BEFORE THE ENVIRONMENT COURT

Decision No. [2012] NZEnvC 133

ENV-2010-WLG-000114

IN THE MATTER	of an application under section 311 of the Resource Management Act 1991
BETWEEN	PALMERSTON NORTH CITY COUNCIL Applicant
AND	NEW ZEALAND WINDFARMS LIMITED Respondent

Court: Environment Judge B P Dwyer
Environment Commissioner H M Beaumont
Environment Commissioner D J Bunting

Heard: at Palmerston North on 12 -14 December 2011

Counsel/ Appearances:
J W Maassen and A J Kirk for Palmerston North City Council
M C Holm and V N Morrison for New Zealand Windfarms Limited

DECISION

Decision Issued: 04 JUL 2012

A: Declarations 1.8 and 1.9 made.

B: Costs reserved.

Introduction

[1] Palmerston North City Council (the Council) seeks a series of declarations pursuant to s311 Resource Management Act 1991 (RMA). The declarations concern operation of a wind farm called Te Rere Hau (TRH), situated in the rural hinterland of Palmerston North. The Respondent in the proceedings, New Zealand Windfarms Ltd (NZWL), is the owner and operator of the wind farm.

[2] The Council granted a resource consent allowing establishment and operation of the wind farm in February 2005. Put briefly, the Council asks the Court to make declarations as to whether or not TRH is operating in accordance with its resource consent and the conditions of consent imposed upon it.

[3] The declarations sought by the Council are in the following terms:

1.1. That the noise from the respondent's Te Rere Hau wind farm exhibits special audible characteristics, in particular the noise has tonal and amplitude modulated sound levels for the purpose of condition 5 of the resource consent dated 30 May 2005 ("the resource consent");

1.2. That a penalty of +5dBA should be applied to the measured sound level in accordance with condition 5 of the resource consent and clause 5.3.2 of NZS6808:1998;

1.3. That for the purpose of undertaking an objective test for tonality in accordance with condition 5(1) of the resource consent:

(a) The assessment technique contained in IEC61400-11(2002) is to be used; and

(b) The assessment technique contained in IEC61400-11(2002) requires measurements and assessments to be undertaken at locations close to the wind turbine (as opposed to at the notional boundary of a receiver location).

1.4. That the respondent is not complying with the noise levels in condition 4 of the resource consent at the notional boundary of 104 Harrison Hill Road.

1.5. That there is reasonable doubt that the respondent is complying with the noise levels in condition 4 of the resource consent at the notional boundary of the following dwellings existing at the date of the resource consent (29 May 2005):

(a) *102 Harrison Hill Road (Gordon);*

(b) *18 Harrison Hill Road (Burgess);*

(c) *96 Harrison Hill Road (Parlane);*

(d) *140 Harrison Hill Road (Burnette);*

(e) *19 Ridgeview Road (Olsson);*

(f) *47 Ridgeview Road (Ellingham);*

(g) *48 Ridgeview Road (Banks-Wallace and Wallace);*

(h) *38 Ridgeview Road (Irvin);*

(i) *15 Ridgeview Road (Moore);*

(j) *428 Pahiatua-Aokautere Road (Huffman and Devey);*

(k) *696 Pahiatua-Aokautere Road (Grassick);*

(l) *662 Pahiatua-Aokautere Road (Stewart);*

(m) *349 Forest Hill Road (Malley); and*

(n) *367 Forest Hill Road (Linforth, T and K).*

1.6. *That further compliance monitoring must be undertaken by the respondent at the notional boundary of the dwellings identified in paragraph 1.4* [sic-1.5] *above pursuant to condition 5(m) of the resource consent;*

1.7. *That prior to undertaking the further compliance monitoring in paragraph 1.5* [sic-1.6] *above the respondent must undertake further background sound monitoring (which is consistent with the background sound monitoring requirements in condition 5 of the resource consent) at the following representative locations:*

(a) *367 Forest Hill Road (Linforth);*

(b) *140 Harrison Hill Road (Burnette);*

(c) *38 Ridgeview Road (Irvin);*

(d) *21 Ridgeview Road (Willis);*

(e) *662 Pahiatua-Aokautere Road (Stewart); and*

(f) *428 Pahiatua-Aokautere Road (Huffman/Devey).*

1.8. *That the acoustic information supplied in the AEE by the respondent and the evidence of the respondent was inaccurate such that the applicant may rely on section 128(1)(c) RMA to conduct a review of the noise consent conditions.*

1.9. *That condition 1 of the resource consent is being and has been breached by the respondent in that the Te Rere Hau wind farm is operated at levels higher than those predicted in the application.*

[4] Our hearing was confined to consideration of declarations 1.1-1.3, 1.8 and 1.9 (above). The application remains *alive* insofar as the other declarations are concerned.

[5] In this decision we propose to deal with declarations 1.1-1.3 and then 1.9, followed by 1.8. Insofar as declarations 1.8 and 1.9 are concerned, the Council advised that declaration 1.8 is only sought if declaration 1.9 is not made. Declaration 1.8 is considered a *fallback* position by the Council. In any event, consideration of the declarations requires us to traverse issues common to both and we shall approach this decision on that basis. Before doing so we firstly address a preliminary jurisdictional issue raised by NZWL.

Issues of Jurisdiction/Discretion

[6] In its opening submissions NZWL contended that the making of the declarations sought by the Council was outside the jurisdiction of the Court[1]. As we understood NZWL's submission in that regard it was based on the following propositions:

- The declaration process is limited to interpretive issues and is generally not appropriate where there are contested facts;
- The declarations sought by the Council relate to matters where there are separate procedures available under RMA.

[7] Insofar as the first proposition is concerned, we see nothing in the provisions of ss310-313 RMA which preclude the Court from making findings as to disputed facts in any declaration proceedings. As with all Environment Court proceedings, applications for declaration are conducted in accordance with the provisions of s269 RMA which provides that the Court *...may regulate its own proceedings in such manner as it thinks fit* and s276(1)(a) RMA which authorises the Court to...*Receive anything in evidence which it considers appropriate to receive*. Whether or not it is necessary to determine disputed issues of fact in order to make a declaration is something which will turn on the circumstances of any given case.

[1] NZWL opening submissions, at [103(a)].

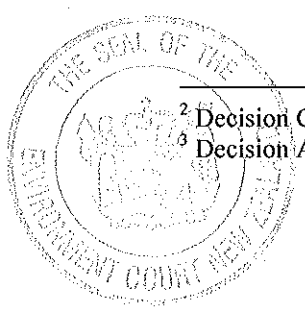
[8] In support of the first proposition NZWL cited a comment of Judge Skelton in a Planning Tribunal decision, *Re Trolove*[2] where he said:

> *As a general proposition, it is not appropriate to seek a declaration when the factual position is unclear or is in dispute - see New Zealand Insurance Company Limited v Prudential Assurance Company Limited [1976] 1 NZLR 84 (CA). I accept that was a case concerning an application for a declaratory judgment under the Declaratory Judgments Act 1908, and that in terms of the relevant provisions of the Resource Management Act 1991 there will be cases where the Tribunal will have to make findings of fact in order to determine an application for a declaration. An obvious example would be an application for declaration as to existing use rights. Nevertheless, a case such as the present one where I am being asked to determine whether a proposed subdivision is a discretionary or controlled activity, I think it is necessary at the very least, that the essential facts are not in dispute. That is not the case, and consequently I am not prepared to make the first declaration sought by Mr Trolove.*

[9] NZWL also referred to the Environment Court decision, *Parnell Residents' Society Incorporated v Edinburgh Institute Limited*[3] where Judge Thompson commented:

> *A Court requires a settled factual background before being able to confidently say that a given situation is (or is not) within the law.*

[10] Neither of the cases cited supports the proposition that the Court cannot resolve contested facts during the course of declaration proceedings. Judge Skelton noted in the *Trolove* case that there will be circumstances where the Court has to do exactly that. We have no difficulty with the proposition that it is preferable that declaration proceedings come before the Court on the basis of agreed facts, however that may not be possible in any given instance for any number of reasons.



[2] Decision C 52/94, at 11.
[3] Decision A 019/2005, at [25].

[11] In any event, there is agreement as to certain facts which are central to the outcome of these proceedings. Those facts are that the documents forming part of NZWL's application for resource consent contained statements that:

- The Windflow 500 turbine (the turbine used at TRH) has a sound power output of 100.7dB;
- The Windflow 500 turbine does not generate noise with special audible characteristics (SACs).

It is conceded by NZWL that both of those statements are incorrect.

[12] We accept that part of NZWL's second proposition, which contends that there are procedures under RMA upon which the Council may possibly have embarked, other than these declarations. Those potential procedures include the issue of abatement notices, the seeking of enforcement orders or prosecution.

[13] NZWL points to the limited nature of the relief that may be granted under declaration proceedings, which are essentially limited to addressing issues of legal interpretation. We recognise that is the case, but do not accept that declaration proceedings are not available to the Council.

[14] The Council has statutory obligations to monitor the state of the environment and the exercise of resource consents in its district[4] and to... *take appropriate action (having regard to the methods available to it under this Act) where this is shown to be necessary.*[5] Section 35(2) clearly contemplates that there may be more than one method of appropriate action available to a local authority undertaking these duties.

[15] These proceedings have been commenced by the Council in the context of acknowledged inaccuracies in information provided by NZWL to the Council and the public in obtaining its resource consent, together with considerable public disquiet about operation of that consent. That disquiet has led to numerous complaints being made to the Council about TRH. The Council decided to apply for declarations to determine whether or not

[4] RMA, s35(2)(a) and (d).
[5] RMA, s35(2).

NZWL is in breach of the terms of its resource consent. NZWL submitted that these issues could have been resolved by discussion between itself and the Council rather than by the Council seeking declarations.

[16] We understand the Council's reluctance to try and resolve issues about exercise of the resource consent on the basis of in house discussions between itself and NZWL, in light of public disquiet about that matter. Members of the public might be understandably sceptical about any such resolution. In any event, the issue of enforcement proceedings does not preclude the Council and NZWL working in co-operation to resolve these issues. To some extent that has happened with a programme of monitoring and evaluation of TRH which has been undertaken since the Council made this application.

[17] It appears to us that the declaration application made by the Council is in fact the most benign process that it could have undertaken to resolve these issues, particularly when compared with the consequences of abatement or enforcement proceedings which NZWL suggested might be appropriate. The fact that the Council had a range of actions available to it does not preclude it from pursuing the particular method which it has, namely the seeking of declarations. It is ironic that NZWL complains about the Council's use of the declaration procedure when it is acknowledged inaccuracies in presentation of NZWL's resource consent application have created the need for these proceedings in the first place.

[18] Section 310 RMA relevantly provides (inter alia):

> ***310 Scope and effect of declaration***
>
> *A declaration may declare-*
>
> *(c) Whether or not an act or omission, or a proposed act or omission, contravenes or is likely to contravene this Act, regulations made under this Act, or a rule in a plan or proposed plan, a requirement for a designation or for a heritage order, or a resource consent; or*
>
> *(h) any other issue or matter relating to the interpretation, administration, and enforcement of this Act, except for an issue as to whether any of sections 95 to 95F have been, or will be contravened.*

We consider that the declarations sought by the Council in this case clearly fall within the ambit of those provisions of s310.

[19] We accept the proposition advanced by NZWL that the Council bears the burden of proof in these proceedings and that burden is on the balance of probability. We did not understand the Council to suggest otherwise.

[20] We conclude that we have jurisdiction to make the declarations sought by the Council. We note the provisions of s313 RMA which provides:

> ***313 Decision on application***
>
> *After hearing the applicant, and any person served with notice of the application, and any other person who has the right to be represented at proceedings under section 274, who wishes to be heard, the Environment Court may-*
>
> *(a) Make the declaration sought by an application under section 311, with or without modification; or*
>
> *(b) Make any other declaration that it considers necessary or desirable; or*
>
> *(c) Decline to make a declaration.*

Accordingly, we have power to make the declarations sought, modify the declarations sought, make any other declarations that we consider necessary or desirable or decline to make a declaration at all.

Background

[21] In September 2004, NZWL made application to the Council for resource consent for:

> *The development, construction, installation, operation, maintenance and decommission of 104 wind turbines at Te Rere Hau Wind Farm to generate electricity and associated ancillary activities. The wind turbine generators comprise tubular towers and associated nacelles and blades. A summary description of the structures and activities follows:*
>
> - *The parameters of the wind turbine generators are as follows:*
>
> *(i) The wind turbines will be supported by a tubular tower having a maximum height of 28.5 metres above ground level (total height including hub approximately 30 metres);*

(ii) Each turbine will incorporate a maximum of two rotor blades with a maximum length of 33.2 metres for both blades (tip to tip).

- *A site office and maintenance building and associated outdoor yard.*
- *Associated internal access tracks.*

[22] The application identified that the type of consent required was discretionary activity (unrestricted). As required by s88(2) RMA the application was accompanied by an Assessment of Environmental Effects (AEE) prepared in accordance with Schedule 4 RMA. Section 88(2)(b) requires that an AEE is *...in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.*

[23] The AEE was prepared by NZWL's consultant planner. It contained a detailed description of the site and the proposal, identified a series of environmental effects potentially caused by the proposal, addressed requirements of the District and Regional Plans and RMA and concluded (in summary) that potential and actual adverse effects of TRH could be avoided, remedied or mitigated.

[24] There were 13 attachments to the AEE. The attachments were maps, plans and assessments of various aspects of the wind farm proposal. For the purposes of these proceedings, the most significant of such attachments was Attachment 7 which was a Noise Impact Assessment Report (NIAR) prepared by Malcolm Hunt Associates (noise and environmental consultants).

[25] The NZWL application was duly notified by the Council. It attracted a total of 71 submissions. Twenty seven submissions were in support of the application, 38 opposed the application and the remaining submissions indicated neither support nor opposition. The application was heard by a Commissioner appointed by the Council. On 11 February 2005 the Commissioner issued a decision approving the grant of consent to TRH subject to imposition of 30 conditions.

[26] Aokautere Guardians Incorporated (a submitter which had opposed the application) filed an appeal against the grant of consent. The appeal was settled by discussion between the parties, who agreed on the issue of a consent order from the Environment Court. The

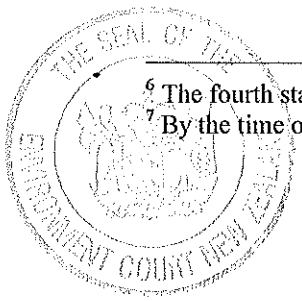
consent order allowed construction and operation of 97 turbines (as opposed to the 104 turbines approved by the Commissioner), subject to conditions (some of which were amended from the conditions imposed by the Commissioner).

[27] Construction of the wind farm commenced shortly after the grant of consent and has proceeded in stages. A total of 65 turbines have been constructed in three stages within the Council's territory[6]. The wind farm commenced operation in September 2006 when Stage 1 was completed with five turbines. In May 2009, Stage 2 was completed with a further 28 turbines installed and construction of Stage 3 (32 turbines) began.

[28] In about May 2009, the Council started to receive complaints from nearby residents about noise from the wind farm. By the time the Council lodged this application for declaration (October 2011) it had received over 500 complaints about noise.[7] Affidavits from 20 residents were provided as part of the Council application, however the evidence which we considered was considerably wider than just that of the residents.

[29] Operation of TRH has been the subject of a number of acoustic reports commissioned by both NZWL and the Council which were made available to us. These include:

- *Pre-Installation Ambient Sound Level Monitoring* – Malcolm Hunt Associates – August 2006.
- *Post-Installation Sound Level Monitoring* – Malcolm Hunt Associates – April 2007.
- *Te Rere Hau Wind Farm Noise Monitoring – Initial Results* – Marshall Day Acoustics – June 2009.
- *Wind Farm Sound Level Monitoring 2009 Compliance Assessment* Malcolm Hunt Associates – September 2009.
- *Te Rere Hau Wind Farm Noise Compliance Assessment* – Acousafe Consulting and Engineering Limited – April 2010.
- *Wind Farm Sound Level Monitoring Compliance Assessment* – Malcolm Hunt Associates – April 2010.



[6] The fourth stage of 32 turbines is within territory under the jurisdiction of Tararua District Council.
[7] By the time our hearing commenced, about 800 complaints had been received.

[30] Additionally, the Court was assisted in this hearing by the evidence of three acoustic consultants:

- Mr N R Lloyd (for the Council)
- Mr N I Hegley (for NZWL)
- Mr M M Halstead (for NZWL).

[31] The three acoustic witnesses produced statements of evidence for the hearing (and a rebuttal statement in the case of Mr Lloyd), including evidence about extensive monitoring and evaluation of wind farm operation required by the Court as part of case management of these proceedings. Additionally, at the instruction of the Court, the witnesses had entered into discussion on a number of occasions in order to identify the significant noise issues for consideration by the Court. The witnesses provided two joint statements to the Court.

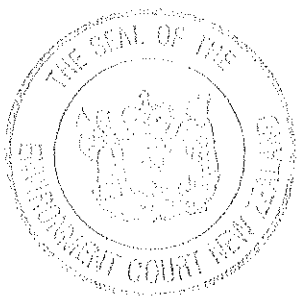
[32] In the light of that background we now consider the determinative matters in these proceedings. There are two substantive matters which we must address as part of that process. They are:

- The contents of the AEE and their accuracy;
- The conditions of the resource consent for TRH.

The AEE

[33] In this section of the decision we will identify and consider the accuracy of various measurements and predictions contained within the AEE. NZWL formally acknowledged that there were inaccuracies in the AEE. Its case before us revolved around the legal consequences of those inaccuracies. We will return to that issue in due course.

[34] The ***Details of the Proposal*** contained in the AEE stated that NZWL would use the Windflow 500 wind turbine generator at TRH. The Windflow 500 is a turbine developed by NZWL or an associated entity. At the time of application there was only one such turbine in operation, that being a prototype installed at Gebbies Pass near Christchurch. TRH was to be the first wind farm to use the Windflow 500 (and we understand remains the only wind farm to do so).



[35] The AEE incorporated a brochure providing details of the Windflow 500[8] and provided specifications of the turbine towers, blades and nacelles. Insofar as the matter of noise generated by the turbines was concerned, the AEE document summarised and incorporated the conclusions of the NIAR which formed Attachment 7 to the AEE.

[36] The NIAR was prepared by Malcolm Hunt Associates and contained an assessment of the noise which would be generated by the Windflow 500 turbines. The assessment was undertaken in accordance with *NZS6808:1998 – Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators* (NZS6808:1998). The NIAR included two statements as to the performance of the Windflow 500 which are of particular significance in the context of these proceedings.

Special audible characteristics

[37] The first of those statements was that Windflow 500 turbines did not produce sound with SACs. The NIAR contained this statement about SACs[9]:

> *The recommendations of NZS6808 imply sound from a WTG may contain special audible characteristics (clearly audible tones or impulses) which may arouse adverse community response at lower levels than sound without such characteristics.*
>
> *When sound has a special audible characteristic, NZS6808:1998 recommends the measured sound level of the source has a 5dB penalty applied. This is to say that the subjective reaction to a sound containing a special audible characteristic is deemed to be 5bB greater than the same sound without the special audible characteristic.*
>
> *The Windflow 500 WTG has been thoroughly measured and sound emissions analysed. On-site assessment and results of frequency analysis indicate the Windflow 500 is assessed as not producing sound with special audible characteristics. ...*

[8] AEE, Attachment 3.
[9] NIAR, at [1.6].

[38] The NIAR noted that the prototype at Gebbies Pass was initially found to produce sound with SACs but that those had been eliminated as a result of extensive redesign and gearbox engineering work. Accordingly, The NIAR stated unequivocally that the Windflow 500 would not produce sound which had SACs.

[39] The NIAR referred the reader to Appendix 3 for a *full report* on the sound power determination for the turbines. That full report uses more measured language with respect to SACs:[10]

> *No apparent tonal components were present within the measured sounds. The above spectra is consistent with the subjective evaluation made on-site whereby broadband aerodynamic sounds were mainly present with there being little or no detected sounds associated with mechanical equipment operation or electrical sounds.*
>
> ...
>
> *No significant tonal components are present that would warrant a "tonal penalty" such as described in NZS6808:1998.*

[40] The full report described the assessment and measurement of SACs and then evaluated the results against the thresholds of the relevant standards. The NIAR and the AEE itself combine this measurement and evaluation into a single statement that... *the Windflow 500 is assessed as not producing sound with special audible characteristics.*

[41] That statement has been found to be incorrect. Testing of the Windflow 500 turbines installed at TRH using the International Standard – *IEC61400-11: Wind turbine generator systems – Part 11: Acoustic noise measurement techniques* (IEC61400-11) has established that noise generated by the turbines does in fact possess a tonal component at least when measured close to the turbines (in the *near field*). NZWL concedes that is the case.

[42] Given the presence of tones close to the turbines, further testing was undertaken to determine how the tonal component changed over distance. Measurement of the noise from turbines 103 and 104 (in accordance with *ISO1996-2:2007 Acoustics -- Description, measurement and assessment of environmental noise -- Part 2: Determination of environmental noise levels*) demonstrated that the tone disappeared between 422 and 724m

[10] Acoustic Report: Sound Power Determination for Windflow 500 WTG.

downwind from the turbines.[11] In addition there has been an assessment of tonality according to the Joint Nordic Method II (a third method of tonal analysis similar to the IEC and ISO methods) in the vicinity of nearby residences. The assessment of noise at five locations along Ridgeview Rd and Harrison Hill Rd, identified a perceptible tone but not at a level that required an adjustment for tonality (being less than the most stringent tone seek criteria of 0.5dB).[12]

[43] The noise experts have agreed that the spectrum of sound from the turbines contains tones which would likely trigger the SAC penalty 50 metres from the turbines. However they disagree on whether tonality near the turbines is relevant to the assessment of environmental effects.[13]

The sound power level

[44] The second relevant statement contained in the NIAR related to the *sound power* level of the Windflow 500 turbines. Sound power is the sound energy created at source by a sound generator. Sound power itself cannot be heard nor measured directly, although it can be ascertained. Ascertaining the sound power level of the turbines is necessary in order to predict the sound pressure levels experienced by recipients of noise from them. Sound pressure levels convert into audible sound which can be both predicted and measured. Accurate determination of sound power level is essential for the accurate prediction of sound pressure level.

[45] The NIAR stated (in summary) that the sound power level of the Windflow 500 turbine had been determined by analysis of the prototype turbine at Gebbies Pass in accordance with IEC61400-11. The NIAR stated that the sound power level of the Windflow 500 was 100.7dBA at a wind speed of 8 m/s[14]. We note that the sound power level in the full report (Appendix 3 to the NIAR) was calculated at 100dBA compared to the 100.7dBA used for the modelling. As the author of the NIAR (Mr Hunt) was not a witness in these proceedings we were unable to determine the reason for this difference.

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[11] Hegley Acoustics Consultants (report dated July 2009 Common bundle tab 16), at page 30.
[12] Marshall Day Acoustics (report dated June 2009 Common bundle tab 15), at [3.2] and Marshall Day Acoustics (report dated June 2011 Common bundle tab 22).
[13] Joint statement of acoustic experts 9 September 2011, at [10] and [22]; and Joint statement dated 13 December 2011, at [11].
[14] Metres per second.

[46] Testing of representative turbines constructed at each of the three stages of TRH has identified their sound power levels at an 8m/s wind speed as being:[15]

- Turbine 36 – 103.3dBA
- Turbine 15 Stage 1 – 104.8dBA
- Turbine 10 Stage 2 – 105.6dBA
- Turbine 104 Stage 3 – 106.4dBA.

The error in the measurement and calculation of the sound power level was only stated for turbine 36, at 1.4dB. The experts agreed that the error would typically be between 1 and 2dB.[16] NZWL accepts that the sound power levels of the TRH turbines exceed the 100.7dBA stated in the application documents.

[47] The difference in the sound power level had direct flow on effects on the accuracy of other parts of the NIAR.

Modelling and noise contours

[48] A key function of the NIAR was assessing *...potential noise levels affecting key assessment locations, namely local rural residential sites*[17]. That assessment was undertaken by predictive modelling of sound pressure levels to be received at surrounding locations (downwind), at wind speeds of 8m/s. The modelling results were presented in various Tables and Figures forming part of the NIAR. These included two Figures[18] which are locality maps superimposed with noise contour lines showing predicted sound pressure levels to be received at surrounding locations. The modelling was undertaken on the basis that the sound power level of the TRH turbines would be 100.7dBA and the sound propagation model used took into account topographical screening[19].

[15] Turbine 36 Hegley Acoustics Consultants (report dated July 2009), at 5.2; Turbines 15, 10 and 104 Marshall Day Acoustics (report dated June 2011), at 3.4.1-3.4.3.
[16] Turbine 36 Hegley Acoustics Consultants (report dated July 2009); Turbines 15, 10 and 104 Marshall Day Acoustics (report dated June 2011).
[17] NIAR, at [5].
[18] Figures 14 and 15.
[19] The noise witnesses variously used the terms *topographical screening* and *terrain screening*. We understand them to be the same thing.

[49] The outcome of the modelling process was summarised in these terms in the NIAR:[20]

The overall conclusion is that only three local residential locations are likely to be affected by sounds from the wind farm at levels of 30dBA or more, however this is when there is also some considerable locally generated ambient sound from wind. It is considered there are no potential noise effects below 30dBA for residences located at further distances from the site as wind farm sound levels at these locations would be 10dBA or more below the compliance limit recommended by NZS 6808:1998 and will result in a [sic] *nil noise effects.*

[50] The conclusion contained in the NIAR that only three local residential locations would be affected by receipt of sounds at levels of 30dBA or more has proven to be wildly incorrect. The acoustic experts agreed that this is due to a combination of the increase in the sound power level generated by the turbines installed (on average about 5 decibels higher than stated in the NIAR) and an overestimation of topographical screening (in the order of 5 to 7 decibels). At the request of the Court, NZWL produced amended noise contour maps showing the noise contours generated using a sound power level of 105.7dBA, with and without topographical screening. Taking the most conservative scenario of the amended sound power level and no topographical screening approximately 30 residences are shown within the 30dBA contour line and 16 of these are also within the 40dBA contour line.

[51] NZS6808:1998 specifies the equation to be used for the calculation of the outdoor sound level with distance from the source. The Standard notes that this equation does not take into account attenuation due to screening effects where there is no line of sight between the turbine and the receiver locations. The acoustic absorption and reflection effects due to vegetation and ground cover are also ignored.

[52] If this more conservative approach had been followed, the modelling would have predicted 16 residences within the 35dBA contour, even when using the incorrect sound power level of 100.7dBA. While the NIAR did show the effect of both a 50% and 100% reduction in the effect of topographical screening this was not considered to be realistic and was not reproduced in the primary AEE document. Mr Halstead told us that the updated

[20] NIAR, at [5].

NZS6808:2010 adopts ISO9613 (a sound propagation standard) and does take into account terrain shielding although in a different manner to that of the model used for the AEE.[21]

[53] The actual noise levels at a number of residences have been measured. Data for residences along Ridgeview Road show that the levels of noise received from TRH are consistent with the AEE predictions for the prevailing winds (from the NW sector for approximately 66% of the time) but much higher for the less frequent downwind conditions (from the SE sector for approximately 29% of the time). Noise levels measured at the residences for the SSE winds are in the range 33 – 41dBA compared to the AEE predictions of 23 – 36dBA.[22]

Conditions of Consent

[54] The conditions of the resource consent which are of particular relevance to our considerations are condition numbers 1, 4 and 5. Those conditions provide as follows:

1. *The proposed Te Rere Hau Wind Farm be constructed and operated generally in accordance with all the information, site plans and drawings accompanying the application or submitted as additional information. Each turbine shall be located within a 20m radius of its nominated coordinates as outlined in the Application (contained on File No:N21/PLN-Plans drawn by Connell Wagner drawing number 101E, 3A).*

   Advice Note:

   (a) the ability to alter the specific location of each turbine within a 20m radius is to provide for likely movement related to detailed design layout and the recommendations made in the Applicant's ecologist's report; and

   (b) non-reflective finishes shall be used and maintained in such a manner to prevent blade glint and to assist in reducing the prominence of the turbines when viewed from a distance.

4. *WTG sound levels shall not exceed:*

   – *the best fit regression curve of the A-weighted background sound level (L95) plus 5dB; and*

   – *40dBA.*

   Whichever is the higher.

[21] NoE, at 188 and 191.
[22] Halstead EiC, at [64]-[69].

5. *The sound levels shall be measured and controlled using NZS6808:1998 - Acoustics - The Assessment and Measurement of Sound from Wind Turbine Generators but with the following additional requirements to be met.*

   a) *The 10 minute background sound levels (L95,10) shall be measured at the notional boundary of the dwelling existing at the date of this consent on Lot 2 DP 307640 (being the nearest dwelling to the wind turbines other than the dwellings on Lot 1 DP 20911 (130 Harrison Road), Lot 2 DP 85413 (629 Pahiatua Track) and Lot 1 DP 85413 (631 Pahiatua Track)), the principle being that if the WTG noise was excessive, then the largest difference between the post-installation noise level and the acceptable limit would be obtained.*

   b) *The 10 minute average wind speeds shall be measured at a height of 10 metres, and 30 metres along with the wind direction and these measurements shall be made at the same time as the 10 minute background L95,10 measurement (and called data pairs).*

   c) *The wind speed and wind direction measurements shall be made near to where the wind turbines are located. In any case these are not to be taken at a distance further than 1.5km from the measurement point.*

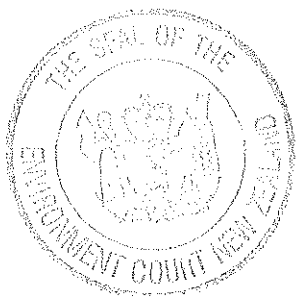
   d) *Background sound level L95,10 shall be correlated with wind speed, and wind direction and time of day.*

   e) *The size of each class in each parameter shall not be more than:*

      - *wind speed – 1m/s bins*
      - *wind direction - 45° arc*
      - *time of day – night-time (1 hour after sunset to 1 hour before sunrise) and daytime*

   The four predominant wind direction arcs are:

      - *WNW - 270° - 315° relative to true north (typically 37% frequency)*
      - *NNW - 315° - 360° relative to true north (typically 28% frequency)*
      - *SSE - 135° - 180° relative to true north (typically 19% frequency)*
      - *ESE - 90° - 135° relative to true north (typically 8% frequency)*



The total number of data points obtained across all wind speeds and directions shall not be less than 1440. In respect of each of the four predominant 45° wind direction arcs, the total number of data points obtained for background sound or compliance testing shall (unless exceptional wind conditions preclude it) be not less than 200 (but not less than 350 for arcs SSE and ESE) and shall be sufficient to cover the range of wind speeds set out in NZS 6808:1998.

In respect of the other four 45° wind direction arcs, there shall be no minimum number of data points for any or all wind speed bins.

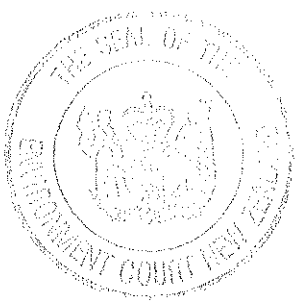
f) *The following effects shall be excluded from the analysis:*
   - *seasonal sounds (eg of seasonal cicadas, crickets and frogs etc);*
   - *other identifiable noise sources (eg tractors working at night, pumps, periods of precipitation, etc)*

g) *Sufficient data shall be gathered such that accurate best-fit regression curves can be obtained.*

h) *Post-installation compliance testing shall be carried out at the same location as the background sound monitoring as soon as reasonably practicable over a 6 month period after completion of the wind farm. If the wind farm is installed in stages then compliance testing shall be undertaken as soon as reasonably practicable over a 6 month period after each stage or annually if there is more than one stage installed per year. The applicant shall notify Council when a stage is completed.*

i) *The same parameters as required for the background noise monitoring shall also be measured for post-installation compliance testing. The cut-in operation times of the WTG shall also be recorded and this shall be indicated on the results.*

j) *The best fit regression curve shall be provided for:*
   - *the times WTGs are operating above cut-in;*
   - *wind speeds up to 14m/s at 10m height;*
   - *wind directions including adequate samples for the 45° arc from the nearest wind turbines to the measurement location; and*
   - *day and night.*



k) *The best fit regression curve of the L95,10 of the WTG's is not to exceed the noise limit under the same wind speed, wind direction and time of day.*

l) *If noise is judged to be tonal then the tonal correction as contained in NZS6808:1998 shall be applied except the assessment technique is that contained in IEC61400-11(2002) Wind Turbines – Part 11 – Acoustics – Noise Measurement Technique. No correction is to be applied to a measured noise level for the additive effect of the background noise.*

m) *Where reasonable doubt exists regarding compliance at any other dwelling (at the notional boundary) existing at the date of this consent (other than the dwellings on Lot 1 DP 20911 (130 Harrison Road), Lot 2 DP 85413 (629 Pahiatua Track) and Lot 1 DP 85413 (631 Pahiatua Track), then monitoring shall be repeated at that location.*

n) *Sound monitoring equipment shall conform to the following requirements:*

- *the complete measurement and analysis measurement system shall conform to the requirements of NZS6808:1998 and the Standards referred to by NZS6808, and*
- *microphones shall be fitted with a wind shield such that the noise generated by wind on the wind shield is, to the extent practicable, at least 10dBA below the noise being measured.*

o) *All results shall be provided in a timely manner to the Principal Planner, City Contacts Unit, Palmerston North City Council.*

p) *All sound monitoring shall be carried out by suitably qualified and experienced persons.*

q) *The consent holder shall provide all necessary data required to carry out the compliance testing including:*

- *wind speeds at 10m and 30m and direction during periods of compliance testing;*
- *the times at which individual wind turbines are operating above the cut-in wind speed;*
- *any other information required by the Principal Planner, City Contacts Unit, Palmerston North City Council.*

r) *The operator of the wind turbines shall pay all costs associated with compliance testing.*

s) *Where compliance is not achieved then the consent holder shall propose and implement remedies within three months. If the sound levels have not been remedied within that time then the consent holder shall cease operation of the WTG's until modifications are made to reduce the noise. Further operation of WTG operation shall only be for sound measurement checks as specifically agreed with Council's Principal Planner to demonstrate compliance.*

[55] Declaration 1.9 relates specifically to compliance by NZWL with the provisions of condition 1. NZWL contended that condition 1 must be read subject to the provisions of conditions 4 and 5 and for that reason we have set all the conditions out above. We accept that condition 1 cannot be read in isolation and must be interpreted in the context of the overall consent that was granted. We will return to those issues shortly.

[56] We now consider the declarations sought. We have set them out in full at the commencement of this decision but for ease of reference repeat the relevant declarations below.

Declarations 1.1 – 1.3

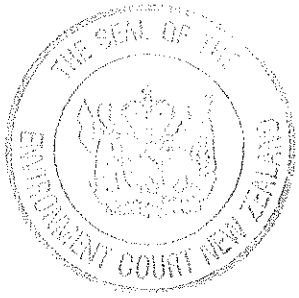
[57] The Council seeks three declarations with respect to special audible characteristics and the related conditions of the consent:

1.1. That the noise from the respondent's Te Rere Hau wind farm exhibits special audible characteristics, in particular the noise has tonal and amplitude modulated sound levels for the purpose of condition 5 of the resource consent dated 30 May 2005 ("the resource consent");

1.2. That a penalty of +5dBA should be applied to the measured sound level in accordance with condition 5 of the resource consent and clause 5.3.2 of NZS6808:1998;

1.3. That for the purpose of undertaking an objective test for tonality in accordance with condition 5(1) of the resource consent:

(c) The assessment technique contained in IEC61400-11(2002) is to be used; and



(d) *The assessment technique contained in IEC61400-11(2002) requires measurements and assessments to be undertaken at locations close to the wind turbine (as opposed to at the notional boundary of a receiver location).*

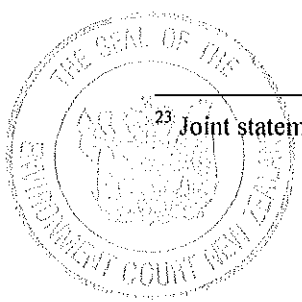
[58] The experts agreed that the turbines exhibit tonal characteristics in the near field when measured according to IEC61400-11. They also agreed that there is a problem with Condition 5(l):[23]

> *This condition states that the assessment technique contained in IEC61400-11 should be used to assess special audible characteristics. However IEC61400-11 is a measurement standard for wind turbines, and while the standard shows how to measure the tonal noise it contains no assessment technique for determining whether a penalty should be applied once the tonal noise has been measured.*

The condition was based on NZS6808:1998 which quoted a draft version of the standard (IEC DIS 1400-11) for assessing sound power levels and tonal character close to the turbine. That draft standard used the Joint Nordic Method to assess tonality but no reference to the Joint Nordic Method is made in the 2002 version of IEC61400-11. The experts agreed that the Joint Nordic Method should be used and that the measurement locations for tones should be at the dwellings. They further agreed that a penalty of 5 decibels should be imposed if the tonal audibility exceeds the 6.5dB criterion given in the Joint Nordic Method.

[59] Monitoring to date has identified tonal characteristics at the residences although below the threshold at which a penalty would apply. However, the acoustic experts have agreed that further monitoring and analysis of tonality and amplitude modulation is required, particularly for the ESE and SSE wind directions before it can conclusively be established whether the noise received at residential locations contains penalisable SACs.

[60] Given the incomplete monitoring and the difficulties with the drafting of Condition 5(l) we decline to make the declarations 1.1 – 1.3 at this time and adjourn those applications until necessary monitoring has been completed.



[23] Joint statement dated 9 September 2011, at [21].

Declaration 1.9 - Condition 1

[61] Paragraph 1.9 of the Council application seeks a declaration:

That condition 1 of the resource consent is being and has been breached by the respondent in that the Te Rere Hau Wind Farm is operated at levels higher than those predicted in the application.

[62] Condition 1 requires that:

1. *The proposed Te Rere Hau Wind Farm be constructed and operated generally in accordance with all the information, site plans and drawings accompanying the application or submitted as additional information. Each turbine shall be located within a 20m radius of its nominated coordinates as outlined in the Application (contained on File No:N21/PLN-Plans drawn by Connell Wagner drawing number 101E, 3A).*

   Advice Note:

   (a) the ability to alter the specific location of each turbine within a 20m radius is to provide for likely movement related to detailed design layout and the recommendations made in the Applicant's ecologist's report; and

   (b) non-reflective finishes shall be used and maintained in such a manner to prevent blade glint and to assist in reducing the prominence of the turbines when viewed from a distance.

[63] The Council's application for declaration 1.9 is based on the proposition that TRH comprises turbines with different noise features and effects than were described in the application documents and because of that, the wind farm is not operating as *expressly allowed* by its resource consent[24]. The Council submitted that the consequence of making this declaration would be that TRH must cease to operate *...unless the turbines can be operated in a manner consistent with the AEE and generate effects as predicted in the AEE.*[25] We note that the Council has not asked for a declaration on whether or not the wind farm has been constructed in accordance with the information supplied. This distinction is important when we come to consider the implications of the turbines having a higher sound power level than that stated in the AEE and exhibiting SACs in the near field.

[24] RMA, s9(3).
[25] Council submissions, at [50].

[64] The Council submission included a detailed analysis of the requirements for resource consent applications and AEEs. The Council contended that in the case of wind farms an adequate description of a proposal will include:

- Where wind turbines are located;
- Where access tracks are located;
- What size, make, model and gearbox configuration the turbines have;
- What sound power levels the turbines possess;
- What noise emission characteristics the turbines have.

The Council described the above as *factual descriptions of the activities*[26]. Much of the Council submission traversed the issue of the significance of the AEE in the resource consent process and the requirement for accuracy in the AEE. The Council submission also addressed issues such as interpretation of the AEE by members of the public and the fact that the application (including the AEE) defines the scope of any given proposal.

[65] In summary, the Council's position was that the AEE made statements of fact as to the turbines to be used at TRH and that Condition 1 requires compliance with those statements. The Council acknowledged that use of the term... *generally in accordance with all the information supplied*... in Condition 1 allows some flexibility in its application.

[66] Whilst acknowledging that actual performance of the TRH turbines was different to that stated in the AEE, NZWL disputed that it was in breach of Condition 1. Its position in that regard was supported by the evidence of Dr P H Mitchell, its planning witness, whose evidence provided the basis for the following submissions on the part of NZWL:

- Insofar as noise compliance obligations are concerned, Condition 1 is void for uncertainty;
- Condition 1 cannot reasonably be interpreted as incorporating all of the application documents as a condition of consent;
- The documents referred to in Condition 1 include an AEE which contains predictions and matters of opinion rather than matters capable of objective determination;
- Condition 1 must be read subject to any specific conditions which follow.

[26] Council submissions, at [71].

We consider those propositions in more detail.

Void for uncertainty

[67] NZWL submitted that Condition 1 is a *catchall* condition intended to ensure that the wind farm proposal should be developed generally as set out in the relevant application documents. It contended that the condition did not identify specific plans or parts of the application with which the consent holder must comply nor did it specify what was to happen if there was conflict between the application documents and the provisions of other conditions of consent.

[68] NZWL referred to the Court's finding in *Ferguson v Far North District Council*[27] that *...a condition requires specificity, clarity and accuracy of expression leading to certain measure of certainty, before it can be enforceable.* It was NZWL's case that Condition 1 lacked that measure of certainty.

[69] The Council submitted that Condition 1 was an *Augier* condition agreed when NZWL and some submitters settled their dispute before the Environment Court.[28] However, we note that the condition appears in the original Commissioner's decision with almost exactly the same words. The Commissioner recorded:[29]

> *The majority of the conditions were formulated prior to the hearing, principally by the Council and the Applicant. Others had input from some submitters... Yet other conditions were debated and 'formulated' during the hearing, particularly those addressing noise effects.*

We have not endeavoured to resolve the issue of whether or not the condition complies with *Augier* requirements or not but have simply sought to interpret it in the context of the resource consent.

[27] [1998] NZRMA 238, at 244.
[28] Council submissions, at [55].
[29] Report and decision of Commissioner dated February 2005 (common bundle tab 9), at 68.

Application not a consent condition

[70] NZWL contended that the phrase *generally in accordance with* cannot be reasonably interpreted as requiring specific compliance with every single aspect of an application. If it did, that would obviate the need for any other conditions at all. NZWL submitted that the intent of the phrase is to allow some variations to occur without further planning permissions being required. Again it contended that the condition cannot be interpreted as requiring compliance with every aspect of the application when there are specific noise conditions in the consent which supersede any general noise provision contained in the AEE.

Predictions and matters of opinion

[71] NZWL submitted that Condition 1 could not reasonably be interpreted as requiring compliance with noise levels predicted in the AEE and that predictions and matters of opinion are not appropriate as consent conditions. They point to the fact that the AEE predicts different noise levels at different locations, which would result in different noise limits at those locations, which is inconsistent with NZ6808:1998.

Conflict with specific conditions

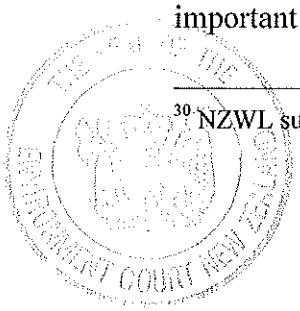
[72] NZWL submitted that, to the extent that Condition 1 could be considered as imposing a noise compliance condition (which NZWL disputes), it conflicts with Conditions 4 and 5 which contain specific noise limits and controls. It submitted that Conditions 4 and 5 are objective, fact based and enforceable conditions and must prevail over the predicted noise levels in the AEE and hence the more general Condition 1.

Discussion

[73] We will base our consideration of this matter on the submissions made on behalf of NZWL. Before addressing the specific issues identified by NZWL we make some general observations as to the significance of the AEE in the resource consent process.

[74] NZWL accepted *...that an AEE is an important part of the initial phase of the consenting process*[30]. While that is undoubtedly correct, the statement considered in isolation considerably understates the significance of the AEE. The AEE is more than just an important document, it is the bedrock upon which resource consent applications are founded.

[30] NZWL submissions, at [75].



The application document itself is a somewhat sparse document which briefly describes the resource consent proposal. It is the AEE which (as required by s88(2)(b) RMA) provides the detail of the proposal. Between them, the two documents:

- Identify the activity for which consent is being sought;
- Confine the extent of what may be undertaken pursuant to any consent which may be granted;
- Identify, describe and evaluate the effects of a proposal on the environment;
- Enable initial appraisal of a proposal by consent authorities;
- Enable persons with an interest in a proposal to broadly assess how it might affect them.

The need for accuracy and integrity in the application documents is self evident.

[75] We agree with NZWL's submission that Condition 1 is a catchall condition which we understand to mean a general condition applying to all aspects of the consent. That is the whole point of such conditions which are commonly imposed on resource consents and which (in general terms) simply require that consent holders do what they said they were going to do in their applications.

[76] Turning to the question of uncertainty, it appears to us that there are two potential areas of uncertainty apparent in Condition 1:

- Firstly use of the term *...generally in accordance with*;
- Secondly, what documents are incorporated within the description *...all the information, site plans and drawings accompanying the application or submitted as additional information.*

[77] Dr Mitchell testified that resource consents commonly contain conditions requiring compliance with specific plans[31] and that for more complex projects where it is practically impossible to specify all of the plans and details that apply to the activity in question, such conditions are sometimes expanded to require *general* compliance with the information supplied[32] with an application. Dr Mitchell's observations in that regard are similar to our

[31] Mitchell EIC, at [3.9].
[32] Mitchell EIC, at [3.10].

own. He went on to note, however, that he had never seen the *general compliance* type of condition used as an enforcement measure.

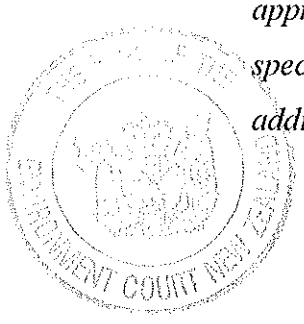
[78] Dr Mitchell and Mr Holm, appeared to agree with the proposition advanced by the Council Planner (Mr C L Auckram) that the term *generally* allows *some tolerances* in terms of compliance with the information contained in the AEE. We agree with Dr Mitchell's observation that this is a practical and robust approach to the imposition of conditions, particularly in respect of complex projects. The alternative of requiring compliance with application plans and information in the most minute detail seems both impracticable and unreasonable. We do not consider that use of the term... *generally in accordance with...* of itself, invalidates Condition 1.

[79] Nor do we accept that there is uncertainty in the description of the documents referred to in Condition 1. Those documents are described as *...all the information, site plans and drawings accompanying the application or submitted as additional information.* It is an ascertainable question of fact whether or not any given document falls within that description.

[80] We appreciate that in a complex consent, application of a condition such as Condition 1 may require consideration of a large range of documents to ascertain if they are within the ambit of the condition. In our view that does not invalidate the condition but is rather a reflection on the complexity of the consent in question. However, it should be noted that in these proceedings there can be no dispute that the document whose compliance is in question (the NIAR) is a document certainly caught by the description *...information... accompanying the application.* It is part of the AEE which we have described as the bedrock of the application.

[81] Finally on this topic, we refer to the High Court decision, *Red Hill Properties Ltd v Papakura District Council* where Rodney Hansen J made the following observations:

> *[42] It seems to me also that the changes to law and practice which have followed the passing of the Resource Management Act have invited a somewhat more flexible approach to the interpretation of resource consents. The statutory regime requires specific information to be included in the application (s88) and makes provision for additional information to be provided if required by the consent authority (s92). That*



information must be made available for public inspection before any hearing (s92(3)(b)). I agree with the view expressed in the Clevedon Protection Society case that any documents so produced may be referred to in construing the terms of a resource consent whether or not they are expressly referred to in the consent itself.

[43] I do not see this somewhat more expansive approach as undermining the concerns which informed the statements of principle in Codner and Slough Estates. The Courts there were concerned that reference to extrinsic evidence not expressly referred to in the consent could prejudice a subsequent purchaser of the land the subject of the consent. They would be unable to rely on the words of the consent itself with the risk that the consent could mean one thing in the hands of the original owner and something different in the hands of a subsequent purchaser.

[44] Under the Act a land use consent and subdivision consent attaches to the land and may be transferred unless the consent provides otherwise (s34). However, given the formal requirements associated with an application for consent imposed by the Act, it is hard to see how any prejudice to a subsequent purchaser could arise as a result of reference to information disclosed pursuant to statutory obligations and as part of the formal application process. Such information will be part of the public record and, if not expressly referred to in the consent, incorporated by necessary implication.

[45] Although interpretation of contracts involves somewhat different considerations, recent dicta in that area also encourage a less formalistic and rigid approach to the issue of interpretation generally and confirm that almost all of "the old intellectual baggage of 'legal' interpretation has been discarded": Investors Compensation Scheme Ltd v West Bromwich Building Society [1998] 1 All ER 1998 at pp 114-115, quoted in Boat Park Ltd v Hutchinson [1999] 2 NZLR 74 at pp 81-82. For much the same reasons as appealed to the courts in those cases, I see it as desirable when interpreting a resource consent to have regard to any relevant background information which may assist the tribunal to determine what the consent authority using the words might reasonably have been understood to mean by them.[33]

We consider that our approach to interpretation of Condition 1 is consistent with those observations.

[33] (2000) 6 ELRNZ 157 (HC), at [42]-[45].

[82] We find that Condition 1 does have the measure of certainty required to be a valid condition.

Application not a consent condition

[83] We refer only briefly to NZWL's submission that Condition 1 cannot reasonably be interpreted as requiring specific compliance with every single aspect of an application, no matter how minute. As we have noted, use of the word *generally* seeks to avoid such a requirement.

[84] In this case, the aspects of the application whose compliance is in question, are statements contained in the AEE and NIAR as to the sound power levels and noise characteristics of the turbines at TRH. We will return to those matters shortly, but simply observe at this time that they are matters which are fundamental to consideration of the noise effects of wind turbines. They are not aspects of the application which can be described as minutiae.

Predictions and matters of opinion

[85] We note the submission of NZWL as to the difficulties of applying Condition 1 in respect of compliance with noise levels predicted in the AEE. We understand that to be a reference to the noise levels received by surrounding properties as shown on the noise contour maps. We consider that discussion of that issue falls more appropriately under the head of conflict with specific conditions and address it in that context.

[86] We do however refer to the submission made by NZWL that the predicted noise levels vary at different locations and that requiring NZWL to meet those predicted levels at various locations is inconsistent with NZS6808:1998. NZWL contends that the fact that only one monitoring point was nominated in the consent supports the proposition that is not intended to be the case.

[87] The reason why only one monitoring point was identified was a direct outcome of NZWL's inaccurate statement that only one existing residential property was potentially affected by noise from the wind farm to such an extent as to require monitoring. NZWL's

own acoustic witnesses concede that that is not the case. Modelling using the correct sound power level and no terrain correction, indicates that 16 houses would have been within the 35dBA contour where more rigorous monitoring of noise effects is required. In that situation, the Standard recommends that a representative number of these houses are chosen for background noise monitoring. There is no doubt in our minds that a number of these houses would have similarly been specified as monitoring locations in the conditions of consent if it was not for the inaccuracy in the information provided by NZWL.

Conflict with specific conditions

[88] We agree in a general sense with the proposition advanced on behalf of NZWL that where a general condition of resource consent (such as Condition 1) conflicts with specific conditions (such as Conditions 4 and 5) then these specific conditions must prevail over the more general condition. That is a common rule of statutory interpretation.

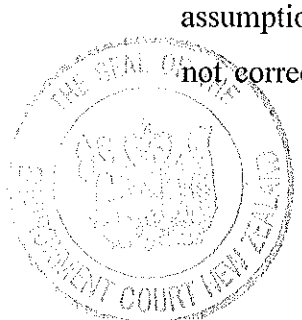
[89] NZWL submits that Condition 4 imposes a limit of 40dBA on wind farm noise received by neighbouring properties and that to the extent that Condition 1 requiring compliance with received noise levels predicted in the AEE is in conflict with the specific noise level contained in Conditions 4, the provisions of Condition 4 must apply. We accept that is the case. However, that is not the end of the matter.

[90] The NZWL application for resource consent was advanced on a very specific basis. That was that TRH would use the Windflow 500 turbine. Precise details of the dimensions, character and performance of the Windflow 500 turbine were included in the application documents. Amongst the performance specifications which were provided in the AEE were that:

- The sound power output of the Windflow 500 was 100.7dBA;
- The Windflow 500 turbine did not produce noise with SACs.

These specifications were presented as statements of fact in the NIAR.

[91] Even if NZWL was correct in its submission as to the unenforceability of predictive assumptions contained in the NIAR (and we do not accept that is the case), that submission is not correct insofar as the statements regarding sound power level and absence of SACs is



concerned. They are statements of fact which are indisputably part of the information accompanying the application. We consider that Condition 1 requires that TRH be constructed and operated generally in accordance with that information.

[92] In any event, we do not concur with the submission for NZWL that Condition 1 is in conflict with Conditions 4 and 5 insofar as the issues of sound power level and SACs are concerned. The information contained in the NIAR as to sound power levels and SACs relates to noise generated at source. We have noted[34] that sound power is the sound energy created at source by a generator. Similarly, SACs were identified by application of IEC61400-11[35] using near field measurements. Conditions 4 and 5 address the noise to be received by neighbouring properties. That is a different matter to the noise generated by turbines at source.

[93] We appreciate that there is a direct relationship between the noise generated at source and the noise ultimately received by neighbouring properties. The information contained in the NIAR as to the sound power level of the Windflow 500 was what led NZWL to the prediction that only three neighbouring properties would receive noise at levels higher than 30dbA from TRH. The increase in sound power levels of the TRH turbines (as compared to the sound power levels stated in the AEE) has led directly to TRH having noise effects over a substantially wider area and on more residential locations than was predicted in the AEE. In our view there is no inconsistency or conflict between Condition 1 and Conditions 4 and 5 at all. Condition 1 (and the NIAR) identifies the means (restricted sound power output and absence of SACs) by which NZWL predicted it would be able to meet the noise requirement now contained in Conditions 4 and 5.

[94] The consequence of the turbines producing sound with SACs is less clear at this time. SACs have been shown to be present close to the turbines. Conversely, we heard no expert evidence confirming that there were SACs at neighbouring residences at a level which would require an adjustment for tonality although we were advised that analysis of the measured data was still incomplete. As we have noted, that matter remains under investigation.

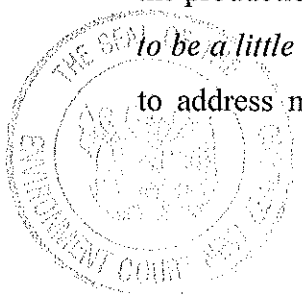
[34] Above, para [44].
[35] Above, para [41].

[95] The facts that the turbines have a sound power level 5dBA in excess of that stated in the NIAR and generate noise with SACs (whatever the consequence of that might be) contrary to the statements contained in the NIAR, lead Judge Dwyer to the conclusion that those facts of themselves mean that TRH was not constructed and is not operating as required by Condition 1. Commissioners Beaumont and Bunting are not of that opinion. They consider that a more wide ranging analysis is required. We accordingly undertake a more detailed consideration of the uncertainties of the noise measurements and predictions and their consequences.

[96] There is no doubt that the sound power level stated in the AEE is inaccurate and that the turbines installed at TRH, on average, produce noise some 5dBA above the sound power level of the prototype. Five decibels is considerably greater than the error in the measurement and calculation of sound power levels, quoted by the noise witnesses as being typically between one and two dB. However it is not the uncertainty in the measurement that is the issue here. The variability in production runs (individual turbines range from 103.3 to 106.4dBA) is much greater than this measurement uncertainty. The NIAR was clear that the measurements were carried out on a prototype model although there was no explicit discussion of the possible implications of this.

[97] The sound power level of the turbines is not the only source of error in predicted noise levels. The predicted noise contours took into account attenuation of the sound by the terrain and this attenuation has proved to be considerably less (by some 5 to 7 dB) than modelled during downwind conditions. While attenuation of sound by terrain is not included in the basic model adopted by NZS6808:1998 the Standard does refer to ISO9613 (albeit an earlier version) for further information on the calculation of attenuation of sound outdoors. We accept that the modelling carried out was good practice and in accordance with the Standard at the time the NIAR was prepared.

[98] These two issues were put to Mr C Sadler (the Chief Executive of NZWL) during cross examination. Mr Sadler was not surprised by the differences between the prototype and the productions runs. He told us that prototypes tended to be... *hand-made therefore they tend to be a little smoother.* He noted that production runs would involve ongoing improvements, to address mechanical issues with the turbines, leading to variability between batches of



turbines. With respect to the noise predictions Mr Sadler observed that the... *vagaries of terrain and weather conditions can produce different effects*... to those modelled in the AEE. He emphasised that his focus was on the noise received at the residences rather than on the sound power level of the turbines and the original predictions. Mr Sadler considered that operating protocols could be changed to reduce noise particularly during periods of low wind speed and for winds in the SE sector.[36]

[99] In closing, NZWL indicated that a number of the consented turbines for TRH had not been constructed, some of these being in proximity to residences of concern. In addition to changes in operating protocols there was some flexibility for some or all of these turbines not to be installed.[37]

[100] It is clear that even with the higher sound power levels of the turbines TRH could be operated in a manner which compensated for this increase and this would result in lower noise levels at residences. This can be compared to other parameters defined in the AEE, such as the height of the turbines, where the consequential visual effects are not amenable to change by altering the operating protocols. In addition, the construction of the wind farm could be altered by not installing some or all of the remaining consented turbines or removing some existing turbines. Thus, strict compliance with the sound power level given in the AEE might not be required if the construction and/or operating protocols were changed to compensate for this, thereby achieving the predicted outcomes.

[101] However, the wind farm has not been operated in a manner designed to compensate for the increased sound power level of the turbines. So while it might be possible to achieve the outcomes contemplated in the NIAR in terms of noise received by neighbours, it is clear that the operation of TRH to date has not. As a result the magnitude and extent of the noise effects, particularly when the winds are in the SE quarter, are considerably greater than predicted.

[102] In reaching a conclusion as to whether or not TRH has been operated generally in accordance with the information accompanying the application, we have had regard to all of

[36] NoE, at 78-91.
[37] NoE, at 215-216.

the contents of the NIAR. That includes the statements as to the sound power level of the Windflow 500 turbines, the absence of SACs in the noise generated by the turbines and predicted noise levels at neighbouring properties.

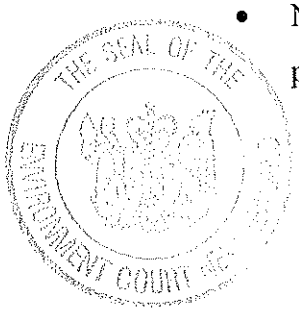
[103] NZWL contended that predictions and matters of opinion were not appropriate as consent conditions, thereby suggesting that it was not generally bound by the noise outcomes (in terms of properties affected or extent of effect) contained in the NIAR. We do not accept that to be the case.

[104] The predictions in question were the results of modelling undertaken to establish what the noise effects of TRH would be. Modelling is a technique which is commonly used to predict a wide range of effects in resource consent applications. The results are more than just a statement of opinion as to outcomes but are advanced as scientifically based calculations which can be relied upon by a consent authority in determining the effects of a proposal. The modelling results are indisputably part of the *information* provided by NZWL to the Council.

[105] In this case the modelling was used to support the quite specific prediction contained in the NIAR as to the limited noise effects which TRH would have on neighbouring properties, namely that only three local residential locations would receive noise in excess of 30 dBA. The suggestion that NZWL cannot be bound by that prediction in any way would have very wide implications for the administration of RMA consents.

[106] In determining whether or not TRH has been operating generally in accordance with the documents accompanying the application as required by Condition 1 we have had regard to the facts that:

- The TRH turbines generate noise with higher sound power levels than identified in the NIAR;
- The TRH turbines generate noise with SACs when measured in the near field contrary to the statement contained in the NIAR;
- Noise from TRH received at local residential locations exceeds the levels predicted in the NIAR.



[107] The combination of all of those factors leads us to the view that TRH is being operated in breach of Condition 1.

[108] Declaration 1.9 has clearly been prompted by complaints about noise at the residences. However the words used – *wind farm is operated at levels higher that those predicted in the application* – are much more general. Given the breadth of Condition 1 we are not prepared to make such a general declaration and have altered the wording to specify the effects at issue:

> *That condition 1 of the resource consent is being and has been breached by the Respondent in that the Te Rere Hau wind farm has been operated in such a way that the noise effects at local residential locations are considerably greater than those predicted in the application.*

The term *noise effects* is deliberately used in preference to *noise levels* to include the potential effect of SACs at the residences, even if only under particular weather conditions.

Application 1.8-Section 128(1)(c) RMA

[109] The declaration which the Council seeks in relation to s128(1)(c) is:

> *That the acoustic information supplied in the AEE by the respondent and the evidence of the respondent was inaccurate such that the applicant may rely on s128(1)(c) RMA to conduct a review of the noise consent conditions.*

We note that (somewhat unusually) the TRH resource consent does not contain a review condition enabling the Council to review conditions.

[110] Section 128 RMA sets out the circumstances in which conditions of resource consents may be reviewed. It relevantly provides:

> ***128 Circumstances when consent condition can be reviewed***
>
> *(1) A consent authority may, in accordance with section 129, serve notice on a consent holder of its intention to review the conditions of a resource consent –*
>
> *(c) If the information made available to the consent authority by the applicant for the consent for the purposes of the application contained*

inaccuracies which materially influenced the decision made on the application and the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions.

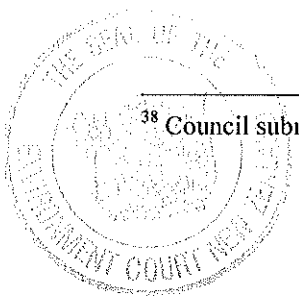
[111] The Council made the following submission in respect of declaration 1.8:[38]

Declaration 1.8 only arises if Declaration 1.9 is not made. That is because Declaration 1.8 can only be made if the Environment Court concludes that the differences between the AEE and TRH's actual acoustic profile outlined above are authorised by the resource consent, and complies with Condition 1 but nevertheless contained inaccuracies. The Council says that RMA s.128(1)(c) can be used appropriately only where a refinement of conditions is necessary, to address effects contemplated but poorly estimated in an AEE. The Council argues that RMA s.128(1)(c) is not appropriate where the activity is operated beyond what is expressly authorised. Declaration 1.8 is therefore the Council's fall-back position.

[112] We have found that the operation of TRH breaches Condition 1. Notwithstanding that finding we consider that it is still appropriate for us to consider Declaration 1.8 for two reasons:

- In the event that we might be found to be incorrect in our determination as to compliance with Condition 1;
- A review of conditions is another method which the Council might choose to adopt in exercising its duties under s35(2). It is appropriate that it has that option available to consider.

[113] The powers of review pursuant to s128(1)(c) are wide-ranging. However, our considerations are limited to a determination as to whether or not the Council is entitled to exercise such powers in this case. If we find that the Council may do so, the form and extent of any review is a matter to be determined by the Council in accordance with the provisions of ss129-132 RMA.



[38] Council submissions, at [53].

[114] NZWL submitted that there are three requirements, all of which must be present, before a review under s128(1)(c) may be conducted:

- There must have been inaccuracies in the information made available to the consent authority;
- Those inaccuracies must have materially influenced the decision made on the application;
- The effects of exercise of the consent must be such that it is necessary to apply more appropriate conditions.

[115] NZWL accepted that it is ... *apparent that the initial Noise AEE predictions contained inaccuracies in relation to both the sound power level and sound propagation.*[39] To the extent that NZWL might imply by use of the word *predictions*, that the statements in the AEE as to these matters were predictive only and were not intended to be binding, we disagree. The information as to these aspects of turbine performance was presented in the NIAR as statements of fact based on assessment of the Gebbies Pass turbine. In any event, we refer to our discussion on modelled predictions contained in paras [103]-[105] (above).

[116] The two conceded inaccuracies led to the following further inaccuracies in NZWL's description and evaluation of effects:

- Miscalculation of the wind farm noise contours;
- The conclusion that only three local residential locations were likely to be affected by sounds from the wind farm at levels of 30 dBA or more;
- The statement that there would be *nil noise effects* from TRH on residences further away than the three identified residences. (We accept NZWL's contention that the term *nil noise effects* was intended to indicate that other residential locations would not receive noise above 30 dBA, not that they would hear no noise from TRH at all);
- The conclusion that due to the restricted extent of noise effects there needed to be only one monitoring point for assessment of wind farm noise compliance.

We consider that all of these inaccuracies are relevant to consideration of Declaration 1.8.

[39] NZWL submissions, at para 75.

[117] The Council made the following submission about the identified inaccuracies:[40]

> *88 Inaccuracies in the AEE had the following consequences:*
>
> *(a) Many residents were not personally served with the application including residents on Ridgeview Road from which many of the complaints the Council has received emanate;*
>
> *(b) Residents that attended the consultation meeting who were affected were told they were not;*
>
> *(c) Residents who were notified by personal service were given inaccurate information;*
>
> *(d) Residents who were not personally served but read the application were given inaccurate information;*
>
> *(e) Pre-installation background noise levels as required by NZS 6808 were not obtained;*
>
> *(f) Only 104 Harrison Hill Road was identified as a site requiring monitoring;*
>
> *(g) No detailed management and monitoring regime was established to manage and monitor the effect of WTGs that exhibit tonal characteristics based on near field assessment.*

[118] The Council further contended that if accurate predictions had been made then:

- The Council would have been obliged to serve a wider catchment of residents likely to be affected by the proposal;
- The desktop acoustic review undertaken by the Council's technical advisory group would have been based on different information;
- Engagement in the process by the public would have been different (a point acknowledged by the acoustic experts in their first joint statement).[41]

[119] We consider that the consequences identified in Para 88 (a)-(d) of the Council submission (above) are certainly correct. However, they are irrelevant for our considerations under s128(1)(c) which are confined to determination of the influence which the inaccuracies had on the consent authority's decision, not what influence the inaccuracies may have had on

[40] Council submissions, at [88].
[41] Council submissions, at [17].

the manner in which the Council notified and appraised the proposal nor the manner in which the public responded to it.

[120] Application of the second limb of s128(1)(c) appears to require the reviewer to put itself into the mind of the initial decision-maker in order to determine whether the inaccuracies in information provided by the Applicant *materially influenced* the decision. In undertaking that exercise it is necessary to have regard to the inaccurate information provided by the Applicant, together with the decision (including the reasons for it). We ask two questions:

- Is it reasonably likely that any aspect of the decision, including the determination to grant consent and/or the form of conditions imposed as part of the consent is founded on the inaccurate information provided;
- Is it reasonably likely that a different decision might have been made, either in terms of granting consent or in terms of conditions imposed, if the consent authority had accurate information before it.

[121] It is apparent on considering the Council decision, that the Commissioner who heard the application accepted the information and conclusions provided by NZWL's acoustic witness, Mr Hunt. The Commissioner summarised that evidence in paragraphs [55]-[73] of his decision. He also considered other noise reports and evidence (including a report provided by NZWL from Marshall Day Acoustics which identified areas of risk surrounding sound power levels and SACs). It is apparent from perusal of paragraphs [246]-[250] of the decision that having done so, the Commissioner accepted Mr Hunt's evidence and the propositions advanced on behalf of NZWL as to the limited number of residences and properties which might be adversely affected by noise from TRH and the very limited noise effect of TRH generally.

[122] A direct consequence of the conclusions reached by the Commissioner as to the limited extent of noise effects was that pre-installation background sound measurements and post-installation monitoring of wind farm performance were required at only one adjoining site, namely the notional boundary of a dwelling existing on Lot 2 DP307640 (known as the Hargreaves site) where noise levels in excess of 40 dBA were predicted.

[123] NZS6808:1998[42] recommends that background sound level measurements are carried out at a representative number of locations where there are predicted sound levels of 35dBA or higher. NZS6808:1998 similarly recommends compliance monitoring at the same locations where background sound levels were determined.[43] In each case the conditions of consent required background and compliance monitoring at only one site, based on the prediction contained in the NIAR as to the limited extent of the noise effects.

[124] We understand that it was the common view of the acoustic witnesses that if the true extent of noise generation had been known as established by actual performance of the wind farm, considerably more extensive pre-installation and post-installation monitoring sites would have been required as a specific condition of consent.[44] In other words, the limited pre and post-installation monitoring required by the conditions of consent is a direct result of inaccuracies contained in the NIAR as to the extent of wind farm noise effects.

[125] Similarly, if it had been recognised that the turbines emitted a perceptible tone (even in the near field) then the conditions of consent would have directly addressed the measurement, assessment and criteria for any penalty for SACs. We do not consider Condition 5(l) to be adequate in this regard and we understand that the acoustic experts agree that to be the case also.

[126] We note that the conditions for the Te Rere Hau Eastern Extension[45] directly address the issue of tonality requiring assessment at nominated residential locations.

[127] We find that there were inaccuracies in the information and these inaccuracies did materially affect the decision, particularly with respect to conditions regarding the monitoring of noise. Noise conditions would almost certainly have specified additional locations for monitoring and comprehensively addressed the issue of SACs. Additionally, it may have been considered appropriate to provide for post installation and pre-operational testing to verify modelling results in light of the operational differences between the prototype turbine and constructed turbines which NZWL has now acknowledged. There may have been other

[42] Standard at [4.5.1].
[43] Standard at [5.2.1].
[44] Joint statement of acoustic experts dated 13 December 2011, at [17].
[45] Exhibit 1.

consequential changes to conditions required. We have no doubt that there would have been material differences to the conditions imposed had the AEE not contained the inaccuracies which it did.

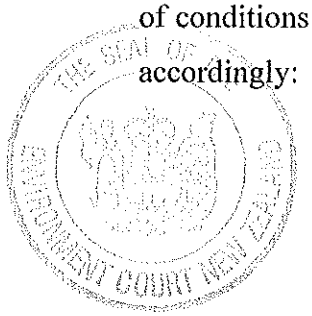
[128] In terms of the questions which we asked in para [120] (above), we find that the Commissioner's decision (at least as to conditions) was materially influenced by the inaccurate information and that it is likely (indeed certain) that the Commissioner would have made a different decision if he had accurate information in front of him.

[129] Finally, we ask whether the effects of the exercise of the consent are such that it is necessary to apply more appropriate conditions. We find that to be the case also.

[130] The fact that a considerably larger number of residential locations fall inside the 30 dB contour than the three predicted in the NIAR leads us to the finding that more appropriate monitoring conditions need to be applied to the consent if nothing else. Additionally, the acknowledged presence of SACs (even if only proven in the near field at this time) means that there is the need for an enforceable and viable SAC condition to replace condition 5(l). It is likely that other consequential changes to conditions might flow from those we have identified although we do not consider it is necessary for us to identify them in this decision. That would be the function of the Council on review.

[131] In making that finding, we acknowledge that at the Court's direction, extensive monitoring has been carried out by NZWL in preparation for the hearing of these proceedings. That monitoring may answer many of the questions which might have been asked in the first instance had accurate information been provided. Notwithstanding, it is necessary that appropriate and enforceable monitoring conditions are now included in NZWL's resource consent.

[132] We are therefore satisfied that the Council is entitled to exercise the power of review of conditions contained in s128(1)(c) if it so determines. We make the following declaration accordingly:



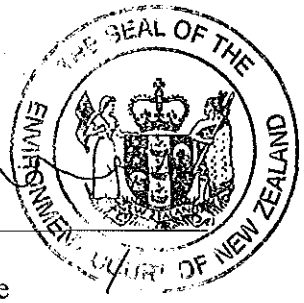
That the acoustic information supplied in the AEE by the Respondent and the evidence of the Respondent was inaccurate to such an extent that Palmerston North City Council may rely on s128(1)(c) RMA to conduct a review of the noise consent conditions applicable to the Te Rere Hau wind farm .

Costs

[133] Costs are reserved. If the Council seeks costs, any application shall proceed in accordance with para 4.5.5 of the Court's Consolidated Practice Note 2011.

DATED at WELLINGTON this 4th day of July 2012

For the Court:



B P Dwyer
Environment Judge