

**From:** Springer, Darren [Darren.Springer@vermont.gov]  
**Sent:** Wednesday, June 08, 2016 3:32 PM  
**To:** Copans, Jon  
**Subject:** Fwd: Sound Standard

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**From:** "Springer, Darren" <[Darren.Springer@vermont.gov](mailto:Darren.Springer@vermont.gov)>  
**Date:** June 8, 2016 at 2:43:36 PM EDT  
**To:** "Coriell, Scott" <[Scott.Coriell@vermont.gov](mailto:Scott.Coriell@vermont.gov)>  
**Subject:** FW: Sound Standard

The analysis below is from Ken Kaliski at RSG, the sound consultant expert for Green Mountain Power:

For the Vergennes project, "ambient sound level" was defined in the application (CPG #NM-1646) as "the level that is exceeded 90% of the time that a noise measurement is taken." This is the 10th-percentile sound level or what is commonly referred to as an L90 in the field of acoustics.

With regards to Kingdom Community Wind, the preconstruction nighttime L90's ranged from 16 dBA to 37 dBA. At the Nelson Farm near the stream, the L90 was 35 dBA, but further from the stream it was 19 dBA. It is fair to say that the L90 is heavily influenced by local sources. At the end of Irish Hill Road, the nighttime L90 was 19 dBA. All of these are overall numbers. The lowest hourly L90s were even lower.

Based on these results, it is my opinion that the KCW project could not have been built if this standard were in place.

However, those L90s are measured during very calm times when the wind turbines may not have been operating. We will review the KCW test data to see if, in actual operation, KCW would have exceeded the standard. This brings up another issue in preconstruction permitting, which is that determining exceedance is an exercise in the statistical probability of background L90 being 10 dB below turbine operations. Thus, we now have two models – one of L90 and one of the turbine.

There are many other problems with standards based on background L90s. Here are just a few:

- The developer has no control of the background L90. What if you permitted

a project, then the nearby farm's fans shut down. The background level drops by 5 dB and suddenly you are out of compliance.

- There is no way to determine the background level at all locations and all times of the year. What if you measured at house x, but house y complains. House 7 has a lower background sound level. You are then out of compliance. Or, you measure the L90 under one set of conditions, but it changes throughout the year.

- The incentives for siting are the exact opposite of what is desired. You are incentivized to place wind turbines where there is more background noise – that is, generally, where there is more people. Instead, it is better to put these in more remote areas away from people, but this is where the background sound level is lowest.

- There is no scientific justification for the 10 dB above ambient standard for use in rural areas.