

**BEFORE THE ENVIRONMENT COURT**

**Decision No. [2017] NZEnvC 68**

IN THE MATTER of the Resource Management Act 1991  
AND of an appeal pursuant to s 120 of the Act  
BETWEEN LUKE PICKERING  
(ENV-2015-CHC-032)  
Appellant  
AND CHRISTCHURCH CITY COUNCIL  
Respondent  
AND WINDFLOW TECHNOLOGY LIMITED  
Applicant

Court: Environment Judge J E Borthwick  
Environment Commissioner D J Bunting  
Environment Commissioner C J Wilkinson

Hearing: In Chambers at Christchurch

Date of Decision: 10 May 2017

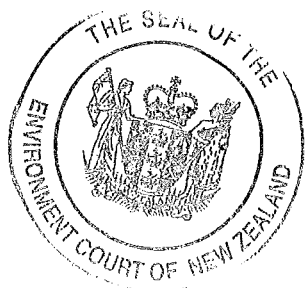
Date of Issue: 10 May 2017

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**FINAL DECISION OF THE ENVIRONMENT COURT**

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- A: The appeal is allowed to the extent that the application for resource consent is granted subject to the amended conditions of consent, marked "Approved Conditions", attached to and forming part of this decision.
- B: Costs are reserved. Any application for costs is to be filed and served by 2 June 2017. Any reply is to be filed and served by 16 June 2017.



## REASONS

### Introduction

[1] In an Interim Decision dated 1 December 2016<sup>1</sup> the court granted consent to Windflow Technology Limited for a wind turbine at Gebbies Pass, Banks Peninsula, subject to conditions which would be confirmed in a final decision.

[2] This decision finalises the conditions of consent and, subject to any issues as to costs, resolves this appeal.

[3] By way of background this is an appeal against a decision to re-consent an existing wind turbine at Gebbies Pass, Banks Peninsula. The turbine was made operational in 2004 and, as we recorded in the Interim Decision, the residents in the neighbouring McQueen's Valley have experienced noise from the turbine which has intruded upon their general enjoyment of their properties and for some, disturbed and disrupted their sleep.<sup>2</sup>

[4] During the tenure of the original consent, Windflow did not undertake compliance monitoring within McQueen's Valley to confirm whether the turbine was operating within the conditions imposed on its consent. Instead it relied on predicted noise levels in the valley based on measurements undertaken at the turbine site. We were greatly troubled by this and by the reliance on the turbine's attainment of the noise limits in the New Zealand Standard 6808:2010 as this proved inimical to an enquiry into the experience of noise within McQueen's Valley which, in contrast to the turbine site, has a very low sound environment.

[5] Disengaged with the persons living within the receiving environment, Windflow has been met with strong opposition to this application. To its credit, at the conclusion of the hearing Windflow proposed restrictions on the hours of operation of the turbine in response to the parties' concerns, although it maintained these measures were not mandated by the evidence.<sup>3</sup>



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<sup>1</sup> [2016] NZEnvC 237.

<sup>2</sup> [2016] NZEnvC 237 at [1].

<sup>3</sup> Windflow closing submissions at [25].

[6] The court reached a different view on the evidence. Noise from the turbine, including amplitude modulation, was a particular feature of this case because of its adverse effect on the amenity of the residents in the low background sound environment of McQueen's Valley. Overall, we concluded the restrictions on the hours of operation and ceasing operation of the turbine if verification measurements identified penalisable levels of amplitude modulation or tonality were an appropriate response given Windflow's duty under s 16 of the Resources Management Act 1991 to avoid unreasonable noise.<sup>4</sup>

### **Material inaccuracies – s 128(c) RMA**

[7] In the Interim Decision we recorded that for the purpose of s 128 of the Act the accuracy of the sound level prediction of 26 dB L<sub>eq</sub> at the appellant's dwelling materially influenced our decision to grant resource consent for a period of seven years.<sup>5</sup>

[8] We agree with the City Council that there is no need for the review condition to make reference to those matters which materially influenced our decision to grant consent. If the prediction of turbine noise level is proven to be inaccurate, s 128(c) provides a separate ground for review and, if made out, then under s 132(4) such a review can result in the cancellation of the consent. We anticipate, as counsel for the City Council Mr Schulte submits following *Palmerston North City Council v New Zealand Windfarms Ltd*,<sup>6</sup> that the material nature of that finding will be important in any subsequent decision by the City Council to review the conditions of consent. In that case, the court when considering the task of the reviewer under s 128(c), posed two apposite questions:

- (a) 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? and
- (b) 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?



<sup>4</sup> [2016] NZEnvC 237 at [150].

<sup>5</sup> [2016] NZEnvC 237 at [162].

<sup>6</sup> (2012) 17 ELRNZ 10 at [120].

[9] Further, and because of the reliance placed by Windflow and the City Council on compliance with noise limits in the New Zealand Standard, we included an Advice Note to make clear the rationale for the restrictions on the operation of the wind turbine.

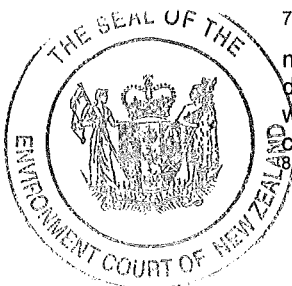
### **Proposed conditions**

[10] At the conclusion of the hearing the applicant provided us with a set of draft consent conditions. In our Interim Decision, we identified individual conditions in this condition set which either required amendment, clarification or needed to be supported by expert evidence and directed the parties to respond to the further information sought in relation to the conditions. Having considered the parties' responses,<sup>7</sup> we remained concerned that the applicant's revised set of conditions were not clear, certain and enforceable. The conditions proposed lacked a coherent structure or architecture and the obligations imposed upon the consent holder were not easily ascertainable and therefore open to interpretation.

[11] For the reasons that we set out in the Minute dated 10 April 2017 the court restructured the conditions and made clear the unambiguous requirement that the consent holder was to undertake verification measurements and compliance monitoring. We invited the parties' responses.

### ***The applicant's and City Council's final comments on conditions<sup>8</sup>***

[12] Where we have accepted the changes proposed by the applicant and City Council these have been made and are recorded in the document labelled "Approved Conditions", attached to and forming part of this decision. As we agree with the reasons given by them for the changes we make no further comment.



<sup>7</sup> Windflow's memorandum dated 22 December 2016 proposing further conditions, including a complaints management process; Mr Lewthwaite's affidavit dated 20 February 2017; Mr Pickering's memorandum dated 20 February 2017; and Mr Allan's affidavit dated 21 February 2017, producing a plan showing the wind turbine location and existing dwellings within a 2 km radius of the turbine at the date of commencement of the resource consent.

<sup>8</sup> See memoranda of Windflow dated 10 April and 2 May 2017, and the City Council dated 26 April 2017.

[13] The applicant, City Council and Mr Pickering proposed amending condition 5 to delete the express requirement that an acoustic engineer carry out verification measurements and compliance monitoring. Incorrectly they considered this requirement to be a duplication. Careful reading of the wording proposed by the court identifies two obligations for the consent holder: the first is to appoint an acoustic engineer and the second is for the engineer to undertake measurements and compliance monitoring. Given the lack of certainty in the draft conditions tabled in court we have retained the requirement that the acoustic engineer shall carry out the measurements and monitoring.

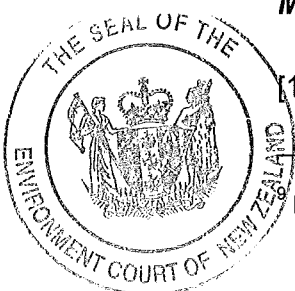
[14] The applicant has proposed changes to the time by which verification measurements and compliance monitoring must be undertaken and reported upon. It has suggested appointing an acoustic engineer within one month following the activation of the wind turbine under this consent and also following any reconfiguration of the turbine. Three months following the activation of the wind turbine under this consent or reconfiguration of the turbine the acoustic engineer is to submit and report on the results of the verification measurements and compliance monitoring (applicant's condition 6(vii)). The change regarding the appointment of an acoustic engineer within one month of these events was not shown in the applicant's revised set of conditions. We accept the timeframes proposed, but rather than have up to three conditions addressing "time" we have set out the requirements in condition 5. We have deleted the reference in the applicant's condition 6(vi) to the report being provided to certain people within one month of its completion as this creates tension with the new requirement to report within three months. We have listed the persons to whom the applicant will send the acoustic engineer's reports.

[15] The proposed amendment to condition 7(i) that the operation of the turbine shall cease "as soon as the consent holder is in receipt of the relevant measurements" is otiose. The pre-condition to cessation of the turbine operations is the production of verification measurements in condition 6(v).

**Mr Pickering<sup>9</sup>**

[16] Mr Pickering comments extensively on condition 3, without suggesting any

Memorandum dated 5 May 2017



changes to the wording. He appears to be asking how the court can be certain that the applicant can demonstrate compliance through the provision of the requisite certificate. Earlier he had sought additional information be provided for this purpose. The additional information sought was not the subject of evidence and we decline to impose the same in a condition.<sup>10</sup> The City Council, which is responsible for the enforcement of the conditions of consent, has not raised any concerns with the information to be provided including the wind turbine operating algorithm.

[17] We have responded to Mr Pickering's concerns in a number of ways. We have made explicit the requirement that the certificate be produced within one month of the activation or reconfiguration of the wind turbine. If the algorithm is adjusted for any other reason, the consent holder is required, within one month of making the adjustment, to provide updated certification to the City Council. Upon request the consent holder is also required to supply the City Council with wind speed data and actual operating hours information for the preceding month. If any of this is inadequate, the condition may be reviewed.

[18] Changes proposed by Mr Pickering to condition 7 are included (albeit worded slightly differently).

[19] We have not changed condition 11 to delete the second reference to "above", as this refers to a different subject matter.

[20] We have approved Mr Camp's change to the definition of "compliance monitoring" as it is consistent with the decision. While it is not clear from para 2(d) of his memorandum, Mr Pickering appears to oppose this change and second, suggests the noise limits have been amended by the court's decision. Mr Pickering is incorrect, the noise limits are those proposed by the applicant and recorded in condition 8. He is correct in his observation that the noise limits in condition 8 do not distinguish between the daytime and evening/nighttime limit guide for high amenity areas set out in cl 5.3.4 of NZS 6808.<sup>11</sup> The noise limits in condition 8 apply at all times.

[21] As we have made clear in the decision and reiterate in the Advice Note to condition 8, the 5 dB penalty adjustment of the noise limit in condition 8 for sound with

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<sup>10</sup> Minute dated 10 April 2017.

<sup>11</sup> The higher of the background sound plus 5 dB or 35 dB.



amplitude modulation or for sound received in a high amenity area in accordance with cl 5.3.4 would not address the adverse effects for the simple fact that if such an adjustment was to be made, the applicant predicts that the adjusted noise limit would still comply with the noise limits in condition 8. For times when there is a low sound environment in McQueen's Valley, it is the increase in loudness above the low background sound environment in the valley coupled with amplitude modulation, (whether penalisable or not) that are the primary sources of adverse effects on residents in the valley. The fixed value of 35 dB in condition 8 does not address the adverse effect of noise with amplitude modulation where background sound is also low. As the Advice Note to condition 8 makes clear, mitigation is achieved through condition 3 which restricts the hours of operation when wind speeds are less than 10m/sec and condition 7 where restrictions on the operation of the turbine are to apply if there is penalisable amplitude modulation at the turbine.

[22] If the prediction of a noise level of 26 dB at the representative receptor site in McQueen's Valley is erroneous and the measured noise is higher, this would be a material inaccuracy for the purposes of s 128(c) of the Act.

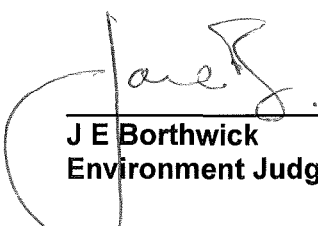
[23] Finally, Mr Pickering seeks that all property owners within a 2 km radius of the wind turbine, and not only those who have erected a dwelling, be provided information (etc) under the conditions. We are satisfied with the restriction as proposed by the applicant and the City Council, the greatest level of affect is on residential amenity during the evening.

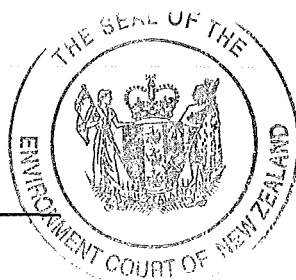
### **Outcome**

[24] For the reasons given, the appeal is allowed to the extent that the application for resource consent is granted subject to the amended conditions of consent, marked "Approved Conditions", attached to and forming part of this decision.

[25] Costs are reserved.

For the court:

  
**J E Borthwick**  
**Environment Judge**



## ATTACHMENT A

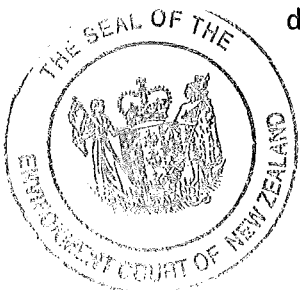
### APPROVED CONDITIONS

1. This consent authorises the construction and operation of a wind turbine as described in the following documents attached to and forming part of this consent:
  - i. Turbine Elevation [from Appendix 2, RC020111, 11 October 2002].
  - ii. Sketch of Proposed Meteorological Mast [from Appendix 2, RC20111, 11 October 2002].
  - iii. Proposed Wind Turbine Site – Windflow Technology Ltd, Glasson Potts Fowler DWG No. 7547-03B, Sept 2002 [from Appendix 1, RC020111, 11 October 2002].
  - iv. Report Rp 001 R01 2014277C Gebbies Pass Wind Turbine—Reconsenting Noise Assessment, dated 7 November 2014, by Marshall Day Acoustics.
  - v. Plan of 2 km radius from the wind turbine location identifying existing dwellings as at the date of commencement of this resource consent.

#### Definitions

For the purposes of interpretation, the following definitions shall apply:

- a. **Compliance Monitoring** means sound measurements in accordance with NZS 6808:2010 to confirm compliance with noise limits in condition 8. For avoidance of doubt, any penalties required by NZS 6808:2010 for tonality or amplitude modulation shall be applied.
- b. **Measurements** means sound measurements.
- c. **Verification Measurements** means measurements to determine the sound power level of the turbine and objective assessments of tonality and amplitude modulation of the turbine noise all as set out in condition 6.
- d. **Assessment** means a determination of sound levels taking into account measurements and any adjustments required under NZS 6808:2010 for attributes such as tonality and amplitude modulation, and/or adjustments





required to account for measurements made at locations other than the notional boundary of a dwelling.

- e. Reference Position means a downwind measurement position at a horizontal distance from the turbine equal to the vertical height to the uppermost tip of the turbine rotor blade, as defined in IEC 61400-11:2012.

## 2. Term of Consent

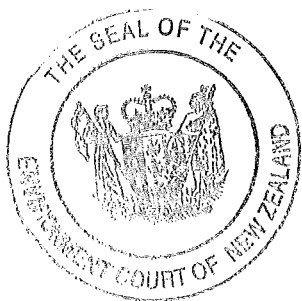
This consent shall expire after 7 years from the date of this consent.

## 3. Hours of Operation:

- i. The turbine shall not be operated on any day of the week between the hours of 1900 and 2200 except when the wind speed measured at the hub height of the turbine exceeds 10 metres per second;
- ii. Within one month of the activation or reconfiguration of the wind turbine the consent holder shall certify to the head of regulatory compliance (or equivalent) Christchurch City Council that the wind turbine operating algorithm has been adjusted for compliance with the restriction in (i);
- iii. If the algorithm is adjusted for any other reason, the consent holder shall, within one month of making the adjustment, provide updated certification to the Council that the adjusted algorithm satisfies this condition;
- iv. Upon request the consent holder shall supply the Christchurch City Council with wind speed data and actual operating hours information for the preceding month and a copy of the information shall be provided to the Community Liaison Group.

### Advice Notes:

- i. The above restriction shall be achieved using the wind turbine's normal start-up and shut-down algorithm by shifting the low-wind cut-in speed from 5.5m/s to 10m/s and making a similar adjustment to the low-wind cut out speed.



- ii. "Low-wind cut-in" refers to the mean wind speed which must be achieved for at least one minute before the turbine will start up.

#### 4. Reconfiguration of turbine

The consent holder shall provide written notification to the head of regulatory compliance (or equivalent) Christchurch City Council and owners and occupiers of dwelling houses within a 2 km radius of the wind turbine site at least 5 working days before any reconfiguration of the wind turbine is undertaken which involves the removal of the nacelle or turbine blades for refurbishment or replacement, or physical redesign of the gearbox.

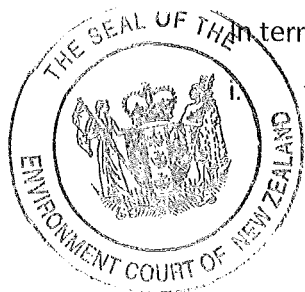
#### 5. Noise assessments

- i. Within one month following the activation of the wind turbine under this consent and also upon reconfiguration of the turbine, the consent holder shall appoint a suitably qualified and experienced acoustic engineer to undertake verification measurements and compliance monitoring of the wind turbine in accordance with the conditions of this consent.
- ii. Within three months of the activation or reconfiguration of the turbine the acoustic engineer shall carry out and report on the results of the verification measurements and compliance monitoring. The report shall be provided to the following persons:
  - a. the consent holder;
  - b. owners and occupiers of dwelling houses within a 2 km radius;
  - c. head of regulatory compliance (or equivalent) Christchurch City Council;  
and the
  - d. Community Liaison Group.

#### 6. Verification measurements

In terms of the verification measurements required by this condition:

i. the measurements of the wind turbine sound power level shall be undertaken in general accordance with IEC 61400-11:2012.



- ii. a full range of wind speeds and direction is not required, provided the wind turbine is generating power during the verification measurements for not less than 12 hours in total;
- iii. an objective assessment of tonality and amplitude modulation shall be made, using the best available methodology consistent with NZS 6808:2010. At the date of commencement of this resource consent, the best available method for amplitude modulation is the British Institute of Acoustics (IOA) guidance: Institute of Acoustics discussion document "Methods for Rating Amplitude Modulation in Wind Turbine Noise", dated 22 April 2015 – Method 3: "Hybrid Reconstruction Method";
- iv. if the verification measurements indicate the sound level at the reference position at hub height wind speed of 8 m/s is less than 65 dB, and does not contain tonality or amplitude modulation which would be penalisable under NZS 6808:2010, no further action is required;
- v. if the verification measurements indicate the sound power level at the reference position at hub height wind speed of 8 m/s is 65 dB or greater, or contains tonality or amplitude modulation which would be penalisable under NZS 6808:2010, the requirements of Condition 7 shall apply;
- vi. the consent holder shall provide the results of the verification measurements undertaken by a suitably qualified and experienced acoustic engineer certifying that the criterion of (iv) or (v) is achieved to the head of regulatory compliance (or equivalent) Christchurch City Council and to owners and occupiers of dwelling houses within a 2 km radius of the wind turbine site. ~~within one month of completing the measurements.~~

## 7. Restricted operations

- i. Should the criterion of Condition 6(v) apply, operation of the wind turbine between 1700 and 0500 hours shall immediately cease, except on occasions when (and only as long as) operation overnight is required for further verification measurements and compliance monitoring to be undertaken under conditions 6 and 8 respectively.
- ii. If the criteria of condition 6(iv) are not met after three months, operation of the wind turbine shall cease at all times except for where verification measurements



and compliance monitoring are undertaken under conditions 6 and 8 respectively. The full operation of the wind turbine shall not recommence until a suitably qualified and experienced acoustic engineer has certified that condition 6(iv) and the noise limits in condition 8 are being met. Results of this certification shall be provided to the head of regulatory compliance (or equivalent) Christchurch City Council and to owners and occupiers of dwelling houses within a 2 km radius of the wind turbine site prior to recommencement of the turbine operation.

## 8. Compliance monitoring

In conjunction with the verification measurements required under condition 6:

- i. The consent holder shall undertake compliance monitoring and confirm that the wind turbine is operating within the noise limits set out in the following table when assessed at the measuring points defined in condition 8(ii) below.

Background Sound Level	424 Gebbies Pass Road (L <sub>A90</sub> (10min))	McQueen's Valley (L <sub>A90</sub> (10min))
>35 dB	Background + 5 dB	Background + 5 dB
30 – 35 dB	40 dB	Background + 5 dB
<30 dB	40 dB	35dB

- ii. On the first occasion that compliance monitoring occurs a representative receptor measuring point shall be identified at McQueen's Valley in addition to the measuring point at (or in the vicinity of) 424 Gebbies Pass Road. These measuring points shall be identified and agreed by suitably qualified and experienced acoustic engineers, who may be appointed by: the consent holder, Christchurch City Council and the relevant landowner. For all compliance monitoring undertaken in accordance with this condition, the representative receptor measuring point in McQueen's Valley shall be the only one monitored in the valley.

The results of all compliance monitoring shall be provided to the head of regulatory compliance (or equivalent) Christchurch City Council and to owners and occupiers of



dwelling houses within a 2 km radius of the wind turbine site within one month of completing the monitoring.

**Advice Notes:**

- i. The increase in loudness from turbine noise above the low background sound environment in McQueen's Valley (as low as 18-20dB), coupled with amplitude modulation are the primary sources of adverse effects on the residents of the valley. For the avoidance of doubt, the application of a 5 dB adjustment for noise with amplitude modulation recommended by NZS6808:2010 Appendix B would not address these adverse effects.
- ii. Instead, mitigation is achieved through condition 3 which restricts the hours of operation when wind speeds are less than 10m/sec and condition 7 where restrictions on the operation of the turbine are to apply if there is penalisable amplitude modulation at the turbine.

**9. Additional compliance monitoring/verification measurements**

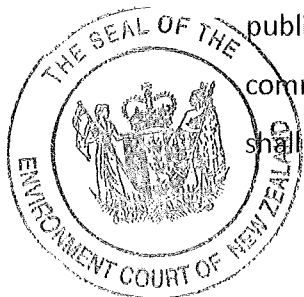
In addition to Conditions 6, 7 and 8, if requested to do so by Christchurch City Council at any time, the consent holder shall appoint a suitably qualified and experienced acoustic engineer to undertake additional compliance monitoring and/or verification measurements, the results of which shall be provided to the head of regulatory compliance (or equivalent) Christchurch City Council as soon as practicable, but no later than three months after the date of the request.

**10. Colour**

The wind turbine shall be finished in "Jungle Mist" colour (BS 5252:18 C 33, Resene "Jungle Mist") and maintained in accordance with this condition for the duration of consent.

**11. Community Liaison Group**

The consent holder shall, prior to undertaking any activities authorised by this consent, publicly offer to establish (by way of community newsletter and public notice) a community liaison group for the Gebbies Pass Wind Turbine. As a minimum the following shall be invited to participate in this group:



- i. Two representatives of property owners from McQueen's Valley, one of which shall be a party to the appeal (ENV-2015-CHC-032);
- ii. One representative of the consent holder; and
- iii. A representative of the Christchurch City Council shall be invited to attend meetings in an observer capacity.

The consent holder shall offer the opportunity for meeting at least annually during the operation of the wind turbine.

The objective of the Community Liaison Group is to facilitate information flow between the consent holder and the community and to be an ongoing point of contact between the consent holder and the community. The functions of the group may also include acting as a forum for relaying any community concerns about the ongoing operation of the wind turbine and reviewing the implementation of measures to resolve and manage community concerns.

In particular, the consent holder shall provide an opportunity for the Community Liaison Group to receive and discuss the results of all monitoring and reports as required by the conditions of these consents.

The consent holder shall be responsible for convening the meetings of the group and shall cover the direct costs associated with the establishment and operation of the group. The Consent Holder shall be responsible for the keeping and distribution of the group's minutes to all participants of the group.

The consent holder shall not be in breach of the above conditions if any one or more of the above parties specified above do not wish to be members of the group or to attend any particular meeting.

## **12. Procedure for dealing with complaints**

The consent holder shall establish and publicise in a mail drop to all owners and occupiers of dwelling houses within a 2 kilometre radius of the turbine contact details for a liaison



officer, so that members of the local community have a specified and known point of contact should they wish to raise any issues that may arise during the operation of the wind turbine.

### **13. Complaints Register**

The consent holder shall maintain and keep a Complaints Register for any complaints about the activities and operation of the wind turbine received by the consent holder, including complaints notified by the Christchurch City Council. The Register shall record, where this information is available:

- i. The date, time and duration of the incident that has resulted in a complaint;
- ii. The location of the complainant when the incident was detected;
- iii. Weather conditions at the time of the incident, including wind speed and direction;
- iv. The possible cause of the incident;
- v. Any corrective action undertaken by the consent holder in response to the complaint, including timing of that corrective action;
- vi. The date and details of the response given to each complainant.

The Complaints Register shall be made available to the Christchurch City Council and the Community Liaison Group during business hours upon request.

Within 5 days of receipt of any complaint the consent holder shall advise the head of Regulatory Compliance, Christchurch City Council, of the details of any complaint received and, where appropriate, of any remedial or corrective action taken, including the response provided to the complainant.

#### **Advice Note:**

The Christchurch City Council has undertaken to notify the consent holder in writing of any complaints that it receives relating to the exercise of this consent and will do so within 5 working days of the complaint being received.



#### 14. Review

The Christchurch City Council may, 1 year after the commencement of the consent and at yearly intervals thereafter, serve notice on the consent holder and in accordance with section 128 of the Resource Management Act of its intention to review any of the conditions of this consent for any of the following purposes:

- i. to deal with any unanticipated adverse effects on the environment that may arise from the exercise of the consent, which is appropriate to deal with at a later date;
- ii. to ensure that the conditions are effective and appropriate in managing the effects of activities; and
- iii. to confirm that the methodology used for the assessment at 6(iii) remains the best available.

#### 15. Decommissioning

Within 3 months of the expiry of this resource consent, the wind turbine shall be decommissioned, removed from the site and the site remediated to a standard for agricultural uses, unless an application for a new consent for the activity approved by this resource consent is made to the appropriate consent authority in accordance with section 124 of the Resource Management Act.

#### Advice Notes:

- i. Monitoring

The Council will require payment of its administrative charges in relation to monitoring, as authorised by the provisions of section 36 of the Resource Management Act 1991. At the time of the granting of this consent, the monitoring charges include time charged at an hourly rate of \$116 (incl. GST) where monitoring is required.

- ii. Costs

All Council costs associated with the engagement of experts to enable the implementation of conditions of this resource consent shall be borne by the consent holder.

