

June 20, 2022

Ben Mallernee
Technical Services Specialist
Brookfield Renewable
200 Liberty Street, 14th Floor
New York, NY 10281-1023

Re: Review of Proposed Noise-Related Changes to the Champaign County Wind Turbine Ordinance

Mr. Mallernee,

Per your request, I reviewed the proposed noise-related changes to the Champaign County Zoning Ordinance. A summary of the most important issues is provided below. Additional information follows which provides a more in-depth review of the issues involved.

The Champaign County Zoning Board of Appeals (ZBA) gathered public input and provided recommendations limiting noise levels to 39 dBA (audible) and 80 dB (infrasound) at the property line to “better protect Champaign County residents.” Audible noise levels have been and continue to be safely regulated by the rules of the Illinois Pollution Control Board (IPCB). The IPCB rules limit noise from wind projects to approximately 46 dBA¹, which is in line with recommendations from the World Health Organization (WHO), other health-based studies, and on the low end of the range of limits used by virtually all states and counties in the U.S. The proposed limit of 39 dBA is based on the opinion of a handful of consultants who have only *theorized* that such a limit is necessary. These theories have not been borne out in reality with over 3,000 turbines safely operating in Illinois and 70,000 nationwide. Understand that this low limit completely prohibits the development of wind turbines in the Midwest and is lower than existing ambient noise levels due to the wind blowing through trees.

The ZBA also raised concerns of infrasound (very low frequency sound). For decades it has been *postulated* and *theorized* by a handful of mostly non-medical individuals that infrasound from wind turbines *might* be harmful to human health. This has been disproven by numerous studies conducted by government health-based agencies the world over. It has been tested and verified that infrasound produced by wind turbines is not audible to humans in any way, shape, or form. The proposed limit of 80 dB is unnecessary and provides no demonstrated benefit to the public.

The ZBA also recommended that the 39 dBA and 80 dB limits be enforced at the edge of a property, not at the residence itself. This is unnecessary and inappropriate. The IPCB rules are comprehensive in their protection from noise impacts through the distinction of limits based on land use, with more stringent limits in place for noise emitted to a residence and more stringent limits yet for nighttime versus daytime. This is appropriate given that nighttime activities, such as sleeping, require a greater degree of protection. Developers of wind turbine projects understand this and design projects to meet the residential, nighttime noise limits at every residence.

Additional Information Regarding the Adequacy of the IPCB Noise Limits

The IPCB noise level limits are some of the most comprehensive and restrictive limits in the country. They have safely governed all forms of noise sources in the state, including the thousands of wind turbines that have been operating for 20 years. The noise limits take into account residential land use, nighttime activities (e.g., sleeping), and frequency content in that they limit low frequency noise as well as more typical “audible noise.” The information the ZBA heard to the contrary was provided by a handful of non-medical consultants and their opinions stand in stark contrast to what medical experts and agencies have published. Specifically:

1. The IPCB limits noise using a different metric than other states, counties, and townships in the U.S. The IPCB specifies limits to individual frequency bands (dB), whereas almost all other regulations and standards utilize what is called the overall A-weighted level (dBA). Based on the frequency spectra of wind turbine noise, the IPCB effectively limits noise from wind turbines to 46 dBA.
2. The World Health Organization has long recommended a limit of 45 dBA for the protection of human health at night^{2,3,4}. In 2018 the WHO studied noise from wind turbines specifically. They found no evidence for health impacts, some evidence for annoyance, and recommend a limit of 45 dBA. Note that this limit is expressed as the annual average of the 24-hour average day-evening-night level, which equates to a loudest-hour turbine noise level of 45 dBA. The IPCB limit is in line with these recommendations.
3. First published in 2016, the Health Canada⁵ study is, to date, the most rigorous study of the potential effects of noise from wind turbines on human health. It studied 1,200 people living near wind farms in Canada and collected both subjective (surveys) and objective (e.g., cortisol levels and sleep parameters) data from participants. It concluded that, up to 46 dBA (the loudest level they studied), they too found no evidence of health impacts and some evidence of annoyance. Again, the IPCB limits are in line with these findings.
4. At a state-level in the U.S. the range of limits is 45 to 55 dBA, including Wisconsin (45 dBA), Colorado (50 dBA), Illinois (46 dBA), Minnesota utility commission (47 to 50 dBA), New York utility commission (45 dBA), South Dakota utility commission (45 dBA), and Maryland (55 dBA). The IPCB limits are on the low end of this range and therefore very much in line with what is being done nationally.
5. Hankard Environmental has conducted approximately 50 noise impact analyses for projects regulated at the county or township level in the U.S. In our experience, the limits at the local level overwhelmingly range from 45 to 55 dBA. There are some localities with higher limits, but this is moot as wind turbines do not produce noise levels in excess of approximately 50 dBA at residences based on our measurement of noise at more than 60 locations. Where limits of less than 40 dBA have been enacted, this too is moot, as no utility-scale wind development can or has been developed in the Midwest. The IPCB limits are on the very low end of this range.

Despite this conclusive information, opponents of wind energy projects have routinely asserted that the IPCB noise limits are not sufficient to protect public health and well-being. The following lists examples of the rationale for lower limits that has been presented by a few consultants who are not medical experts. The examples have a common thread, in that they consist of *theories* associated with decades-old studies, many of which are unrelated to wind turbines. These theories have remained the same for 10 to 20 years now, all the while ignoring the results of the health-based studies noted above. With over 70,000 wind turbines now operating in the U.S. it is becoming clearer that these theories have not, and are not coming to pass.

- ANSI S12.9 Parts 4 and 5^{6,7} can be used to establish limits for certain land uses, such as residential. The standard will yield limits in the 30 to 35 dBA range if each adjustment in the standard is taken to its fullest. For example, the standard's starting point of 55 dBA can be lowered by 10 dBA for "quiet rural areas." Wind turbine projects are indeed sited in rural areas, but they produce full acoustic emissions only when it is windy which is when it is not quiet, and turbines are off during calm, quiet nights. The ANSI limit can be lowered by another 5 dBA for sources of noise that are new to a community. Wind turbines may be new in some cases, but their sound is similar to a fan or plane. Only by taking the full adjustment in both of these cases, which is an overreaching theory, does one arrive at a recommendation of 39 dBA. A more balanced interpretation of the ANSI guidelines leads to a limit of 45 dBA, which as noted above is that used by many counties and states.
- It has long been established in the acoustics profession that the impact of noise from a new source is dependent on how loud it is relative to existing noise levels. If the source is 10 dBA or more louder than existing levels it is generally considered potentially intrusive. On calm, quiet rural nights it can be very quiet (down to 20 dBA). But these are the very nights wind turbines are *off* and nearly silent. Turbines generate their maximum noise on windy nights, those nights where it is noisy due to the rustling of trees and crops. Wind blowing through trees generally produces noise levels ranging from 35 to 55 dBA. For a project permitted at 45 dBA, it could at times be 10 dBA louder than existing levels and at times be 10 dBA quieter (in other words not audible). Comparing wind turbine noise levels of 45 dBA to ambient levels of, for example 20 dBA, is misleading and inaccurate.
- In 2018 the WHO published a conditional recommendation of 45 dBA. This limit is specified using a metric called the annual-average day-evening-night level (" L_{den} " or "DNL," dBA). Consultants for wind turbine opponents have falsely asserted that wind turbine noise levels need to be limited to 35 dBA at night to meet this recommendation. They arrive at this conclusion through the 10 dBA "penalty" applied to nighttime noise levels in the calculation of the L_{den} , falsely assuming that turbines produce full acoustic emissions 24 hours a day, 365 days a year. Turbines operate fully only about 30% of the time, and not all of that occurs at night. Furthermore, there are many days and nights in a year when the turbines do not operate at all, or when atmospheric conditions do not favor noise propagation. When all of this is taken into account, limiting noise levels to 45 dBA (one-hour average of full operation) will meet the WHO 2018 conditional recommendation of an annual average L_{den} of 45 dBA⁸.
- Relying on data published by the U.S. EPA in 1974, coupled with research published in Europe in 2008, and with a few adjustments of their own, a few acoustical consultants have testified that wind projects permitted with a maximum level of 45 dBA will result in "strong appeals to stop noise" and "vigorous community reaction." It is agreed that there have been

complaints about noise from wind turbine projects, and in some cases legal action. The same can be said about noise from many industrial facilities, airports, roadways, rail lines, and agricultural operations. Wind turbines are not unique in this regard. However, instead of reviewing and combining decades-old research on non-turbine sources with decade-old studies of turbine noise in Europe, it is preferable, and more realistic, to review a study conducted recently in the U.S. dealing directly with turbine noise and its annoyance⁹. This study of attitudes of people living near wind turbine projects throughout the U.S. shows that, when asked, ~25% of the respondents living with noise levels of up to 45 dBA reported being “highly annoyed.” But it needs to be noted that only 25% of those living close to the turbines even responded to the survey. This is a very low response rate and indicative of a lack of concern. Thus, only ~6% of the population living very near the turbines could be considered highly annoyed based on this study (25% of 25%). In the field of environmental acoustics, a value of “10% highly annoyed” has long been used as a maximum value when designing power generation and other industrial facilities. The Haac study acknowledges that there is a degree of annoyance associated with wind turbine projects, but the level of annoyance is within expected bounds.

Additional Information Regarding Infrasound

The ZBA recommends a limit on infrasound from wind turbines of 80 dB. It is imperative to understand that humans routinely experience infrasound, it is produced by sources such as the wind, ocean waves, and home heating systems. When riding in a car, tractor, or plane a person experiences far higher levels of infrasound than those produced by wind turbines. However, none of these sources, nor wind turbines, produce enough infrasound for humans to detect, either through our ears or through other means such as vibration. In fact, the levels of infrasound produced by wind turbines are *significantly* below the threshold of hearing in humans at these very low frequencies. As detailed below, studies by numerous health-based organizations have repeatedly demonstrated that infrasound from wind turbines is not harmful to humans. Therefore, no limit is needed or warranted.

Infrasound from wind turbines has been measured at and inside homes by researchers in the U.S. and internationally, most notably by the Federal State of Baden-Wuerttemberg in Germany, Walker, et al. in the U.S., and Tachibana in Japan. Small peaks of acoustic energy are produced from about 1 Hz to 5 Hz and are the result of the blades passing the tower, but the levels are 50 dB below the threshold of human hearing.

In 2022, Liebich, et al.¹⁰ produced the largest polysomnography study of the potential interaction between wind-turbines noise (WTN) and sleep. Their controlled, repeated-measures, laboratory study of 68 adults was conducted in a pin-drop quiet laboratory of 19 dBA background noise, with wind turbine noise exposures of 25 dBA in four different exposure conditions over four nights. The study did not demonstrate differences in participants’ primary outcome of sleep efficiency. The importance of their study is that the wind turbine noise level was substantially higher than the background noise, and yet their primary outcome of sleep efficiency was undisrupted.

In 2021 Majjala, et al.¹¹ published the results of a study in the Journal of the Acoustical Society of America involving people who had complained of health impacts from wind turbines. Samples of turbine noise, including infrasound, were played in a test chamber for these people while certain tasks were performed and physical symptoms monitored. A control group who had not complained about turbines was also included. The concluding statement reads: “In the conditions used in the current study, infrasound did not contribute to the detection, annoyance, or physiological reactions to wind turbine sound.” In other words, nobody, not even those who had complained of health impacts, could tell that infrasound was even there.

Wind energy opponents have for at least a decade theorized that perhaps there is something about infrasound that makes it different from other sources such that it could impact humans more directly or via a pathway not fully understood. In contrast to these theories, the following is a sample of what leading researchers and governments across the world have concluded based on their research into wind turbine infrasound impact to humans:

Japan Ministry of the Environment study¹²: “Super-low frequency range components of wind turbine noise [20 Hz or lower] are at imperceptible levels. **Therefore, wind turbine noise is not an issue caused by super-low frequency range.**”

French Government (ANSES) measurement study¹³ at three wind farms concluded: “The results of these campaigns confirm that wind turbines are sources of infrasound and low sound frequencies, but no exceedance of the audibility thresholds in the areas of infrasound and low frequencies up to 50 Hz has been found.” The study also noted “**all the experimental and epidemiological data available today do not show any health effects related to exposure to noise from wind turbines, other than noise-related annoyance.**”

Health Canada’s 2015 Community Noise and Health Study¹⁴ is the largest-yet epidemiological study conducted to address community health concerns in relation to wind turbines. It concluded the following regarding infrasound: “Within the normal hearing frequency range, sounds have to be at a very low level to be non-audible, and at those levels would not contribute to any type of known hearing dysfunction. For low-frequency signals, including infrasound, activation of the vestibular system is possible if the signal levels are at high intensity. For both normal subjects and even for individuals with certain medical conditions that result in lowered vestibular activation thresholds (e.g., Tullio syndrome, superior canal dehiscence, perilymphatic fistula, or enlarged vestibular aqueduct), wind turbine signals are unlikely to reach the activation threshold. **It is therefore unlikely that wind turbine noise could directly cause any symptoms associated with vestibular dysfunction, such as vertigo, dizziness, vision problems, or nausea.**”

The Australian Medical Association¹⁵ evaluated the health impact relative to wind turbines and released a position statement: “The available Australian and international evidence **does not support the view that the infrasound or low frequency sound generated by wind farms, as they are currently regulated in Australia, causes adverse health effects** on populations residing in their vicinity. The infrasound and low frequency sound generated by modern wind farms in Australia is well below the level where known health effects occur, and there is no accepted physiological mechanism where sub-audible infrasound could cause health effects.”

A 2016 German study¹⁶, which spanned two years and examined six wind turbines by different manufacturers with different sizes and covering a power range from 1.8 to 3.2 MW, concludes that “Infrasound is caused by a large number of different natural and technical sources. It is an everyday part of our environment that can be found everywhere. Wind turbines make no considerable contribution to it. **The infrasound levels generated by them lie clearly below the limits of human perception. There is no scientifically proven evidence of adverse effects in this level range.**”

Conclusion

It is my hope that the information provided in this letter demonstrates that:

1. The current IPCB noise level limits have been and continue to be adequate to protect public health based on the published findings of the most significant studies conducted by government and public agencies.
2. Infrasound from wind turbines has never been demonstrated to be audible by or harmful to humans.
3. The recommended noise limit of 39 dBA is based on the opinions of a few non-medical consultants that have long *theorized* that such a limit is necessary.

References

1. Illinois Pollution Control Board (2018). *Title 35: Environmental Protection Subtitle H: Noise Chapter 1: Pollution Control Board – Part 901: Sound Emission Standards and Limitations for Property Line-Noise-Sources*.
2. World Health Organization (1999). *Guidelines for Community Noise*. Available from: <https://apps.who.int/iris/bitstream/handle/10665/66217/a68672.pdf>
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4. World Health Organization. (2018). *Environmental Noise Guidelines for the European Region*, ISBN 978 92 890 5356 3. Available from: https://www.euro.who.int/__data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf
5. Health Canada’s series of papers published starting in 2016.
6. American National Standards Institute (ANSI). (2021). *Quantities and Procedures for Description and Measurement of Environmental Sound – Part 4: Noise Assessment and Prediction of Long-term Community Response* (ANSI Standard S12.9/Part 4).
7. American National Standards Institute (ANSI). (2007). *Quantities and Procedures for Description and Measurement of Environmental Sound – Part 5: Sound Level Descriptors for Determination of Compatible Land Use* (ANSI Standard S12.9/Part 5).

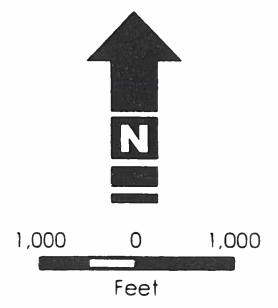
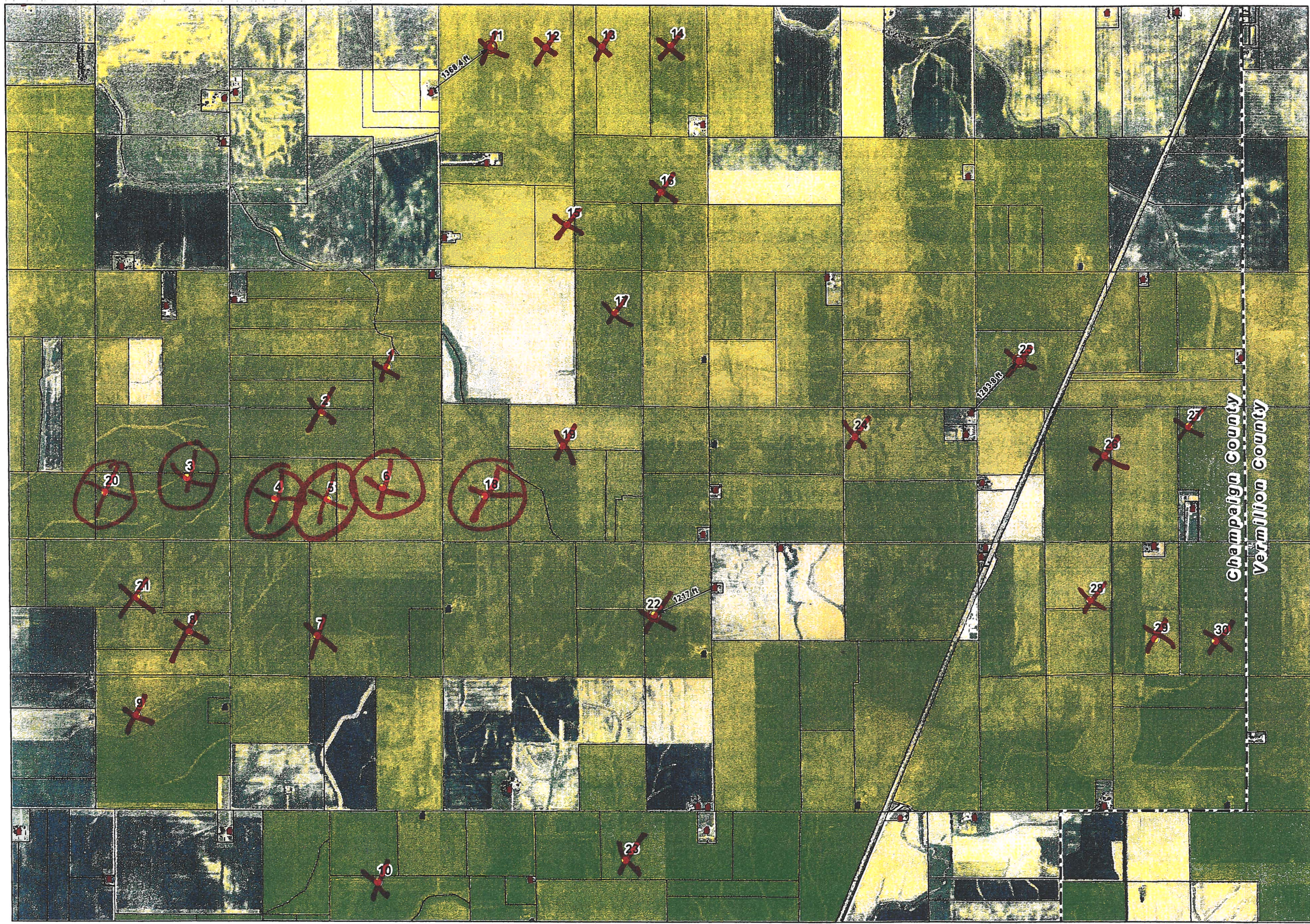
8. Hankard and Ellenbogen, *Prepared Rebuttal Testimony of Noise Panel* before the NY State Board on Electric Generation Siting and the Environment in the Matter of Canisteo Wind Energy, July 2019.
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10. Liebich T. An experimental investigation on the impact of wind turbine noise on polysomnography-measured and sleep diary determined sleep outcomes. *SLEEP*. April 2022.
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Please let me know if you have any questions regarding the above or would like additional information.

Sincerely,



Michael Hankard
Owner and Principal Acoustical Consultant
Full Member of INCE and ASA



≥ 3,250' SEPARATION TO PL, 9982A
 (6 TURBINES)
REVISED
 6/24/22

Legend

- Proposed Turbine Location
- Principal Dwelling Structure**
- Not Participating
- Participating
- 125' Turbine Buffer
- County Boundary
- Landowner Status**
- Participating
- No Information

Separation distances between wind farm structures and non-participating dwellings or principal buildings are greater than minimum setbacks.

Dimensions indicated are from non-participating buildings or principal buildings to turbine buffer. Turbine buffer is 125' from current turbine centerpoint in order to account for field adjustments and micro-siting issues.

Champaign County Non-Participating Dwelling Separation Summary

California Ridge Wind Energy Project, Champaign and Vermillion Counties, Illinois

Rev. 01
 July 29, 2011

Invenergy
 One South Wacker Drive Suite 1900
 Chicago, Illinois 60606
 (312) 224-1400

Susan Burgstrom

From: Isaak L. Simmers
Sent: Monday, June 27, 2022 8:00 AM
To: Susan Burgstrom
Subject: Wind energy

From: Bill Bell <jwb713@yahoo.com>
Sent: Saturday, June 25, 2022 7:21 PM
To: Bill Bell <jwb713@yahoo.com>
Subject: Wind energy

As you consider wind energy policies and decisions at your meeting this week and in the future, I hope you will do everything possible to update the wind farm ordinance to encourage more wind energy development in Champaign County. The current ordinance is overly restrictive -- the setbacks are excessive and reducing those would still create noise levels that are no greater than road traffic.

References to "wind turbine syndrome" that often come up during these debates have been roundly and routinely debunked. Neither the National Institutes of Health nor the World Health Organization recognize any such condition or health threat. Please look critically at these arguments, should they arise.

Sustainable energy improves our nation's security, protects our environment, and enlivens our county's economy. I ask that you do everything you can to encourage wind energy development in Champaign County.

Thank you.

Bill Bell
3304 Weeping Cherry Dr.
Champaign, IL

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JUN 27 2022

CHAMPAIGN CO. P & Z DEPARTMENT

Susan Burgstrom

From: Isaak L. Simmers
Sent: Monday, June 27, 2022 8:01 AM
To: Susan Burgstrom
Subject: Please Support Wind Energy!

From: kshannon617@comcast.net <kshannon617@comcast.net>
Sent: Sunday, June 26, 2022 8:39 PM
To: zoningdept <zoningdept@co.champaign.il.us>; Eric Thorsland <ericfor1@yahoo.com>; ale7496@yahoo.com; Chris Stohr <cstohr.ccbd10@gmail.com>; Jacob Paul <217jpaul@gmail.com>; Mary King <maryking4countyboard@gmail.com>; Kyle Patterson <kylepatterson@co.champaign.il.us>; Stephanie Fortado <fortadoccb@gmail.com>
Subject: Please Support Wind Energy!

To the members of the Zoning Board of Appeals and the Environment and Land Use Committee :

My name is Kathy Shannon and I live in Champaign. I am strongly in favor of wind energy in Champaign County, and I'm concerned that these proposed changes will make it almost impossible to develop new wind farms. We need wind energy now more than ever! The climate crisis is at a critical point. The International Panel on Climate Change (IPCC) reports that we must cut our emissions in half by 2030 to limit warming to 1.5 degrees Celsius, which is critical to keeping the Earth habitable for us and for our children. Farmers are already feeling extreme pressure from changing weather patterns, and this will only get worse. Fossil fuels will get more expensive as banks stop financing new infrastructure. On a personal note, my homeowner's insurance went up substantially this year, and the insurance company writes that this is largely because of "the frequency and severity of weather events caused by changing weather patterns." Climate change is negatively affecting us already. If anything, we should be updating our ordinances to encourage MORE renewable energy development, not less.

I also want to point out that our taxing bodies, especially school districts, need the revenue that comes from wind farms. Many people are worried that a recession is on the way, and with it, a possible reduction in EAVs. It's vital that we fully fund our schools, and property taxes on wind farm developments are a great way to do that without putting an undue burden on homeowners and farmers.

Finally, the war in Ukraine and the resulting disruption in the supply of fossil fuels underscores the urgency of energy independence. With wind energy, we're not reliant on foreign oil, but also not reliant on pipelines that leak and poison our soil and drinking water.

Please reject this anti-scientific attempt to curtail a stronger, more resilient, and more sustainable Champaign County. Thank you!

Kathy Shannon

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JUN 27 2022

CHAMPAIGN CO. P & Z DEPARTMENT

JUN 28 2022

CHAMPAIGN CO. P & Z DEPARTMENT

6/27/2022

To: Champaign County Environmental & Land Use Committee

Subject: California Ridge Wind Farm Comments on Proposed Changes to the Champaign County Wind Turbine Ordinance

Dear Sir / Madam,

California Ridge is a 214-megawatt ("MW") wind farm consisting of 134 wind turbines, operating since 2012. Of these, 30 turbines are located in Champaign County while the rest are in Vermilion County. The Project is owned and operated by Brookfield Renewable, one of the largest renewable operators in the world with almost 21,000 MW in service. We operate 21 wind farms consisting of 1,045 turbines in the US alone.

As the sole operating wind farm in Champaign county with an excellent track record over 10 years, we are writing to express our concern with the misinformation and push to effectively ban wind energy lately in circulation in Champaign County. More specifically, some of the ZBA's proposed changes in the currently pending text amendment to Champaign County's wind siting ordinance would likely deter any future wind development in the county.

Champaign County has benefited so far from its well-designed wind ordinance. Our California Ridge project is a real-life testament to it. The Project has been sited, built and operated per the ordinance that was in place in 2011. Other than occasional and isolated issues which we strive to address immediately and thoroughly, there have been no persistent or chronic complaints in Champaign County as course of normal operation. California Ridge employs 13 full-time local staff for operation and maintenance of the turbines. In 2021, the Project contributed approximately \$1.8 million in property taxes; of which \$400,000 was contributed in Champaign County. To-date, the Project has generated 5,646 GWh of clean renewable energy which would represent taking more than 850,000 cars off the road.

The recently suggested changes in the wind ordinance based on unscientific claims would risk closing Champaign to any future wind investment and associated benefits. We understand many of these suggestions are intended to do exactly that - disseminate fear and anxiety in the community and effectively ban future wind development in the county.

Two suggestions are of particular concern: (a) deviating from Illinois Pollution Control Board (IPCB) standards & regulations with respect to noise emissions and (b) implementing an arbitrary setback of 3250' from neighboring property lines

- a) To address claims with respect to noise and to provide the county a balanced, scientific view we've engaged our noise expert Hankard Environmental, who conducted a post-construction noise assessment at California Ridge in 2014. Their testimony responding to the unscientific claims is attached.
- b) To demonstrate the potential impact of a 3250' setback from property lines, we ran an analysis to see how such a setback would have impacted California Ridge, had it been in place when the project was approved in 2011. Of the 30 operating turbines, none would have complied with the proposed

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setback. If this setback were to be imposed, no wind farm could be developed in Champaign County. Under the proposed amendment, the alternative for developers to obtain waivers from each neighboring landowner within 3250' is not realistic or practicable. We understand it was openly admitted at recent county meetings that the purpose of this proposed setback was to effectively ban wind development in Champaign County.

Based on our experience in the US and globally, the industry standard setback of 1000' from dwellings has allowed counties to responsibly benefit and continue to benefit from the transition to renewable energy. We believe Champaign County's previously proposed setback changes, 2x tip-height from participants (1,037' at California Ridge) and 2.4x tip-height from non-participants (1,244' at California Ridge), are slightly more conservative than this industry standard but would still allow for responsible development of future projects. The added dependence on tip height would maintain adequate separation from turbines while providing adaptability to changes in turbine technology and increases in turbines size (i.e. as the turbine size increases, so does the separation in absolute feet). We recommend proceeding with the recommended setbacks in Case 037-AT-22.

As noted above, our goal is to provide a scientific and realistic view of the proposed ordinance changes to Champaign County, leveraging our experience as a global renewable energy developer and operator. We also have a natural interest in correcting unfounded, un-scientific claims about wind energy, given our unique status as the only operating wind farm in Champaign County. We will be pleased to provide you any technical information you might require and share our real-life experiences with California Ridge to help form an informed view.

Regards,



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Technical Specialist – Wind Energy
Brookfield Renewable
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Ben.mallernee@brookfieldrenewable.com



Iron Workers Local Union 380

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Phone 217-367-6014 ■ Fax 217-367-6614 ■ ironworkers380.org

AFFILIATED WITH AFL-CIO

06/29/2022

RECEIVED

JUN 29 2022

CHAMPAIGN COUNTY CLERK'S OFFICE

Eric Thorson, E.L.U.C. Committee Chair,
and Members of the Environment and Land Use Committee
John Hall, Champaign County Zoning Administrator,
and Members of the Zoning Board of Appeals

Dear Board and Committee Members,

I hope this letter finds you well. As you come together to discuss amendments to the Champaign County Zoning Ordinance, please consider some of the positive attributes that wind energy will bring to the area. My name is Charles Black, I represent the Members of Iron Workers Local Union 380. Our Local Union is based out of Urbana, and we cover a jurisdiction that includes parts of seventeen counties including Champaign Co. Most of our members live in the county and the surrounding counties. These are local people that depend on temporary projects, including wind energy projects to make a career in the building trades.

As you go through the process of amending the wind ordinances, I would like to share a few viewpoints from the construction side of these projects. As we all know technology is progressing at a fast pace with a goal to make the world a more efficient place. The wind industry is also following that trend. Larger turbines are producing more energy, reducing the overall number of turbines needed per project or farm. Larger turbines go hand in hand with taller turbines. When I first started working around wind turbine erection the Vestas units that were being installed had an overall height or Tip Height of 400 ft. - 490 ft. depending on the model.

Fast forward to today. Tower Heights are reaching over 625 ft. in the new turbine models. What does that mean to the landowners in the Turbine Farm footprint? Fewer turbines on a project producing more efficient power with less acreage used. Please consider Tower Height and Set Back Distances that will not stop these projects from being developed in Champaign County when making Amendments to the Ordinance.

Even with fewer turbine sites on these projects our local crafts people will be put to work. The economic value will still be there for Champaign County and its residents. Taller towers will still bring revenue while at the same time keeping the impact to acreage used for the project to a minimum. Whether it is a local contractor or a contractor coming from out to town, they also

need local resources to get these projects done. They will bring equipment and machinery that will need maintained, fixed, or replaced. There will be consumable supplies that need replenished, once again putting revenue back in the local economy. I cannot stress how important these projects are to the local people that will be benefiting from the construction jobs that will be created.

Again, please think of the county as a whole and show your support for Wind Energy in Champaign County as you make amendments to the Wind Ordinance. There are years of economic sustainability for the County, schools, townships, fire protection districts, and the working people in and around Champaign County on the line with these Wind Ordinance Amendments.

Sincerely,



Charles Black

Business Manager

Iron Workers Local Union 380

Susan Burgstrom

From: Isaak L. Simmers
Sent: Thursday, June 30, 2022 10:40 AM
To: Susan Burgstrom
Subject: Please Support Renewable Energy

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CHAMPAIGN CO. P & Z DEPARTMENT

From: Adani Sanchez <adani.sanchez@gmail.com>
Sent: Wednesday, June 29, 2022 10:41 PM
To: zoningdept <zoningdept@co.champaign.il.us>
Subject: Please Support Renewable Energy

Dear members of the Zoning Board of Appeals,

Even in the nearly 9 years that I have lived in Central Illinois, I have already experienced many unusual climate events like the polar vortex (a true shock to this Texan), and this year extreme heat early on in the summer.

We know that the climate is changing and that fossil fuels are a direct cause. We must reduce our reliance on fossil fuels and expand renewable energy resources before we are no longer able to grow corn in Illinois.

Please be part of this solution by supporting and expanding the wind farm ordinance to allow more development. The proposed amendments are restrictive, based on misinformation, and would effectively ban wind farms from even being built. Wind turbines do not cause any more harm to birds than power lines, they are also not louder than an air conditioner when 100 meters away. Please support renewable energy in Central Illinois!

Sincerely,

Adani Sanchez
Champaign Resident

Susan Burgstrom

From: Isaak L. Simmers
Sent: Thursday, June 30, 2022 11:12 AM
To: Susan Burgstrom
Subject: Opposed to zoning limits on wind farms

From: Matthew Frank <matthew.i.frank@gmail.com>
Sent: Thursday, June 30, 2022 11:10 AM
To: zoningdept <zoningdept@co.champaign.il.us>; Eric Thorsland <ericfor1@yahoo.com>; ale7496@yahoo.com; Chris Stohr <cstohr.ccbd10@gmail.com>; Jacob Paul <217jpaul@gmail.com>; Mary King <maryking4countyboard@gmail.com>; Kyle Patterson <kylepatterson@co.champaign.il.us>; Stephanie Fortado <fortadoccb@gmail.com>
Subject: Opposed to zoning limits on wind farms

Dear Champaign County Zoning Board of Appeals and Environment and Land Use Committee-

I am opposed to amending the Champaign County Zoning Ordinance to further limit wind farm tower construction. I believe the current Zoning Ordinance and Illinois Pollution Control Board noise limits are already sufficiently tight to protect residents of neighboring class A properties from any negative externalities.

The ZBA seems to be suggesting using the regulatory power of the county to take existing property rights from owners of local land based on the preferences of a small minority of county residents who dislike wind farms. This is what conservatives typically call "massive government overreach."

While I do think the county has an interest in regulating pollution from class C properties impinging on class A properties, I think the county should focus on quantifying and regulating the pollution limits they think are appropriate, rather than imposing set-back and noise limits only on specific technologies or use-cases.

At the top of page 4 the Agenda Packet suggests that current Illinois Pollution Control Board noise regulations are not sufficient because "wind turbines ... did not even exist when the regulations were created," yet IPCB Title 35 Illinois Administrative Code Subtitle H: Part 901 has been revisited and amended in 2004, 2006, 2007, 2015, and 2018.

If you still believe that the nighttime limits on noise pollution in Title 35 Subtitle H, Section 901.102, paragraph b emitted from class C land, and received by class A land are not strict enough, please recognize that those limits are already stricter than a limit of 46 dB(A) across all frequency ranges, and in fact already stricter than 39 dB(A) below 50 Hz and above 2000 Hz. If you were to impose a limit of 39 dB(A) on class C property owners you would be requiring class C properties to be as quiet as class A properties in the 125 Hz - 250 Hz frequency range. If you're not willing to impose that restriction on all class C property uses at night, then you shouldn't impose it on class C properties being used for this specific use. (If you are further curious, I've included a graph below demonstrating the claims in this paragraph)

Thank you,
-Matt Frank
2207 O Donnell Dr

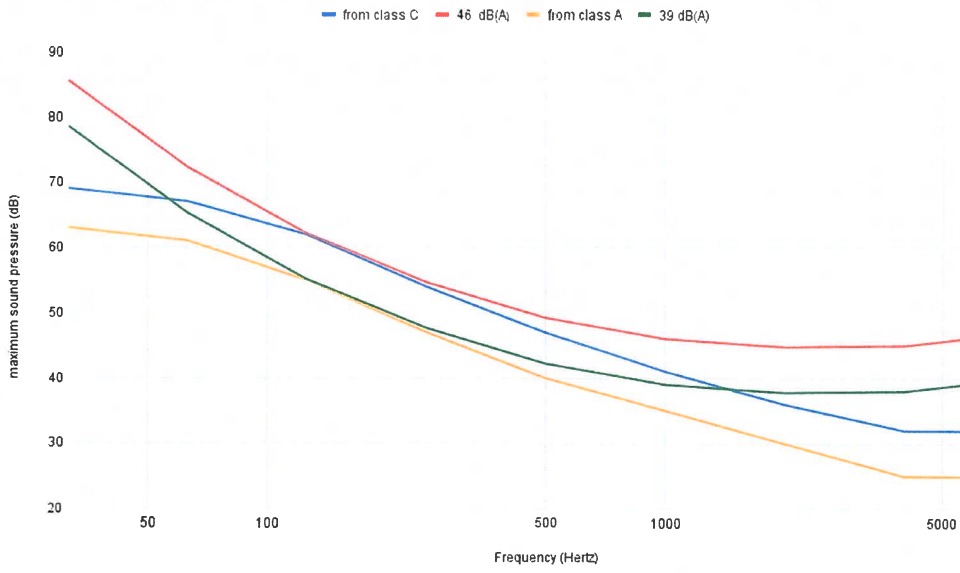
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Champaign, IL 61821

Illinois Pollution Control Board limits on nighttime noise pressure received by class A properties



Susan Burgstrom

From: Isaak L. Simmers
Sent: Thursday, June 30, 2022 1:36 PM
To: Susan Burgstrom
Subject: Proposed Zoning Ordinance Amendments for Wind Farms

From: Yousaf Shah <yousafmshah@gmail.com>
Sent: Thursday, June 30, 2022 1:30 PM
To: Eric Thorsland <ericforl@yahoo.com>; ale7496@yahoo.com; Chris Stohr <cstohr.ccbd10@gmail.com>; Jacob Paul <217jpaul@gmail.com>; Mary King <maryking4countyboard@gmail.com>; Kyle Patterson <kylepatterson@co.champaign.il.us>; Stephanie Fortado <fortadoccb@gmail.com>; zoningdept <zoningdept@co.champaign.il.us>
Subject: Proposed Zoning Ordinance Amendments for Wind Farms

To the members of the Environment and Land Use Committee and Zoning Board of Appeals,

As a fairly new resident of Champaign County, I'm heartened to see so much support and emphasis here on the use of renewable energy, of programs and resources available to residents to participate in installing and sourcing non-fossil fuel based energy to power our homes and infrastructure. So much so that I am surprised to see this discussion of limiting the potential for further investment in wind energy in the County. All the more bizarre as, being in the plains, we are uniquely positioned to excel at solar and wind energy generation.

As someone who prefers to make decisions based on research and data, having read the report prepared Hankard Environmental on the current baselines for wind turbine noise generation and how that fits within environmental health parameters, I find justification for the proposed changes weak. Conducting a cursory review of available research, it seems the proposed measures only make sense if any residents are immediately within the vicinity of the turbines (within approximately 300-500 ft).

Considering the 45 dBa baseline recommended by the WHO fits within the parameters of most household appliances (dishwasher, refrigerator, HVAC), it is bizarre to demand a stricter standard as most households are already exposed to higher levels of environmental noise on a day-to-day basis.

I request the Committee and ZBA rely on available research and ensure the residents of the county have access to reliable sources of clean energy now and in the future. Though I sympathize with residents who may find the noise a nuisance, there are mitigation measures available to them that they can implement in their own homes. Perhaps that should be more the topic of discussion; how to address the needs of the specific residents immediately impacted, at their own properties, rather than limiting the potential of the entire County to access clean energy.

Thank you,

Yousaf Shah

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INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS

LOCAL UNION NO. 601

3301 N. Boardwalk, P.O. Box 3902 • Champaign, IL 61826-3902
217-352-1741 • Fax: 217-352-9210

6/30/2022

To the members of the Champaign County Zoning Board of Appeals,

I would like to address this body, both as a taxpayer and supporter of renewable energy. As a supporter of wind and solar projects, I want to iterate the long-term tax benefits renewables bring to the taxing bodies in our community. The increased revenue these projects bring to our communities and taxing entities improves our community. Schools, community colleges, fire protection districts, township road districts, park districts, health departments, and others all greatly benefit from these projects. This alone is an enormous benefit to the constituents of our community.

Allow me to introduce myself, I am Brian Andersen, a lifelong resident of Champaign County, I am a representative of the International Brotherhood of Electrical Workers Local 601 here in Champaign, IL. I have personally worked on renewable energy projects in our community and have seen the benefits they bring to the bodies. Our members have built hundreds of wind and solar projects throughout our jurisdiction. It has enabled them to put food on their tables and roofs over their heads. Our jurisdiction covers parts of twelve counties in central Illinois. Our members have firsthand seen the benefits these projects bring to the community on a long-term basis.

As ZBA members, consider your recommendation to the County Board, and think of the county as a whole and the benefits these projects bring to the constituents.

Thank you for your time,

Brian Andersen

Assistant Business Manager

IBEW Local 601

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