

Appendix B

Comments on the HGC Acoustical Investigation at the Lormand Residence

Section 1.0 discusses the sound level limits. Really, all we need to know is the content of Table 1, the MOE Sound Level Criteria for Wind Turbine Generators. The author is trying to argue that L_{90} is perhaps a better choice than L_{EQ} on the basis that turbine noise is steady and that L_{EQ} can pick up transient noises such as traffic or bird noise. The fact is that turbine noise is not steady. There is the amplitude modulation, the effect of wind gusts, the change of wind direction, the effect of turbulence in the atmosphere and the effect of turbulence from one turbine on another. It can be argued that L_{10} is a better measure because that is closer to what the ear picks up. The fact of the matter is that the Sound Level Criteria are defined in terms of L_{EQ} . The author goes on to argue that the fact that a measured sound level exceeds the criteria does not mean that it is out of compliance with the regulations. This does not seem to be good engineering practice. Imagine applying the same approach to the design of a bridge. Neither the wind energy companies, the acoustics consultants nor the MOE even consider the uncertainty in the specifications of the turbines or the uncertainty in the noise prediction code. Such thinking is to my mind quite unprofessional. The reason for the above double-think of course is that the measurements show that the wind farm is far from compliance and the intent is to minimize this large discrepancy.

Turning to the measurements, figures 2, 3 and 4 demonstrate that L_{EQ} is consistently 15 dBA above the noise limit when the wind speed is 3 m/s and above and all turbines are operating and 10 dBA above the limit when some of the turbines are operating.

Figure 5 compares sound levels at the residence and at a point 80 metres from WT71. A problem here is that one recording is L_{90} and the other is L_{EQ} ! However, from figures 2, 3 and 4 we learn that the difference between L_{90} and L_{EQ} is typically 5 dBA. Therefore it appears that the actual difference in noise level between the 2 sites is 5 dBA. If WT71 were the culprit, the difference would be 20 dBA at least.

Concerning the summary: The conclusion is much too weak. Always when the wind speed is above 2 m/s, the noise level is above 40 dBA. The wind farm is clearly out of compliance and should be shut down. If there is indeed just one turbine with a tonal component at 160 Hz, how difficult can that be to find? That tonal component is not the problem: the description of the swoosh and the sound of a washing machine continually running is not the description of a 160 Hz tone!

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