e: info@kaimaiwind.nz or Mordecai Matan m: 021 1671460 e: info@kaimaiwind.nz

11 September 2007

Wind farm proposal draws Paeroa residents

Around 50 Paeroa residents attended two information days held in Paeroa on 6 and 7 September to learn about the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

The information days were promoted, in late August, with flyers delivered by NZ Post to residents living within a 2km radius of the site along with email invitations to people who have logged questions on the Kaimai Wind Farm website.

Glenn Starr, the CEO of the company behind the proposal, Ventus Energy, said the purpose of the information days was to provide the public with an opportunity to come in, learn about the proposal and discuss any concerns with the company.

“Wind energy is clean and abundant in New Zealand and features strongly in the country’s energy strategy with a number of wind farms operating around the country,” Glenn Starr said.

“We understand that people do have concerns however, and the opportunity to express these was the prime motivation for the information days so we could hear, first hand, any concerns or issues enabling us to consider possible mitigations.

“The most common concerns shared by people who came to the information days related to noise, visual impacts and possible effects on property values.

“Our application for a Resource Consent requires us to conduct in-depth, specialist analyses into these and other issues including impacts on recreation, tourism, ecology and sites of historical value to Maori. As a result we have objective, quantitative research which answers these concerns. In the main we were able to provide this information to people at the information days and where reports are not to hand, we have undertaken to provide that insight as reports come to hand.”

Glenn Starr said the company is consulting with the wider Paeroa community on a number of fronts to explain the proposal and hear concerns.

“We have engaged with local Iwi and met with various stakeholder groups and will continue to hold information days up to and beyond the lodgement of our Resource Consent Application. A detailed Q&A on the Kaimai Wind Farm website (www.kaimaiwind.nz) provides answers to residents’ questions we have received to date and we will continue to add to this as questions come to hand.

“I want to invite residents unable to attend the information days or who have questions to contact us via the website – we will get back to you,” Glenn Starr said.

Ventus Energy hopes to submit its Resource Consent Application to the Hauraki District Council in late October 2017 with an optimum commencement date for development in September/October 2018 with completion in 2020.

ends

Kaimai Wind Farm

Website Q&A

How much noise do turbines generate?

The main source of sound from wind turbines is aerodynamic sound, which is created as air passes around the blades. This sound is heard as a swishing or whooshing near to the turbines. Turbines can also produce mechanical sound from the generator and gear box (if present), and adjacent to the turbine the electrical transformer can be heard.

At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low level sound, sometimes compared to the sound of waves on a beach.

When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.

At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices.

Does the geography of the area proposed for the turbines add to the noise they emit?

Topographic contours are integral to the acoustics computer model for the wind farm, and the interaction of sound waves with the ground between each wind turbine and each house is included in the calculations. At some frequencies the sound is partially absorbed by the ground, but at other frequencies it is amplified. These effects are included in sound level predictions.

Reflections from surrounding terrain in the wider area do not noticeably increase sound levels because of the increased propagation distance of sound travelling out to the valley side and back compared to the direct sound path, and losses due to absorption and scattering at the reflection from the valley side.

Also, the inclination of valley sides is such that sound is reflected predominantly upwards rather than down towards houses. Reflections from hillsides of impulsive or short duration sound are often clearly audible as echoes, but this does not relate to a significant increase in level for continuous wind farm sound.

In rural valleys people often refer to experiencing 'amphitheatre' effects. In many cases this relates to the fact that the area is quiet at times so sounds from surrounding activities are still audible at a significant distance. Another reason is that sheltered valleys can support the development of temperature inversions, under which condition sound propagation is enhanced. However, with respect to wind farms, strong temperature inversions only develop in stable air conditions which can only exist with low wind speeds when wind farms do not operate.

Is there a difference in decibel level and tone between 90m and 180m wind turbine blades?

Yes - There are differences between different size wind turbines. When comparing modern designs, a single large wind turbine produces more sound than a single small wind turbine. However, a single large

wind turbine produces less sound than multiple small wind turbines that would be required to generate the same electrical power.

Wind turbine rotation speeds are limited by the speed of the blade tip. A larger wind turbine therefore rotates at a slower speed than a small turbine, altering the timing of the blade swish heard when standing close to turbines.

Noise effects vary between specific sites and are not universally better or worse with larger or smaller wind turbines.

What noise monitoring has been carried out?

In March 2017 monitoring was conducted at a property in Thorp Road and another in Rawhiti Road to gain an appreciation of the existing environment used in conjunction with site observations. Further baseline measurements for establishing noise limits will be required prior to construction, and compliance measurements will be required when turbines start operating. These additional measurements will be undertaken at three representative locations, which are proposed at three properties in Thorp, Rawhiti and Rotokohu Roads.

Were different wind conditions and weather factored into the noise readings?

Yes – sound level measurements are analysed relative to the measured wind speed and direction in each 10 minute period during the survey. This is required by NZS 6808.

Will an acoustics plan be prepared?

Prior to construction a prediction report in accordance with NZS 6808 will be prepared to confirm the sound from the final turbine type and layout (unless it is identical to the current assessment). A compliance assessment report will also be prepared once the wind farm is operating and will be submitted to the Council.

What impact will the turbines have on the ecology, fauna and birdlife in the area?

Environmental specialist, Kessels Ecology, was commissioned to undertake an ecological effects assessment of the proposed Kaimai wind farm and surrounding locality to determine existing ecological features and their relative sensitivity to the construction and operation of the proposed wind farm.

The field work for the investigation was undertaken from 2009 to 2017 enabling data to be collected across multiple years on the distribution and habitat utilisation of the locality by birds and bats. Further desktop based analysis was undertaken to determine the effects of the proposal on aquatic freshwater biota, indigenous vegetation, lizards and terrestrial invertebrates. Below is a summary of the investigation –

Effects on Vegetation

The wind farm area can generally be described as a mosaic of rolling pasture land with a number of exotic plantations and indigenous forest remnants scattered throughout. Some 72% of the site is covered in pasture. Smaller stands of secondary broadleaved forest are mainly present within the gully systems in the northern half of the site, while larger areas of logged tawa forest remain along the eastern margin of the site (i.e. the Kaimai Ranges), as well as in the southern extent of the site and near the quarry at the north-western margin of the site.

While indigenous forest and scrubland is situated within 100 m from the edge of some of the turbine locations, since all the centres of the turbines are located in the pastoral land no indigenous vegetation will be removed in the turbine footprint. No ecologically significant indigenous vegetation or nationally threatened plant species would be affected by the proposal.

The introduction of new weeds, diseases and the spread of existing weed species will need to be managed to protect the ecological health of the existing indigenous vegetation remnants in the locality. All machinery and aggregate brought onto site will need to be cleaned, or otherwise guaranteed free of attached seed or plant matter before being brought on to site.

Provided due care and initial weed control is carried out as and when required, it is expected that the pasture or indigenous scrubland species will quickly gain a foot-hold and dominate vegetative cover along access road batters and cuts.

Effects on Freshwater Aquatic Habitats

No fish or aquatic macroinvertebrate habitats would be adversely affected provided appropriate sediment control measures are adopted. No upgrades to existing access stream crossing are proposed with the current roading design. Although water abstraction requirements have not been defined at this point in time, abstraction points should result in no more than minor adverse effects on in-stream biota provided suitable storage and/or non-fully allocated water sources can be devised and found.

Sediment control measures include, but are not restricted to, controlling run off, the prevention of slumping of batters, cuts and side casting, maintain slope stability and contingency measures for heavy rainfall events.

Effects on Lizards, Frogs and Terrestrial Invertebrates

As no ecologically significant indigenous vegetation will be disturbed during the construction phase adverse ecological effects on lizards and indigenous terrestrial invertebrates is likely to be minimal. However, it is possible that areas of non-ecologically significant vegetation (both exotic and indigenous) cleared or trimmed for infrastructure development or tower placement will include lizard and invertebrate habitat.

The consequential relatively minor adverse effects on these fauna groups can be managed through appropriate mitigation and monitoring measures. Details of these measures can be dealt with as part of the consent conditions.

Effects on Birds

According to international best practice guidelines a summary of the main bird habitat areas which should be avoided when locating a wind farm are: (1) Areas with a high density of wintering or migratory waterfowl and waders where important habitat might be affected by disturbance or where there is potential for significant collision mortality; (2) Areas with a high level of raptor activity, especially core areas of individuals breeding ranges and in cases where local topography focuses flight activity which would cause a large number of flights to pass through the wind farm; and (3) Breeding, wintering or migrating populations of less abundant species, particularly those of conservation concern, which may be sensitive to increased mortality as a result of collision.

The main bird groups impacted by wind farm developments internationally have been swans, geese, ducks, waders, gulls, terns, large soaring raptors, owls and nocturnally migrating passerines. Most

resident bird species within the study site are common and widespread with the potential exceptions of New Zealand pipit, North Island kaka and New Zealand falcon, which are all found in the local area. There is a risk of collision with the turbine blades, especially along the forest edge. It is possible that New Zealand falcon and kaka will suffer occasional strike, particularly by the turbines along the forest edge of the Kaimai-Mamaku Conservation Park. Australasian bittern may also be at risk from strike while moving between the Bay of Plenty and Kopuatai Peat Dome. However; of these species, only pipit was detected during the bird surveys or by the acoustic surveys, so while non-detection does not necessarily mean these birds are absent from the locality, it does suggest that they may be present in low densities. While the ability of these key forest and wetland bird species to adapt to the turbines and become accustomed to associated noise and movement is likely, and the birds should be able to fly around the turbines to gain access to other remnant bush areas within the locality, there is a likelihood that strike will occur from time to time.

There is insufficient data for this site to determine the strike level, but modelling and carcass searches at other similarly situated New Zealand wind farms suggest strike rates will be low. Nonetheless, the local effects of this mortality may be more than minor on threatened species, so some form of offset mitigation, such as a contribution to local animal pest control to increase bird productivity, is recommended.

The impact of the wind farm on migratory birds is dependent on any flight path these species may take between key habitats in the Bay of Plenty and Firth of Thames. Wader and shorebird species, such as bar-tailed godwit, wrybill and South Island pied oystercatcher, may move between the Firth of Thames and Tauranga Harbour on a regular basis and in doing so traverse the proposed windfarm footprint. The sound recorders detected two flocks of South Island pied oystercatchers crossing the proposed wind farm site on one occasion in January 2013, from a total recording effort of some 4,000 hours. These detected South Island pied oystercatchers were crossing the southern section of the windfarm over the Kaimai range. This indicates that the site is likely part of a seasonal commuting route for waders between the Haruaki Gulf and Tauranga Harbour.

Initial strike risk analysis at similar New Zealand sites indicates that turbine strike is possible for wader species and it will be in the range of less than 2-5 birds per annum for the proposed Kaimai wind farm. This level of strike risk is considered to have a minor adverse effect on the target shorebird species. However, given that several species are threatened, such as wrybill, offset mitigation may be required to compensate for any residual adverse effects on wader bird species. Quantification of this offset can be addressed at the consenting stage, but could involve a contribution to conservation activities by community groups at Miranda, which is a key site for international and national wader birds.

Effects on Bats

The nationally threatened North Island long-tailed bat is known to be present within the Kaimai Ranges and was detected during the surveys for this proposal. The survey results showed longtailed bat activity during 4-17 January 2013, and from 22 September to 27 October 2015 at the study site. In the 2015 survey 63% (eight) of all of the surveyed sites contained long-tailed bats, while in the 2013 bat survey 55% (11) of the sites contained bats. In total 59% (19) of the surveyed sites detected bats. No publicly accessible studies have investigated the impacts of wind farms on the spatial use of either of New Zealand's native bat species. Therefore, it is not clear whether avoidance behaviour occurs in either native bat species.

Based on review of international studies it is considered possible that long-tailed bats will suffer mortality as a result of interactions with the turbines. Thus, bats are considered to be at moderate risk of being killed or injured by turbine strike at this proposed wind farm site. A combination of habitat restoration and pest control would enhance the local North Island longtailed bat population, producing a healthy source population which could mitigate against any declines at the proposed wind farm site.

Avoidance, Remediation and Mitigation Recommendations

The proposed Kaimai wind farm is situated within a largely pastoral environment, heavily modified by human activities and animal pests. No ecologically significant or legally protected natural features will be directly affected by the proposed wind farm. However, there are several threatened birds and one bat species which could be adversely affected by the turbines in the form of turbine blade strike. The biodiversity consequences of this risk are low to moderate at a local level, and the effects are likely to be minor at a regional, national and international scale.

It is recommended that measures are taken to avoid, remedy or mitigate the adverse effects of turbine strike on these key animals and their habitats, as well as address the localised potential adverse effects associated with construction. A range of measures that will avoid, remedy or mitigate the adverse effects of the project (inclusive of the wind turbines, access roads and the transmission lines) are required. They should include:

- Ensuring all aspects of the construction and operation of the wind farm minimise any potential adverse effects associated with indigenous flora and fauna habitat disturbance, sediment runoff, water abstraction and stream crossings (if any);
- Preparation and implementation of a mitigation package to compensate for potential turbine strike on key indigenous fauna which incorporates enhancing productivity of the target species through ongoing animal pest control and ecological enhancement of targeted natural features; and
- Monitoring of key fauna species, as well as carcass searches under the operational turbines, for a specified period, in order to ensure that the risks associated with the operation of the wind farm are low and to allow for adaptive management risk minimisation contingencies if required.

What impact have windfarms had on property values where they have been established in New Zealand?

Research carried out by Colliers International indicates that in New Zealand thus far, there will be no or negligible long term ongoing negative value impacts on the values of rural properties surrounding the proposed Kaimai Wind Farm, caused by the wind farm being visible to the rural properties or parts of properties.

In summary, studies have shown that there may be a potential difference in the impact on property values arising from the proximity of wind turbines, depending on the property type. Rural properties have been shown to be least affected of all; and in some studies affected positively. Lifestyle blocks generally occupied by city office workers may potentially be affected if turbines are within hearing distance or very close to dwellings, at wind farms close to cities. At some other lifestyle locations, however, not near cities; where wind farms have been established nearby, such as at Te Apiti near Palmerston North, no fears over value erosion have arisen or been expressed in the resource consent

process. It appears (and this is borne out from anecdotal experience) that residents largely support the environmental benefits derived from sustainable electricity generation.

In conclusion, Colliers' introductory study has confirmed earlier findings that there are no discernible negative value impacts on rural property values caused by wind farms being visible to parts of properties.

What is the predicted traffic use on local roads?

Ventus Energy is proposing that extra-heavy transportation be limited to one route – Rawhiti Road – to contain effects and need for bridge and roadside upgrades.

Eight to 16 tonne truck units may use Rotokohu Road and Rawhiti Road.

Lighter traffic – buses, cars and light trucks (less than 8 tonne) – may use Rotokohu Road which is convenient for staff accommodation and supply of equipment from outlets in Paeroa.

How will the local community benefit from the establishment of the windfarm?

We expect a good level of commerce will be generated in Paeroa during pre-construction, construction and commissioning of the wind farm.

At least two staff will reside in Paeroa and we will also establish a warehouse in the town to store key parts and consumables. There will therefore be advantage to the local community from personnel living in town and from local people being employed and trained for the wind farm).

The rating base for the Hauraki District Council will also increase with potential benefit via council services.

Aren't there more remote locations where the windfarm could be established?

There are lots of remote locations in New Zealand, however the main constraint, when it comes to developing a wind farm, is remoteness from a grid connection and transport routes. To justify a remote wind farm (which has a high cost of grid connection and roads) wind farm projects have to be larger – often much larger – eg the now cancelled HMR project on the west coast of the Waikato. A wind farm in New Zealand needs to be of moderate scale (to fit into a demand gap in the market) and needs to be close to roads and grid connection. It also needs to have an excellent wind resource and be consentable.

How will you keep the local and wider community informed?

Communication is a two-way path – the first part is ours, providing you with regular updates on what is happening so you feel informed. The second part is yours – if you have questions or concerns, let us know so we can answer them.

One tactic won't achieve the level of engagement we want with the local community so we will be using a variety – from regular update letters to neighbours, to regular updates on our website, public meetings and via local media. Our aim is to be as transparent as possible so you understand what is proposed for your district.

Will the turbines be lit at night?

The wind farm is likely to have suitable lighting to comply with the requirements of CAANZ Rule Part

77.21(d) and appendix B and marked on aeronautical charts. This would be a CAANZ decision.

Do you plan to extend the windfarm beyond the current proposal?

Should this project be successful we would welcome the opportunity to extend the project to the south. However, we do not currently have land rights on Pukeroa Station which has some possible constraints including higher visibility, more bat life, DoC boundaries and steeper terrain.

Will public meetings be held to provide local people with an opportunity to have their questions answered?

Public meetings have a place in public consultation and engagement – not simply as a means for us to tell you about the project, but to provide you with an opportunity to meet the people behind the project, and have your questions and concerns answered. We have conducted a few over the last year, most recently with residents of Rotokohu and Thorp Roads.

Are you talking with local Iwi?

Yes, we are consulting with local Iwi.

The Kaimai Range is popular with paragliders – what steps are you taking to talk to, and answer, their concerns?

We have had a number of conversations with the local Soaring Club and with commercial and recreational flyers and, as a result, reduced the number of turbines from 26 to 24 to accommodate flight paths. We would also consider shutting down specific turbines during gliding competitions.

Peet Aviation also conducted a comprehensive aviation report which concluded that the proposed wind farm will not represent a physical obstacle to glider operations over the proposed site. Likewise, turbulence and wind shear will not be an issue when wind speeds in the area are approximately 16 knots, which is the norm. Glider operations over the proposed site may, however, be affected when wind speeds are more than 20 knots – although this would account for potentially 15% of the time, and needs to be considered against the fact that glider activity would remain viable and subject to pilots conducting flights in a safe and secure manner at an appropriate altitude.

What considerations are you able to give for people who have an emotional or special affiliation with the area proposed for the turbines?

We understand that people may have emotional connections to the land that we are proposing for the wind farm. If you, or someone you know, has particular concerns about any area of the proposed windfarm (see attached map), then we want to know. Please contact us via the website.

What is the proposed timeline for the proposal?

We anticipate that the consent application to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia will be lodged with the Hauraki District Council in February 2018.

This will be publicly notified so residents and stakeholders can go online to the Council website and read the range of detailed reports and analyses which have been conducted.

An RMA hearing on the application will be held mid 2018.

Got any questions?

If you have any questions about any aspect of the proposal to construct and operate a wind farm on the lower Kaimai Ranges, please let us know – simply fill out the form on the website www.kaimaiwind.nz and we will respond to you directly and include your question and our answer in this Q&A.

Kaimai Wind Farm Community Updates

21 February 2017

Dear Madam/Sir,

We write this letter to provide you with an update on the recent developments and progress Ventus Energy (NZ) has made with the Kaimai Wind project.

We have commissioned a sound and vibration specialist - Dr Stephen Chiles - an independent acoustics engineer with 20 years experience in his field. Dr Chiles will soon be making a site visit and will also meet with Hauraki District Council Staff. This will be followed by on-site background noise monitoring at two selected house locations - on Rawhiti Road and Thorp Road. These sites will be selected to be representative of the background sound environment.

Kessels Ecology, a company specialising in ecological effects assessment, is currently completing analysis of data that has been collected on the site over several years – notably bird flight observations.

The geotechnical site investigation (which has included site boreholes) is largely complete. Preliminary results indicate that the site is quite stable and the risk is manageable.

Siemens, a possible turbines supplier, is carrying out a preliminary sub-station design for connection into the existing Transpower lines that pass over the site.

Ventus Energy carried out community engagement activities, which included door knocking, flyer drops and face to face meetings, with a special focus on the immediate neighbours to the project. The purpose was to introduce the project and receive or invite feedback. We also issued a media release to the two NZ media companies (Fairfax and NZME). They chose to report the story in the Waikato Times and Bay of Plenty newspapers.

An encouraging response was received from the Minister of Energy and Resources, Hon Judith Collins. In her letter, which can be found on our website, www.kaimaiwind.nz, Ms Collins makes reference to the NZ government objective for electricity to be produced from 90% renewable resources by 2025.

We will be holding a public consultation day at the Tirohia School hall on Thursday, 16 March 2017 from 3pm onwards. Members of the public are most welcome to come along, to meet us, ask questions and provide us with their feedback.

Yours Sincerely,

Glenn Starr
Director
Ventus Energy

31 March 2017

Dear Madam/Sir,

We write this letter to provide you with another update on the recent developments and progress Ventus Energy (NZ) has made with the Kaimai Wind project.

We held a public meeting on 16 March at the Tirohia School Hall. We were very pleased to see many members of the community attended and shared their concerns. Most queries were to do with the possible noise impact, the visual effect and access of suppliers and operators to the site. Our team, myself included, addressed the presenting concerns - that led to a lively discussion. Dr Stephen Chiles, an independent acoustics engineer was present to answer questions pertaining to noise impact.

Noise monitors have been deployed in two selected house sites. They will be retrieved next week for the collected data to be analysed. We will publish the findings once we have them.

We are currently analysing bird-life data. More on that in our next update.

Initial photo-montages have been developed and will soon be available on the project's website. These provide a visual simulation of the expected visibility of the proposed turbines, from several different perspectives, in the existing landscape,.

A more detailed wind energy analysis is now taking place on site.

Following on from the feedback at the public meeting, we are planning to hold another public meeting and information day. Details will be announced by email, on the project's website and advertised in the local media.

Yours Sincerely,

Glenn Starr
Director
Ventus Energy (NZ)

14 June 2017

Dear resident,

I hope this finds you warm and cosy as we approach the mid-winter period.

Over recent months we have devoted a great deal of effort into engaging with the local community - listening and understanding the concerns of residents and other interested parties.

We want to be as transparent as possible as we investigate the development of the Kaimai Wind Farm and have condensed all questions we have received from the community, into a Q & A (questions and answers) on the website.

A common focus has been concern over the noise the turbines will generate so acoustics engineer, Dr Stephen Chiles, has compared this to common everyday sounds eg

- At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low-level sound, sometimes compared to the sound of waves on a beach.
- When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.
- At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices.”

Noise is just one concern which has been answered in the Q&A – check it out on <http://www.kaimaiwind.nz/qna>.

When visiting the website you will also notice a series of photo-montages, on the resources page, which simulate the visual impact of the turbines from four different perspectives.

In other news, a meeting was recently held with the Piako Soaring Club in Matamata and we now have a better understanding of the needs of paragliders, hang-gliders and fixed wing gliders. One consequence of that meeting was a request to wind energy specialist (Energy3) asking them to determine the likely turbulent effect behind wind turbines at key wind speeds required by the soaring disciplines. We are also investigating a possible mitigation plan to enable continued use of the soaring amenity.

Kessels Ecology - a company specialising in environmental effects assessment, ecological monitoring and ecological restoration - have been carrying out an in-depth analysis along the bush line for several years. Their research collecting methods have included visual observation and listening devices to monitor birdsong with the object of identifying possible impacts and recommending mitigation measures. Key measures to improve bat populations would, for example, include predatory pest control eg rats, stoats etc. The analysis will be completed very soon and will be shared with you.

We also have a comprehensive consultation programme planned with local Iwi where we will meet with local representatives to discuss the project and understand whether they have any concerns of cultural significance.

We will keep you updated on any further development on our website and via these letters. If you have any questions please ask them via the website <http://www.kaimaiwind.nz/> so can answer direct to you, and add it to the Q&A.

Yours sincerely,

Glenn Starr
Director
Ventus Energy (NZ)

18 December 2017

Dear resident

By the time you receive this you will, hopefully, be in the wind-down to Christmas and the holiday season.

I hope 2017 has been a good year for you and your family. It's certainly been a very busy one for the Ventus Energy team with a huge amount of time devoted to meeting with local residents and stakeholders to outline the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

In September we held two very successful, well attended Public Information Days at the offices of Positive Paeroa and we recently met with residents of Rotokohu and Thorp Roads to hear and respond to their concerns. We have also met, and continue to talk with, local Iwi to understand areas of cultural value and possible concern.

At this stage, we are hoping to file the Consent Application with the Hauraki District Council in January 2018. At that point, the application will be publicly declared and you will have the opportunity to go onto the Council website and read the raft of expert reports which have been prepared on the proposal. Research topics range from a six year research study on the impact on ecology, to noise levels, impact on property values and traffic management.

The latest information on the proposal is available to you now, however, on the Kaimai Wind Farm website – www.kaimiwind.nz. Resources include answers to questions which have been posed by residents, to a series of photomontages which depict how the wind farm will look from various vantage points in the region. If you have a question, which hasn't been answered in the Q&A, please get it to us via the contact page on the website. We will answer directly to you, and add it to the Q&A.

I look forward to coming back to you in the New Year to confirm the application has been filed, but in the meantime want to wish you and your families a very happy and safe Christmas and New Year.

Yours sincerely

Glenn Starr
Director
Ventus Energy (NZ)

Ventus Energy Media releases

19 January 2017

A proposed wind farm at the northern end of the Kaimai Ranges will be supplying clean energy to up to 49,000 households in the Waikato and Bay of Plenty regions.

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The company has been investigating the viability for a wind farm in this area since 2005 and is now consulting with local landowners, Iwi, districts' councils and all interested parties.

The company's Director, Glenn Starr, says the windfarm will ensure greater security of electricity supply for the region and will provide construction and maintenance jobs, as well as reduce the nett CO2 emissions from the Waikato.

The site is privately owned and farmed by three land owners. The grid connection will be via the existing Transpower 110kV lines that pass over parts of the site.

Mr Starr says that a successful wind-farm in NZ must have a number of factors in alignment. It must have a strong wind resource, be close to an existing electricity network, have a low/acceptable impact on the environment and the landscape and be of sufficient scale.

“There are very few viable sites close to the major demand centres of Auckland, Hamilton and Tauranga that fulfil these criteria.

“In recent years the increased size of modern turbines has reduced the unit cost of electricity. The turbines we are proposing will allow the project to be competitive within the wholesale market pricing. There are a number of projects consented in NZ. However, these are all in the lower half of the North Island or the South Island. They are also for smaller turbines, which are not as financially viable as the new generation machines.

“The timing feels positive to proceed to consultation on the back of 500MW of thermal plant closures in the Waikato and Auckland regions – including Otahuhu Southdown and part of Huntly. There has also been increasing electricity demand driven by strong population growth.

“Given the recent gas and coal generation plant closures, there is now a heightened risk of electricity supply shortages during dry years.

“We have conducted wind resource data collection over many years as well as carrying out investigations on birdlife, geotechnical, archaeology, access, background noise and visibility analyses. Given this, I am confident the proposed windfarm can proceed successfully through the consent process and then through financing and construction.” says Mr Starr.

Auckland based Ventus Energy (NZ) Ltd was formed in 2004 to develop wind energy projects in New Zealand. It is affiliated with Ventus Energy Ltd, an Irish company formed in 2000 which has developed a 7.5MW and a 24MW project in the west of Ireland.

Ventus Energy will be holding a public information day at the Tirohia School hall at a date to be announced soon. Members of the local community and anyone who wants to hear more and ask questions are welcome to attend. The date will be announced on the website: www.kaimaiwind.nz

For more information visit:

kaimaiwind.nz or contact: Glenn starr m: 021416305 e: info@kaimaiwind.nz or Mordecai Matan m: 021 1671460 e: info@kaimaiwind.nz

11 September 2007

Wind farm proposal draws Paeroa residents

Around 50 Paeroa residents attended two information days held in Paeroa on 6 and 7 September to learn about the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia.

The information days were promoted, in late August, with flyers delivered by NZ Post to residents living within a 2km radius of the site along with email invitations to people who have logged questions on the Kaimai Wind Farm website.

Glenn Starr, the CEO of the company behind the proposal, Ventus Energy, said the purpose of the information days was to provide the public with an opportunity to come in, learn about the proposal and discuss any concerns with the company.

“Wind energy is clean and abundant in New Zealand and features strongly in the country’s energy strategy with a number of wind farms operating around the country,” Glenn Starr said.

“We understand that people do have concerns however, and the opportunity to express these was the prime motivation for the information days so we could hear, first hand, any concerns or issues enabling us to consider possible mitigations.

“The most common concerns shared by people who came to the information days related to noise, visual impacts and possible effects on property values.

“Our application for a Resource Consent requires us to conduct in-depth, specialist analyses into these and other issues including impacts on recreation, tourism, ecology and sites of historical value to Maori. As a result we have objective, quantitative research which answers these concerns. In the main we were able to provide this information to people at the information days and where reports are not to hand, we have undertaken to provide that insight as reports come to hand.”

Glenn Starr said the company is consulting with the wider Paeroa community on a number of fronts to explain the proposal and hear concerns.

“We have engaged with local Iwi and met with various stakeholder groups and will continue to hold information days up to and beyond the lodgement of our Resource Consent Application. A detailed Q&A on the Kaimai Wind Farm website (www.kaimaiwind.nz) provides answers to residents’ questions we have received to date and we will continue to add to this as questions come to hand.

“I want to invite residents unable to attend the information days or who have questions to contact us via the website – we will get back to you,” Glenn Starr said.

Ventus Energy hopes to submit its Resource Consent Application to the Hauraki District Council in late October 2017 with an optimum commencement date for development in September/October 2018 with completion in 2020.

ends

Kaimai Wind Farm

Website Q&A

How much noise do turbines generate?

The main source of sound from wind turbines is aerodynamic sound, which is created as air passes around the blades. This sound is heard as a swishing or whooshing near to the turbines. Turbines can also produce mechanical sound from the generator and gear box (if present), and adjacent to the turbine the electrical transformer can be heard.

At the typical distance of the nearest houses to a wind farm (500m to 1km) the overall sound is generally a bland indistinct low level sound, sometimes compared to the sound of waves on a beach.

When standing underneath or in the vicinity of the wind turbines (within approximately 100 metres) the sound levels are typically in the range of 55 to 60 dB, which is similar to sound levels experienced during normal conversation between people.

At the nearest houses (eg 500m to 1km) sound levels from wind farms are usually in the range of 35 to 40 dB outside houses. These sound levels outside houses are similar to the sound levels normally experienced inside a quiet library, or from people talking in hushed voices.

Does the geography of the area proposed for the turbines add to the noise they emit?

Topographic contours are integral to the acoustics computer model for the wind farm, and the interaction of sound waves with the ground between each wind turbine and each house is included in the calculations. At some frequencies the sound is partially absorbed by the ground, but at other frequencies it is amplified. These effects are included in sound level predictions.

Reflections from surrounding terrain in the wider area do not noticeably increase sound levels because of the increased propagation distance of sound travelling out to the valley side and back compared to the direct sound path, and losses due to absorption and scattering at the reflection from the valley side.

Also, the inclination of valley sides is such that sound is reflected predominantly upwards rather than down towards houses. Reflections from hillsides of impulsive or short duration sound are often clearly audible as echoes, but this does not relate to a significant increase in level for continuous wind farm sound.

In rural valleys people often refer to experiencing 'amphitheatre' effects. In many cases this relates to the fact that the area is quiet at times so sounds from surrounding activities are still audible at a significant distance. Another reason is that sheltered valleys can support the development of temperature inversions, under which condition sound propagation is enhanced. However, with respect to wind farms, strong temperature inversions only develop in stable air conditions which can only exist with low wind speeds when wind farms do not operate.

Is there a difference in decibel level and tone between 90m and 180m wind turbine blades?

Yes - There are differences between different size wind turbines. When comparing modern designs, a single large wind turbine produces more sound than a single small wind turbine. However, a single large

wind turbine produces less sound than multiple small wind turbines that would be required to generate the same electrical power.

Wind turbine rotation speeds are limited by the speed of the blade tip. A larger wind turbine therefore rotates at a slower speed than a small turbine, altering the timing of the blade swish heard when standing close to turbines.

Noise effects vary between specific sites and are not universally better or worse with larger or smaller wind turbines.

What noise monitoring has been carried out?

In March 2017 monitoring was conducted at a property in Thorp Road and another in Rawhiti Road to gain an appreciation of the existing environment used in conjunction with site observations. Further baseline measurements for establishing noise limits will be required prior to construction, and compliance measurements will be required when turbines start operating. These additional measurements will be undertaken at three representative locations, which are proposed at three properties in Thorp, Rawhiti and Rotokohu Roads.

Were different wind conditions and weather factored into the noise readings?

Yes – sound level measurements are analysed relative to the measured wind speed and direction in each 10 minute period during the survey. This is required by NZS 6808.

Will an acoustics plan be prepared?

Prior to construction a prediction report in accordance with NZS 6808 will be prepared to confirm the sound from the final turbine type and layout (unless it is identical to the current assessment). A compliance assessment report will also be prepared once the wind farm is operating and will be submitted to the Council.

What impact will the turbines have on the ecology, fauna and birdlife in the area?

Environmental specialist, Kessels Ecology, was commissioned to undertake an ecological effects assessment of the proposed Kaimai wind farm and surrounding locality to determine existing ecological features and their relative sensitivity to the construction and operation of the proposed wind farm.

The field work for the investigation was undertaken from 2009 to 2017 enabling data to be collected across multiple years on the distribution and habitat utilisation of the locality by birds and bats. Further desktop based analysis was undertaken to determine the effects of the proposal on aquatic freshwater biota, indigenous vegetation, lizards and terrestrial invertebrates. Below is a summary of the investigation –

Effects on Vegetation

The wind farm area can generally be described as a mosaic of rolling pasture land with a number of exotic plantations and indigenous forest remnants scattered throughout. Some 72% of the site is covered in pasture. Smaller stands of secondary broadleaved forest are mainly present within the gully systems in the northern half of the site, while larger areas of logged tawa forest remain along the eastern margin of the site (i.e. the Kaimai Ranges), as well as in the southern extent of the site and near the quarry at the north-western margin of the site.

While indigenous forest and scrubland is situated within 100 m from the edge of some of the turbine locations, since all the centres of the turbines are located in the pastoral land no indigenous vegetation will be removed in the turbine footprint. No ecologically significant indigenous vegetation or nationally threatened plant species would be affected by the proposal.

The introduction of new weeds, diseases and the spread of existing weed species will need to be managed to protect the ecological health of the existing indigenous vegetation remnants in the locality. All machinery and aggregate brought onto site will need to be cleaned, or otherwise guaranteed free of attached seed or plant matter before being brought on to site.

Provided due care and initial weed control is carried out as and when required, it is expected that the pasture or indigenous scrubland species will quickly gain a foot-hold and dominate vegetative cover along access road batters and cuts.

Effects on Freshwater Aquatic Habitats

No fish or aquatic macroinvertebrate habitats would be adversely affected provided appropriate sediment control measures are adopted. No upgrades to existing access stream crossing are proposed with the current roading design. Although water abstraction requirements have not been defined at this point in time, abstraction points should result in no more than minor adverse effects on in-stream biota provided suitable storage and/or non-fully allocated water sources can be devised and found.

Sediment control measures include, but are not restricted to, controlling run off, the prevention of slumping of batters, cuts and side casting, maintain slope stability and contingency measures for heavy rainfall events.

Effects on Lizards, Frogs and Terrestrial Invertebrates

As no ecologically significant indigenous vegetation will be disturbed during the construction phase adverse ecological effects on lizards and indigenous terrestrial invertebrates is likely to be minimal. However, it is possible that areas of non-ecologically significant vegetation (both exotic and indigenous) cleared or trimmed for infrastructure development or tower placement will include lizard and invertebrate habitat.

The consequential relatively minor adverse effects on these fauna groups can be managed through appropriate mitigation and monitoring measures. Details of these measures can be dealt with as part of the consent conditions.

Effects on Birds

According to international best practice guidelines a summary of the main bird habitat areas which should be avoided when locating a wind farm are: (1) Areas with a high density of wintering or migratory waterfowl and waders where important habitat might be affected by disturbance or where there is potential for significant collision mortality; (2) Areas with a high level of raptor activity, especially core areas of individuals breeding ranges and in cases where local topography focuses flight activity which would cause a large number of flights to pass through the wind farm; and (3) Breeding, wintering or migrating populations of less abundant species, particularly those of conservation concern, which may be sensitive to increased mortality as a result of collision.

The main bird groups impacted by wind farm developments internationally have been swans, geese, ducks, waders, gulls, terns, large soaring raptors, owls and nocturnally migrating passerines. Most

resident bird species within the study site are common and widespread with the potential exceptions of New Zealand pipit, North Island kaka and New Zealand falcon, which are all found in the local area. There is a risk of collision with the turbine blades, especially along the forest edge. It is possible that New Zealand falcon and kaka will suffer occasional strike, particularly by the turbines along the forest edge of the Kaimai-Mamaku Conservation Park. Australasian bittern may also be at risk from strike while moving between the Bay of Plenty and Kopuatai Peat Dome. However; of these species, only pipit was detected during the bird surveys or by the acoustic surveys, so while non-detection does not necessarily mean these birds are absent from the locality, it does suggest that they may be present in low densities. While the ability of these key forest and wetland bird species to adapt to the turbines and become accustomed to associated noise and movement is likely, and the birds should be able to fly around the turbines to gain access to other remnant bush areas within the locality, there is a likelihood that strike will occur from time to time.

There is insufficient data for this site to determine the strike level, but modelling and carcass searches at other similarly situated New Zealand wind farms suggest strike rates will be low. Nonetheless, the local effects of this mortality may be more than minor on threatened species, so some form of offset mitigation, such as a contribution to local animal pest control to increase bird productivity, is recommended.

The impact of the wind farm on migratory birds is dependent on any flight path these species may take between key habitats in the Bay of Plenty and Firth of Thames. Wader and shorebird species, such as bar-tailed godwit, wrybill and South Island pied oystercatcher, may move between the Firth of Thames and Tauranga Harbour on a regular basis and in doing so traverse the proposed windfarm footprint. The sound recorders detected two flocks of South Island pied oystercatchers crossing the proposed wind farm site on one occasion in January 2013, from a total recording effort of some 4,000 hours. These detected South Island pied oystercatchers were crossing the southern section of the windfarm over the Kaimai range. This indicates that the site is likely part of a seasonal commuting route for waders between the Haruaki Gulf and Tauranga Harbour.

Initial strike risk analysis at similar New Zealand sites indicates that turbine strike is possible for wader species and it will be in the range of less than 2-5 birds per annum for the proposed Kaimai wind farm. This level of strike risk is considered to have a minor adverse effect on the target shorebird species. However, given that several species are threatened, such as wrybill, offset mitigation may be required to compensate for any residual adverse effects on wader bird species. Quantification of this offset can be addressed at the consenting stage, but could involve a contribution to conservation activities by community groups at Miranda, which is a key site for international and national wader birds.

Effects on Bats

The nationally threatened North Island long-tailed bat is known to be present within the Kaimai Ranges and was detected during the surveys for this proposal. The survey results showed longtailed bat activity during 4-17 January 2013, and from 22 September to 27 October 2015 at the study site. In the 2015 survey 63% (eight) of all of the surveyed sites contained long-tailed bats, while in the 2013 bat survey 55% (11) of the sites contained bats. In total 59% (19) of the surveyed sites detected bats. No publicly accessible studies have investigated the impacts of wind farms on the spatial use of either of New Zealand's native bat species. Therefore, it is not clear whether avoidance behaviour occurs in either native bat species.

Based on review of international studies it is considered possible that long-tailed bats will suffer mortality as a result of interactions with the turbines. Thus, bats are considered to be at moderate risk of being killed or injured by turbine strike at this proposed wind farm site. A combination of habitat restoration and pest control would enhance the local North Island longtailed bat population, producing a healthy source population which could mitigate against any declines at the proposed wind farm site.

Avoidance, Remediation and Mitigation Recommendations

The proposed Kaimai wind farm is situated within a largely pastoral environment, heavily modified by human activities and animal pests. No ecologically significant or legally protected natural features will be directly affected by the proposed wind farm. However, there are several threatened birds and one bat species which could be adversely affected by the turbines in the form of turbine blade strike. The biodiversity consequences of this risk are low to moderate at a local level, and the effects are likely to be minor at a regional, national and international scale.

It is recommended that measures are taken to avoid, remedy or mitigate the adverse effects of turbine strike on these key animals and their habitats, as well as address the localised potential adverse effects associated with construction. A range of measures that will avoid, remedy or mitigate the adverse effects of the project (inclusive of the wind turbines, access roads and the transmission lines) are required. They should include:

- Ensuring all aspects of the construction and operation of the wind farm minimise any potential adverse effects associated with indigenous flora and fauna habitat disturbance, sediment runoff, water abstraction and stream crossings (if any);
- Preparation and implementation of a mitigation package to compensate for potential turbine strike on key indigenous fauna which incorporates enhancing productivity of the target species through ongoing animal pest control and ecological enhancement of targeted natural features; and
- Monitoring of key fauna species, as well as carcass searches under the operational turbines, for a specified period, in order to ensure that the risks associated with the operation of the wind farm are low and to allow for adaptive management risk minimisation contingencies if required.

What impact have windfarms had on property values where they have been established in New Zealand?

Research carried out by Colliers International indicates that in New Zealand thus far, there will be no or negligible long term ongoing negative value impacts on the values of rural properties surrounding the proposed Kaimai Wind Farm, caused by the wind farm being visible to the rural properties or parts of properties.

In summary, studies have shown that there may be a potential difference in the impact on property values arising from the proximity of wind turbines, depending on the property type. Rural properties have been shown to be least affected of all; and in some studies affected positively. Lifestyle blocks generally occupied by city office workers may potentially be affected if turbines are within hearing distance or very close to dwellings, at wind farms close to cities. At some other lifestyle locations, however, not near cities; where wind farms have been established nearby, such as at Te Apiti near Palmerston North, no fears over value erosion have arisen or been expressed in the resource consent

process. It appears (and this is borne out from anecdotal experience) that residents largely support the environmental benefits derived from sustainable electricity generation.

In conclusion, Colliers' introductory study has confirmed earlier findings that there are no discernible negative value impacts on rural property values caused by wind farms being visible to parts of properties.

What is the predicted traffic use on local roads?

Ventus Energy is proposing that extra-heavy transportation be limited to one route – Rawhiti Road – to contain effects and need for bridge and roadside upgrades.

Eight to 16 tonne truck units may use Rotokohu Road and Rawhiti Road.

Lighter traffic – buses, cars and light trucks (less than 8 tonne) – may use Rotokohu Road which is convenient for staff accommodation and supply of equipment from outlets in Paeroa.

How will the local community benefit from the establishment of the windfarm?

We expect a good level of commerce will be generated in Paeroa during pre-construction, construction and commissioning of the wind farm.

At least two staff will reside in Paeroa and we will also establish a warehouse in the town to store key parts and consumables. There will therefore be advantage to the local community from personnel living in town and from local people being employed and trained for the wind farm).

The rating base for the Hauraki District Council will also increase with potential benefit via council services.

Aren't there more remote locations where the windfarm could be established?

There are lots of remote locations in New Zealand, however the main constraint, when it comes to developing a wind farm, is remoteness from a grid connection and transport routes. To justify a remote wind farm (which has a high cost of grid connection and roads) wind farm projects have to be larger – often much larger – eg the now cancelled HMR project on the west coast of the Waikato. A wind farm in New Zealand needs to be of moderate scale (to fit into a demand gap in the market) and needs to be close to roads and grid connection. It also needs to have an excellent wind resource and be consentable.

How will you keep the local and wider community informed?

Communication is a two-way path – the first part is ours, providing you with regular updates on what is happening so you feel informed. The second part is yours – if you have questions or concerns, let us know so we can answer them.

One tactic won't achieve the level of engagement we want with the local community so we will be using a variety – from regular update letters to neighbours, to regular updates on our website, public meetings and via local media. Our aim is to be as transparent as possible so you understand what is proposed for your district.

Will the turbines be lit at night?

The wind farm is likely to have suitable lighting to comply with the requirements of CAANZ Rule Part

77.21(d) and appendix B and marked on aeronautical charts. This would be a CAANZ decision.

Do you plan to extend the windfarm beyond the current proposal?

Should this project be successful we would welcome the opportunity to extend the project to the south. However, we do not currently have land rights on Pukeroa Station which has some possible constraints including higher visibility, more bat life, DoC boundaries and steeper terrain.

Will public meetings be held to provide local people with an opportunity to have their questions answered?

Public meetings have a place in public consultation and engagement – not simply as a means for us to tell you about the project, but to provide you with an opportunity to meet the people behind the project, and have your questions and concerns answered. We have conducted a few over the last year, most recently with residents of Rotokohu and Thorp Roads.

Are you talking with local Iwi?

Yes, we are consulting with local Iwi.

The Kaimai Range is popular with paragliders – what steps are you taking to talk to, and answer, their concerns?

We have had a number of conversations with the local Soaring Club and with commercial and recreational flyers and, as a result, reduced the number of turbines from 26 to 24 to accommodate flight paths. We would also consider shutting down specific turbines during gliding competitions.

Peet Aviation also conducted a comprehensive aviation report which concluded that the proposed wind farm will not represent a physical obstacle to glider operations over the proposed site. Likewise, turbulence and wind shear will not be an issue when wind speeds in the area are approximately 16 knots, which is the norm. Glider operations over the proposed site may, however, be affected when wind speeds are more than 20 knots – although this would account for potentially 15% of the time, and needs to be considered against the fact that glider activity would remain viable and subject to pilots conducting flights in a safe and secure manner at an appropriate altitude.

What considerations are you able to give for people who have an emotional or special affiliation with the area proposed for the turbines?

We understand that people may have emotional connections to the land that we are proposing for the wind farm. If you, or someone you know, has particular concerns about any area of the proposed windfarm (see attached map), then we want to know. Please contact us via the website.

What is the proposed timeline for the proposal?

We anticipate that the consent application to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia will be lodged with the Hauraki District Council in February 2018.

This will be publicly notified so residents and stakeholders can go online to the Council website and read the range of detailed reports and analyses which have been conducted.

An RMA hearing on the application will be held mid 2018.

Got any questions?


If you have any questions about any aspect of the proposal to construct and operate a wind farm on the lower Kaimai Ranges, please let us know – simply fill out the form on the website www.kaimaiwind.nz and we will respond to you directly and include your question and our answer in this Q&A.



YOU'RE INVITED

To a public information 'drop in' to learn about the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges behind Tirohia.

Come along to meet the team and learn what this exciting proposal means for the Paeroa community.



Ventus Energy is about to complete investigations and submit a resource consent application to construct a 100mw wind farm on the northern reaches of the Kaimai Ranges.

Wind energy is clean and abundant in New Zealand and features strongly in the country's energy strategy.

YOU'RE INVITED

to public information days
which will be held on

**Wednesday
6 September 2017 &
Thursday
7 September 2017**

from 10 am to 3 pm at
Positive Paeroa,
101 Normanby Road, Paeroa

WWW.KAIMAIWIND.COM

MEET & GREET

FOR RESIDENTS OF ROTOKOHU AND THORP ROADS



Dear resident of Rotokohu and Thorp Roads

A number of you attended the recent public information days in Paeroa to learn more about the proposal to establish a wind farm on the northern reaches of the Kaimai Ranges at Tirohia. We are aware, however, that a number of you were unable to attend, and so we have organised a 'meet and greet' especially for residents of Rotokohu and Thorp Roads.

The purpose of this short gathering is to provide a relaxed, informal opportunity to share some reports which have been prepared by specialists in relation to such things as noise, impact on property values, traffic volume/management and ecology. I know you will also have some questions in relation to these topics, and hope that the reports may either answer these or provide a wider context.

If you have any particular questions you would like answered, please contact Clare Bayly on 027 499 8862 or clare@baylyandco.co.nz.

Details of the meeting are as follows:

Date **Monday 13 November 2017**

Time **7 pm to 8 pm**

Venue **Paeroa Golf Club, Rotokohu Road**

We look forward to talking with you on the 13th.

With best wishes

Glen Starr
Ventus Energy



WWW.KAIMAIWIND.NZ

updated 23/07/15

	First Name	Last Name	Position	Address 1	Address 2	Email
Te Rūnanga a Iwi o Ngāti Tamaterā	Liane	Ngamane	Trustee and Environment, Conservation portfolio holder			liane@tamatera.co.nz
Hauraki Maori Trust Board	Josie	Anderson	Chief Executive	PO Box 33	Paeroa	josiea@hauraki.iwi.nz
Ngāti Rahiri Tumutumu	Greg	Thorne	Chairperson			drwthorne@gmail.com
	Jill	Taylor	Treaty Negotiator	14 Sutherland Road	Point Chevalier Auckland 1025	jilltaylor@vodafone.co.nz
Te Kupenga o Ngāti Hako Inc	Pauline	Clarkin		P O Box 114	Paeroa 3640	hako@xtra.co.nz
Ngāti Tara Tokanui Trust	Paora	Raharaha		PO Box 181	Paeroa 3640	taratokanui@gmail.com
	CC: Caroline	Karu				cakaru@gmail.com
	Russell	Karu				russellkaru@xtra.co.nz
Ngāti Maru ki Hauraki Inc	David	Taipari	General Manager	PO Box 37	Thames 3540	taipari@wave.co.nz
	CC: Wiremu	Peters	Environment Unit Manager			eungatimaru@wave.co.nz

Emilia Williams – tepunekokiri (govt website) – treaty negotiator (Opotere resident). Ngāti

Tara Tokanui Trust

Buddy Mikaere - ??

Te Aroha Mountain iwi Consultation List

Ngati Rahiri Tumutumu	Jill Taylor	021 269 1809	jilltaylor@vodafone.co.nz	14 Sutherland Road Pt Chevalier Auckland 1025
	Lee Guthrie (delegate replacing Sheryl Tuki until February 2013)	027 825 1237	lee.guthrie@hotmail.com	16 Carlton Street Te Aroha 3320
Ngati Hako	Pauline Clarkin	07 862 8161	hako@xtra.co.nz	PO Box 114 Paeroa 3640
Ngati Haa	Rangitonga Kaukau (delegate)	027 772 1319	rangitonga@gmail.com	
Ngati Maru	David Taipari		taipari@wave.co.nz	PO Box 37 Thames 3540
Ngati Tamatera	John McIvor	021 251 0080 07 862 6079	office@tamatera.org.nz	19 Lee Ave PO Box 23 Paeroa 3600
Ngati Whanaunga	Nathan Kennedy	027 290 9572	nkennedy@ngaatiwhanaunga.maori.nz	P.O. Box 160 Coromandel 3543
Ngati Tara Tokanui	Caroline Karu		taratokanui@gmail.com	PO Box 181 Paeroa 3640

Draft update to landowners

Maureen Jackson

Mat Denize

Richard Thorp

Dear Maureen, Mat and Richard

This is the first of regular updates to provide you with insight to progress on the proposal to establish a wind farm on your properties.

Application

We are progressing with the Resource Management Act application for consent to construct the wind farm with a number of specialist consultants appointed and preparation of reports underway. Specialist areas include the archeology of the site, ecology (bird and bat life), impact on tourism and recreation, commercial and recreational aviation impacts, regional value assessment and traffic management.

Consultation with local iwi

We have made contact with five iwi in the greater Paeroa region – Ngati Tara Tokanui, Ngati Tamatera, Ngati Hako, Ngati Maru Runanga and Ngati Rahiri-Tumutumu – asking if they have any cultural concerns which would necessitate them preparing a Maori Values Assessment. At this time, Pauline Clarkin, CEO of Ngati Hako, has confirmed they will undertake an analysis of their history and potentially file an assessment of impact.

Open day

We will be holding two public information ‘drop in’ days at the premises of Positive Paeroa, Belmont Road, Paeroa between 10 am and 3 pm on Wednesday 6 September and Thursday 7 September 2017. We will have displays of turbines, maps of the region showing the location, number and specifics of turbines, details of the noise generated etc. The intention is to provide people with information and an opportunity to ask, and have their, questions answered.

The open days will be communicated to everyone in the Paeroa and Te Aroha RD 2 rural delivery areas during the week starting 21 August to give people plenty of time to get the dates into their diaries. A statement will also be released to local and national media.

Kaimai Wind website www.kaimaiwind.nz

The website has been updated with new specifics for the number of turbines, and a detailed question and answer form which has been developed in response to enquiries and discussions with yourselves and members of the public.

If you have any questions or concerns at any time, please don't hesitate to contact me and I hope we will see you at one of the open days.

Best wishes

Glenn Starr



Ventus Energy (NZ) Ltd
10/215 Rosedale Rd,
M338 Private Bag 300987
Albany, Auckland

Telephone: (09) 9661653

23 November 2005

DOC
Tauranga Area Office
PO Box 253
Greerton

RE: Wind Monitoring Masts

Dear sir/madam,

Ventus Energy (NZ) Ltd is investigating the possibility of installing wind turbines on farmland owned by Waitoki Downs Ltd as shown on the attached maps. As part of the investigation we wish to erect a temporary monitoring mast at the site for up to 4 years.

These are slender temporary monitoring masts up to 60m in height. The monitoring mast construction is of light steel tube and held in place with steel guy wires and screw-in anchors – no excavations are required. A drawing and photograph of typical masts are included for your information.

Should you have no objection to the proposal then we request that you complete the enclosed form of consent. If there is any issue that you like to discuss then please phone and I can meet with you if required.

I look forward to your reply.

Yours faithfully

Glenn Starr

Ph.: 021 416305

Encl.: Drawing of 60m Mast
Photograph of typical masts
Notice of Written Approval
Map of landowner boundaries
Map of Location



Unit 6 Ward St, New Lynn, Auckland, 0600
M338 Private Bag 300987, Albany, Auckland 0632

12 December 2016

.....

Attn:

RE: Kaimai Windfarm Consultation

Dear,

Ventus Energy has been investigating the viability of a windfarm at the northern end of the Kaimai Ranges since the 2005. Due to a combination of recent positive factors as listed below we are now progressing to the resource consent stage.

Positive Factors include:

- investigations demonstrate low ecological impact
- higher wholesale electricity pricing
- improved output of modern wind turbines (size and efficiency gains)
- increasing electricity demand in the upper north island

The proposal, at this stage in the project design, is to install up to 27 wind turbines on farmland at the northern end of the Kaimai Ranges. Nominally, the turbines will have a hub height up to 109m with a rotor diameter of between 130 and 142m. The final number of turbines, hub-height, exact location and size will be determined following further investigation and consultation. The site is privately owned and farmed by three separate landowners. The grid connection will be via the existing Transpower 110kV lines that pass over part of the landholding. A preliminary site layout is attached.

On-going investigations include:

1. Archeology
2. Geotechnical
3. Wind Modeling
4. Ornithology
5. Background Noise
6. Component transport and construction
7. Grid connection

We intend to hold public engagement sessions starting in February 2017. You are most welcome to attend these days and/or contact me directly outside of these events for further discussion, updates and of course to express your view on the project.

Yours sincerely

Glenn Starr,

Director
Ventus Energy (NZ) Ltd.
+64 (0)21 416 305
Glenn@ventusenergy.co.nz

Encl: Site Layout
Example of possible turbine (Siemens)



Ventus Energy (NZ) Ltd
10/215 Rosedale Rd,
M338 Private Bag 300987
Albany, Auckland

Telephone: (09) 9661653

23 November 2005

Te Kupenga o Ngati Hako
PO Box 114
Paeroa

RE: Wind Monitoring Masts

Dear sir or madam,

Ventus Energy (NZ) Ltd is investigating the possibility of installing wind turbines on farmland owned by Waitoki Downs Ltd as shown on the attached maps. As part of the investigation we wish to erect a temporary monitoring mast at the site for up to 4 years.

These are slender temporary monitoring masts up to 60m in height. The monitoring mast construction is of light steel tube and held in place with steel guy wires and screw-in anchors – no excavations are required. A drawing and photograph of typical masts are included for your information.

Should you have no objection to the proposal then we request that you complete the enclosed form of consent. If there is any issue that you like to discuss then please phone and I can meet with you if required.

I look forward to your reply.

Yours faithfully

Glenn Starr

Ph.: 021 416305

Encl.: Drawing of 60m Mast
Photograph of typical masts
Notice of Written Approval
Map of landowner boundaries
Map of Location



Ventus Energy (NZ) Ltd
10/215 Rosedale Rd,
M338 Private Bag 300987
Albany, Auckland

Telephone: (09) 9661653

23 November 2005

Te Runanga a Iwi o Ngati Tamatera
PO Box 23
Paeroa

RE: Wind Monitoring Masts

Dear sir or madam,

Ventus Energy (NZ) Ltd is investigating the possibility of installing wind turbines on farmland owned by Waitoki Downs Ltd as shown on the attached maps. As part of the investigation we wish to erect a temporary monitoring mast at the site for up to 4 years.

These are slender temporary monitoring masts up to 60m in height. The monitoring mast construction is of light steel tube and held in place with steel guy wires and screw-in anchors – no excavations are required. A drawing and photograph of typical masts are included for your information.

Should you have no objection to the proposal then we request that you complete the enclosed form of consent. If there is any issue that you like to discuss then please phone and I can meet with you if required.

I look forward to your reply.

Yours faithfully

Glenn Starr

Ph.: 021 416305

Encl.: Drawing of 60m Mast
Photograph of typical masts
Notice of Written Approval
Map of landowner boundaries
Map of Location

Meeting with Liane Ngamane, Ngati tamatara, at the offices of the Hauraki Maori Trust Board, Paeroa at 10 am on Wednesday 24 January 2018.

Her concerns are centred on cultural landscapes, heritage and wahi tapu (places sacred to Maori in the traditional, spiritual, religious, ritual or mythological sense).

Examples of cultural landscapes include the ridgeline of the kaimai ranges which is part of the waka, nine identified wahi tapu within Ohinemuri, two around Rawhiti Road which are defined on Maori land maps.

Suggested

- Obtaining map of Treaty claims and overlay this with the site map (available on Ministry of Justice OTS website – iwi names and deals, schedule 2 attachments).
- Obtain Kaimai Conservation Stat acknowledgement steting over Kaimai Hauraki Collective Deed.
- Obtain map of Maori freehold land and overlay this with the site layout.

Requested

- Copy archaeological assessment
- That GE meet cost of hui (ie kai) Liane to come back with insight to cost.
- Detail of earthworks ie where and what earth will be moved to construct roadways to enable the construction of the turbines.
- Insight to the benefits for local Maori. Suggested hui could come up with suggestions of things VE could do to help local Marae. Possibly cultural recognition, at say, new bridge on Rawhiti Road, on the reformed Wrights Road (telling the story of how it was originally a track which Maori used to travel from the Kaimai Ranges to the flatlands).
- Ecological Report.`



Ventus Energy (NZ) Ltd
10/215 Rosedale Rd,
M338 Private Bag 300987
Albany, Auckland

Telephone: (09) 9661653

22 November 2006

406 Rawhiti Road
RD 2
Te Aroha

RE: Wind Monitoring Masts

Dear Jim,

As discussed with you previously Ventus Energy (NZ) Ltd is investigating the possibility of installing wind turbines on farmland owned by Waitoki Downs Ltd as shown on the attached maps. As part of the investigation we wish to erect a temporary monitoring mast at the site for up to 4 years.

These are slender temporary monitoring masts up to 60m in height. The monitoring mast construction is of light steel tube and held in place with steel guy wires and screw-in anchors – no excavations are required. A drawing and photograph of typical masts are included for your information.

Should you have no objection to the proposal then we request that you complete the enclosed form of consent and sign a copy of each one of the enclosed documents and return to our offices. A copy is provided for your records. If there is any issue that you like to discuss then please phone and I can meet with you if required.

I look forward to your reply.

Yours faithfully

Glenn Starr

Ph.: 021 416305

Encl.: Drawing of 60m Mast
Notice of Written Approval
Map of landowner boundaries
Map of Location

Meeting Minutes



Meeting Title: Proposed Kaimai Wind Farm and Existing Soaring Amenity

Date: 18 May 2017

Location: Piako Soaring Club, Waharoa, Waikato

Attendees

Name	Organisation	Interest
Glenn Starr (GS)	Ventus	Wind Farm
Tim Bromhead (TB)		Gliding
Rick Hawkeswood (RH)		Hangliding and Paragliding
X	X	X
X	X	X
X	X	X

No.	Item	Action
1	Introduction - GS introduced the history of the project and evolution of the site layout. Touched on the benefits of the economies of scale to make a wind farm project viable. Key aspect is the grid connection with an estimated cost of \$10M. Requires a larger wind farm to keep the per turbine connection cost low. GS described the wind regime on the site and the data collected by two monitoring masts. GS presented a revised layout on the screen.	
2.	Gliding Use - Club members stated that key routes are the north and south routes particularly during competition times. The number of competition days are up to 30/ year and the return flights for competitions are estimated to be 600/year. Some occasional recreational flying round trips include perhaps another 150/year. The journey north is generally at a higher altitude and they can pass safely over the high ridgeline turbines (no. 11, 13, 19, 16, 20 22 and 25). The return journey (from the Coromandel Ranges) is generally at lower elevation. A critical place to pass over is the ridge between turbines 11 and 21. TB showed cockpit cam recording of this flight path. At times there may not be sufficient elevation attained or thermal lift present to make the pass so pilots will land in farmers paddocks on an ad hoc basis. This is true also of the journey north. Of secondary importance is a turning point to the NW of proposed turbine no. 1 where pilots will race to it, turn around and then race back south. Also of importance is that use of the lower elevation ridgeline (under Turbines 1 to 18), where pilots may search for thermal rises to gain elevation.	
3.	Paragliding Use. Key launching points for paragliders are Swaps Quarry – close to Matamata or from the Jackson farm. There is no formal right however and access is granted on a casual basis. A key route for para-gliders to travel north is over the higher ridgeline. Turbines here essentially cause a block from travelling further North. GS: these are the most productive wind turbines.	
4.	Importance of the Amenity - Some member stressed the importance of the amenity and how at times pilots will travel internationally to enjoy the challenges of flying the entire length of the Kaimai ranges from locations close to Matamata. And for Gliders and Hanggliders the entire length of the Coromandel ranges too. Paragliders currently can make it as far north as somewhere between Thames and Paeroa. The amenity has been used since 1975.	
5.	Turbulence. Of key concern to pilots are the turbulent effects of operating wind turbines. TB showed a graphic representation of this with water vapour wake shedding from and operating wind farm. GS showed the results from recent wind analysis to demonstrate the background turbulence of the site – which is quite low – class C for wind turbines. Turbulence is particularly worrisome for paragliders as the chute may collapse. Gliders are less troubled.	

6.	<p>Key Pass – GS estimated the distance between proposed turbine 11 and 21 is 1.5km. Club members asked if this could be made greater and could some turbines be removed. GS expressed concern over removing turbines as it undermines the projects viability.</p>	
7.	<p>Mitigation Options – TB enquired about the possibility of turning turbines off at key times. GS considered the idea has merit and enquired over the preferred operating wind speeds or the disciplines which were given as:</p> <p>Glider: 12 to 25 knots Hanglider: 10 to 20 knots, or 10knots with thermals Paraglider: <10knots</p> <p>GS suggested the removal of Turbine no. 1. Members did not see much benefit in this.</p> <p>Club members asked about moving the high ridgeline turbines further south – where it is less critical for all the soaring disciplines. GS stated that Ventus no longer has land rights on that land – also there are other environmental considerations there including landscape and bats.</p> <p>GS – a mitigation come through as a consent condition so it would survive Ventus Energy’s control on the project.</p>	
8.	<p>Actions – Determine the extra turbulence caused by the wind turbines – especially 6, 21, 24 and 26. Also of concern are 18, 14 and 10.</p> <p>Distribute updated draft layout.</p> <p>Report back to the Soaring club with any possible solutions or mitigations – estimated turn around of 3 weeks.</p>	GS

Meeting Minutes



Meeting Title: Community engagement

Date: 21 June 2017

Location: Hauraki District Council Offices, Paeroa

Attendees

Name	Organisation	Interest
Clare Bayly (CB)	Ventus	Wind Farm
David Fieldon (DF)	HDC	
His Worship the Mayor, John Tregida (JT)	"	
Mark Buttimore	"	

No.	Item	Action
1	Introduction - CB explained the purpose of the meeting was to discuss community engagement not the technical aspects of the wind farm and provided DF with the consultation pack.	
2.	Recommendations <ul style="list-style-type: none"> • Before RMA application lodged, establish a shop front in Paeroa so people can come in and learn about the proposal, ask questions etc. • Consider potential issues around Chinese investor – ie issues management, create positive profile etc. • Concentrate iwi consultation on RMA mandated members and utilize David Taipare. 	GS CB All
8.	Actions <ul style="list-style-type: none"> • Need specifics on economic benefits to the region ie how many jobs will be created during three phases of the project – pre, during and post, impact on electricity costs, use of local suppliers etc. 	GS
	<ul style="list-style-type: none"> • Connect with Jo Tilsley, Paeroa town promoter. 	CB
	<ul style="list-style-type: none"> • GS to speak at future Business at 5 meeting – preferably before consent application. 	GS
	<ul style="list-style-type: none"> • Contact Michelle Hawthorne, Matamata Piako District Council re iwi consultation, traffic management. 	CB
	<ul style="list-style-type: none"> • Add Michelle Hawthorne, David Fieldon, the Mayor and Mark Buttimore to mailing database so they receive all updates. 	MM

Meeting Minutes



Meeting Title: Community engagement

Date: 21 June 2017

Location: Hauraki Maori Trust Board, Paeroa

Attendees

Name	Organisation	Interest
Clare Bayly (CB)	Ventus	Wind Farm
John McEnteer, CEO (JMcE)	Hamilton Maori Trust Bd	
David Taipari, Chair (DT)	“ “	

No.	Item	Action
1	Introduction - CB explained the purpose of the meeting was to seek guidance on the most effective way to engage and consult with iwi to understand if they have any issues or sites of cultural significance. Provided JMcE and JT with consultation packs.	
2.	Recommendations <ul style="list-style-type: none">• Restrict consultation to RMA mandated members – and do not expect consensus – instead focus on ensuring each iwi receives the consultation pack and are invited to provide feedback.• Ensure each iwi receives the same information and key messages.• Respect confidentiality ie what is discussed with each iwi remains sacrosanct to that iwi and is not shared with others.• DT provided a template and contact names for each iwi, recommending that we make initial contact via email, attaching consultation pack, with a personal follow-up and meeting in their offices – ie it should not be necessary to go onto the marae.• DT and JMcE are available if needed for advice as we move through consultation.	
8.	Actions <ul style="list-style-type: none">• Methodically work through DT's list of contacts, email as advised, and follow-up.	All
	<ul style="list-style-type: none">• Ensure DT and JMcE receive all updates.	MM

Meeting Minutes



Meeting Title: Community engagement

Date: 21 June 2017

Location: Eric Souchon's offices, Paeroa

Attendees

Name	Organisation	Interest
Clare Bayly (CB)	Ventus	Wind Farm
Eric Souchon (ES)	Tirohia Quarry	

No.	Item	Action
1	Introduction - CB explained the purpose of the meeting was to gain perspectives on the most effective way to engage with the Paeroa community. Provided ES consultation packs.	
2.	Recommendations <ul style="list-style-type: none">• Focus on engaging with Ngati Hako because Tirohia Mountain is considered sacred.	
8.	Actions <ul style="list-style-type: none">• Add ES to the list of stakeholders who receive all updates.	MM
	<ul style="list-style-type: none">• Develop a map of 1 km radius of the site and either visit or do a mail-drop to every house of every update.	All
	<ul style="list-style-type: none">• Clarify the size of the project – are there stages? What are the total number of turbines?	GS
	<ul style="list-style-type: none">• Form a Kaimai Wind Farm Liaison Committee comprising all residents within the 1km radius, and initiate gatherings (at appropriate times)	All

Phone Conversation Minutes



Meeting Title: Community engagement

Date: 30 June 2017

Attendees

Name	Organisation	Interest
Mordecai Matan (MM)	Ventus	Wind Farm
Amelia Williams (AW)	Ngati Tara Tokanui / Koi	Chair

No.	Item	
1	<p>Introduction - MM and AW had been challenged to find suitable time to meet and agreed to have a quick phone conversation, in view to meet later in the month.</p> <p>MM explained the purpose of the conversation was to understand if Ngati Tara Tokanui had any issues or sites of cultural significance. Emailed AW a consultation pack the night before.</p> <p>Discussion</p> <p>AW said she was very much preoccupied with treaty negotiations reaching settlement stage and an environment court case, which meant she is not available to put a lot of time into this topic. She said she had discussed the wind farm proposal with the Iwi board of trustees and that they were generally supportive / neutral. They recommend, however, to pay attention following three points of interest as detailed in the recommendations below.</p>	
2.	<p>Recommendations</p> <ul style="list-style-type: none"> The treaty settlement grants the Hauraki Maori Collective 1000ha of land around Te-Aroha and Waikino River (stewardship land). AW believes there may be some touch points in the proposed site. Mangaiti Trust is located at 59 Hill Rd. It is a 30 acres Hapu block owned by 300 shareholders, chaired by AW. The proximity to the site may present a cultural concern. There is a major Urupa / burial site and an old pa on top of the hill (green square in the layout map), which is a 1769 Wahi Tapu site of cultural value to Ngati Koi. 	
3.	<p>Actions</p> <ul style="list-style-type: none"> Despite her busy schedule AW will consider MM's offer to pay for a cultural value report to be prepared. She will get in touch with a quote. Follow up and organise to meet in person before the end of July. 	AW MM

Meeting Minutes



Meeting Title: Kaimai Wind Farm - traffic management

Date: 4 August 2017

Location: Matamata-Piako District Council Office, Te Aroha

Attendees

Name	Organisation	Interest
Clare Bayly (CB)	Ventus	Wind Farm
Susanne Kampshof	MPDC Asset Manager	Strategy and Policy
Mike Van Grootel	MPDC Team Leader	Projects/traffic management
Peter McCoskrie	MPDC Team Leader	Resource consents

No.	Item	Action
1	Introduction - CB explained the purpose of the meeting was to provide the consultation pack and give a basic overview of the wind farm proposal; provide the Transport Feasibility template from Tranzcarr covering land transportation of wind turbine equipment to the site.	
2.	Council needs to see <ul style="list-style-type: none"> • dimensions and weights of all equipment which will be transported to the site – turbines, cranes, concrete trucks. • Hours of operation 	
3.	Assuming Wright Road is the name of the Denize farm access road, Council expressed concern that the loading capacity of the two timber bridges on Rawhiti Road is insufficient to take the weight of any of the construction equipment. Any route to the farm needs to avoid this level of bridge crossing.	GS
4.	In relation to road condition, an assessment will be made before and after each phase to determine the impact on the road surface and what remedial action is required.	
5.	According to their maps, turbine No 19 is within the MPDC region – which could necessitate a resource consent.	GS
6.	Waikato Regional Council will need to be involved in relation to storm-water runoff from Rawhiti Road.	
7.	The team asked which quarry will supply metal as they need to consider the impact of getting quarry materials to the site.	GS
8.	Once we provide dimension details for each of the phases of the project, MPDC will develop a traffic management plan.	
8.	Actions – <ul style="list-style-type: none"> • MPDC will study the Transport Feasibility plan and provide an overview of requirements. 	MPDC

**‘Meet and Greet’ for residents of Rotokohu and Thorp Roads V4
Monday 13 November 2017**

Friday 2 November Invitations delivered, via rural courier, to all residents of Rotokohu and Thorp Roads
Personal emails sent to all residents of both roads who attended the Information Days in Paeroa.

Attendees (24)

Name	Email
Simon and Sarah Hill	Thehills79@gmail.com
April Mudford	aprilmudfordnz@gmail.com
Bev and Kevin Sharp	Kevin.sharp@xtra.co.nz
Lyn Pullan, Paeroa Golf Club	pullasLJ@gmail.com
Paul and Mandy Tormey	Paul.tormey@gmail.com
Debbie and Adrian	Adriananddebbie@xtra.co.nz
James and Gaye Thorp	thorpwhanau@xtra.co.nz
Ron and ? Elliott	Inline24v@gmail.com
Keith and Robyn Walker	Keroy2@xtra.co.nz ; rnawalker@gmail.com
John and Barb Frater	barbfrater@xtra.co.nz
Amy and Zen Timmons	hydradye@slingshot.co.nz
Henry and Rebecca Clubb	beckclubb@gmail.com
Mark Ofsoske	fieldenfarms@xtra.co.nz
Z Timmins	zenithtimmins@hotmail.com

Summary of concerns, actions and possible mitigations –

James Thorp spoke for the group saying they were concerned that the current position of the turbines ‘surround’ them in the valley. They would have been happier had the project been on the Te Aroha side of the range.

Concern/issue	Answer/Action	Mitigation
Level of noise – asked if guarantee could be given in relation to actual levels?	Consent conditions will require that sound levels do not exceed the noise limits in NZS 6808. Comprehensive commissioning measurements also required by conditions will ensure these limits are not exceeded.	Suggested that VE volunteer and commit to consent conditions setting noise limits and requiring compliance measurements.
Property values – question relevance of Colliers Report given it is largely based on overseas experience.	The Colliers’ report was wholistic looking at the impact of controversial developments across New Zealand eg corrections facilities and prisons, proximity to earthquake fault lines, power pylons, psychiatric housing, detention centres and the Hau Nui Wind Farm in Martinborough.	

	Over the passage of time, research and an Environment Court ruling shows that "property values may fall for a short while but this is not sustained and after a matter of months prices return to normal".	
What turbines have been removed from the original proposal?	<u>Reduced from 26 to 24.</u> Central, between Rotokohu Road and lower ridge and north end in response to concerns expressed by glider community and Tirohia School (respectively).	
Questioned how many turbines at maximum and minimum height. Concern over prominence of maximum height turbines. Concern that this constitutes 'visual pollution'.	Seven maximum height on top <u>lower height turbines on the</u> ridgeline, and 17 <u>maximum height turbines on the</u> lower ridgeline. Height and placement a response to analysis of wind conditions ie to <u>maximise-optimise the wind resource.</u>	
Questioned scale of photomontages.	<u>The photomontages are to scale.</u>	
Traffic on Rotokohu Road – what is the predicted traffic flow on the road, what is the nature of those vehicles, what effect will it have on the road surface, on local users and residents (like school children) – and how will this be managed.	VE is proposing that extra-heavy transportation to be <u>limited to one route – Rawhiti Road – to contain any effects and need for bridge and roadside upgrades.</u> <u>8t to 16t truck units may use Rotokohu Road and Rawhiti Road.</u> <u>Lighter traffic – utes, cars and light trucks (less than 8t) – may will be encouraged to use Rotokohu Road which is convenient for staff accommodation and supply of equipment from outlets in Paeroa.</u>	
Wanted clarification on the route the turbines will take from Tauranga to the wind farm. Wanted reassurance that they will not go down Rotokohu Road.	It is proposed that the turbines will be transported to site via Rawhiti Road.	
Wanted to know the timeline for the application and how to lodge a response.	At this stage, it is hoped to lodge the application in January 2018. Full details will be published on the Hauraki District Council website including information on how to lodge a response.	
Wanted to know how they could access full expert reports.	Once the application is filed with the Hauraki District Council, all reports will be available online, to the public.	
Wanted to be notified when the application is filed.	VE will email all residents who attended meeting when the application has been filed.	
Wanted specifics of bird and bat monitoring.	Kessels Ecology (specialists in environmental effects assessment, ecological monitoring and ecological restoration) have been carrying out surveys along the bush line for several years by various means ie visual	

Commented [j1]: Glenn – are you happy with this? What do you have in mind for 'heavy'? Concrete trucks?

	observation, listening for birdsong and listening devices. Add latest data from Kessels	
How many wind farms are in as close proximity to communities as Rotokohu Road will be ie perception they will be surrounded 180 degrees by turbines.	Every site has unique aspects which distinguish it from others – that is why specialist, objective modelling is undertaken. The NZWEA provides a good resource for wind farms in NZ, including a regularly-updated googlemap of proposed, consented and constructed windfarms - http://www.windenergy.org.nz/wind-energy/nz-windfarms	
Concern that 'being surrounded by turbines' will reduce the desirability and value of their properties.	Refer question/answer above in relation to the impact of 'other than residential' developments on property values.	
Noise – is there difference in decibel level and tone between 90m and 180m rotations?	It is assumed "rotations" means "rotors" – i.e. wind turbine blades. Yes - There are differences between different size wind turbines. When comparing modern designs, a single large wind turbine produces more sound than a single small wind turbine. However, a single large wind turbine produces less sound than multiple small wind turbines that would be required to generate the same electrical power. Wind turbine rotation speeds are limited by the speed of the blade tip. A larger wind turbine therefore rotates at a slower speed than a small turbine, altering the timing of the blade swish heard when standing close to turbines. Noise effects vary between specific sites and are not universally better or worse with larger or smaller wind turbines.	N/A
Noise – concern that the valley is an amphitheatre which will magnify the noise of the turbines.	In rural valleys people often refer to experiencing 'amphitheatre' effects. In many cases this relates to the fact that the area is quiet at times so sounds from surrounding activities are still audible at a significant distance. Another reason is that sheltered valleys can support the development of temperature inversions, under which condition sound propagation is enhanced. However, with respect to wind farms, strong temperature inversions only develop in stable air conditions which can only exist with low wind speeds when wind farms do not operate.	Suggest VE include a compliance measurement position in Rotokohu Valley (indicatively at 579 Rotokohu Road subject to landowner agreement).

	They will hear the turbines at times and that will be a change to their environment. The turbines will only be at a relatively low sound level and will not interfere with activities, but we need to front up to the fact there will be some change in amenity.	
Is VE conducting an assessment on ultra-low frequencies?	No specific assessment is intended for ultra-low frequency sound ("infrasound") International literature shows that wind turbines do not generate infrasound above levels that are commonly found in the environment, and there is no evidence of effects from infrasound.	N/A
Will VE remain the operator/owner of the wind farm or will it be sold?	Ventus Energy is a private company. Glenn Starr's role, as a risk project manager, is to get offers on all elements involved in the development of the wind farm ie turbine supply etc, and then attract investment into the project. He then has the opportunity to sell down his rights to the project company. Currently he holds 100% and envisages he could sell down to around 5%.	
If there is a new owner in the future, will this affect/compromise the consents?	The resource consents apply to the wind farm, not the organisation which made the application, so the consents remain in force over the site and would not be affected by a change of operator.	
Wanted guarantee that no more turbines will be built on this site.	Instead perhaps the The 24 turbine layout has been optimised to realise the potential wind resource on this site, and there is no room for more turbines on the site.	
Wanted specifics of where and when noise monitoring was conducted.	Monitoring in March 2017 was conducted at 181A Thorp Road and 500 Rawhiti Road. This was to gain an appreciation of the existing environment used in conjunction with site observations. Full details are included in the assessment report.	Further baseline measurements for establishing noise limits will be required prior to construction, and compliance measurements will be required when turbines start operating. These additional measurements will be undertaken at three representative locations, which are proposed to be at 181E Thorp Road, 680 Rawhiti Road and 579 Rotokohu Road, if access is agreed by respective landowners. If access is not agreed alternative locations will be used.
Were different wind conditions/weather factored into the noise readings?	Yes – Sound level measurements are all analysed relative to the measured wind speed and direction in each 10 minute period during the survey. This is required by NZS 6808.	Baseline and compliance measurements will be analysed with respect to wind speeds and directions as required by NZS 6808.

Want to visit an operating wind farm. Can this be arranged?	The closest wind farm to Paeroa is at Te Uku near Raglan. VE, as a potential competitor, cannot get group access but the walk up to the turbines is open for the general public.	
Questioned why spiral turbines are not being used.	Spiral turbines are considered to be more suited to smaller blocks than large scale wind farms.	
Is it possible to conduct an acoustics plan?	Yes – prior to construction a prediction report in accordance with NZS 6808 will be prepared to confirm the sound from the final turbine type and layout (unless it is identical to the current assessment). A compliance assessment report will also be prepared once the wind farm is operating and will be submitted to the Council.	Suggested that VE volunteer and commit to consent conditions requiring a prediction report and a compliance assessment report to be submitted to Hauraki District Council.
Will VE consider acoustics plantings?	Planting has negligible effect on measured sound levels, although can reduce the perception of sound.	

**‘Meet and Greet’ for residents of Rotokohu and Thorp Roads
Monday 13 November 2017**



Summary of concerns, actions and possible mitigations –

James Thorp spoke for the group saying they were concerned that the current position of the turbines ‘surround’ them in the valley. They would have been happier had the project been on the Te Aroha side of the range.

Concern/issue	Answer/Action	Mitigation
Level of noise – asked if guarantee could be given in relation to actual levels?	Consent conditions will require that sound levels do not exceed the noise limits in NZS 6808. Comprehensive commissioning measurements also required by conditions will ensure these limits are not exceeded.	Suggested that Ventus Energy volunteer and commit to consent conditions setting noise limits and requiring compliance measurements.
Property values – question relevance of Colliers Report given it is largely based on overseas experience.	The Colliers’ report was wholistic looking at the impact of controversial developments across New Zealand eg corrections facilities and prisons, proximity to earthquake fault lines, power pylons, psychiatric housing, detention centres and the Hau Nui Wind Farm in Martinborough. Over the passage of time, research and an Environment Court ruling shows that “property values may fall for a short while but this is not sustained and after a matter of months prices return to normal”.	
What turbines have been removed from the original proposal?	Reduced from 26 to 24. Central, between Rotokohu Road and lower ridge and north end in response to concerns expressed by glider community and Tirohia School (respectively).	
Questioned how many turbines at maximum and minimum height. Concern over prominence of maximum height turbines. Concern that this constitutes ‘visual pollution’.	Seven lower height turbines on the ridgeline, and 17 maximum height turbines on the lower ridgeline. Height and placement a response to analysis of wind conditions ie to optimise the wind resource.	
Questioned scale of photomontages.	The photomontages are to scale.	
Traffic on Rotokohu Road – what is the predicted traffic flow on the road, what is the nature of those vehicles, what effect will it have on the road surface, on local users and residents (like school children) – and how will this be managed.	Ventus Energy is proposing that extra-heavy transportation be limited to one route – Rawhiti Road – to contain effects and need for bridge and roadside upgrades. Eight to 16t truck units may use Rotokohu Road and Rawhiti Road.	

	Lighter traffic – utes, cars and light trucks (less than 8t) – may use Rotokohu Road which is convenient for staff accommodation and supply of equipment from outlets in Paeroa.	
Wanted clarification on the route the turbines will take from Tauranga to the wind farm. Wanted reassurance that they will not go down Rotokohu Road.	It is proposed that the turbines will be transported to site via Rawhiti Road.	
Wanted to know the timeline for the application and how to lodge a response.	At this stage, it is hoped to lodge the application in January 2018. Full details will be published on the Hauraki District Council website including information on how to lodge a response.	
Wanted to know how they could access full expert reports.	Once the application is filed with the Hauraki District Council, all reports will be available online, to the public.	
Wanted to be notified when the application is filed.	Ventus Energy will email all residents who attended meeting when the application has been filed.	
Wanted specifics of bird and bat monitoring.	Detailed in the Report summary (below) which was provided to residents at the meeting.	.
How many wind farms are in as close proximity to communities as Rotokohu Road will be ie perception they will be surrounded 180 degrees by turbines.	Every site has unique aspects which distinguish it from others – that is why specialist, objective modelling is undertaken. The NZWEA provides a good resource for wind farms in NZ, including a regularly-updated googlemap of proposed, consented and constructed windfarms - http://www.windenergy.org.nz/wind-energy/nz-windfarms	
Concern that 'being surrounded by turbines' will reduce the desirability and value of their properties.	Refer question/answer above in relation to the impact of 'other than residential' developments on property values.	
Noise – is there difference in decibel level and tone between 90m and 180m rotations?	It is assumed "rotations" means "rotors" – i.e. wind turbine blades. Yes - There are differences between different size wind turbines. When comparing modern designs, a single large wind turbine produces more sound than a single small wind turbine. However, a single large wind turbine produces less sound than multiple small wind turbines that would be required to generate the same electrical power. Wind turbine rotation speeds are limited by the speed of the blade tip. A larger wind turbine therefore rotates at a slower speed than a small turbine, altering the timing of the blade swish heard when standing close to turbines.	N/A

Commented [j1]: Glenn – are you happy with this? What do you have in mind for 'heavy'? Concrete trucks?

	Noise effects vary between specific sites and are not universally better or worse with larger or smaller wind turbines.	
Noise – concern that the valley is an amphitheatre which will magnify the noise of the turbines.	In rural valleys people often refer to experiencing ‘amphitheatre’ effects. In many cases this relates to the fact that the area is quiet at times so sounds from surrounding activities are still audible at a significant distance. Another reason is that sheltered valleys can support the development of temperature inversions, under which condition sound propagation is enhanced. However, with respect to wind farms, strong temperature inversions only develop in stable air conditions which can only exist with low wind speeds when wind farms do not operate. They will hear the turbines at times and that will be a change to their environment. The turbines will only be at a relatively low sound level and will not interfere with activities, but we need to front up to the fact there will be some change in amenity.	Suggest Ventus Energy includes a compliance measurement position in Rotokohu Valley (indicatively at 579 Rotokohu Road subject to landowner agreement).
Is Ventus Energy conducting an assessment on ultra-low frequencies?	No specific assessment is intended for ultra-low frequency sound (“infrasound”) International literature shows that wind turbines do not generate infrasound above levels that are commonly found in the environment, and there is no evidence of effects from infrasound.	N/A
Will Venus Energy remain the operator/owner of the wind farm or will it be sold?	Ventus Energy is a private company. Glenn Starr’s role, as a risk project manager, is to get offers on all elements involved in the development of the wind farm ie turbine supply etc, and then attract investment into the project. He then has the opportunity to sell down his rights to the project company. Currently he holds 100% and envisages he could sell down to around 5%.	
If there is a new owner in the future, will this affect/compromise the consents?	The resource consents apply to the wind farm, not the organisation which made the application, so the consents remain in force over the site and would not be affected by a change of operator.	
Wanted guarantee that no more turbines will be built on this site.	The 24 turbine layout has been optimised to realise the potential wind resource on this site, and there is no room for more turbines on the site.	
Wanted specifics of where and when noise monitoring was conducted.	Monitoring in March 2017 was conducted at 181A Thorp Road and 500 Rawhiti Road. This was to gain an appreciation of the existing environment used in conjunction with site	Further baseline measurements for establishing noise limits will be required prior to construction, and compliance measurements will be required

	observations. Full details are included in the assessment report.	when turbines start operating. These additional measurements will be undertaken at three representative locations, which are proposed to be at 181E Thorp Road, 680 Rawhiti Road and 579 Rotokohu Road, if access is agreed by respective landowners. If access is not agreed alternative locations will be used.
Were different wind conditions/weather factored into the noise readings?	Yes – Sound level measurements are all analysed relative to the measured wind speed and direction in each 10 minute period during the survey. This is required by NZS 6808.	Baseline and compliance measurements will be analysed with respect to wind speeds and directions as required by NZS 6808.
Want to visit an operating wind farm. Can this be arranged?	The closest wind farm to Paeroa is at Te Uku near Raglan. Ventus Energy, as a potential competitor, cannot get group access but the walk up to the turbines is open for the general public.	
Questioned why spiral turbines are not being used.	Spiral turbines are considered to be more suited to smaller blocks than large scale wind farms.	
Is it possible to conduct an acoustics plan?	Yes – prior to construction a prediction report in accordance with NZS 6808 will be prepared to confirm the sound from the final turbine type and layout (unless it is identical to the current assessment). A compliance assessment report will also be prepared once the wind farm is operating and will be submitted to the Council.	Suggested that Ventus Energy volunteer and commit to consent conditions requiring a prediction report and a compliance assessment report to be submitted to Hauraki District Council.
Will Ventus Energy consider acoustics plantings?	Planting has negligible effect on measured sound levels, although can reduce the perception of sound.	

Aviation assessment carried out by Peet Aviation

POTENTIAL EFFECTS OF THE KWF ON AVIATION AVIATION NAVIGATION HAZARDS

Effects on Flying

- The CAANZ utilises different methods to manage aviation risks, including education, guidance and legislative tools (i.e. rules). The approach used depends on the nature and degree of the risk posed to the aviation system. Rules are generally made when setting a common standard is the best way to manage a safety risk or address an issue with the aviation system. The rules are made under the Civil Aviation Act 1990 by authority of the Minister of Transport.

- As the wind turbines may be up to 207 metres in height, the KWF would be considered to be a hazard in accordance with Rule Part 77.19(a) of the Civil Aviation Rules (1 April 2014). In this regard, any structure that is 120 metres or higher above ground level is determined as a hazard in navigable airspace.
- In previous studies related to wind farms the CAANZ determination requires that the wind farm be lit with navigation lighting and its location marked on aeronautical charts. This is considered the appropriate method to inform pilots of the hazard.

Risk Mitigation: The wind farm will likely have suitable lighting to comply with the requirements of CAANZ Rule Part 77.21(d) and appendix B and marked on aeronautical charts, this would be a CAANZ decision

Effects on Hang-gliding & Paragliding

- Establishment of the KWF would stop hang-gliding & paragliding activity from launching at the Jackson property. Hang-gliding & paragliding launch sites outside the proposed KWF site remain viable and available for use.
- Hang-glider and paraglider flight over the KWF site, where a launch is done outside the site envelope, would remain viable, provided the craft are operated at a safe height above and clear of the turbines, approximately 2,000ft.
- Flight activity at low level over the KWF site would increase risk of an incident, due to the pylons height, and vertical and downwind turbulence generated by the turbines.

Risk Mitigation: These activities remain viable from launch sites away from KWF, however, they will need to be operated in a safe manner over the KWF site, with respect to height and this is the responsibility of the pilot

Effects on Gliding

- The proposed KWF site covers an area approximately 1.5% of the overall Kaimai Ranges.
- The wind turbines are placed along the ridge lines running across the three properties.
- Due to the most consistent wind direction across the project envelope being from the South-West quadrant the airflow is into the State Park.
- Glider aircraft use the ridgelines as the wind is forced up generating uplift zones or ridge lift. In meteorological terms, this is known as orographic lift. The lift is created when the wind meets the surface of the ridge and the air rises. Wind creates a region of rising air directly above the ridgeline. This region of rising air may extend some distance upwards and outwards from its surface as the airflow follows the contour of the hill. Downwind of the ridgeline, lee waves can form, these can also be used by glider aircraft to gain height, but they should not be confused with ridge lift.

- Glider aircraft use the length of the Kaimai Ranges and across to the Coromandel Ranges for recreational and competition soaring. There are no firm statistical flight data on number of glider flights over this area, however, broad assumptions provided by the Soaring Centre in Matamata are between 600 to 10003. There are approximately 15 competition days per annum.
- Glider aircraft will operate at varying altitudes above the ridgelines in this area, depending on what operational activity they are undertaking, from recreational through to competition, which may include using the area as a turn point or transiting across the Karangahape Gorge between the Kaimai and Coromandel Ranges.
- Glider aircraft returning from the North, the Coromandel Ranges, could be expected to be at a lower height as they transit the KWF site, than glider aircraft transiting from South to North, the Kaimai Ranges to the Coromandel Ranges where glider aircraft can be expected to be at a greater height over the KWF site.
- KWF Limited have, subsequent to discussions, 18 May 2017, removed one turbine from the site proposal, this has had the effect of providing greater open distance between proposed turbines 17 and 18, approximately 1.5km apart, enabling low height glider flight between these points.
- KWF Limited recognise the importance of the area for glider flight activity, especially during competitions, and to facilitate glider activity and provide some risk mitigation from turbulence in the lee of the turbines, are open to shutting down proposed turbines 16 and 17 on some days of the year.
- KWF Limited would accept shutdown of turbines 16 and 17 in wind speeds up to approximately 12 knots (6m/s) for ten competition days per annum.
- The Matamata Soaring Centre may consider that a curtailed turbine operation speed may be safely navigated downwind between turbines 17 and 18. A regime of turbine curtailment may be appropriate - for example the turbine speed reduces to x rpm, this would increase the (wind) window for transiting through the wind farm up to 25 knots (13 m/s). This will need to be discussed between KWF Limited and the Matamata Soaring centre.
- There may be some "ridge running" activity⁴, and this has occurred over the proposed site. However, the position of the turbines will negate low height ridge running over the KWF site.
- Glider aircraft indicative tracks provided through the Soaring Centre display a range of heights over the KWF proposed site (as is illustrated in Appendix Four), the majority of which appear to provide at least 1000ft or more separation above the surrounding area. This provides sufficient height separation between the glider aircraft and turbines in the wind conditions in general found for the area.
- In greater wind conditions, in general above 20 knots, more turbulence will be experienced over the KWF proposed site, this will need to be evaluated by individual pilots and glider flights operated accordingly.

Risk Mitigation: Shut down turbines 16 and 17 on ten days per year, during glider competitions under the auspices of the Matamata Soaring Centre and with wind conditions 12 knots or less (<6m/s)

Karangahape Gorge

- The Karangahape Gorge is a known light aircraft, fixed wing and helicopter, transit between the Coromandel Ranges, to the North and the Kaimai Ranges, to the South.
- The Karangahape Gorge provides aircraft flight between the Bay of Plenty and Waikato, especially in lower level cloud conditions, but above that for flight in Visual Flight Rules (VFR).
- The KWF proposed site is approximately 6km South of the Karangahape Gorge and should not provide an impediment for aircraft flight through the Karangahape Gorge.
- In both normal wind flow conditions and direction, approximately 16 knots from the SouthWest and higher wind conditions, The KWF site will not stop light aircraft activity through the Karangahape Gorge.

Effects – Turbulence

- In winds of 15 knots (approximately 8m/s), turbulence occurs in the lee of an obstruction and may extend up to one third higher than the obstruction. Given that each of the wind turbines at the KWF lower elevation turbines, number 1 to 17, may be up to 207 metres in height, turbulence may extend to a height of approximately 275 metres above ground level. Turbines at the KWF higher elevation, turbines number 18 to 24, may be up to 180 metres in height, turbulence may extend to a height of approximately 240 metres above ground level.
- There may also be turbulence disturbance in the lee horizontal plane of the obstruction. However, such turbulence in wind conditions up to 15 knots will be mainly contained to the project site, turbines 1 to 17, given the setback or with turbines 18 to 24 through into the State Park at the rear boundary of the proposed site.
- In wind speeds above 20 knots (approximately 10m/s), turbulence can occur up to twice the height of the obstruction - which is approximately 414 and 360 metres above ground level, in the case of the wind turbines proposed for the KWF. Turbulence in the lee horizontal plane will extend for 10 - 15 times the height of the wind turbine, which is approximately 2070 – 3105 metres. Due to the local topography, this turbulence will get mixed and modified by the valleys and ridges in the Kaimai Ranges and ultimately mixed with the general wind conditions being experienced across the region.
- Turbulence can also create wind shear. The presence of wind shear can cause fluctuations in airspeed when a glider or aircraft operates within a turbulence field. Other factors such as wind direction, air density, humidity and pressure altitude will also influence aircraft performance. In this regard, wind shear generated by the KWF will not be the sole determining factor for aircraft performance when operating in the proposed site area.
- The decision to fly a glider or aircraft is ultimately that of the glider and aircraft pilot. Factors such as wind speed and direction, glider and aircraft performance, pilot skills and capability are assessed, either intuitively or through a checklist system and used by a pilot to manage flying risk and operations.

- Overall, I do not consider that glider and aircraft operations in the area will be affected by turbulence effects from the KWF in wind conditions up to 16 knots, however, the prior risk mitigation measure recommended will assist to mitigate some turbulence risk during glider competitive flying with turbines 16 and 17 shutdown. Glider operations in the area, as well as flying over the KWF, may be affected when wind speeds are more than 20 knots – which could restrict lower height level operations over the site in those wind conditions, predominately Southwest winds. Based on wind data collected for the KWF site, this would account for potentially 15% of the time, and needs to be considered against the fact that low level flight is infrequent and that 20 knots is above the normal mean wind speed for the area.
- I consider that glider operations over the proposed site would remain viable with wind speed norm being approximately 16 knots, subject to the glider pilot conducting the flight in a safe manner.

CONCLUSION

- The ridgeline on the Jackson property will not be able to be used as a launch site for hang-glider and paragliders with the location of the turbines.
- With respect to glider aircraft activity, it is my opinion that the KWF will not represent a physical obstacle to glider operations over the proposed site. Likewise, turbulence and wind shear will not be an issue when wind speeds in the area are approximately 16 knots, which is the norm. Glider operations over the proposed site may, however, be affected when wind speeds are more than 20 knots – although this would account for potentially 15% of the time, and needs to be considered against the fact that glider activity would remain viable and subject to pilots conducting flights in a safe and secure manner at an appropriate altitude.

Risk Mitigation measures:

- The wind farm is likely to have suitable lighting to comply with the requirements of CAANZ Rule Part 77.21(d) and appendix B and marked on aeronautical charts, this would be a CAANZ decision.
- Hang-gliding and paragliding activities remain viable from launch sites away from KWF, however, they will need to be operated in a safe manner over the KWF site, with respect to height and this is the responsibility of the pilot.
- Shut down turbines 16 and 17 on ten days per year, during glider competitions under the auspices of the Matamata Soaring Centre and with wind conditions 12 knots or less (<6m/s).
- Finally, I do not consider that there is any need to consider moving the location or the alignment of the proposed site or provide for a reduced project envelope.

Ecological effects assessment carried out by Kessels Ecology

Aim of the Ecological Effects Assessment

Environmental specialists, Kessels Ecology, was commissioned to undertake an ecological effects assessment of the proposed Kaimai wind farm and surrounding locality to determine existing ecological features and their relative sensitivity to the construction and operation of the proposed wind farm.

The field work for the investigation was undertaken from 2009 to 2017 enabling data to be collected across multiple years on the distribution and habitat utilisation of the locality by birds and bats. Further desktop based analysis was undertaken to determine the effects of the proposal on aquatic freshwater biota, indigenous vegetation, lizards and terrestrial invertebrates. Below is a summary of the investigation –

Effects on Vegetation

The wind farm area can generally be described as a mosaic of rolling pasture land with a number of exotic plantations and indigenous forest remnants scattered throughout. Some 72% of the site is covered in pasture. Smaller stands of secondary broadleaved forest are mainly present within the gully systems in the northern half of the site, while larger areas of logged tawa forest remain along the eastern margin of the site (i.e. the Kaimai Ranges), as well as in the southern extent of the site and near the quarry at the north-western margin of the site.

While indigenous forest and scrubland is situated within 100 m from the edge of some of the turbine locations, since all the centres of the turbines are located in the pastoral land no indigenous vegetation will be removed in the turbine footprint. No ecologically significant indigenous vegetation or nationally threatened plant species would be affected by the proposal.

The introduction of new weeds, diseases and the spread of existing weed species will need to be managed to protect the ecological health of the existing indigenous vegetation remnants in the locality.

All machinery and aggregate brought onto site will need to be cleaned, or otherwise guaranteed free of attached seed or plant matter before being brought on to site.

Provided due care and initial weed control is carried out as and when required, it is expected that the pasture or indigenous scrubland species will quickly gain a foot-hold and dominate vegetative cover along access road batters and cuts.

Effects on Freshwater Aquatic Habitats

No fish or aquatic macroinvertebrate habitats would be adversely affected provided appropriate sediment control measures are adopted. No upgrades to existing access stream crossing are proposed with the current roading design. Although water abstraction requirements have not been defined at this point in time, abstraction points should result in no more than minor adverse effects on in-stream biota provided suitable storage and/or non-fully allocated water sources can be devised and found.

Sediment control measures include, but are not restricted to, controlling run off, the prevention of slumping of batters, cuts and side casting, maintain slope stability and contingency measures for heavy rainfall events.

Effects on Lizards, Frogs and Terrestrial Invertebrates

As no ecologically significant indigenous vegetation will be disturbed during the construction phase adverse ecological effects on lizards and indigenous terrestrial invertebrates is likely to be minimal. However, it is possible that areas of non-ecologically significant vegetation (both exotic and indigenous) cleared or trimmed for infrastructure development or tower placement will include lizard and invertebrate habitat.

The consequential relatively minor adverse effects on these fauna groups can be managed through appropriate mitigation and monitoring measures. Details of these measures can be dealt with as part of the consent conditions.

Effects on Birds

According to international best practice guidelines a summary of the main bird habitat areas which should be avoided when locating a wind farm are: (1) Areas with a high density of wintering or migratory waterfowl and waders where important habitat might be affected by disturbance or where there is potential for significant collision mortality; (2) Areas with a high level of raptor activity, especially core areas of individuals breeding ranges and in cases where local topography focuses flight activity which would cause a large number of flights to pass through the wind farm; and (3) Breeding, wintering or migrating populations of less abundant species, particularly those of conservation concern, which may be sensitive to increased mortality as a result of collision.

The main bird groups impacted by wind farm developments internationally have been swans, geese, ducks, waders, gulls, terns, large soaring raptors, owls and nocturnally migrating passerines. Most resident bird species within the study site are common and widespread with the potential exceptions of New Zealand pipit, North Island kaka and New Zealand falcon, which are all found in the local area. There is a risk of collision with the turbine blades, especially along the forest edge. It is possible that New Zealand falcon and kaka will suffer occasional strike, particularly by the turbines along the forest edge of the Kaimai-Mamaku Conservation Park. Australasian bittern may be also be at risk from strike while moving between the Bay of Plenty and Kōpūatai Peat Dome. However; of these species, only pipit was detected during the bird surveys or by the acoustic surveys, so while non-detection does not necessarily mean these birds are absent from the locality, it does suggest that they may be present in low densities. While the ability of these key forest and wetland bird species to adapt to the turbines and become accustomed to associated noise and movement is likely, and the birds should be able to fly around the turbines to gain access to other remnant bush areas within the locality, there is a likelihood that strike will occur from time to time.

There is insufficient data for this site to determine the strike level, but modelling and carcass searches at other similarly situated New Zealand wind farms suggest strike rates will be low. Nonetheless, the local effects of this mortality may be more than minor on threatened species, so some form of offset mitigation, such as a contribution to local animal pest control to increase bird productivity, is recommended.

The impact of the wind farm on migratory birds is dependent on any flight path these species may take between key habitats in the Bay of Plenty and Firth of Thames. Wader and shorebird species, such as bar-tailed godwit, wrybill and South Island pied oystercatcher, may move between the Firth of Thames and Tauranga Harbour on a regular basis and in doing so traverse the proposed windfarm footprint. The sound recorders detected two flocks of South Island pied oystercatchers crossing the proposed wind farm site on one occasion in January 2013, from a total recording effort of some 4,000 hours. These detected South Island pied oystercatchers were crossing the southern section of the windfarm over the Kaimai range. This indicates that the site is likely part of a seasonal commuting route for waders between the Haruaki Gulf and Tauranga Harbour.

Initial strike risk analysis at similar New Zealand sites indicates that turbine strike is possible for wader species and it will be in the range of less than 2-5 birds per annum for the proposed Kaimai wind farm. This level of strike risk is considered to have a minor adverse effect on the target shorebird species. However, given that several species are threatened, such as wrybill, offset mitigation may be required to compensate for any residual adverse effects on wader bird species. Quantification of this offset can be addressed at the consenting stage, but could involve a contribution to conservation activities by community groups at Miranda, which is a key site for international and national wader birds.

Effects on Bats

The nationally threatened North Island long-tailed bat is known to be present within the Kaimai Ranges and was detected during the surveys for this proposal. The survey results showed longtailed bat activity during 4-17 January 2013, and from 22 September to 27 October 2015 at the study site. In the 2015 survey 63% (eight) of all of the surveyed sites contained long-tailed bats, while in the 2013 bat survey 55% (11) of the sites contained bats. In total 59% (19) of the surveyed sites detected bats. No publicly accessible studies have investigated the impacts of wind farms on the spatial use of either of New Zealand's native bat species. Therefore, it is not clear whether avoidance behaviour occurs in either native bat species.

Based on review of international studies it is considered possible that long-tailed bats will suffer mortality as a result of interactions with the turbines. Thus, bats are considered to be at moderate risk of being killed or injured by turbine strike at this proposed wind farm site. A combination of habitat restoration and pest control would enhance the local North Island longtailed bat population, producing a healthy source population which could mitigate against any declines at the proposed wind farm site.

Avoidance, Remediation and Mitigation Recommendations

The proposed Kaimai wind farm is situated within a largely pastoral environment, heavily modified by human activities and animal pests. No ecologically significant or legally protected natural features will be directly affected by the proposed wind farm. However, there are several threatened birds and one bat species which could be adversely affected by the turbines in the form of turbine blade strike. The biodiversity consequences of this risk are low to moderate at a local level, and the effects are likely to be minor at a regional, national and international scale.

It is recommended that measures are taken to avoid, remedy or mitigate the adverse effects of turbine strike on these key animals and their habitats, as well as address the localised potential adverse effects associated with construction. A range of measures that will avoid, remedy or mitigate the adverse effects of the project (inclusive of the wind turbines, access roads and the transmission lines) are required. They should include:

- Ensuring all aspects of the construction and operation of the wind farm minimise any potential adverse effects associated with indigenous flora and fauna habitat disturbance, sediment runoff, water abstraction and stream crossings (if any);
- Preparation and implementation of a mitigation package to compensate for potential turbine strike on key indigenous fauna which incorporates enhancing productivity of the target species through ongoing animal pest control and ecological enhancement of targeted natural features; and
- Monitoring of key fauna species, as well as carcass searches under the operational turbines, for a specified period, in order to ensure that the risks associated with the operation of the wind farm are low and to allow for adaptive management risk minimisation contingencies if required.

Acoustics assessment carried out by Chiles Ltd

At all receivers, the predicted wind farm sound levels comply with the fixed part of the NZS 6808 wind farm noise limit (40 dB LA90). This finding is applicable to the modelled Siemens' turbines, and as the predicted levels are at least 2 dB below the limit, it also holds true for the alternative Gamesa or Vestas' turbines. As the variable part of the limit ('background + 5dB') can only increase the limit above 40 dB LA90, the predictions also demonstrate compliance with that part of the noise limit. As these limits have been set in NZS 6808 to provide protection from sleep disturbance and maintain reasonable residential amenity, the predicted wind farm sound levels should be acceptable, with any of the proposed turbine models (Siemens, Gamesa or Vestas).

While the predicted wind farm sound complies with the noise limits, it will still be audible at times. This is common for all sound sources controlled by district plans which set absolute limits, rather than requiring inaudibility, which would not be a sustainable criterion. In this instance, as the wind farm noise limits are relatively low the wind farm sound would only be quietly audible. Even that scenario is still for a worst case of the maximum wind turbine sound power in downwind conditions. Wind conditions vary, and for receivers that are up-wind and at times

of lower wind speeds, the sound levels and audibility would be reduced. Furthermore, the wind farm would generate negligible sound under calm conditions and generally would not be audible at the most sensitive times such as on a still summer's evening. In the context of this area with typical rural characteristics, wind turbine sound that is quietly audible should not cause disturbance or cause undue annoyance.

For activities such as the golf course on Rotokohu Road, occasional wind farm sound quietly audible should not interfere with the activity.

No literature has been found that shows a link between wind turbine sound and adverse effects on honey bees. While online articles include assertions of an effect, no scientific evidence has been found of a causal relationship.

Conclusions

Chiles Ltd has assessed sound from the proposed Kaimai Wind Farm near Tirohia. The Hauraki District Plan does not include noise rules that can be applied to a wind farm. Therefore, the assessment has been based on the New Zealand wind farm noise standard NZS 6808. This standard is referenced in the Matamata Piako District Plan.

The existing environment has been found to be typical of a rural area. A survey during March 2017 showed elevated background sound levels due to cicadas, but analysis of audio recordings to remove the influence of cicadas indicates that sound levels are likely to reduce to more common rural levels at other times of year.

A computer model has been used to predict sound levels for the maximum sound power of indicative wind turbines. The wind farm sound levels are predicted to comply with a 40 dB LA90 noise limit, for three wind turbine options currently under consideration (Siemens, Gamesa and Vestas).

On the basis that predicted sound levels comply with NZS 6808, which recommends limits to protect health and reasonable amenity, the noise effects of the Kaimai Wind Farm are considered to be acceptable in this environment.

If consent is granted, it is recommended that conditions should be imposed to ensure noise effects remain in accordance with this assessment.

Colliers' assessment on impact on property values

CONCLUSION

Research which has been undertaken indicates that in New Zealand thus far, experiences show that there will be no or negligible long term ongoing negative value impacts on the values of rural properties surrounding the proposed Kaimai Wind Farm, caused by the wind farm being visible to the rural properties or parts of properties, as per the information we have perused.

NEW ZEALAND RESEARCH

Over the last ten years in New Zealand, we have not been able to track down any new independent academic research which has been undertaken on the impact of wind farm development on adjacent property values. The only study completed to date that we are aware of, was prepared by Iona McCarthy, (of Massey University, titled “The Impact of Wind Farm Development on Adjacent Property Values – Manawatu and Taranaki Region 2006”).

The report undertook extensive research on the topic and concludes that there is minimal negative impact (if any) of wind farm development on surrounding land and property values. These studies involved rural residential and residential surroundings.

INTERNATIONAL RESEARCH

Overseas, a body of research is being built up involving the impact of windfarms on surrounding property values where the nature of the properties cover a relatively wide range, and the conclusions are fairly contradictory.

Some reports conclude negative value effects, and others conclude no negative value effects or value increases.

The reports concluding generally no long term negative effects involve properties located in Massachusetts, El Paso County, Colorado, Windy City, and a further Massachusetts report some four years later.

Conversely, a proposed windfarm to be established on Galloo Island, Lake Ontario did not proceed which was to involve 31 turbines located off shore of Henderson, a holiday home town where boating and fishing and the beautiful lake views were the attraction for the residential occupancies. Another study indicated that falling values were also experienced in northern New York state, as indicated by an analysis of 11,331 property transactions over nine years.

The largest study we have been able to locate involved a “Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States. “(U.S. Department of Energy, August 2013). Data was collected from more than 50,000 home sales among 27 counties in nine states.

These homes were within 10 miles of 67 different wind facilities, and 1,198 sales were within 1 mile of a turbine – many more than previous studies had collected. The findings were that: “regardless of model specification, we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods.”

It is our understanding from the findings from the most recent reviews, that individuals who perceive wind energy as a clean source of power have a more positive perception of it. Also, where the windfarms are small and remain quite novel, and there are not many of them in the vicinity, perceptions are also more positive. And where people purchase properties specifically for their beautiful views (as opposed to their rural amenity, for example), perceptions will of course be more negative if the beautiful view is impeded or obstructed. Noise effects on health are also a matter which are of concern to some.

Wind farms do tend to be established in rural areas, and this is no doubt why most of the value impact studies concentrate on rural uses.

OLDER EXAMPLES

Turning to wider and older background examples, “What is the impact of Wind Farms on House Prices?” was the title of a study by Dent and Sims (commissioned and published by the Royal Institute of Chartered Surveyors in March 2007). The study focussed on the question of distance and value effect with particular respect to residential properties, in Cornwall, England.

Despite initial evidence that there was an effect, when they investigated more closely, there were generally other factors which were more significant than the presence of a wind farm.

Insofar as there was any impact on prices, the results seemed to show that it was most noticeable for terraced and semi-detached houses, with there being a significant impact on properties located within a mile of a wind farm. The effect seemed less marked – if at all, for detached houses. The research also highlighted that, to some extent, wind farm developers are themselves avoiding the problem by locating their developments in places where the impact on prices is minimised, carefully choosing their sites to avoid any negative impact on the locality.

An interesting observation provided by the research related to analysing objections to wind farm applications, where over time it was observed that “In very few cases are the objections from local people. People from Scotland are objecting to wind farms in Cornwall”.

A further comment widely observed has been that attitudes of property owners are influenced if they have a financial stake in the electricity generated. These expressed little or no objection to the presence of the turbines.

Poletti (2005) is the only reported quantitative study of the impact of wind farm development on rural and rural residential property. He compared the sale price per acre of properties of 5 to 20 acres and properties of greater than 20 acres in a target area, to a control area. His statistical comparison showed no significant difference in sale price per acre between the target and control areas.

In Katri’s survey of Chartered Surveyors in Great Britain, 68% of respondents stated that a wind farm development would have no impact on the value of agricultural land.

Pedden (2006) summarised 13 studies of the economic impact of wind farm development on rural communities and found that wind installations do create a large direct impact on the economies of rural communities. They create another industry that contributes positively to the local tax base and local business.

Northwest Economic Associates (2003) studied the economic impact of three USA wind farm developments. The study found that only a very small reduction in farm income would occur due to land being taken out of agricultural production by site occupancy and concluded that this

would have only a very small effect on farm values. If the turbines provide a potential future income stream to the farm property this would mitigate the above, plus the income would be expected to be capitalised into the value of the farmland.

Hoehn (2006) has also completed one of the more comprehensive quantitative studies to date. He analysed 280 bona fide residential property sales using a hedonic regression model. Sales occurred over a 9 year period before and after the wind farm development and were located within a 5 mile radius of a 20 turbine wind farm in Madison County, New York.

He endeavoured to eliminate many of the limitations of previous studies by using only bona fide sales data, ground truthing the view-shed, (verifying the information by way of physical inspections) including distance to turbines as a variable and analysing data using the hedonic model. He concluded that in the community studied, there is no statistically significant relationship between sale price of residential property and view of or distance to the wind farm.

CASE STUDY: HAU NUI WIND FARM, MARTINBOROUGH

Some years ago, we undertook a case study on the impact of the Hau Nui wind farm south east of Martinborough on surrounding rural property values, with the assistance of Phil Guscott, rural registered valuer from the Wairarapa Property Consultants.

This involved examining all of the farms which had sold over recent years and comparing the analysed sale prices (into stock units and area rates) from properties close to (and encompassing) the wind farms, with those further away. The sales were divided into three groups – properties directly adjoining and encompassing turbines; properties a short distance away which can see the turbines and properties further away which have no view or a distant view only of the turbines.

Based on our research and our wider market investigations, there was no evidence to show that the properties directly adjoining and beneath the wind farm and turbines at the Hau Nui wind farm achieved sale prices any lower than properties which may be said to be in no way affected.

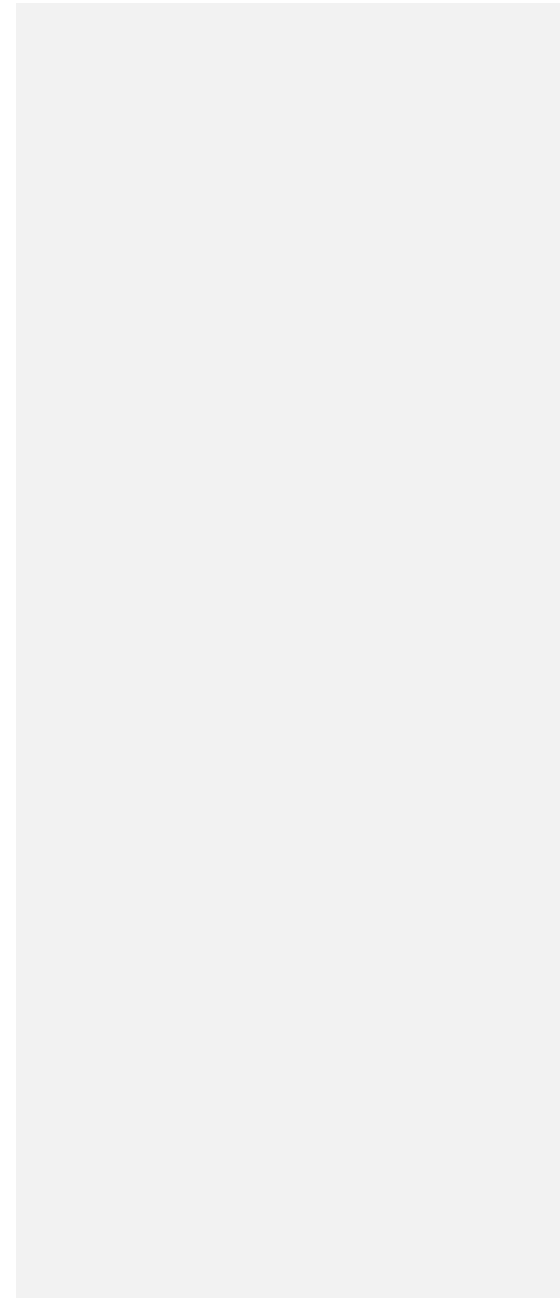
Comments from the vendors and purchasers of the properties closest to the Hau Nui wind farm indicate no value impact was perceived by either. The wind farm was noted as a visual point of interest amongst the hills of the horizons; and a reminder of the modern world to the somewhat isolated rural inhabitants.

The surrounding rural area contains many hills, ridges and skylines if an observer chose not to look at the turbines.

In summary, studies have shown that there may be a potential difference in the impact on property values arising from the proximity of wind turbines, depending on the property type. Rural properties have been shown to be least affected of all; and in some studies affected positively. Lifestyle blocks generally occupied by city office workers may potentially be affected if turbines are within hearing distance or very close to dwellings, at wind farms close to cities. At some other lifestyle locations, however, not near cities; where wind farms have been established nearby, such as at Te Apiti near Palmerston North, no fears over value erosion have arisen or been expressed in the resource consent process. It

appears (and this is borne out from anecdotal experience) that residents largely support the environmental benefits derived from sustainable electricity generation.

In conclusion, Colliers' introductory study has confirmed earlier findings that there are no discernible negative value impacts on rural property values caused by wind farms being visible to parts of properties.



Meeting Minutes



Meeting Title: Consultation with Ngati Tamatera

Date: 24 January 2018

Location: Hauraki Maori Trust Board offices, Belmont Road, Paeroa

Attendees

Name	Organisation
Liane Ngamane (LN)	CEO Ngati Tamatera
Clare Bayly (CB)	Ventus Energy
Jack Turner (JT)	Tektus

No.	Item	Action
1	<p>LN apologized for not responding sooner to communication from VE about the proposal to construct a wind farm on the northern reaches of the Kaimai Ranges. She had an overview of the proposal saying her concerns centered around cultural landscapes/heritage and items of wahi tapu.</p> <p><i>Examples of cultural landscape include the ridgeline of the Ranges which are considered to form part of the tribe's waka.</i></p> <p><i>Wahi tapu (places sacred to Maori in the traditional, spiritual, religious, ritual or mythological sense) include nine identified sites within Ohinemuri, two in the Rawhiti Road area – all defined on Maori land maps.</i></p>	
	<p>LN stressed value of VE demonstrating value/benefit to local Maori eg cultural recognition (carvings, story of Maori involvement in the area) at the site of the Rawhiti Road bridge, Wrights Road redevelopment etc.</p>	
2.	<p><u>Recommendations</u></p> <ul style="list-style-type: none"> Agreed with the recommendation of Ngati Ngahutoitoei Marae that a hui involving three iwi (Ngati Tara Tokanui, Ngati Tamatera and Ngati Haku) will be held at Ngati Ngahutoitoei Marae on 11 February. The aim of this hui will be to discuss the proposal and the development of a CVA which will be presented to GE at a later hui. 	
8.	<p><u>Actions</u></p> <ul style="list-style-type: none"> Obtain map of Treaty of Waitangi Claims and overlay this with the KWF site map. 	CB/JT
	<ul style="list-style-type: none"> Obtain Kaimai Conservation statutory acknowledgement over Kaimai (part of the Hauraki Collective Deed). 	CB/LN
	<ul style="list-style-type: none"> Obtain map of Maori freehold land and overlay this with the KWF site layout. 	JT
	<ul style="list-style-type: none"> Provide overlays (claims and Maori land) to LN before the 11 February hui. 	JT
	<ul style="list-style-type: none"> Provide LN with Ecological Report 	CB
	<ul style="list-style-type: none"> Provide LN with archaeological report 	CB
	<ul style="list-style-type: none"> Agree to cover the cost of food for the hui on 11 February (LN will provide costings) 	GS



19 December 2017

Nancy Gage
Te Moananui Flats Road
PAEROA

Kia ora Nancy

I work for Ventus Energy which is proposing to construct a wind farm on the northern reaches of the Kaimai Ranges at Tirohia. I met your nephew at a recent meeting with residents of Rotokohu and surrounding roads and promised him that I would contact you with the latest information.

We have been communicating with Iwi in the area and Ngati Hako is considering a Cultural Values Assessment.

We have also been communicating with residents via Community Update Newsletters and these should have reached you, but I enclose the latest.

I also enclose a copy of the Q&A from our meeting with Rotokohu Road area residents and an information pack on the proposal. Please share and discuss this with your hapu.

If you have any concerns or questions please don't hesitate to contact me on email (clare@baylyandco.co.nz) or mobile 027 499 8862.

Nga mihi

Clare Bayly
For Ventus Energy

Meeting Minutes



Meeting Title: CVA update

Date: 18 April 2018

Location: Paeroa

Attendees

Name	Organisation	Interest
Clare Bayly (CB)	Ventus	Wind Farm
Pauline Clarkin (PC)	Ngati Hako	CVA

Windfarm Proposal - Ngati Hako Summary of Key Issues

No.	Item	Action
1	Purpose of meeting To gain an update on Ngati Hako's CVA.	
2.	Pauline reinforced the points raised in her email summary of the CVA which Ngati Hako will lodge once the RMA process is formalized (below).	
3.	Essentially she contends there are no mitigations which would over-shadow the concerns of all five iwi to the erection of turbines on the ridgeline which, in cultural terms, represents the tail of the taniwha.	
4.	Ngati Hako also have concerns about the impact of the turbines on the mist which the range is known for, and which has cultural significance to Maori representing the spirits of their ancestors.	
5.	PC believes the site is a protected landscape under the District Plan.	

Introduction / Background

Ventus Energy is about to complete investigations and submit a resource consent application for the proposed 100MW Kaimai Wind Farm. Map attached as Appendix One. The proposal is to install up to 24 wind turbines on farmland at the northern end of the Kaimai Ranges. The original proposal sought to install up to 26 wind turbines. However, after consultation with affected parties, this has now been reduced to 24.

Nominally, the turbines will have a hub height up to 132m with a rotor diameter of between 136 and 150m. The final number of turbines, exact location and size will be determined following further investigation and consultation. The site is privately owned and farmed by three separate landowners. The grid connection will be via the existing 110kV lines that pass over part of the landholding.

Te Kupenga o Ngati Hako Inc.

Te Kupenga o Ngati Hako Inc. is the mandated iwi organisation that represents the social, cultural, economic and environmental interests of Te Kotahitanga Marae, Paeahi Marae, Kerepeehi Marae as well as the iwi, hapu, whanau and individuals of Ngati Hako.

Ngati Hako are the original peoples of the Hauraki region and have maintained a relationship with the land, rivers, seas, mountains and people since time immemorial.

Te Kupenga o Ngati Hako Inc. engaged with the applicant at the early stages of the development of this proposal (2015?) and raised a number of concerns regarding the proposed development. The applicant made contact with Te Kupenga o Ngati Hako Inc. in 2017, to discuss the proposal in further detail.

Purpose of Assessment

The purpose of this assessment is to identify the effects of this proposed application on Ngati Hako / tangata whenua cultural values and potential mitigation/recommendations (if any) that could be implemented by the applicant to mitigate tangata whenua concerns.

Historical Background

The Kaimai Mamaku range is an area of high spiritual and cultural significance to Hako. The range traversed north to Ohinemuri, eastwards to Katikati-Te Puna, south to Wairere incorporating the Waihou river to the west.

Hako had a number of pā (marae), kāinga (villages), wāhi tapu (sacred places), urupā (burial places), pa tuna (fish gathering areas), waahi rongoa (healing places), sacred healing, cleansing and waahi mate (places for preparing for death) areas for cosmo travelling surrounding and within the Kaimai-Mamaku ranges. Hako whānau (families), hapū (subtribes) and iwi (tribes) settled, held mana (authority) and exercised kaitiakitanga (guardianship) over their places of the Kaimai-Mamaku range and surrounding kāinga (villages).

The ranges vibrant indigenous forests and numerous streams, lakes and waterfalls provided an abundance of native flora and fauna and a plentiful “pataka kai” (cupboard) for our people to access on a daily basis.

Ancient walking tracks were established throughout the Kaimai-Mamaku range which were utilised by Hako. Historically, four main walking tracks were used to travel within the tribal region and further.

Te Aroha maunga (mountain) is the highest mountain peak in the Kaimai-Mamaku range and is one of two prominent maunga of significant importance to Hauraki iwi.

The importance of these maunga are articulated by the following proverb “Te Aroha ki uta, Moehau ki tai – From Te Aroha inland to the peak of Moehau near the sea”.

Historical traditions refer to Moehau as the bow and Te Aroha as the stern of the waka (canoe) of the Hauraki people. The peaks and mountain ranges between these peaks form the important cultural landscape of Hauraki.

A number of important peaks of cultural and spiritual significance to Ngati Hako are located within the area which is subject to this proposal. These mountains include Te Aroha, Pukemokemoke, Raeotepapa, Karangahake, Pukehange, Tapu Ariki and Taumaharua. These mountains form the Kaimai-Mamaku range and link to Te Paeroa o Toi-te-Huatahi range located to the north. These peaks form the important cultural landscape of Ngati Hako.

Key Issues for Ngati Hako

- Ngati Hako place high value of the cultural landscape of Hako and Hauraki. The wind turbines will affect the cultural landscape of Hako. The aesthetic value will be impeded and may have detrimental effects on the cultural values associated with the peaks and mountain ranges.
- There are **potential effects** on the tohu and kaitaki located and associated with the Kaimai Mamaku mountain ranges. Tangata whenua rely on tohu (indicators) for weather, tangata (people) and whenua (land). These tohu have been a significant part of our culture and traditions since time immemorial.
- For Ngati Hako, te uira (lightning) ua (rain), and kohu (mist) are important tohu used to caution and notify iwi of impending news. The proposal will have potential effects on the weather patterns and our ability to read these tohu.

- Pauline has stressed the high importance of the area to iwi and encouraged the company representatives to make contact with Ngahutoitoi Marae representatives as soon as possible.
- There are no mitigating factors that gives effect to the cultural values, and the potential to lose the spiritual and cultural connection to the whenua through the wind turbines.
- There is no economic benefit to Ngati Hako. There is already power generation occurring at Tirohia that contributes to the national grid. The economic benefit is to private individuals that have agreed to have these turbines places on their land.

Meeting Minutes



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Attendees

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Commented [MW1]: general

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Commented [MW2]: more specific to site but where are these features and how does the site fit within the cultural landscape referred to.

Key Issues for Ngati Hako

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Commented [MW3]: Conditionally framed

Commented [MW4]: How are these affected, a bit like RF issue.

Commented [MW5]: Regardless of weight, can this be investigated objectively

- Pauline has stressed the high importance of the area to iwi and encouraged the company representatives to make contact with Ngahutoitoi Marae representatives as soon as possible.
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Commented [MW6]: General again.

Commented [MW7]: Bulls eye.

Meeting Minutes



Meeting Title: Potential sponsorship of Paeroa Highland Games

Date: 6 June 2018

Location: Paeroa

Attendees

Name	Organisation	Interest
Clare Bayly (CB)	Ventus	Wind Farm
Margarete Ford	Highland Games	Secretary
Denese Taylor	Highland Games	Treasurer

No.	Item	Action
1	<p>Introduction -</p> <p>The Paeroa Highland Games and Tattoo started out as a small Pipe Bands Competition and has grown over the last 25 years to become a fully-fledged Highland Games, one of only seven such Scottish gatherings in New Zealand, and the only one in New Zealand to hold an Evening Tattoo.</p> <p>Held on the first Saturday in February each year, the event regularly attracts an audience of more than 10,000 people. It is a major undertaking by a small team of passionate volunteers, proceeds from which are distributed back to the community.</p> <p>Until 2018 the event has been self-funding; however this year's event rained with a consequent reduction in public attendance. The committee was able to meet costs – just – but the experience made them realise that sponsorship is critical for the future.</p> <p>The sponsorship package is relatively unstructured at this point – KWF the first potential sponsor to be approached. Generally they are seeking support ranging from \$1,000 to \$40,000. Their ideal would be one principal sponsor who would commit \$40,000 and, in return, receive naming rights but they concede that 'the biggest sponsor' will receive naming rights.</p> <p>Regardless of the amount of donation, each sponsor will feature in TV, radio and print advertising which extends across NZ and into Australia from November onwards, banner placement at the event, promotion on two large screens at the event and the ability to have a stand promoting the organisation.</p> <p>Their preference is for sponsors to commit to ongoing support but appreciate that, in the case of KWF, this depends on the success of the AEE and may initially be for one year only.</p>	
2.	<p>Recommendation</p> <ul style="list-style-type: none"> This is one of the highest profile events on the Hauraki Plains. It would give KWF high exposure and promotion as an organization investing in the local community. 	
8.	<p>Actions</p> <ul style="list-style-type: none"> Glenn Starr to consider appropriateness of sponsorship, amount, duration of sponsorship and promotional requirements. 	