

24 October 2018

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Dear Louise

Hauraki District Council: Request for Further Information under Section 92 of the Resource Management Act 1991 (RMA) – Application number 202.2018.0000873.001 – Kaimai Wind Farm Limited

Thank you for the Section 92 requests from Waikato Region (dated 30 July) and Hauraki District (dated 2 August) Councils in which you request further information on the above consent applications.

This letter responds to further information requested from Hauraki District Council.

The information is responded to in the order it was requested. In many cases the responses are in this letter but in some instances additional investigations have been undertaken and the resultant reports are referenced and appended.

Extensive additional work has been undertaken in order to respond to the S92 request for further information. In particular we have refined the Civil Drawings and re-released them. The major differences from those submitted with the application is that we have carried out a more detailed assessment of potential cleanfill sites, including looking at geotechnical issues and erosion and sedimentation issues. This has led to a reduction in the number of cleanfill sites, and we are now proposing just one quarry area. The response includes an application for mining to carry out the activity of quarrying and associated aggregate processing for the development.

In addition, we have prepared a comprehensive Erosion and Sediment Control Plan and we have reviewed geotechnical aspects of the cleanfills, as requested. We have also completed an Ecological Impact Assessment using the guidelines developed by the Environment Institute of Australia and New Zealand (EIANZ).

Additional reports have been prepared to respond to a number of issues including Acoustic issues, Landscape and Visual, and Transport.

Please contact me if you have any queries re this response document and accompanying documentation.

Yours faithfully,

Craig Shearer

S92 Requests and Responses

Assessment of Environmental Effects

1. P1 *Concern with regard to the generality of the statement within 1.2 of the AEE that:*

“The application expressly seeks resource consents for any and all variations or amendments to the plans and information described and appended to this AEE report, to the extent necessary to enable implementation of the resource consents, assuming granted, upon progression of the Project through the detailed design phase. This is provided any such variations or amendments do not create materially different or additional effects to those assessed, described or illustrated in this AEE and the Technical Reports and plans included within Attachments B to E”.

Council request that this statement be amended or removed.

Response:

The purpose of this statement was to ensure that as a matter of scope, the application covered variations revealed as necessary at the detailed design phase to enable implementation of the resource consents. For a major project of this kind, it is essential to retain such scope. There is nothing unusual or inappropriate about this. Resource consents are frequently granted subject to a requirement that the approved activity proceed in general accordance with the application. A condition of that nature is almost universally set for consent for major projects, including for wind farm consents that have been approved by the Environment Court.

Case law confirms that a consent with that type of condition covers immaterial variations; that as a developer proceeds with the work authorised by a consent there will necessarily be variations from time to time, and that it should not be necessary for the developer to go back to the consent authority for every such immaterial variation. (*Cooke v Auckland City Council* A63/96)

Kaimai Wind Farm is not seeking “carte blanche” here but simply to retain scope within the consent granted for variations to the details of the project relative to the plans submitted with the application, provided they do not create materially different or additional adverse effects. This is in line with established case law and necessary for a project of this scale and nature. Kaimai Wind Farm does not propose to delete this statement from the application or amend it accordingly.

2. P10 *It is noted that KWF is now engaged with Transpower on the next design stage, what, if any, amendments are likely to result from this process?*

Response:

No amendments are likely to the applications for resource consent.

3. P13 *There is no evidence provided as part of the application to support the statement that the Hazardous Substances requirements of the District Plan (Rule 7.7.6(1)(a)) will be complied with. Please provide appropriate evidence to confirm this statement.*

Response:

The storage, location and use of hazardous substances (likely engine oil, hydraulic oil and diesel) will only be fully understood once consent is granted and construction details are being worked through. Regardless of whether the Effects Ratio falls above or below the permitted threshold under the HFSP Consent Matrix referred to in rule 7.7.6(1)(a), this will not affect the consent status for the proposal as a whole, and any adverse effects or risks of activity above the threshold can be managed by way of appropriate controls being imposed. We therefore suggest the appropriate time to prepare an assessment under the HFSP and a Spill Response Plan is at the time of preparing the Construction Management Plan when construction and operational details will be finalised and approved by the relevant Council manager.

Kaimai Wind Farm therefore proposes that details of the storage, location and use of hazardous substances should be required through assessment against the HFSP Matrix as a condition of consent, and should be included within the details to be provided in the Construction Management Plan.

4. *P21 It is noted that a lapse period of 12 years is sought. Further assessment is needed to be provided to support this request. The information provided within section 3.8 is very general and could apply to any application. Particular and convincing reasons are needed, given that more than double the lapsing period is sought, as not only might such a long period unreasonably impact on surrounding landowners, causing uncertainty, but once granted a resource consent becomes part of the consented environment and can have a profound effect on the consideration of other resource consent applications during the period that it exists.*

Response:

A twelve-year lapse period is sought for this consent for the following reasons. It would provide sufficient flexibility to time the financing, construction and commissioning of the wind farm whilst navigating a range of conditions (the supply of turbine components and ancillary equipment from overseas, foreign exchange rates, and other matters such as electricity demand). This is a large project, it will significantly contribute to renewable energy development in New Zealand.

A twelve-year lapse period also builds a degree of flexibility allowing the Applicant to take the benefit of the most favourable economic and electricity demand circumstances. These conditions can vary from year to year and the timing of the development of wind farm projects is critical to long term viability.

A longer lapse period than the statutory minimum is also consistent with the lapse periods applied to the resource consents for other wind farm projects consented throughout New Zealand. For example, the Environment Court set a 10-year lapsing date on the Hurunui Wind Farm and in discussing the issue noted that 10-year lapsing dates had also been imposed on the Turitea, Hauauru ma Raki and Te Waka wind farms. The 10-year lapsing date was proposed in the Hurunui Wind Farm case to deal with the necessary flexibility required to respond to market uncertainties, including the exchange rate, commodity pricing and electricity demand. A 10-year lapsing date was also approved for the Mahinerangi wind site by the Environment Court. While preferring 12 years, at the very least a 10-year lapsing date would be consistent with these other cases.

5. *P26 Incorrect interpretation of excavations and placement of fill. The following definitions from the District Plan are noted:*

“Mineral: Means a naturally occurring inorganic substance beneath or at the surface of the earth, whether or not under water, and includes all metallic minerals, non-metallic minerals,

fuel minerals, precious stones, industrial rocks and building stones, a prescribed substance within the meaning of the Atomic Energy Act 1945, and peat, topsoil and sand.”

“Mining Operations: Means operations in connection with mining (for any mineral), and shall include the following:

- (a) the transport, treatment, processing and separation of any mineral; and*
- (b) the construction, maintenance and operation of any works, structures and other land improvements, and of any machinery and equipment connected with such operations; and*
- (c) the removal of overburden and waste rock, by mechanical or other means and the stacking, deposit, storage and treatment of any substance considered to contain any mineral; and*
- (d) the deposit or discharge of any mineral, material, debris, tailings, refuse or wastewater produced from or consequent on any such operation; and*
- (e) the doing of all lawful acts incidental or conducive to any such operations.”*

“Surface Mining: Means taking, winning or extraction of naturally occurring minerals from under or on the land surface utilising open pit, open cast or other recognised surface mining techniques, methods and equipment. It does not include minor surface activities (eg removal of boulders from the surface of land) which are provided for separately under the “Earthworks” provisions. It excludes “Mining Operations” (refer to separate definition).”

These definitions are of significance to the nature of the activities for which consent is sought. The application refers to the quarry activity as “excavations and placement of fill” permitted within the plan. However, the proposed quarry activities, intended to win rock for use in roading activities and as basecourse for windfarm platforms clearly falls within the definition of surface mining and the associated activities within the definition of mining operations. These activities are identified as Discretionary Activities under Rule 5.1.4.4 D14.

The associated assessment in relation to all of the effects of this activity are therefore required. These matters have not been adequately addressed within the AEE nor parties of the technical reports as they currently stand.

Response:

See Appendix 11 Tektus Consultants letter and 11B Civil Drawings Revised October 2018

6. P31 Rule 8.2.2 relates to Floor Levels not Flood Levels.

Response:

Noted. This is a typographical error but the “not relevant” assessment holds true.

7. P32 Rule 8.2A.1.3(1) – plan needed showing proposed transmission towers and substation in relation to centre line of High Voltage Transmission Lines. HDC and Transpower will need information to know if the proposed distance is appropriate or not. Also need information in relation to Rule 8.2A.1.3(3) regarding earthworks within 32m of centre line of High Voltage Transmission Lines.

Response:

Attachment D - Civil Drawings; Textus drawings generally show the transmission towers and substation platform area (within which the substation itself will be located – see drawings 200-6 (overview) and 212). The exact location of the substation and towers will vary when detailed site considerations are applied at the engineering design/approval stage of the project. The indicative tower locations are identified as red squares under the transmission lines on drawing 212. The project has been discussed with Transpower and the precise location of the towers and connection to the transmission lines will need to be approved by Transpower at a later stage, assuming the resource consents sought for the windfarm are approved.

In respect of earthworks, the AEE (page 32) states that the requirements of Rule 8.2A.1.3(1) as to depth of earthworks within the 32m corridor relative to support structures will be met. Beyond that, earthworks for the substation and new pylon towers will be addressed under the - erosion and sediment control plan to be included with the Waikato Regional Council S92 response information and covers all earthworks across the site.

8. *P33 As per the Chiles report the District Plan noise rule is irrelevant in relation to turbine noise, can't therefore say that the proposal complies with this noise standard. For all other activities, other than the turbines, the noise rules do apply, this is not assessed adequately within the AEE or associated noise report.*
9. *P33 Tables do not quote District Plan accurately. Only Table 8.3.1.3(1)(a) is relevant. Don't know where the 55/70 in the LAeq and 75/85 in the Amax columns come from as these are not in the District Plan. This reference needs to be removed.*
10. *Second table is totally irrelevant as it is our understanding that the activity is not to be located in the Conservation (Indigenous Forest) zone.*
11. *P34 Construction noise assessment, the middle column appears to quote the District Plan but leaves several parts of the actual DP statement out.*
12. *The Chiles report says "long term duration standard" is applicable; however, the AEE table has "typical duration" figures listed. Why is there a discrepancy?*
13. *Also the limits are applicable to the Rural and Conservation (Indigenous Forest) zones. Neither the AEE or the S Chiles report provide details of noise at either zone boundary (or for the Rural Zone outside buildings – approximately 1m from the wall most exposed to the sound), nor is there any assessment in relation to effects on the Conservation (Indigenous Forest) zone.*

For response to items 8 to 13 please see Appendix 1, Acoustic Responses (Chiles Limited)

14. *P34 Rule 8.4.1.3 – is not interpreted correctly. The Hauraki District Plan defines Road as "including all land comprising legal but unformed roads and all land comprising formed and existing roads under the control of the road controlling authority and is inclusive of the definitions contained in the Local Government Act 1974 and the Government Roding Powers Act 1989."*

Response:

Noted. The issue with interpretation of roads is dealt with in response to question 15 below.

15. *It is noted that a number of activities are occurring within the unformed road running through the site, which is identified on Council Plans and within the legal title as "Wright Road". This includes activities such as culvert replacement and repair along with widening of the current alignment.*

Response:

Noted. Please note that only part of Wright Road (the unformed legal road- see Attachment D - Civil Drawings; Textus drawings 200-1 and 200-2 for legal alignment of Wright Road) within Hauraki District will be upgraded. Some of the road upgrading will be close to but not on the Wright Road alignment. Also, only two of the culverts on Wright Road within Hauraki District are to be replaced or upgraded (lengthened). However, it is acknowledged that approval is needed from Hauraki District Council to upgrade those parts that are within its jurisdiction. This is further considered under question 16 below.

16. *Rule 7.9.5 (3) specifies:*

The formation and use of a proposed road (including an existing legal unformed road) which is part of a subdivision or development that is a permitted, controlled, discretionary or non-complying activity shall assume the same activity status as the subdivision or development, and shall be assessed accordingly.

As such these activities are also considered to be Discretionary Activities requiring consent. The associated assessment in relation to all of the effects of this activity are therefore required. These matters have not been adequately addressed within the AEE or the technical reports as they currently stand.

Response:

KWF agrees that consent is needed under 7.9.5(3), and this was sought in the application and AEE regardless of specific reference to the rule (see AEE at 6.5, and paragraph 2 of the application document itself). Please see the assessment set out in Question 18 below which is also relevant to Question 16.

17. *P35 Comments regarding assessment against 8.4.8.3 incorrect, roadways are not an "internal access" so no limit applies to length.*

Response:

Noted.

18. *8.4.9.3 has not been addressed at all, this needs to be considered for Wright Road, which although unformed is still a public road.*

Response:

The rule has been referenced in the Integrated Transport Assessment in the application documentation (Technical Report 20, Appendix 3). To the extent the road construction activities described in the application need consent under Rule 8.4.9.4 an assessment is required. The proposed

access road upgrade (some of which is Wright Road) will not comply with Council's road design standards. To the extent that the windfarm proposal requires consent as a Restricted Discretionary Activity, tripping to a Discretionary Activity under the bundling provisions for the project under this rule, this has been sought on the same basis as stated above for Question 16.

The assessment of this infringement has already been set out in the consent documentation. The Construction Report, Technical Report no 5 by Energy3 Limited has addressed all site roads (this includes that part of the site road which is part of the unformed Council owned Wright Road) in section 3 (p12 – 17). This has set out road width (6m – enabling passing traffic), maximum axle loads (15 tonnes), grade, road structure and road corner details. The road has been assessed as being able to accommodate all vehicles and payloads. Proposed traffic movements are included in the Integrated Transport Assessment report from Gray Matter. There are no plans to allow members of the public to use the road and its maintenance will be carried out by Kaimai Wind Farm Limited.

In terms of other effects, the main effect is the control of sediment and erosion during road construction phase. This matter has been specifically considered in the Erosion and Sediment Control Plan prepared as part of the Section 92 process by Ridley Dunphy. This Plan and associated report are included in the bundle of Section 92 reply documents.

The standards to be applied to the road have been discussed generally with Council's roading engineer, Steve Lye. The exact details of the road will need to be assessed and approved at the Engineering Approval stage of the project.

19. *8.4.3.3 sight distance is not relevant for Wright Road intersection. Rotokohu Road entrance is not addressed.*

Response:

Rotokokohu Road will not be used to access the site. Rawhiti Road and then Wright Road is proposed as the main access road into the site.

20. *P35 8.5.5.3 irrelevant –as the application area is not in a Council Drainage District.*

Response:

Noted. Agree that 8.5.5.3 is not relevant.

21. *P59 Does not contain an assessment of the NES for Assessing and Managing Contaminants in Soil to Protect Human Health. Although contaminated land is mentioned within the AEE, and there are statements along the lines of 'but it's not relevant because there are no contaminated/HAIL sites'. This may well be true, however there is nothing in the AEE to confirm how this is known. Has some form of assessment (eg confirmation from Regional and District Council records or a PSI) been completed? Or is there a general assumption being made based on the current land uses? Please confirm how it is known that there are no areas of potentially contaminated land and/or HAIL sites within the site.*

Response:

We have assessed the Resource Management (NES for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 and do not consider the regulations apply to the project.

The regulations only apply to activities described on a 'piece of land' described in Subclauses (7) and (8) of Regulation 5.

Assuming the site is one where an activity described in the *HAIL* list has or is being undertaken such that subclause 7 is triggered, in respect of subclause 8, the land does not cease to be production land, except where it is under a concrete pad and turbine and/or road, and as such there is no human health issue from this change of change of use. On that basis the NES does not apply. Note that the concrete pads will be largely covered after development and the roading network will largely follow that which currently exists.

Out of completeness, if the Council still has concern, a condition could be applied to the consent requiring a Preliminary Site Assessment be undertaken before works commence.

Report No 2 - Aviation

22. *P2 Notes an Aeronautical Study, pursuant to Civil Aviation Rule 77.17(a) is to be done. When will this be done, and is it of relevance to the assessment of potential for adverse effects?*

Response:

An aeronautical study is a Civil Aviation Approval (CAA) requirement and is not relevant in respect to adverse effects assessment. The study will be completed after consents have been granted in line with CAA requirements.

23. *Appendix Two and Three are missing from the document. Can these please be supplied.*

Response:

Appendix Two and Three in the Aviation report relate to the turbine positions (two) and location of the airstrips (three). These have been combined into one plan – Kaimai Wind Farm: Turbine Position Concept, and Farm Airstrips – which is attached to this document as Appendix 2.

Aviation Review

24. *Following review of the Document by AECOM New Zealand Limited the following points are made:*

P10 Item 46 in the Conclusion should include the following statements

The proposed structure, at up to 207m above natural ground level, triggers a requirement under the CAANZ Rule 77.5 (1) as follows, for consideration of the Director:

77.5 Notice of construction or alteration of structure. A person proposing to construct or alter a structure must notify the Director of the proposal in accordance with rule 77.13 if the proposed structure or alteration to a structure—

(1) extends more than 60 m in height above the ground level at its site.

Furthermore the height of the structures, at some 207m above ground levels to the tip of the rotor blade potentially constitutes a major airspace obstruction as per CAANZ rule 77.19 (a):

77.19 Standards for determining hazards

(a) The Director must determine a structure to be a hazard in navigable airspace if it is 120 m or higher above ground level at its site."

This links the recommendation clearly to the CCANZ rules accordingly.

Response:

The aeronautical study (referred to above) will capture all of this in substance, as Kaimai Wind Farm will need to lodge form CAA 24077/01, which then triggers the aeronautical study. CAA rule P77.17 is triggered on CAA receiving the form application and covers rules 77.5, 77.7, 77.9 or 77.11 (although the latter three are not applicable in this application). In short, the aeronautical study captures the individual rule parts, and it is the submission of the form that triggers the process.

Kaimai Wind Farm therefore does not see the need to include the rewrite as suggested as it is covered by the fact it will be submitting the application form to CAA.

Other considerations - Risk Mitigation Measures

25. *Noting Items 27 and 28:*

P7 Item 27. 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.

P7 Item 28. 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.

And noting risk mitigation 47.3

P10 Item 47.3. 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).

Review comments are as follows:

This implies that competition gliders could fly at or lower than the turbine prop heights between the masts? Please confirm whether this assumption is correct?

Response:

Kaimai Wind Farm is not encouraging gliders to fly through/between the pylons at levels lower than the turbine hub. It is a safety measure, to provide additional levels of safety for flight operations as gliders operate over the top. However, it also provides a zone, where for instance a glider may find themselves low, to transition through the Wind Farm as they seek more lift. For a glider to be down at that level, in that environment would not be normal, as there are few options available in that area, to the pilot for continued flight and landings are generally done on flat land, not on hills.

26. *With regard to Item 47.3, how practical is it to include obstruction lighting in the blade tips as these are of significant length and will protrude above and abeam of the obstruction light fitted to the mast head area?*

Response:

CAA requirement will be for a light to be positioned on the top of the turbine hub. CAA may not require all turbines to be lit in this manner, provided all turbines on the external boundaries have a light. The CAA will determine lighting requirements.

27. *Recommend an alteration to Item 47.3 to say:*

“Competition glider activity in the vicinity of turbines 16 and 17 presents a risk component that warrants further investigation: Whilst shut down of turbines 16 and 17 for up to ten days per annum is recommended to facilitate glider competition flights in the vicinity of these towers in coordination with the Matamata glider club with wind conditions 12 knots or less (<6m/s), there is still a risk element of a thin stationary blade protruding above or abeam of the main structure, noting that the aircraft would have to be relatively close to the main structure for this to become a risk consideration.”

Response:

This is also not a request for further information and Kaimai Wind Farm does not agree to the suggested changes as being necessary.

28. *What is the minimum acceptable clearance envelope around these structures, and how is this spatially assessed by a pilot?*

Response:

This is the responsibility of the pilot, and standard practice leaves it to the pilot to determine the appropriate clearance.

29. *Would this be a component addressed under the recommended Aeronautical Study as per CAANZ 77.19?*

Response:

The Director CAA takes into consideration a number of factors; the actual study being completed by a CAA employee with the Director's sign-off.

The fact the height of the turbines is 207m is only one issue considered, and it would not be considered a reason to give a negative determination. For instance, Waverley Wind Farm has turbines with blade tips of 180m, the Director issued a notice to airman that a hazard in navigable airspace will exist and then provides mitigating measures that are required to be completed by the developer

Report No 4 - Civil Peer Review

30. *The Civil Engineering Peer Review supplied in Appendix 4 raises several questions regarding consistency between reports – can you confirm if all of these matters have been addressed within the final technical reports supplied as part of the application?*

Response:

These issues were addressed in the technical reports.

Report No 5 - Construction Report

31. *P8 2.1 advises that noise will be kept to a minimum during the hours of 6.30am to 7.30am and 6pm to 8pm, how will this be done?*

Response:

Lower construction limits are set in the proposed conditions during these time periods, and all contracting staff will be required to comply with them. Mr Chiles has confirmed that this will be readily achievable given the distance to nearest receivers by applying standard site management practices (refer Appendix 1), albeit restrictions on night time construction activities (between 8pm to 6.30am) will be required to meet the lower noise limits applying during that period. Conditions to this effect will be proposed by the applicant.

32. *P8 2.2 advises in relation to turbine foundations that the positions are given within a 20m radius of potential locations to allow for micro-siting. Is this correct, as it seems at odds with the very detailed civil drawing provided in relation to the location of each turbine on site?*

Response:

Turbine foundations will vary, depending upon the site-specific siting. Many consents for windfarms have a 'flexibility' condition around specific turbine location. For example, a condition allowing for turbines to be up to 100 metres from the location shown on the application plans was set by the Environment Court for the Makara (West Wind) and Mill Creek projects. For the Motorimu Wind Farm, a 30 metre radius circle was provided for. For the Awhitu Wind Farm the wind turbines were simply required to be within the "white shapes" shown on the application plans. All turbine locations are approximate and may vary slightly depending upon detailed assessment of Geotech, ground and soil conditions, proximity to boundary etc. It is not reasonable to have GPS located fixed locations at this early stage of the project.

33. *P9 Based on the proposed size of the turbine foundations, approximately 100 concrete trucks will be required to supply the required concrete, can you confirm the proposed construction methodology, ie continuous pour, will this be over a certain time period, and how many concrete truck will this equate to per hour, in any one 24 hour period?*

Response:

The concrete will be a continuous pour with no concrete mixed in situ and will continue until each turbine foundation is complete. The pour for a given turbine will need to be completed in one day.

A typical capacity for a concrete truck referred to on page 16 of the Construction Report and is 6m³. As each turbine base will require approximately 540m³ of concrete, 90 concrete truck loads will be required for each turbine (p13 Construction report).

34. *P9 2.3 identifies general laydown areas which will temporarily contain fuel tanks. Can a better description of how and where these will be located be provided, along with sufficient information eg volumes, means of storage, to provide confirmation that the temporary storage of fuel can meet the hazardous substances provisions of the District Plan.*

Response:

Although laydown areas will be set aside in the planning phase, the exact location of these will be determined through the development and approval of the Construction Management Plan (CMP). We will not know until we have appointed contractors to the project what the quantum of machinery will be on the site, and the logistics of refuelling – where, how much, the size of storage facilities, the types of fuel needed to be stored, and the daily requirements. Once we are aware of these details then we can assess the storage under the HFSP to ensure the provisions of the District Plan are complied with. Therefore, the appropriate way of safeguarding any concerns the Council may have with hazardous substances is to include as a consent condition or as one of the requirements of the CMP that the Hazardous Facility Screening Procedure will be applied to all proposed new hazardous facilities using or storing hazardous substances.

35. *P11 2.7 110kV Pylons refers to Drawing 212, where is this drawing?*

Response:

In the Civil Drawings produced by Tektus – 212 is the last drawing in the drawings entitled Attachment D – Civil Drawings – 1. Civil Drawings; Tektus.

36. *P11 2.8 Site Entrance refers to Taumatatotoara West Road, where is this road? This section also advises that concrete trucks may enter via Rotokohu Road can you please advise where the details and assessment of effects in relation to this are within the report and where the proposed entrance is located. Also, throughout the report reference is made to Thorpe, which should be Thorp.*

Response:

Noted – Please disregard reference to Taumatatotoara West Road, which is an error. The site entrance is to be off Rawhiti Road. Construction vehicles will not be accessing the site off Rotokohu Road – this includes concrete trucks. The correct spelling of Thorp road is noted.

37. *P11 2.9 refers to the need to move the Lightwire Ltd telecoms facility, can you please provide evidence of consultation with Lightwire Ltd in relation to this.*

Response:

The movement of the Lightwire facility is independent of the resource consent process and will require approval from that company, which will be consulted at the appropriate time accordingly. We will not be providing evidence of consultation with Lightwire.

38. P12 Repeats section reference 2.8 and 2.9. Within 2.8 Fencing the appendix number provided does not match with the appendix as numbered (should this be appendix 4 not 3?).

Response:

Agreed and noted – the second 2.8 and 2.9 should read 2.10 and 2.11. And 2.10 (as now changed) should refer to Appendix 4 not 3.

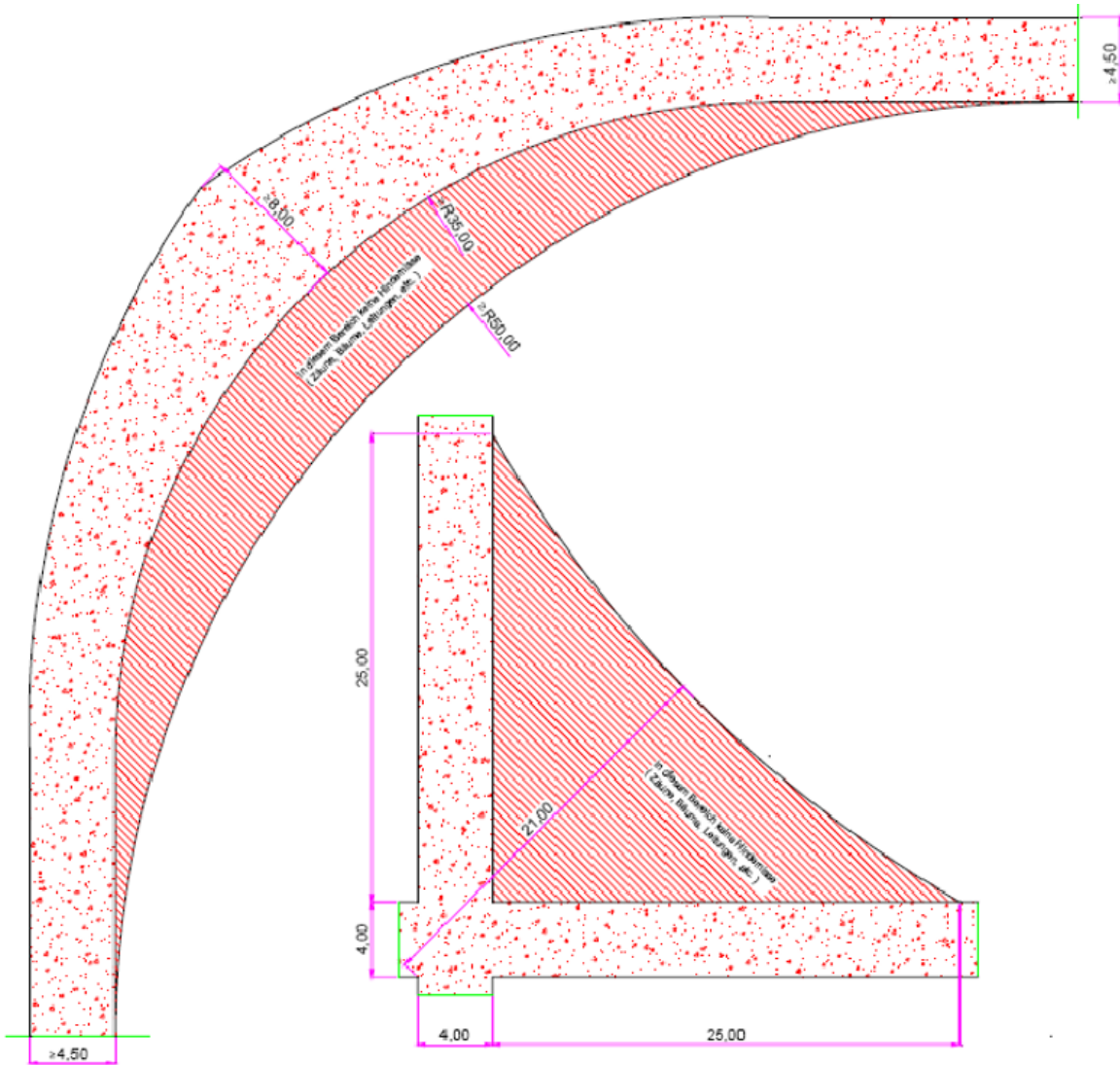
39. P12 3. Site road, reference should be appendix 3 not appendix 4?

Response:

Agreed and noted – in 3. (p12) reference to culverts should reference Appendix 3 and not 4

40. P13 The wording within the diagrams provided in Figure 2 is not readable.

Response: The diagram (see below) is taken from a publication and the wording is in German. It is not possible to replicate the diagram with any more clarity but the hatched area relates to the clear air space to allow the body of the transporter to negotiate the corner.



41. P16 3.4 refers to temporary facilities, can additional details in relation to the proposed layout of these site, and the potential for visual effects, noise effects and so on be provided. How many transportation movements are likely to be required to set up and service these areas?

Response:

Again, it is not possible to detail the location, number and consequent layout of these facilities until contractors have been appointed to carry out the works. This information should be provided within the proposed CMP.

A typical wind farm site, based on experience, will about have 4 porta-coms for office space, two for lunch rooms, a toilet block, and two general rooms. In addition, there are likely to be 5 rooms for various office and temporary supplies. In addition, there would be approximately another 10 x 20ft containers for various storage functions.

In terms of the effects referred to in the questions, this would require approximately 24 traffic movements in total to establish, and the same to dis-establish. This is a very small number compared to the 66,411 traffic movements for the project set out in Table 1: Trip Generation, in the

Integrated Traffic Assessment report. The landscape impact is assessed as being low, particularly as the layout facilities will be temporary, lasting for the construction period only. Further the facilities will largely be shielded from any of the views by existing topography – especially those viewers on the eastern, northern and north-west of the site. Noise occurring within the temporary facilities sites is a component of Construction Noise, which has been specifically assessed in the Acoustic Assessment report as well as elsewhere in this response report as a result of further technical questions about construction noise.

42. P16 numbering is again confused with reference to 3.1 following 3.1.

Response:

Agreed and noted

43. P16 3.1.1 Concrete notes that “a second option for sourcing concrete is to establish a batching plant on site”. If this is to truly be considered as a potential option then an appropriate assessment of the effects of this activity needs to be provided, including siting, hours of operation, potential noise effects, visual effects, access, lighting and so on. Additionally it is noted that this type of facility will require water, water take matters will need to be addressed via the Regional Council’s consenting process.

Response:

KWF has determined there will be no concrete batching plant established on site.

44. P17 It is noted that rock may be sourced from the Tirohia Quarry. If this is so how will the material be moved, directly to the site via private access, or via public roads? If the rock is to be moved directly, can the location of the new internal access road be provided, along with any indication of earthworks and so on required to create this access.

Response:

This application now proposes to source all aggregate on site – refer to Appendices 11 and 11B. Aggregate is discussed in response to question 5.

45. P17 3.1.4 reinforcing steel and 3.1.5 cables, which road and/or entrance is to be used for the transportation of the incidental materials such as reinforcing steel, cables and so on?

Response:

All material delivered to the site will be via the Rawhiti Road entrance.

46. P18 4. Craneage again is reference to the incorrect appendix, should be appendix 7 not 6?

Response:

Noted – should be Appendix 7.

Report No 6 - Ecology Report (Kessels)

Response:

See attached report from Ecology NZ S92 Response, Appendix 3, for answers to questions in 47 - 53.

47. P8 1.2 notes that the use of Rotokohu Road is proposed for post construction operation and maintenance, yet no corresponding details are provided within the AEE in relation to the number, frequency, type of traffic and the effects of this, along with any mitigation measures.
48. P15 There is a reference to Rotor Impact Zone in Figures 4 and 5, is this the same as the "rotor sweep zones" referred to in 6.3 (P35) and the RSA Strike Area referred to elsewhere within the report? If so what do these terms mean?
49. P15 The rotor impact zone circles (shown as light blue in Figures 4 and 5) for turbines 5, 11, 15, 16, 21, 22 and 23 appear to extend out over the various SNA areas. Can you please clarify if this is the case, what potential impact this will have on these areas and where the potential effects of this have been considered within the documentation.
50. P31 Bottom paragraph refers to Waikato District Plan rather than Hauraki District Plan.
51. P49 6.3.3 Fill disposal sites recommends that "any fill disposal sites avoid seepage zones and indigenous vegetation remnants where possible and that any wetland and stream infills are adequately mitigated for habitat loss." Are any of the fill sites as shown on the civil drawings within seepage zones, wetland areas or streams, and if so have these been "adequately mitigated"?
52. P51 7.2 Recommended Amelioration Measures talks about allowing for "quantifiable risk minimisation contingencies if required". What are these and how would they be determined and implemented, given that this is proposed for post construction and the wind turbines would already be in place?
53. There appears to be no discussion regarding the effects from turbulence created by the windfarm on SNA's and the like. Please confirm why this has not been addressed.

54. Report No 7 - Ecology Report (ENZL)

Response:

See attached report from Appendix 3, Ecology S92 Response, and Appendix 3B EIANZ Assessment Report, also from Ecology NZ for answers to questions in 54.

Who was the author of the ENZL report? There is no name or qualifications and so on included as a reference within the report.

Ecological Review (both Reports 6 and 7)

For your information appended to this letter is the initial ecological review of the proposal undertaken by AECOM New Zealand Limited. This review looked at survey design,

presentation of result, interpretation of results, conclusions in relation to impacts and the approach to the development of mitigation.

For clarification purposes the information requested and required within this review is briefly summarised below:

1. Methodology to Assessment

The Environment Institute of Australia and New Zealand (EIANZ) produced the Ecological Impact Assessment Guidelines for use in New Zealand: terrestrial and freshwater systems (1st edition 2015, 2nd edition 2018). The guidelines provide a framework for assessment that aims to:

- Improve the scientific rigour, objectivity and consistency of Ecological Impact Assessment (EclA).*
- Assist consultants and officers in local and central government working with AEEs.*
- Improve community confidence in the ability of professionals to undertake impartial assessments.*
- Guide policy around biodiversity management.*
- Contribute to better decision-making on environmental matters.*

The Ecological Effects Assessment (and subsequently the Supplementary Ecological Report) has not followed the EIANZ guidelines. This has meant that the assessment process is not clear, stages of the assessment have been missed and conclusions are made without clarity around how these have been reached.

2. Scoping

A Scoping Report is not provided within the documentation submitted to Council. This documentation may provide clarity to the reader around decisions made in relation to the ecological survey methodology.

3. Consultation

The AEE in section 4.2 indicates that the Department of Conservation (DOC), HDC and Waikato Regional Council (WRC) were consulted in relation to the development. Has the information obtained during consultation with DOC, and other organisations, been integrated into the survey design and subsequently project design?

4. Plans and Policies

The Ecological Effects Assessment includes a section titled Policy Context in section 1.3. However, this section is very high level and does not go into detail about the legislation, plans and policies for which the EclA is aiming to provide evidence that the proposed project is compliant.

5. Description of Existing Environment

5.1 Study Area

The Ecology Effects Assessment does not clearly indicate (e.g. map), what it considers to be the extent of the project and what is considered to be the study area.

5.2 Desk Study

The reporting indicates that a desk study was undertaken, but there is no clear presentation of this information.

5.3 Survey Methodology

It is acknowledged that there are no guidelines within New Zealand as to the level of effort that is required for the completion of ecological surveys for windfarms. However, international guidelines exist and have been developed in response to the particular issues caused by windfarm developments (e.g. Rodrigues et al., 2014, BCT, 2016, SNH, 2014). It is not evident from the Ecological Effects Assessment that consideration was given to international best practice.

5.4 Results

It would be beneficial if there was a clear separation between desk study information and field survey information. This separation will highlight where the Effects Assessment has not presented all of the species desk study data (e.g. migratory birds) and highlight where there are gaps in existing knowledge that are then filled by the survey works completed for the project.

6. Evaluation

An EclA should include a section that confirms the species and habitats that are known to be present or likely to be present and assign a value to them. It is not clear how the significance test has then been undertaken.

In the assessment of effects the significance of the bat population is discussed in section 6.5.1, but this assessment is not undertaken for other species.

The Supplementary Ecological Report does not include any assessment of the value of the streams to be impacted.

7. Assessment of Effects

The Ecological Effects Assessment does not follow current guidance (EIANZ, 2015 & 2018) therefore the assessment of effects is not comprehensive.

The Effects Assessment does not identify at the start of the assessment the works that are to be considered and this leads to potential routes of impact being forgotten by the assessment e.g. the development includes the installation of a substation with lattice transmission towers and overhead power cables and these are not considered/referred to in the assessment of effects. It may be possible that these structures could provide additional strike risk for birds.

There is no assessment of effects prior to mitigation as is normal practice within an EclA

The Supplementary Ecological Report looks at the majority of impacts that could occur as a result of the upgrade of culverts, but it is not clear what the value of the impacted streams are,

the footprint of the works and whether culverts are perched. Where on site was fish passage restricted and what area of stream do the culvert upgrade works create access to?

8. Mitigation

EclA requires that impacts are identified prior to mitigation. This does not occur in the Ecological Effects Assessment.

It is unclear as to how this project has followed the mitigation hierarchy; avoid, reduce, mitigate, offset and then finally compensate. It appears from the information provided that compensation is the main route of mitigation?

Although research in New Zealand is limited in relation to the effects of windfarms on bats it is not within Europe and America. Best practice guidelines indicate that windfarm turbines should be located 200m from a forest edge (tip of blade should be 200m from forest) to avoid significant impacts to bats (Rodrigues 2014). It is recommended that this international best practice is considered and commented upon due to the presence of a threatened bat species adjacent to a forest edge.

Are the culverts within the 1-2 streams highlighted by the AEE perched? Will there be loss of stream length or any instream works? There is no indication as to where stream restoration will occur and the scale of works. It is not evident as to whether this is mitigation for impacts, enhancement works or compensation for other effects of the development. Please clarify.

9. Assessment of Residual Effects

It is good practice after the implementation of mitigation to assess residual effects. This assessment is presented in part within the assessment of effects, however, it is not always clear as to how the conclusions have been reached.

The Ecological Effects Assessment does not include a summary table of residual effects. However, one is presented within the Supplementary Ecology Report, which is then represented within the Assessment of Environmental Effects.

In the Ecological Effects Assessment it states that 'after mitigation effects on bat mortality are uncertain'. However, in Table 3 of the Supplementary Ecology Report it is indicated that residual impacts are non-significant with uncertainty.

It is unclear how the Supplementary Ecology Report can present an assessment of residual ecological effects as this document is not an EclA and has not gone through the assessment process.

10. Conclusion

The information submitted to date is not fit for purpose.

- It is not clear from the information provided that the survey design has been appropriate to establish the true ecological baseline for the site.*
- A clear evaluation of the value of habitats and species on site has not been completed.*
- The impact assessment does not consider impacts from all aspects or stages of the development.*
- The impact assessment is not completed prior to mitigation.*

- *The mitigation does not present how the development has worked through the mitigation hierarchy to reach proposed mitigation for each of the species and habitats that are significantly impacted.*
- *There is no clear assessment of residual impacts post mitigation.*

Please provide sufficient ecological information to meet the requirements as laid out within the appended ecological review. It is suggested that the applicant's ecologist confers with the Council's ecologist to determine the best way forward to address all of these matters.

55. Report No 10 – Noise

Response:

See attached report Acoustic Responses from Chiles Limited, Appendix 1, for answers to questions in 55.

P3 2. Criteria. It is assumed that the District Plan noise standards (both HDC and MPDC) will apply to all noise, except noise created by the turbines themselves. Please confirm.

P13 7. Construction Noise – no modelling of expected noise levels provided, an assessment should be provided using worst case scenarios of all likely machinery to be operating at any one time. There is nothing provided to support the statements of compliance. What is meant by the statement “temporary disturbance for occupants of houses along Rawhiti Road”? What about quarrying noise, vehicle noise, crane noise, and assembly noise (when assembling the turbine pieces). The construction noise assessment is lacking “overall” assessment of a number of activities that could be combined on the site and occurring together at any one time.

P14 8. Conditions. In relation to condition 1, why is the assessment limited to these sites? What if additional houses are built during the life of the wind farm, in particular during the 12 year lapse period that is sought? Why is the condition not worded to require that noise levels shall be made to comply at the notional boundary of all dwellings?

In relation to 1. (b) how would such a condition be able to be monitored? Unless there is a noise meter continuously measuring background noise levels how will anyone know whether (a) or (b) applies at any given time. Once the windfarm is operational won't the noise from it also then form part of the background?

In relation to condition 4, how were the three properties chosen? What would be the purpose of post installation measurements at these sites? Condition 1 says to comply at the sites shown on Figure 1 (which are more than these three properties).

Acousafe Noise Control Solutions Review

Following review of the application information by Acousafe Noise Control Solutions which is appended to this letter the following matters need to be addressed:

Further information should be supplied regarding:

- *the monitoring of background sound levels during the winter months (without cicadas),*

- a breakdown into wind direction (if this can be done), and
- a breakdown into background sound levels during the Amenity Hours and Night-time Hours,
- remove the presence of noise sources which are not common to the representative measurement locations and neighbouring noise sensitive properties, using a review of time histories and scatter plots,
- if appropriate remove clear dawn chorus effects from night-time data,
- exclude any data directly affected by rainfall, or when rainfall has resulted in atypical levels, and
- plot the background sound levels against wind speed to determine the prevailing background sound levels at each representative assessment position. The order of regression analysis to use (linear to fourth order) will depend upon the nature of the background environment.

This will demonstrate the seasonal and diurnal variations in background sound level.

We recommend that further information is sought regarding:

- *Predicted data which should cover the range of wind speeds between cut-in and the speed at which maximum sound power level is achieved,*
- *Use the hub height wind speed (not 10m AGL),*
- *Identify if wind sheer issues affect noise generation or propagation,*
- *Justify why 106 dB L_{Aeq} sound power level has been selected,*
- *Justify the spectral adjustment used,*
- *Provide justification why this data should represent other turbines that may be selected,*
- *Undertaken predictions with both zero and 0.5 ground absorption,*
- *Do predictions at a receiver height of 4.0 metres to reduce the potential oversensitivity of the calculation to the receiver region ground factor compared to lower receiver heights, and*
- *Provide for safety factors and uncertainty including any terrain screening concerns described in the GPG (if no data on uncertainty is provided then a factor of +2dB should be added to WTG noise levels).*

Section 7 discusses construction noise. No mention is made of traffic using the internal roading network particularly during Amenity Hours and at Night. This network is likely to be closer to receivers than proposed turbine locations and may involve steep terrain. Would the sound of labouring trucks on steep internal roads be likely to cause an impact on neighbours and should this be controlled at critical times?

Is concrete manufacture proposed on the wind farm site?

In relation to the proposed conditions it is noted:

The current background sound monitoring shows no correlation between wind farm wind speed and background sound level at residential neighbours. This makes it impossible to apply proposed condition 1(b) because there is no method of determining the background sound level. The further information sought above may improve this level of knowledge but if not, then how is NZS 6808 to be applied?

Report No 11 and 20 - Land Transportation of Wind Turbine Equipment and Traffic

56. *In terms of 2.2 of the Tranzcarr report, there are contradictory statements regarding over height loads, one part saying none, another part saying likelihood still exists. If the potential exists then an appropriate assessment of effects should be made.*

There is a comment that more detailed study of the route is needed. What alternatives are proposed if the current route is found not to be viable?

The assessment provided is based on using the full length of Rawhiti Road, information provided elsewhere suggests the use of SH26 and the northern portion of Rawhiti Road. Can confirmation be provided as to which route will be used so appropriate assessment can be completed?

Response:

This poses several questions to be answered. Note that at present there are no trailer units in the country capable of transporting the load lengths being considered in this project. There is little point in carrying out an assessment of effects when there is no certainty of the dimensions of the loads and as yet there are no trailer units in New Zealand of transporting such long units. Their ability to manoeuvre around corners is dependent upon their design. Further, over-dimension and over-weight permits will be required from NZTA, the local authorities and Kiwirail, and also Lines companies. Their requirements may necessitate arrangements to the transportation regime which render the assessment of effects as redundant.

- i. Over height loads. This has been clarified in the revised Land Transportation report September 2018 (Tranzcarr Heavy Haulage) which is attached as Appendix 4. It is too early in the process to say with certainty how high over-height loads will be and how many there will be. That can only be determined once turbine components are sourced and ordered and dimension details fully known. Past experience by Tranzcarr with other turbines is that escorts from lines companies are not usually needed, although approval for over height is.
- ii. Route Alternatives. If, during detailed investigations the route selected is shown to be unsuitable, further assessment of alternatives would be undertaken in consultation with the roading authorities. In the view of Tranzcarr, the route selected (as described in Report 11) is the most appropriate given their experience of turbine transportation, but it is acknowledged other factors introduced by the roading authorities may change this view, leading to assessment of alternative routes.
- iii. Rawhiti Road. We envisage the site entrance for heavy and long turbine equipment will be approached from a southerly direction along Rawhiti Road. This alignment sweeps in a favourable way for transporters. Access from the north is more problematic for long loads. This is not the case for the balance of wind farm construction traffic which the ITA recommends approaching from the northern end of Rawhiti Road (See section 6.1 of ITA) - this matter is also covered in Appendix 10, Response to Traffic Matters (Gray Matter). Ultimately the decision on which route is taken for heavy and long turbine traffic will depend upon the MPDC which must approve the route to be taken, or if a combination is appropriate.

57. *In terms of 2.3 of the Tranzcarr report it is noted that 2.1 of the report indicates that the heaviest loads will be up to 90 tonne, however the feasibility permit request is based on 80 tonne loads, why the disparity?*

Response:

This has been clarified in the attached revised Land Transportation report September 2018 (Tranzcarr Heavy Haulage) - Appendix 4. The generic heavy load is 85 tonne and is the likely heaviest load.

58. *The description within the Tranzcarr report regarding the route, and the maps provided do not match. Words advise that SH will be used essentially all the way apart from Rawhiti Road, however the map shows Tower Road being utilised for part of the route. Please confirm which it will be.*

Response:

See the clarification in the attached revised Land Transportation report September 2018 (Tranzcarr Heavy Haulage) - Appendix 4. The Land Transportation report has been revised to make it clear that the State Highway network will not be deviated from (until reaching Rawhiti Road) when transporting the heavy tower and turbine sections (Nacelle and Generator). However, the much lighter but longer turbine blades transport route will deviate off the State Highway network at Matamata and travel via Tower Road to close to Te Aroha where the State Highway network will be travelled on again.

59. *Please provide evidence of any correspondence with Lines Companies and Kiwi Rail in relation to the potential for over height and over dimension loads.*

Response:

There has been no correspondence with Lines Companies and Kiwi Rail in relation to the potential for over height and over dimension loads. However past experience is that once there is greater certainty of the dimensions and weights of loads, these agencies must be approached for approval.

60. Rule 8.4.1.3 (8) of the Hauraki District Plan sets out the level of detail required within a Transport Impact Assessment. The rule identifies the following:

“(8) Where a Transportation Impact Assessment is required, it shall be at a level of detail appropriate to the scale of the activity, consider all relevant modes, and consider the network affected by the proposal at least including the intersections upstream and downstream. The assessment shall address the following matters:

- (a) Description of the existing environment, including:
 - (i) The site, its location and existing activities*
 - (ii) The surrounding road network – infrastructure capacity and condition, traffic volumes, traffic conditions, safety performance, any transport strategy considerations and the ability of the local network to safely and efficiently accommodate traffic.**
- (b) Location, type and scale of the proposal – traffic generation, transport modes, vehicle types, vehicle parking and manoeuvring layout and design standards, signage, pedestrian and cycle access, cycle parking, end of journey facilities, rail level crossings and consistency with any relevant transport strategies.*

- (c) *Transportation Considerations – the extent to which particular roads will be affected in terms of safety, efficiency, pavement life and maintenance cost; on-site provision for parking; loading/servicing and queuing; safe and efficient provision for ingress/egress including capacity, separation and visibility. Note: Where fewer carpark spaces are proposed than required by the Standard in Rule 8.4.1.3, an assessment in terms of the matters in Rule 8.4.1.4(1)(a) shall be provided.*
- (d) *Evaluation of Transportation Impacts – transportation effects, mitigation options and proposals for mitigation.*
- (e) *Written approvals/comments from the relevant road controlling authority.*
- (f) *Conclusions - transportation impact, mitigation proposed.”*

In this instance no consideration has been given within the Gray Matter ITA in relation to the potential alternative use of Rotokohu Road for construction traffic and the like (it is mentioned as a potential issue within the consultation record), what this would mean in terms of safety, pavement life and maintenance costs.

- 61. *No consideration has been given to pavement life and maintenance costs in relation to Rawhiti Road either.*
- 62. *No written approval or comments from the relevant road controlling authorities have been provided, being NZTA, Matamata-Piako District Council as well as Hauraki District Council. Can any evidence of consideration of the above points please be provided?*
- 63. *P1 Gray Matter report - Potential Effects Summary – none of the potential effects on the physical road are addressed. No assessment of Rotokohu Road is provided at all, although it is mentioned as a potential path for construction vehicles and post construction traffic in various other reports.*
- 64. *P3 The Gray Matter report should also assess against the provisions of the Matamata Piako District Plan given that a large portion of the transportation activities will occur within that District.*
- 65. *P10 The two transport reports provided need to agree on which route and which Rawhiti Road intersection is to be used for site/turbine access. This will assist with determination of directly affected parties.*

Response:

For responses to questions 60 – 65, see Appendix 10 Response to Traffic Matters (Gray Matter).

Transportation Review

- 66. *Following review of the transportation documents by AECOM New Zealand Limited the following comments are made and information requested:*

The Report does not include:

- *Indicative schedule and dates/times during which no transportation shall/may occur.*
- *Approval to transport blade loads through Tower Road in Matamata.*

- *Swept path analysis of truck and trailer tracking through the full route. The report does acknowledge that this needs to be carried out in more detail when more information regarding the trailer and truck combination choices have been considered.*
- *Road closure requirements for certain turning movements that require overhands or driving on the wrong side of the road;*
- *Layover areas if required;*
- *Approval from the overhead lines companies for transporting loads with heights in excess of 4.8m; and*
- *Details of how the SH29 route over the Kaimai's can be negotiated with a 78m blade.*

Having reviewed the content of the three transportation related documents we are concerned that the following information is not presented:

1. *Swept path or other indication as to whether or not a vehicle hauling a 78 metre blade can safely negotiate the roading network from the port through to the site haul road;*
2. *Journey times for the abnormal / oversized load transporters would be helpful to determine the impact on traffic movement along the full route.*
3. *Details of the actual alignment of the site access road to and along the windfarm site;*

Please provide the above information.

Response:

These are levels of detail that cannot be realistically be provided at this early stage in the project. Swept path analysis would need to be undertaken once consent is granted and as part of the approval process from other agencies, and in particular NZTA and local roading authorities. Preliminary Assessment by Tranzcarr, an experienced heavy and long load haulage company is that it is feasible to transport the blades and nacelles along the route suggested. Similarly, with journey times, it is not possible to provide that level of detail given the complexities that will be encountered along the route to be used. For example, it is not possible to estimate how long it may take to negotiate some of the intersections until detailed analysis is undertaken.

Details of the entry into the site access are provided in section 2.7 of the Land Transportation report with a drawing and photograph provided. The Civil Drawings show the access roads throughout the windfarm site.

Again, a number of Environment Court decisions have deferred any requirement to provide these types of details until after the consent has granted, requiring instead that they be submitted through a Construction or Construction traffic management plan. For example, for the Awhitu Wind Farm the Environment Court required that the consent holder prepare over-dimensioned vehicle traffic management plans and obtain the required approval from (then) Transit New Zealand, the Land Transport Safety Authority and the local authority prior to the movement of any over-dimensioned vehicles on a public road. The conditions of the consent for the Mahinerangi Wind Farm as approved by the Environment Court required that as part of the traffic management plan, details of the intended traffic arrangements and provision for delivery of overweight and over-dimensioned components to the site including associated time restrictions, be set out. Condition 7 of the Makara (Mill Creek) Wind Farm consent set out the details required within the construction traffic management plan, including swept paths for over-dimensioned vehicles and requiring that over-width permit applications be made post consent. Details as to hours during which overweight/over-dimensioned loads could take place were also to be submitted post consent (in consultation with the local authority).

Kaimai Wind Farm will propose consent conditions requiring that these details be addressed through the proposed CMP accordingly.

67. Report No 12 - Landscape and Visual Effects Assessment Report

Response:

See attached Appendix 5 Landscape and Visual Effects (Mike Moore Landscape Architect) for answers to questions in 67, plus Appendix 5B Viewpoint B20 Modified.

Within the report Thorpe Road should be Thorp Road.

Please provide further consideration of the visual effects of quarry activities with the site.

No landscape evaluation of the substation, new transmission lines is provided within the report. Please provide.

P45 Although it is noted that the “turbine colour is set by Civil Aviation requirements and is appropriate to mitigate visual effects as the off white colour helps to minimise contrast with generally light, sky colours” please explain the potential effect of this colour when viewed against a backdrop of pasture and bush as will be partly the case here.

How is the “2km” sensitive viewpoints cut off arrived at, ie as referenced on P20 and P52. Can it please be explained further as to why those within 2km are likely to be more sensitive than those slightly further or at a greater distance away. Why is a 2km point chosen?

Landscape and Visual Effects Assessment Review by Brown NZ Ltd

A copy of this review is appended to this letter. The following points are summarised:

Landscape Effects

There is no mention of the substation or analysis of its effects at pp.15 and 16. where the “Main Kaimai Range Ridgeline Area” is analysed in terms of its value and sensitivity, and effects on it.

- What will the effects of a substation (and access to it) be?*
- Would these effects compound the High level of effect identified for the turbines?*
- In relation to the rest of the application, will the juxtaposition of the lower turbines on the Kaimai Range also affect its profile, characteristics and values – in a cumulative fashion, building on the effects of the 7 more elevated turbines in that regard?*
- In a related vein, would any other cumulative effects arise in relation to landscape character and values from the ‘upper’ and ‘lower’ turbines, substation, transmission line, roading and earthworks?*
- Given that ‘landscape’ is both a biophysical entity and the product of human perception (as described in the NZILA Charter), to what degree does the visibility of the wind turbines – which is addressed separately under Visual Effects – affect the effects ratings under Landscape Character and Values at pages 15-17.*

Visual Effects

- *What are the cumulative or combined effects of the ‘lower group’ and the ‘Higher Group’ for the Paeroa (B1 – B3), SH2 (B6 and B7), Waikino (B16), and Kaimai Mamaku Conservation Park – Mt Karangahake (B20) viewpoints?*
- *To what degree would the turbines’ dynamic movement compound the close proximity of the turbines in some views, especially for viewpoints like B8 and B10 (northern Rawhiti Rd)?*
- *There are markedly different ratings for the B10 viewpoint when employed to assess effects on Rawhiti Rd (p.28) versus “Close Residential / Sensitive Viewpoints – Rawhiti Road – North End” (p.33) in a subsequent part of the report. It is assumed that this relates to the sensitivity of road users versus local residents, but what do these ratings mean in a cumulative fashion for the northern Rawhiti Rd locality?*
- *In a somewhat different vein, what would the ‘adverse’ effects of night-time lighting (mentioned by Mr Moore) actually be – subject to active management?*

Statutory Planning Assessment

- *Why have no private dwellings been visited, including that residence identified as being 804m from the nearest turbine?*
- *What would the effects be in relation to the dwellings within 2kms of the turbines – given that the viewpoint ratings for effects on those dwellings that have been assessed range from Moderate to High and the report goes on to state that “it is likely that there will be high adverse visual effects from some nearby properties” and that 15 properties are subject to the effects of shadow flicker?*
- *Which properties would be affected in this manner? At the very least, it is important to have an understanding of those properties that would be worst affected by the proposal and the impacts on views needs to be addressed.*
- *What mitigation measures is Mr Moore / Ventus proposing to address any identified effects? On p.45 of his report, Mr Moore states that “Mitigation involving planting is impractical given the scale of the structures but could be considered for offsite locations to screen particular views if desired by affected neighbours”. However, it is unclear where this might be considered necessary and/or appropriate as part of the application.*

Conclusion

The Moore report concludes by determining that:

1. *the upper 7 turbines would have an adverse and high level of effect on landscape character and values;*
2. *the lower turbines would have an adverse and moderate level of effect on landscape character and values;*
3. *other ‘amenity’ effects would range from adverse and low to adverse and high, with local residents most affected by the proposed wind farm.*

However, it is unclear what these findings mean in terms of the overall acceptability of the proposal from a landscape standpoint:

- *What level of effect would the combined turbines, substation, transmission line, roading, earthworks and mitigation (if any) have?*
- *With reference to the King Salmon decision of the Supreme Court, the question of ‘avoiding’ all adverse effects may not be relevant to assessment of this application, as*

we are not dealing with an ONL in the Coastal Environment; even so, “protect” probably still means “protect”, with reference to section 6(b) of the Resource Management Act. Consequently, a broad judgment about the acceptability of the wind farm proposal needs to be made. This relates to both section 6(b) and the various statutory instruments devolved from it, at both the district and regional levels (as set out in Appendix A of Mr Moore’s report).

68. Report No 15 - Radio Interference

Response:

See two attached reports Appendix 6 Radio Interference Response (Peat Aviation), and Appendix 6B, Radio Interference Response (Lambda), for answers to questions in 68.

Following review of the Radio Communications Information by AECOM New Zealand Limited it is noted that there are some other communications services that have not been considered by the report and they need to be investigated and analysed to determine if the wind farm will have any impact on them. These services are:

Aviation Radio

VOR, DME, NDB and SSR

Weather Radar

Aviation Secondary Surveillance Radar (SSR)

There are secondary surveillance radar sites at Ruaotuhenua (NZAA) and Hamilton (NZHN) that cover the wind farm site. CAA ENR 1.6 shows coverage at least down to 1500ft over the area. More detailed and lower level maps may be available from CAA.

SSR normally has filters to avoid detection of slow moving targets however the speed of blade tips can exceed these thresholds and sites overseas have been known to cause clutter on SSR screens.

Aviation Navigation Beacons

There are VHF omnidirectional range (VOR) beacons in the 112-118MHz band, distance measuring equipment (DME) in the 962-1213MHz band and non-directional beacons (NDB) in the MF band operating in the area. For example Hamilton VOR operates at 114MHz and NDB operates at 390kHz.

Weather Radar

The Bay of Plenty weather radar is located in the vicinity. Wind turbines have been known to cause false rain areas on weather radars.

An assessment in relation to these facilities is required to provide a comprehensive assessment of the potential effects.

69. Report No 16 - Shadow Flicker

P3 It is noted that there are 13 dwellings within 1.1km of the turbines (1.1km distance is based on international guidelines) however 15 dwellings within 2km experience more than 30 hours of shadow flicker per year. Please confirm if more than 30 hours of shadow flicker is an adverse effect for those houses between 1.1km and 2km away from the turbines. Is the effect of shadow flicker reduced with distance from the turbine, or will the dwellings within the 1.1km to 2km range still experience the same level of adverse effect as those up to 1.1km away?

Response:

Based on Australian planning guidelines (the most relevant since there is currently not a New Zealand guideline), the observance of shadow flicker at distances exceeding 265 times the diameter of the blade chord is indiscernible. Applying the modelled turbine blade chord to the guideline multiplier of 265 translates to an outer distance limit of 1.1km. Therefore, according to the guidelines there will be no adverse effects encountered at houses between 1.1km and 2km from the wind farm. It is also important to consider that shadow flicker only occurs during sunset and sunrise when the sun is low in the sky, hence any potential effect may be screened by intervening structures or vegetation.

The intensity of shadow flicker is inversely proportional to distance between the observer and the turbine causing the effect. Thus, the further the observer is from the turbine the less pronounced the effect will be. There are several reasons for this:

- there are fewer times when the sun is low enough to cast a long shadow
- when the sun is low it is more likely to be obscured by either cloud on the horizon or intervening buildings and vegetation
- the centre of the rotor's shadow passes more quickly over the land reducing the duration of the effect
- At distance, the blades do not cover the sun but only partly mask it, substantially weakening the shadow. This effect occurs first with the shadow from the blade tip, the tips being thinner in section than the rest of the blade. The shadows from the tips extend the furthest and so only a very weak effect is observed at distance from the turbines.

70. *P12 Why was the Thames meteorological station used rather than the Paeroa one? (Note this was p12 of the report)*

Response:

The Thames meteorological station was used rather than the Paeroa station because the Paeroa station does not record sunshine hours, which is an important variable for determining average cloud cover.

71. Report No 17 - Siltation Mitigation Proposals

P3 Road Formation and Construction section notes in brackets that "some of these potential areas shown on the consent area plans are considered to have a contour that is too steep for this purpose...". If this is the case, why are these areas shown as sites for potential fill? They should be removed from the plans.

Response:

See Erosion and Sediment Control Plan and attachments submitted from Ridley Dunphy submitted to the Waikato Regional Council S92 response.

72. Report No 18 - Culverts along Main Access Road

The report is based throughout on the incorrect assumption that the road will be an “internal site access road”, when in fact all but one of the eight culverts proposed for upgrade are located within Wright Road, which is an unformed paper road, which is still a public road. Works within this corridor require resource consent and will need to address the appropriate District Plan roading standards.

The photographs provided within this report require some form of label identifying location they were taken and direction they were taken in.

Response:

Issues to deal with culverts and consents needed are discussed in question no 15 above.

The photographs, amended by labelling including direction they were taken, are included in Appendix 7, Photos of Access Roads Road Culverts, to this report.

73. Report No 19 - Tourism

The report is unclear whether any tourism development is proposed in association with this site. If it is then District Plan requirements in relation to the activity ie a cycleway, will be required to be met or resource consent will be required.

Response:

No specific proposal for tourism development is proposed at this time. Any future specific proposal that required resource consent will be applied for at that time.

74. *Bottom P16, think east has been confused with west.*

Response:

Noted

75. *P18 4.1 Construction Mitigation. Is it intended to limit oversize vehicle movements to periods outside school holidays and major visitor periods? This has not been covered off within any of the transportation reports provided. Please confirm.*

Response:

No. No such limits on travel times proposed.

Maps and Other Matters

76. *Quarry Reverse Sensitivity Area (not “Reserve” or “Sensitive”)*

Response: Noted

77. *Marae Development Zone (not Area)*

Response: Noted

78. *Wright Road is a legal road (although unformed) not an internal road or track as referenced in a number of reports.*

Response: Noted

79. *Culverts – all culverts to be upgraded need to be identified correctly on the various maps. ie Integrated Transport Assessment map shows culvert 4 and 5 to be upgraded, whereas the Civil Engineering Services report identifies 8 culverts to be upgraded.*

Response:

The correct and accurate assessment of culverts is the eight culverts/crossings identified on the Civil Engineering Services report – these are also identified on Drawing 18/1250/1/01 (Civil Engineering Services Ltd). Note that the 3 culverts located closest to Rawhiti Road (culverts Chainage 100, 250 and 780) are all within the Matamata-Piako District. The Hauraki District starts at the property boundary, just after the culvert at chainage 780.

Of the five other culverts – all located within Hauraki District, just three will have the culverts significantly modified – see the table in the Civil Engineering Services report, pages 5 and 6 (second table in the report). The culverts to be significantly modified are culverts at chainage 1740, 2260 and 2420, all of which will be extended. Note that none of these culverts are on the paper road, which is marked on the Civil Engineering Services Plan (it starts deviating just after culvert ch 1300, and then again after ch 2060).

There is no proposal at this stage to modify the other two culverts at chainage 1300, and 2060, although the applicant recognises this ultimately may be necessary so the application covers all eight culverts/crossings of the Romaru Stream.

Note also that an Ecological Effects assessment of the culvert/crossing modification proposals has been undertaken as part of the WRC S92 request and the Erosion and Sediment Control Plan also deals with potential effects from the construction of culvert modifications.

Please note the Integrated Transport Assessment map showing culverts 4 and 5 to be upgraded is incorrect although spillway works will occur and this may have limited impact upon the waterway.

80. *The maps also need to show the Hauraki District Plan ONL and DAL areas, plus WRC ONL area, as these do differ.*

Response:

These maps are attached as Appendix 8, WRPS and HDP Landscape Notations,

81. *Only a floor plan of the proposed substation is provided, no elevations. It is noted that the application seeks an envelope type approval, but this is not clear without reading through the documents in detail. Please provide elevations meeting the envelope requirements for the proposed substation building.*

Response:

A description of the building is contained within in section 2.6 of the Construction Report prepared by Energy3 Services. The final design of the building must be approved by Transpower which will happen post the consent process when the fil turbine design has been made. Therefore, an elevation cannot be presented at this stage. Associated substation equipment will be up to 12m high. In terms of effects the main potential effect is that of landscape. The potential for landscape effects has been assessed in detail by Kaimai Wind Farm's Landscape expert Mike Moore in his Section 92 response in Appendix 5, Landscape and Visual Effects, of this document.

82. *Numerous photos throughout the application documents are missing any form of label or explanation to advise where they were taken, looking in what direction etc. ie the Civil Engineering Services report re stormwater. Can this please be corrected.*

Response: Noted. The Civil Engineering Services photos are attached as Appendix 7, Photos of Access Road and Culverts (see also response to question 72 above)

83. *Documents note that there is a "summary Cultural Impact Assessment" can this be made available to Council.*

Response:

The Ngati Hako Summary of Key Issues paper is attached as Appendix 9, Ngati Hako Summary of Key Issues,

84. *Differences in naming and numbering of dwellings list DW60-97, doesn't correspond with the DW lists within the Noise and Landscape reports. Can these please be made consistent across the various appendix documents.*

Response:

There is no dwelling list in the Landscape report. The dwelling lists (Table 4 and 5) in the Noise report are consistent with the dwellings listed on the second aerial photo in Attachment C – Miscellaneous Drawings, although there is a much smaller number of dwellings referred to in the Noise report.

Please contact the undersigned if you have any queries or other issues with the information provided.

Yours faithfully

Craig Shearer
Consent Co-ordination
Kaimai Wind Farm Ltd

List of Appendices

Appendix 1: Acoustic Responses (Chiles Limited)
Appendix 2: Turbine Position Concept and Farm Airstrips (Manawatu Aerial Photo Services)
Appendix 3: Ecology S92 Response (Ecology NZ)
Appendix 3B: EIANZ Assessment Report (Ecology NZ)
Appendix 4: Land Transportation report September 2018 (Tranzcarr Heavy Haulage)
Appendix 5: Landscape and Visual Effects (Mike Moore Landscape Architect)
Appendix 5B: Viewpoint B20 Modified
Appendix 6: Radio Interference Response (Peat Aviation)
Appendix 6B: Radio Interference Response (Lambda)
Appendix 7: Photos of Access Road Culverts
Appendix 8: WRPS and HDP Landscape Notations
Appendix 9: Ngati Hako Summary of Key Issues
Appendix 10: Response to Traffic Matters (Gray Matter)
Appendix 11: Tektus Consultants Letter
Appendix 11B: Civil Drawings Revised October 2018 (Tektus Consultants)