Special Community Board Meeting 7 May 7pm Ohariu Valley Hall

Questions to Meridian

TURBINE LAYOUT

1 *Can you guarantee that no more turbines will be located within the 5 combined properties than the turbines currently applied for?*

Within the boundaries of the site that is proposed Meridian has evaluated the best sites to place turbines and has settled on 31 turbines, these have been applied for in the resource consent application. At this moment in time we can guarantee that we are not applying for any more turbines within the site. Given the constraints on siting turbines in such an area it is unlikely that more will be built and if they are they will need a resource consent.

2 *Page 25 of Meridian Energy's Application includes a map that appears to show that the project is closer to Makara residents than Ohariu residents, but location descriptions in words, for instance also on page 25 and paragraph 3 of Form 9 do not mention Makara at all. Are the turbines closer to Porirua than Makara?*

No, (Makara township is approximately 6km and Porirua is roughly 9km).

3 *Would you clarify?*

a) what is the distance between Makara Road and the closest turbine to Makara Road?

Turbine F13 is approximately 1.3km from Makara Rd.

b) what is the distance between the closest home in Makara to a turbine?

Turbine F13 is approximately 1km to northernmost homes at Makara Beach.

c) what is the distance between Takarau Gorge Road and the closest turbine to Takarau Gorge Road?

Turbine G04 is approximately 650m to Takarau Gorge Rd.

d) what is the distance from the southern boundary of the Mill Creek site and the northern boundary of the West Wind site? (i.e. the closest distance between these two site boundaries)

About 720m, note that it is ~2.5km between the nearest turbines in each project.

e) How many homes (owners with non vested interests) are within 2 km of one or more turbines

77 dwellings.

4 How many of these homes are in Makara and how many in Ohariu Valley

53 on Makara Beach Rd, 24 in Ohariu Valley or on Takarau Gorge Rd.

5 How many turbines are within 2 km of one or more homes?

15 turbines from Mill Creek within 2km of dwellings.

6 Will Meridian agree to not build turbines that are within 2 km of homes where owners do not have a vested interest in the development?

Information on the design criteria used by Meridian when developing wind farms is included in section 7 of the Assessment of Environmental Effects report (AEE). There have been a range of minimum distances put forward by various parties as recommended setbacks of turbines from dwellings. These distances are arbitrary and fail to take into account topography and the location of dwellings in relation to the turbines. Meridian assesses each turbine in relation to the surrounding area taking into account a range of factors, including potential noise and visual effects.

7 Windcorp Directors have suggested that four to five of the turbines near to the community are likely to be removed to appease the community. Is this true, and if so, why were they not removed from the proposal before application.

Meridian was chosen by the Windcorp Directors to develop a wind farm on the land under the control of Windcorp. Meridian has developed this wind farm in line with its previous developments and assessed the impacts accordingly. Meridian is responsible for the layout of the wind farm and indeed its economic viability and has not been party to any discussions where the Windcorp Directors have suggested the removal of any turbines. There are no plans to remove any turbines from the proposal.

NOISE

1 The AEE states that recent background noise shows that at 6mps wind speeds at the turbines, conditions of under 25dBA have been indicated at certain residential testing points in the Valley. It then says that according to Project West Wind conditions a sub-6808 noise restriction of 35dBA would apply at residences. The application does not mention that the West Wind condition, the wind speed at the residence must be less than 1.5mps for this to apply. Do you think that the 1.5mps wind speed at the residence restriction is necessary, and if so, why.

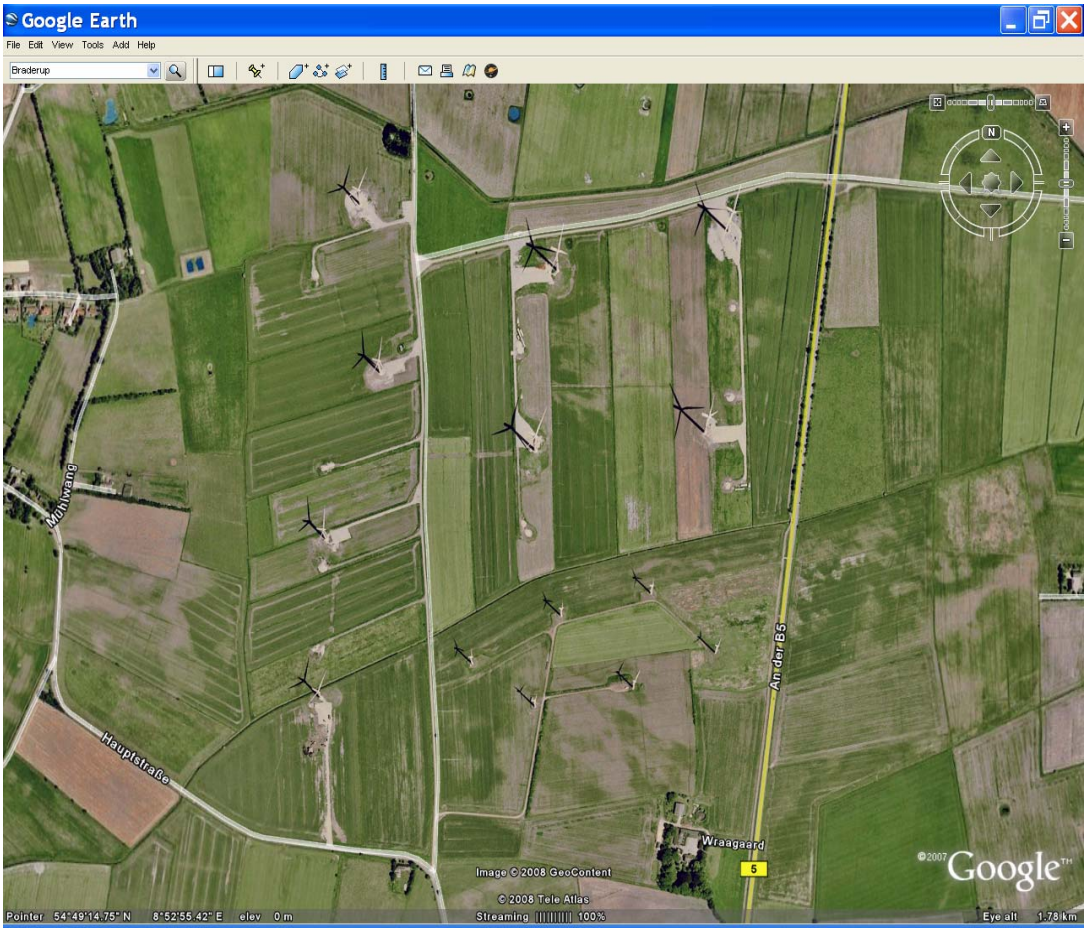
The ongoing work relating to West Wind with the measurement of wind speed and noise levels within the valley will indicate whether the requirement to measure wind speeds in the valley is necessary.

Additional measurements have been undertaken at four locations (to date) for the Mill Creek Project which include wind speed measurements close to two of the noise measurement locations. This data is currently under review.

If the West Wind conditions, including the “sub6808 conditions” were adopted for Mill Creek there would be a requirement to measure local wind speed to determine the times when the local conditions were less than 1.5 m/s.

2 *Can Meridian provide full specifications of the test data that generated the noise output ratings used in their predictions? ie.*

a) where it was tested, Braderup, Germany
b) what topography was it located on, Relatively flat



c) what wind conditions were encountered, Wind speeds sufficient for turbine operations
d) what speeds was it measured over, 4 – 9 $m.s^{-1}$ measured at 10m agl.
e) how many turbines were operating at the time, only turbine under test
f) any other significant aspects. No

3 *Para 2.2.3.6 Malcolm Hayes evidence refers to a World Health Organisation finding about infrasound in the report “Community Noise”. That report also finds that there is a health issue with noise (from outside) in bedrooms at night.*

a) what is the maximum noise level that will not be exceeded by turbine noise in bedrooms at night? Please provide this figure both with windows open and with windows shut.

The maximum predicted noise level at any dwelling neighbouring the Mill Creek Wind Farm is 37.5 dB L_{Aeq} at an external location. Allowing for typical reductions from outside to inside will result in levels of around 27.5 dB L_{Aeq} (windows open) to 17.5 dB L_{Aeq}, (windows closed). This is for the rated power operating condition of the wind turbines, i.e. during high wind speed conditions.

b) will Meridian Energy guarantee that noise levels from turbines heard within bedrooms of all homes in Makara and Ohariu Valley will not exceed WHO recommended limits?

Guarantee of external noise levels is appropriate and this is set out in the conditions imposed on the project which are required to be met. Internal noise levels will depend upon a number of variables which the operator has no control over, i.e. room finishes, building construction materials, internally generated noise levels, etc.

c) Can Meridian Energy guarantee that there will be no vibration effects for residents?

There will be no ground induced vibration effects associated with the operation of the wind turbines that are perceptible to humans. However, with sensitive measuring equipment, vibrational energy associated with the operation of the wind turbines will be detectable within the ground.

4 Para 2.2.2 Malcolm Hayes evidence refers to "strict warranties being given by manufacturers in respect of noise emission".

a) what warranties have Siemens given to Meridian Energy in respect of this development or these particular turbines?

The details of the noise warrantees are commercially sensitive to both Meridian Energy and Siemens. Meridian will obtain a warranty for the noise from the wind turbines and this will cover both the sound power level and the spectral content (or tonal content) of the wind turbine.

5 *What post build surveys have Meridian conducted in other wind farms comparing the accuracy of their predictions against actual effects encountered and what are the results.*

Hayes McKenzie Partnership, (HMP) which has completed the predictions for Project Mill Creek have undertaken post construction noise surveys at over 27 operating wind farms since 1994. So far, HMP have not measured noise levels that exceed their predictions when measured in accordance with the method described within NZS6808:1998. These noise surveys have been completed in a range of different terrain classes, some of which are similar to that around the Mill Creek site.

6 What studies has Meridian undertaken on the issues of amplitude modulation and low frequency infra sound noise radiation for multiple turbine sites and can you direct us to those studies, and provide a summary of the results.

HMP has undertaken measurements of LFN within the UK.

http://www.berr.gov.uk/energy/sources/renewables/explained/wind/onshore-offshore/page31267.html

AM Studies in UK

http://www.berr.gov.uk/files/file40570.pdf

HMP has undertaken infrasound measurements as part of the calibration proves for the study undertaken at Eskdalemuir.

http://www.esci.keele.ac.uk/geophysics/dunlaw/index.html

HMP has also undertaken infrasound measurements at a number of other wind farms and receptor locations to demonstrate the levels associated with operation of modern wind turbines.

7 If noise levels are experienced that exceed the resource consent conditions, what will the process be to reduce the noise to compliant levels?

In the event that noise consent conditions were breached the resolution process would be along these lines:

- Is the breach due to the absolute levels or a tonal or some other special audible characteristic (SAC)?
- If it was due to a SAC, determine the turbine causing the problem and rectify the fault.
- If it was a result of the absolute level, determine the time day, wind speed and wind direction which caused the breach.
- The closest turbine would then have its sound power level reduced for the conditions during which it breached its conditions. If the change to one turbine was insufficient the change would be applied to other turbines. The change is made by modifying the turbine's power curve by reducing the rotational speed.

8 Are there any on going noise problems with the Te Apiti wind farm, and if so, what is the process for managing noise levels and how has this process performed?

Meridian has undertaken additional measurements around Te Apiti. The wind farm continues to comply with its resource consent conditions. Meridian did introduce a change to the wind farm control at Te Apiti during conditions that were shown to be causing a limited number of complaints. There are still a limited number of complaints and Meridian generally discusses these with the complainant.

Meridian operates another wind farm which uses turbines more similar to those to be used at Mill Creek and that project continues to operate without noise issues. The active stall turbines at Te Apiti are very different to those proposed for Mill Creek.

9 *Explain the means by which these turbines will be controlled in the event that the residents of the valley are disturbed by noise emissions from the wind farm? This question is asked because the Hayes McKenzie Noise report (Appendix 1 Page 18) is silent on the means by which control will be affected. There is no noise management plan and therefore this clause does not provide residents any means of assessing whether Meridian have responsibly addressed the issue of control after commissioning.*

To reduce wind turbine noise for specific wind conditions, the site met mast can be used to determine the prevailing weather conditions. Controls for specific wind conditions can be set within the turbine such that it may operate in a lower noise mode. This will reduce the noise from specific wind turbines and thereby noise at specific receptor locations neighbouring the proposed site. Again, the noise level of a turbine can be reduced by lowering its rotational speed. As for West Wind, a noise management plan will be prepared prior to the commencement of the wind farm.

10 *Can Meridian explain whether their consultants have accounted for the affect of "Inflow" turbulence when inserting the source noise into their prediction model? (Hayes McKenzie Noise Report Appendix 1 Page 6). If so, what corrections have been applied? This question is raised because the Delta Noise Study was conducted with the turbines installed in a flat landscape and were operating under laminar flow conditions. At Mill Creek, the turbines will not be operating in laminar flow conditions.*

The inflow turbulence conditions described by Mr Hayes gives examples of inflow turbulence due to high wind shear, yaw error and wake effects. The wake effects have been considered in the layout of the Mill Creek wind farm and they are low. The turbines proposed for project Mill Creek have a very robust yaw mechanism and yaw error is not expected to be an issue for the selected turbine on this site. Furthermore the wind directions at Mill Creek prevail in two dominant directions and therefore reduce issues around possible yaw errors. It is the wind shear issue that potentially has the largest effect here. Paul Botha presented a paper on this matter at a wind turbine noise conference in Berlin. The paper deals with wind shear and issues around high wind shear for noise predictions a matter sometimes called the Van Den Berg effect. Malcolm Hayes has converted the 10m wind speeds to their hub height equivalents using the measure site wind shear.

11 *Could Meridian explain how they came up with what they consider to be acceptable noise levels for the upper end of Ohariu Valley Road during the construction period - i.e. road noise?*

The assessment on construction noise has been completed in accordance with New Zealand Standard NZS6803:1999 Acoustics – Construction Noise.

12 *Is Meridian Energy going to carry out representative background noise testing at Makara Beach before any construction for West Wind will affect the background noise levels?*

There is some existing data that was monitored as part of the West Wind Project but it is only available in graphical format. However, our experience from measurements for offshore installations is that sea noise dominates, i.e. it would be unusual to measure below 35 dB L_{A90} at the sea. If there is any form of wave on the water, it could be higher than 55 dB L_{A90}. Some further monitoring may be undertaken.

ACCESS ROAD

1 *What recourse will landowner's have, if, after subsequent detailed design, Resource Consent conditions are not adhered to, or are contravened? For example, during construction of the road – 2 conditions have been proposed for Resource Consent:*

a) No properties, trees, fences will be disturbed on the Eastern side of Ohariu Valley Road, and

b) All construction work on the road will take place within the road reserve.

If, after Resource Consent is granted, and detailed design proves the above two conditions will have to be changed, what recourse, compensation, or other remedies will Meridian provide to affected parties.

If the proposed conditions become part of a consent granted for the project, the relevant consent authorities will monitor compliance and take action to ensure compliance or remediation in accordance with the powers they have under the RMA.

If, as a result of detailed design, Meridian decided that it could not comply with the consent conditions, or needed to carry out works not covered by the consent, it would seek a variation to the consent from the relevant consent authority. If these works required encroachment on or access over private land Meridian would need to obtain the permission of the relevant landowners.

Note that there may be a need to trim some low branches that have the potential to impact with some of the higher turbine components that will be transported along the road. This will be determined at the detailed design phase.

2 *Please explain how the road is proposed to be closed after construction, and what arrangements Meridian has (or proposes to have) with the various Councils to ensure this happens.*

Refer to sections 5.3 and 15.6 of the AEE.

The project construction road will be located on private land. It will not be located on the existing paper road through this site, therefore there will be no right of public access over this land. During construction, there will be manned security gates at both ends of the Spicer Forest construction road, which will allow access only to approved vehicles. Following construction the access will be closed off using physical barriers and gates, to be agreed with the Councils. Meridian has had discussions with Wellington City Council to explore legal means of ensuring this access is not opened.

3 *Does Meridian or its sub contractors have longer-term plans for this access beyond the current Mill Creek project?*

The contract provides that once the construction of the Mill Creek wind farm is completed, Meridian may have the right to use the access road from time to time during the Further Access period (30 years from the date of the agreement).for the purpose of transporting loads for the Mill Creek wind farm.

4 *Can you provide any detail on the contracts with Wellington City Council and Porirua City council in relation to Spicers Road, and when these contracts were first entered into?*

The contracts are in the form of a licence which gives Meridian the right to construct and use an access road through Spicer Forest for the purpose of constructing the Mill Creek wind farm. Meridian has control of the road during the wind farm construction only and the road remains the property of WCC and PCC. Post construction for a period of 30 years Meridian may request use of the road from time to time for the purpose of maintenance of the Mill Creek project, but this is subject to approval by the councils. Post construction access to the road will be controlled by WCC and PCC.

The contracts were signed in August 2007 (WCC) and June 2007 (PCC).

5 *How much will the road cost through Spicers Forest.*

This information is irrelevant to the consent application.

6 *Will the road be for the sole use of Meridian?*

During wind farm construction the road will be for the sole use of Meridian, in accordance with the agreement with the Council. Post construction control of use of the road lies with the Councils.

7 *How long is the road consented for Meridian to use?*

For the construction period and the further access period (30 years from the date of the agreement) strictly for the purpose of transporting loads associated with the Mill Creek wind farm.

8 *How will other drivers be prevented from using it?*

Refer to sections 5.3 and 15.6 of the AEE and the answer to question 2 above.

9 *Will any access be provided to the wind farm from Takarau Gorge Rd.*

No construction access will be provided to the wind farm from Takarau Gorge Road. Refer to sections 5.3 and 15.6 of the AEE.

10 *If there were informal access to the wind farm via existing farm tracks, specifically on Takarau Gorge Rd, how would these be controlled.*

Resource consent is sought for access during wind farm construction as specified in the AEE (refer to Section 5.3). There is no construction access proposed for Takarau Gorge Road.

In order to meet Health and Safety requirements, access to the site would be strictly controlled, with construction access only through the Boom Rock Road access, which would be controlled by a security gate during the construction period. The only access to the site outside this entry point would be by the Project landowners.

11 *Clarify if the equestrian community are to lose any or all riding during the construction of the road and turbines project in both Spicers Forest, the northern 2.5 km of Ohariu Valley Road and Bryant's Farm.*

Spicer Forest

The agreement with the Councils provides Meridian with control of only the actual road route during the road and wind farm construction period. For safety reasons access onto the road route will be restricted during road construction and while transport operations are underway. We expect that horse riding and other recreational activities within the remainder of Spicer Forest will be able to continue as they do at present, but this is subject to confirmation by the Councils. A suitable safety management plan would need to be developed to ensure that any members of the public who were using the forest for recreational activities aware of the road construction and the subsequent construction traffic that would be using the road.

Section 4.4 of the Traffic Impact Assessment states that discussions with Wellington City Council officers were held during the design of the new road through Spicer Forest. The result of the discussions was agreement that the recreation track should be shifted to run parallel with the new access road. This will segregate construction traffic from non-motorised traffic thereby avoiding conflicts. As part of the agreements with the councils Meridian will contribute to the cost of creating a new recreational track, but the track will be constructed by the Councils.

Ohariu Valley Road

The impact during the construction of the Ohariu Valley Road upgrade and the impact of construction traffic along Ohariu Valley Road on other road users is discussed in Chapter 4 of the Traffic Impact Assessment. During construction it is important that the road can be safely used by existing local users. Traffic Management Plans will be developed to define measures to control the risks associated with any conflicts between construction traffic and other road users.

Bryant's Farm

Specific reference to the Pony Club operating on the Bryant's farm is contained in section 20 of the AEE. Parts of the land used by the Pony Club will not be accessible due to the proposed location of the main access road onto the site. It is intended that the Pony Club will operate during the construction period. Meridian is currently working through options with Mr. Bryant.

12 *The land on the west side of Ohariu Valley Rd (744 Ohariu Valley Road) is going to be the most affected by the new road and the impact on the farming business is unknown*

a) when will Meridian show the landowner exactly where the road reserve is?

b) when will Meridian show the landowner detailed plans of road reconstruction especially where there are large water areas and trees that will have to be removed.

Meridian has provided every resident of the northern section of Ohariu Valley Road with plan/s and a written confirmation of the effects that the road upgrades may have on their property and access ways.

INTERNAL ROADING/STRUCTURES

1 *Would it be possible to move the route for the internal Access Road A from the top of the ridge-line opposite 626 Ohariu Valley Road, and relocate it half way down the slope inside Mill Creek, so traffic using it would not be so visible to residents? If not, why not?*

Road A is already located on the western side of the ridge line. Locating Road A and B half way down the slope towards Mill Creek has a significantly greater environmental impact than its current proposed location. The topography comprises of a series of spurs separated by deep valleys. The earthworks volumes per km generated along such a route would be approximately 3 times the earthworks generated along its current route.

2 What access roads in Mill Creek will be visible from Ohariu Valley, including from homes and public roads throughout the Valley.

Where the road surface is visible it is shown in the visual simulations produced for the project. However in the visual simulations the flat surface of the road only is represented. Cut faces are not shown as these will be re-vegetated as part of the project. As the majority of houses in the Ohariu Valley are situated within the valley, and the road is located largely on the relatively flat top surface of the ridges, ie slightly below the horizon of these houses, most of the road will not be visible.

While the actual road surface will be not visible from most houses situated within the valley, vehicles using the road will have heights of up to approximately 4.8m and are likely to be visible at several locations along the relevant sections of the proposed access roads. Similarly there are locations where cut faces may be visible from houses. However, post construction the cuttings will have been re-vegetated and traffic movements will be minimal.

Further information on the proposed route of the Access Road is provided in the Construction Effects Report. Information on the proposed use of the road is provided in the Traffic Impact Assessment and Assessment of Environmental Effects. These documents are included in Meridian's resource consent application that you will have received together with the notification letter from Wellington City Council.

3 We understand that the substation will be connected to the closest pylon by aerial cables. Are all other cables underground, or are there aerial cables connecting turbines or parts of the wind farm.

This is discussed in Section 5.5 of the AEE.

The internal 33kv network, between turbines and the substation, will generally be underground, typically following the access roads. Overhead circuits may be incorporated within the internal transmission network if the underground option becomes impractical due to significant construction requirements (e.g. difficulty in excavating cable trenches in rock) or performance constraints (i.e. requiring direct route to the substation to avoid excessive losses).

4 What are the dimensions of the substation including building height?

This is discussed in Section 5.5.1 of the AEE. The substation footprint is approximately is approximately 7000m^2. The dimensions of the switchgear building are approximately 32m long, 12m wide and a maximum height of approximately 5m.

5 Will the track through the Bryant's Farm either during construction or once completed, have any impact on the domestic water supplies gathered from the hills on the western side of Ohariu Valley Road between the Cross Roads (number 494) and Boom Rock Road.

This is addressed in Section 3.3.3 of the Construction Effects Report.

No ground water sources of domestic water supply have been identified on site which will be affected by the proposed earthworks. In the event that ground water sources of domestic water supply are identified on site, which may be affected by construction works, the hydrogeology and geomorphology associated with each identified source will be confirmed by a geotechnical engineer. This will take place at the detailed design stage and prior to any construction works.

PHOTO REPRESENTATIONS

1 How many simulations have been done from Ohariu residences, and how many from Makara Rd and beach residences.

Truescape has been commissioned to produce 72 simulations from private residences. They are distributed as follows:

Ohariu Valley Road	30
Takarau Gorge Road	24
Makara Road	7
Rifle Range Road	10
Boom Rock Road	1

2 Can landowners have additional simulations produced at their properties from different viewpoints at their own cost, but handled by Meridian as part of the consultation process?

Meridian has commissioned 72 individual residential simulations to date and believes that this has gone beyond anything that has been done before by any wind developer within NZ. While not covering every single dwelling these simulations are representative of the views from most dwelling locations where the proposed wind farm will be visible.

As of 25 April Meridian will not process any further requests for visual simulations. The reason for this is that we are processing a substantial number of simulation requests and that as of the cut off date we can no longer be certain of getting new requests back to residents before submissions close on the resource consent application. The purpose of the simulations is to assist submitters in assessing effects. As there is substantial time and resources involved in managing the production of these they are not being offered for other purposes.

3 *Will any resident see any structure or anything else of anything that is associated with the wind farm that is not shown on the photographs they have received?*

The TrueView 2 simulations have been generated to show all visible elements of the completed Mill Creek windfarm as seen from each location. They show all turbines, access roads, substation, maintenance building, transformers, and met masts. They do not show any earthworks or the concrete base of the individual turbines. In most cases the bases of turbines cannot be seen.

The visual simulations are an accurate simulation of the completed project and its associated structures. There are some limitations associated with the production of the simulations associated with the scale and print production. The simulations capture what the completed project would look like at the moment in time when the photographs are taken. This view could change with the seasonal changes associated with any plants or trees. It does not reflect any changes that may be made as a result of the consent hearing or any adjustments associated with the detail design process as outlined within the application.

4 *What is the focal length of lens used in the Truescape photo simulations.*

Lens size is irrelevant. Please refer to supporting methodology already supplied. The simulations have been created using a 28mm lens.

5 *How many images are taken to build the panorama in the Truescape photo simulations?*

Nine

6 *What are the operating instructions used by Truescape when they arrive and set up at site before commencing the camera rotation for a panoramic image. If more than one image is required what is the process to align the camera and rotate for taking multiple images.*

Excerpt from our operating manual outlined below.

- Make your way safely to the TrueView location.
- When selecting your camera location, consider all 9 images. Avoid difficult seams, moving objects and distracting foreground elements where possible.
- Set up the tripod and mark the location for the surveyor. Ensure the tripod is stable and fix the camera to the tripod head.
- Use the spirit levels to make sure the camera is level and check through 360• rotation. Record the height of the lens
- Line up the camera for the centre image. Use the 'Photography Guide' to set-up focus and exposure. Take a test image and review.

- Check focus and composition. Be sure to review the histogram. If you are happy, delete your test and prepare to shoot all images. If not happy, adjust & repeat.

7 *Truescape describe 'the focal point of the camera as generally directed to the centre of the project 'can you expand on the meaning of this sentence*

It is always Truescape's objective before going onto the site to identify from each photo point position the general direction of "the project", and which turbines are expected to be visible. Truescape is assisted in this task with the use of an accurate 3D base model that provides a preliminary understanding of turbine visibility. It is this tool that assists the Landscape Assessment team in determining the most appropriate photo point positions. Once on site Truescape orientates the camera to the part of the project that they anticipate to be the most visible. This does not necessarily mean the centre of the project.

For example under what circumstances would the focal point be directed at the centre of the project and under what circumstances would the focal point not be directed at the centre of the project.

Where turbines are visible Truescape cannot think of a circumstance where they direct the focal point of the camera at anything other than the centre of the visible turbines. Where turbines are not visible (for example if the windfarm is clearly blocked by buildings, vegetation, or terrain) there may be situations where they have captured the predominant view to show it is not affected.

8 *Why did you not contact all residents who would be affected to ask if they required photo simulations?*

The opportunity to have simulations undertaken was raised in several forums, including meetings with individuals and the open days on 12 and 16 February. Meridian believes that there was no need to contact each affected resident and this is supported by the number of requests for individual simulations.

ECOLOGICAL EFFECTS

1. *Please provide detail on best practice sediment management and the lessons learnt from West Wind and other Meridian projects, that will presumably be used in developing the Mill Creek Environment Management Plans.*

Meridian's approach to environmental management is to build on knowledge gained on previous projects. The approach to sediment control is outlined in section 4.6 of the draft Environmental Management Plan (EMP) for Project Mill Creek, contained in Appendix E of the Construction Effects Report (Appendix B of AEE). The experience from West Wind is to confirm that the objectives of:

- Minimising the area of disturbance;
- Staging the earthworks; and
- Reinstating disturbed areas as soon as practical

are extremely effective in minimising the generation of suspended sediment.

At Project West Wind the use of straw mulch is being trialled to determine if it reduces sediment run off and assists the revegetation process. If this trial is

demonstrated to be successful then this technique will be added to the revegetation methods identified in the EMP.

Another innovation resulting from Project West Wind is the use of a dedicated sucker truck for emptying grit traps and sediment pond forebays. The use of this vehicle has improved the performance of the sediment control structures. The sucker truck has been specialised designed and constructed for the role by Goodman Contractors.

Flocculation blocks have been used a few occasions to improve the performance of grit traps and sediment ponds where there is a greater proportion of fines than normally encountered. This management tool will be added to the Mill Creek sediment and erosion control measures as outlined in the EMP when next updated.

2 When is monitoring of the amount of sediment flowing into local streams done.

Water quality monitoring is undertaken during or following a rainfall that exceeds 20mm. The monitoring is undertaken as soon as practical following the 20mm trigger being exceeded. The trigger level was determined after 18 months monitoring of rainfall events prior to construction commencing.

3 Is stream sediment measured immediately after heavy rain when the streams may run yellow, or on a schedule that is unrelated to the actual rainfall occurring at the project site.

As noted above the monitoring commences as soon as practical following a rainfall event greater than 20mm. As a result the monitoring occurs during the rainfall event or immediately following the event. There is no schedule for monitoring, the water quality monitoring is event related.

4 With regard to the proposal to have a qualified ecologist to be a member of a Meridian team to identify and design fill sites for excess excavated material, how would this person be able to be impartial and have the ability to stop inappropriate proposals, as they would be paid by Meridian.

Meridian engages recognised experts in their field to assess the various potential effects of the proposed wind farm. In order to operate as a professional ecologist, it is necessary to not only to provide an assessment of effects, but to provide reasons to support this assessment. Codes of conduct must be met by both the firm that work for and by the professional organisations that they belong to. It has to be noted that there is nothing to gain by undertaking inappropriate proposals as there are significant checks and balances within the consent compliance process to monitor the project. Meridian would not risk its reputation within the industry as a responsible developer. Meridian exceptional performance in this area been recognised with Te Apiti.

In term of the process for finalising the location of roads, fill sites etc, this process is detailed in section 11.6 of the AEE and section 2.5.2 of the EMP. The Regional and City Council are involved in inspecting these sites before the SEMP is finalised.

5 *Why has Meridian not chosen air-cooled transformers rather than oil filled transformers? Air-cooled transformers provide virtually no environmental risk as compared to the risk of an oil leak that escapes the bunding.*

Transformer selection is based on a range of technical factors. Oil cooled transformers with appropriate bunding and oil interception measures do not pose a significant environmental risk.

6 *How can Meridian guarantee that oil will not escape the bunding?*

The bund around the transformer is a secondary containment measure that is designed to capture any spills or raptures from the transformer itself. The operational management plan for the wind farm will outline the measures that will govern the operation of the bund and removal of spills or raptures intercepted.

CONSTRUCTION

1 *Meridian's resource consent application has site plans of the site offices. The plans show locations for diesel-powered generators. Is it Meridian's intention to run these generators 24 hours a day, 7 days a week to power these offices? Will there be security lighting of the offices or any compounds during hours of darkness around the offices throughout the project.*

It is likely that power to the site offices located along Road A will be from mains power. The generators are likely to be used only as a back up source of power. Low level security lighting at night will be provided.

2 *Meridian's resource consent application states that some works will take place on a 24-hour, seven day a week basis. Can Meridian please clarify what works this will cover and if this work involves contractors' vehicles travelling to and from the project outside the specified hours of operation, i.e. 6am to 7pm Monday to Saturday?*

Refer to section 15.3 of the AEE for construction traffic hours.

Meridian is proposing to restrict construction traffic entering the core wind farm site to the following times, in order to minimise effects on residents within Ohariu Valley:

- Access for light vehicles – access 24 hours per day, 7 days per week.
- Access for HCV vehicles
  - Monday to Friday: 7am to 7pm
  - Saturday: 8am to 6pm
  - Sunday and Public Holiday: No HCV traffic.

Piloted over-weight/over-dimension loads may be further restricted on Ohariu Valley Road to avoid peak resident travel times, in consultation with residents and WCC.

The Ohariu Valley upgrade works will be carried out in accordance with WCC's Code of Practice for Working on the Road.

Construction traffic hours will be managed as a part of the Construction Traffic Management Plan, which will be prepared prior to any works commencing, and which will be approved by WCC.

Also refer to section 5.8.1 which provides information on construction hours, associated with the need for additional lighting.

Since the site is relatively remote, certain works may take place at night (outside regular working hours).

Apart from the need to work extended hours in order to maximise the seasonal construction window that is available to the construction team there are critical construction activities that once initiated can not be halted until completed; in particular, the turbine foundation concrete pours and the erection of the turbine towers and nacelles. Once the top sections of the turbine tower have been erected the nacelle must be installed in order to provide structural integrity in adverse wind conditions.

3 Meridian's resource consent application states that blasting may be necessary onsite. If this is so, will local residents be given sufficient notice to safeguard against livestock accidents?

Controlled blasting is addressed in Section 5.4.6 of the AEE.

In the unlikely event controlled blasting is required management measures and methodologies for controlled blasting operations will be documented in the contractor's management plan in advance of any work commencing. This will set out management measures, OSH requirements, blast design, methods, site protocols, warning systems, and noise monitoring requirements as required under current HSNO Regulations. Measures would include an agreed blast programme provided to the community.

CONSTRUCTION NOISE/TRAFFIC

1 *Are any ambient noise levels being recorded along Ohariu Valley Road from the Cross Roads (number 494) north to enable the assessment of construction traffic noise and wind turbine noise on the residences in this area? If so at what locations are they being recorded?*

It is planned to undertake some shorter term measurements along the northern end of Ohariu Valley Road to be used in the assessment of road traffic and construction noise.

2 Have readings from the construction traffic to date from West Wind been taken. If so, please provide.

Some construction noise measurements were undertaken at Project West Wind and provided to the Wellington City Council during December 2007.

COMMUNITY FUND

1 *Please advise details of the community fund should the project be consented. Details to include the value and how it is governed.*

Meridian established the community funds in 2005 to recognise the contribution our generation communities make to our hydro and wind operations and to the country's electricity sector. The decision to establish a new community fund is generally taken as the generation facility is being constructed. The amount available through each fund is determined by Meridian's Board on a three-year basis and reflects the long-

term, average energy output from the facility. The Te Apiti fund, which is likely to be fairly representative for Mill Creek, is $120,000 over three years.

Proposals for funding are considered by an advisory panel which, for each fund, comprises an equal number of Meridian and community representatives.

Refer to section 10.1.1 of the Assessment of Environmental Effects report that forms part of the AEE.

2 What funding model has been used for the Makara Community?

This is presently being explored within Meridian.

CONSULTATION

1 *Would you please provide reference to the media announcement in 2003 about Meridian being selected for the operation and development of a wind farm in Ohariu Valley?*

The only media clip we have of this is from the Evening Post 5 June 2002 "Farmers Seek Bids From Power Firms".

Further notice of this selection process was reported to the Makara Ohariu Community Board meetings in 2002 with Neville Beach standing down as Chairperson to report.

2 *Have the community members of the northern suburbs not (sic) be notified of the project.*

Notification of the Wellington community of the wind farm, including northern suburbs residents has included the following:

- Public notices inviting all interested parties to attend the open days in the Dominion Post and community newspapers
- Media coverage (Page 1 Dominion Post) of the project
- Public notice in the Dominion Post on Thursday 17 April 2008 (half page advertisement).

DECOMMISSIONING

1 What happens at the end of the 40-year lease for the wind farm?

Meridian is not able to forecast what will happen beyond the term of its agreement with the landowners. The options remain as continuing as a wind farm, continuing in pasture or changing to another land use such as sub-division.

2 At the end of the 40-year lease will the site be returned to its original state?

Suggested condition 68, in section 24 of the AEE, deals with decommissioning. This would require

"at the end of the operational life of the wind farm, or of any individual turbine or turbines which are not renewed or replaced, every inoperative above ground structures shall be removed, and turbine footings covered in topsoil and re-vegetated."

This condition is the same wording as that imposed for Project West Wind.

3 If not, why is the land not returned to the original state? Eg Underground concrete foundations and infrastructure (transmission and communications) and roads removed?

See above. The roads would not be removed, as they will be an integral part of the farming operations.

4 Have costs for decommissioning been included in the business case?

Yes.