

Dan Moore – Written Summary of the Big Blue Windfarm Noise Complaints

1. How long has the noise been occurring?

There are 2 separate noises that we are receiving. The first is a **clickyclack** noise and the second is the extremely loud **jet** sound.

Since the turbines were first built in 2012 we have noticed a clickyclack noise coming from T9 and we all thought there was a wrench left inside the blade during construction. We dealt with that terrible noise for over 3 years before Big Blue took down the rotor, disassembled the blade, cut it open and they found a tool inside the blade that was banging around for over 3 years.

Now another clickyclack noise is coming from multiple turbines, especially T8 and T9. We have noticed this clickyclack noise for more than a year, and we have complained to Charlie Hoemberg, the site manager, about the clickyclack. When we were complaining about the noises the complaints fell on deaf ears because we did not know we needed to fill out “official” complaint forms. We thought Charlie would fix it, but he hasn’t, so we are starting to fill out the official complaint forms and contacting you about the terrible nonstop clickyclack. I believe the PUC should revoke the ability of T8 and T9 to operate until Big Blue fixes the clickyclack noise.

The second noise is the Jet noise and is worse than the clickyclack and happens when the turbines are curtailed down to half speed during high winds. Big Blue pitches the blades to slow down the rotors and when they do that, the turbines’ noise is completely beyond the tolerable noise compliance limit of 60 dba. I believe this turbine-blade configuration was never modeled, so they did not know how noisy they would be during curtailment. I believe the PUC should not allow Big Blue to operate Big Blue during high winds and revoke their ability to curtail and pitch the turbines because they did not model them for running them like that. If Big Blue needs to curtail these 18 turbines to only produce half the power, do not run all at half speed, run only 9 turbines.

Normal operation noise is fine, and nobody complains about them when they are running normally. It’s just when they are curtailed and the Jet sound happens is when there is an issue.

We have noticed the Jet noise has been getting significantly worse throughout the past year.

2. How often does the noise occur

The Clickyclack occurs all of the time, but we hear it the worst during low winds. Many of the turbines have this noise according to Charlie Hoemberg, the Big Blue site manager. They had a big meeting Thursday April 6th 2017 to discuss fixing the Clickyclack noise. Big Blue and Gamesa are aware of the problem but I am not confident they will do anything to fix it because they are a huge company with

thousands of turbines. That is why I request an immediate revocation of T8 and T9 until they figure it out.

The letter From Rigoberto Madera, Gamesa Field Support Manager, May 7th, regarding the turbine noise has some fatal flaws.

1. We are long past May and we are still enduring the non-compliant noises coming from these turbines. We need these turbines off-line until they can figure it out. We've complained for 9 months and we are appalled with how slow Big Blue reacts to these noises. All we get is excuses. And we cannot enjoy our land, our house, our neighborhood because of these noises
2. Rigoberto says the noise is "unperceived" at high winds. Although we do not hear the 'click" we then have to hear the jet noise. Again, this is completely out of the noise 60db limit from the permit. The noises coming from these turbines are most definitely perceived.!!!
3. Rigoberto says they are going to curtail the turbines. That has not happened.
4. Big Blue set up microphones to measure the non-compliant turbines, but how can we make sure they continue to operate the turbines in a normal manner so that the noises are accurate? I do not trust the results will be accurate unless there is a third party measurement, AND, we require Big Blue to run the turbines at normal wind speeds. Also, Charlie said the study will be for 2 weeks...I find it extraordinarily ironic that they picked the least-windy 2 weeks of the year to do this study. They should have measured the noise levels 3 months ago when these turbines sounded like we were in the landing zone of 747 airplanes. The cheap microphones tipped over and were laying over in the ditch for a few days until I notified Charlie of the tipped over microphones. The study they submitted is bogus.
5. Nothing about how Big Blue is reacting to these turbines is "normal". They are slow to react...then when you asked for a noise study, they choose the calmest windy weeks and it is unknown if they will operate the turbines normally, then lastly they always push blame to Gamesa.

The Jet noise happens when Big Blue pitches the blades to slow down the rotor during high winds. This turbine-blade configuration does NOT comply with the 60 dba limit during high winds and curtailment.

The Jet noise occurs approx a third , 33%, of the time. During nighttime operation the Big Blue turbines are only permitted for 50 dba. I can tell you that these turbines are exceeding the permitted limit much of the time and it's unacceptable to the neighborhood and the residents.

Big Blue DID conduct a noise study as the permit required them to do, however the Noise study, I do not believe, was done within 18 months of COD, nor do I believe the noise study was accurate. I looked up the noise meter that Big Blue says they used to verify the noise, and it's a \$279 piece of junk that the Fagen guy hung out the window of his red Chevy Tahoe for about 5 minutes. What a joke! Is Big Blue actually saying that they are in compliance from an android app and an instrument they sell on Amazon?

That study that Big Blue returned to you was in February 2013, which is only 2 months after the turbines were constructed, so in other words the turbines were BRAND SPANKING NEW. Of course they were quieter then. Now they are 5 years old and they are worn out and louder than what is tolerable. I believe Big Blue intentionally conducted the noise study during very low wind times, were not thorough enough with the noise levels during nighttime operation, did not consult with the neighborhood to record noise levels for a long significant period of time, and did not study the noise of the G97-LM

configuration during high winds and during curtailment. Instead Big Blue had a guy with a red chevy Tahoe stick a microphone out his window for a few hours during the day. This was the summer of 2016, over 3 years AFTER COD, which is, again, not compliant with the permit.

3. Has Big Blue informed you of any maintenance they've performed to solve the problem?

Yes they have removed the rotor on T9 in the spring of 2016 to remove the tool that was banging around the blade for over 3 years. Yes they have informed me that they have held meetings to discuss the noise. Yes they are aware of the clickyclack noise. No they have not informed me or my neighbors their intentions to fixing the problem of the clickyclack of T8 and the other turbines that are making that sound. Big Blue does an extremely BAD job of informing the neighborhood of all of the project issues. They never hold meetings, or mail out explanations, or make any effort to acknowledge the problems and remedies.

Yes they are aware of the jet noise during curtailment and the blade pitch problem of the noise with these LM blades. I truly do not think Big Blue studied the noise that this turbine-blade combination would cause. No Big Blue has not informed us their intentions of shutting down during high winds to stop the Jet noise. All of us in the neighborhood have ZERO confidence in Big Blue to fix these problems, therefore we plead with the PUC to hear us and help us revoke the permit until they remedied these issues because the G97 was never researched and modeled for noise.

4 Have you had any other conversations about this problem with Big Blue aside from the complaint you filed with them?

Yes I have met with Charlie Hoemberg 4 times to discuss these noises. I had hoped Big Blue would have recognized the noise problems on their own without formal complaints, but they have not and will not do anything without formal complaints. Tuesday February 21st was the first meeting I had with Charlie to formally complain. Friday March 31st was the Second meeting I had with Charlie to ask about the plans for remedies. Monday April 10th was a phone conversation about the big meeting with the President of Gamesa, and the Owners of Big Blue to find out if they were going to fix the problem and if I needed to not plant corn around the turbines to provide a laydown area. Charlie said no need for a laydown area. May 20th was the last face to face meeting I had with Charlie.

5 Substantial Breach of the Site Permit

From the permit IP-6851/WS-10-1238.....

11.3 REVOCATION OR SUSPENSION OF PERMIT The Commission may take action to suspend or revoke this permit upon the grounds that: (a) A false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have

warranted a change in the Commission's findings; ***I believe a false statement was knowingly made in the application by not disclosing the intent to build the Gamesa 2MW machine with the 87 meter rotor, and I believe Big Blue did NOT model the noise effects of the Gamesa G87/2000. Big Blue applied for the permit for many turbines including the Gamesa with 97 meter rotors, not 87. Which did they build? And Which did they model? The permit is inconsistent.***

(b) There has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards; ***I believe there has been a failure to comply with the permit with regards to the failure to maintain health standards of noise levels which are non-compliant with the 50 dba noise tolerance.***

or (c) There has been a material violation of a provision of an applicable statute, rule, or an order of the Commission. ***I believe Big Blue conducted a material violation of an order of the PUC when they failed in its requirement to conduct a post-construction noise study within 18 months of Commercial Operations Date.***

In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minnesota Rule 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked. ***I believe Big Blue failed in ALL THREE violations, therefore should have the permit suspended or revoked.***

Complaint forms and compliance is with Exergy in Boise Idaho, when now Big Blue owns the project and are not listed as the official people to contact with complaints. Exergy went bankrupt, but are still listed as the primary complaint contacts.

Gamesa's website says they provided Big Blue with the G87/2000, and Big Blue's permit says they modeled the G97. So which is it? And where are the results from the noise study from the G87 with the LM blades? During public comments on page 7 of the comments and recommendations, Jason and Laura Larsen complained about the noise and shadow flicker and the permit specifically says the project was modeled with the GE 1.6 MW turbine. ***I believe this turbine and blade configuration was NEVER modeled for noise and therefore this project should have its permit revoked.***

Permit says turbines will have pad-mount transformers...these turbines have up-tower transformers. Since they are up-tower they need to run loud cooling fans in the summer when the wind is not blowing. This is another annoyance noise factor and another breach of the permit.

6 Non-Compliant Information Request

On June 29th the PUC submitted an Information Request to Big Blue for 5 specific questions relating to the noise complaints and the remedies for the clickyclack and the jet noises. On July 7th Big Blue submitted only 1 old noise study from 2013, with no other answers to the PUC questions. This is a

normal arrogant dodge that we have come to expect from Big Blue. In the 2013 noise study they admit that the turbines are over the 60 db limit. The study shows 70-85 db.

The table below contains results of actual noise measurements taken at each turbine at Big Blue Wind Farm. Measurements were made with a hand-held instrument, 2 meters above ground level with corresponding wind speeds measured 2 meters above ground level. Wind was from the NNW and noise level measurements were taken at the SW side of the tower base.

Actual Noise Measurements

Turbine	db
1	75
2	80
3	80
4	75
5	85
6	75
7	75
8	70
9	75
10	75
11	75
12	80
13	80
14	75
15	75
16	75
17	75
18	80

The average db from Big Blue's study is 76.6 db which is 16.6 db ABOVE COMPLIANCE



T8 July 7th 2017. Very loud



89.6 db from T8 July 7th, 2017. The blades were so loud I could feel the concussion when the wind unloaded on the downstroke.



This is a picture of the flimsy microphones they used. This one is tipped over in the ditch and I called Charlie to let him know they were tipped over. June 25th, 2017

Thank you for allowing me to explain the noise complaints.

Respectfully submitted,
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