

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

IN THE MATTER OF THE APPLICATION BY PREVAILING WIND PARK, LLC FOR A PERMIT OF A WIND ENERGY FACILITY  IN BON HOMME COUNTY, CHARLES MIX COUNTY AND HUTCHINSON COUNTY,  SOUTH DAKOTA, FOR THE PREVAILING  WIND PARK PROJECT	* * * * * * * * * *	<b>APPLICANT’S FIRST SET OF DATA          REQUESTS TO INTERVENOR          SHERMAN FUERNISS</b>  <b>EL18-026</b>
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Below, please find Prevailing Wind Park, LLC’s (“Applicant”) First Set of Data Requests to Intervenor Sherman Fuerniss. Please submit responses within 10 business days or promptly contact the undersigned to discuss an alternative arrangement.

1-1) Provide copies of all data requests submitted by the PUC Staff to you in this proceeding and copies of all responses to those data requests. Provide this information to date and on an ongoing basis.  
See attachment.

- 1-2) With respect to the Project, please:
- a) Identify, if any, concerns you have regarding the Project’s satisfaction of the criteria for the Project to receive a facility permit from the South Dakota Public Utilities Commission; and
    - 1) Concerns about the legality of depriving property owners of the full traditional and customary use of the full extent of their private property due to the proximity of the proposed wind turbines.
    - 2) Concerns about the negative economic impact on property owners resulting from the inability to make full traditional and customary use of the full extent of their private property due to the proximity of the proposed wind turbines.
    - 3) Concerns about diminished quality of life and impaired health, safety, and welfare from the proximity of the proposed wind turbines sited according to outdated recommendations.
  - b) Identify any other concerns you have regarding the Project.  
Concerns include increased acoustic energy from all directions from this project, potential exacerbation of sleeping problems leading to detrimental health issues, and detrimental effects on quality of life and welfare that have not been quantified now or after continuous and prolonged exposure to increased acoustic energy.

1-3) Identify whether you own property or reside in the vicinity of the Prevailing Wind Park Project ("Project") and, if so, the location (by section, township, and range) of such property and/or residence.

My immediate family owns 320 acres in 14-96-62 of Choteau Creek Township South and 40 acres in 18-96-61 of Choteau Creek Township South. My extended family owns 160 acres in 10-96-62 of Choteau Creek Township South which is managed by myself as an integral part of our operation.

Our family resides in the east one-half of 14-96-62 of Choteau Creek Township South.

1-4) If you have a residence in the vicinity of the Project, identify whether you live at the residence throughout the entire year and, if not, how many months of the year you reside at the residence.

Our family lives and works on our property twelve months of the year.

1-5) Identify how you use your land, including, but not limited to, whether you use your land for agricultural purposes.

Our land is used primarily for animal husbandry making extensive use of intensive and rotational grazing by means of portable break-wires and frequent movement of livestock requiring continual maintenance of both perimeter and internal fencing. Cattle movement and fencing are both accomplished mainly on foot on all areas of the property. Land not used for grazing is hayed and a small amount is used for crop production.

1-6) Identify any sensitive or unique features of your property that you assert would be impacted by the Project.

The vast majority of our property is grassland including native prairie and land replanted to native prairie grasses. Our prime native prairie would be bracketed on all sides by wind turbines.

Our farm is also home to a bow-truss barn built in 1923 by my grandfather which is still in use.

The herd of Braunvieh cattle we raise is unique to the area, perhaps to state of South Dakota.

1-7) Describe any mitigation measures that could address your concerns with respect to the Project. Preventative measures could include, but are not limited to, not building the project, requiring 2 mile setbacks from nonparticipating residences or 2 kilometer setbacks from nonparticipating property owners perimeter property lines - whichever is greater - as measured to the nearest reach of the turbine rotor, and 40dBA max daytime levels not to be exceeded more than 10% of the time and 30dBA max nighttime levels not to be exceeded more than 10% of the time as measured at nonparticipating property owners perimeter property lines.

- 1-8) Identify any documents, information, education, training, or professional experience you have relied upon to form your opinions concerning the Project. Where you have relied upon documents or other tangible materials, please provide such documents and/or materials.

Prevailing Wind Park, LLC application for a permit to the South Dakota Public Utilities Commission; three years experience living 1.25 miles from the Beethoven wind project; Bryce, R. (2010) Power Hungry, New York, NY, Public Affairs, Perseus Books Group; Hansen, C., Doolan, C. and Hansen, K. (2017) Wind Farm Noise: Measurement, Assessment and Control, Chichester, UK, John Wiley and Sons Ltd.; Crampton, G. (Ed.) (1990) Motion and Space Sickness, Boca Raton, Florida, USA, CRC Press Inc.; Salt, A. and Kaltenbach, J. (2011) Infrasound From Wind Turbines Could Affect Humans, Bulletin of Science Technology & Society 2011 31: 296, online version <http://bst.sagepub.com/content/31/4/296>; Punch, J. and James, R. (2016) Wind Farm Noise: A Four-Decade History of Evidence that Wind Turbines Pose Risks, from <https://hearinghealthmatters.org/hearingnews/watch/2016/wind-turbine-noise-health/>; Thorson, P., Persson Waye, K., Ogren, M., Smith, M., Pedersen, E., Forssin, J. (2018), Creating sound immission mimicking real-life characteristics from a single wind turbine, from <https://sciencedirect.com/science/article/pii/S003682X17312008>; McMurtry, R. and Krogh, C., (2014) Diagnostic criteria for adverse health effects in the environs of wind turbines, from [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4221978/#\\_ffn\\_sectitle](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4221978/#_ffn_sectitle); [www.masterresource.org](http://www.masterresource.org); <https://www.researchgate.net>; Salt, A. and Lichtenhan, J. (2014) How Does Wind Turbine Noise Affect People? Acoustics Today, winter 2014, <http://www.windturbinesyndrome.com/wp-content/uploads/2014/04/Salt-et-al.-on-Wind-TurbineSyndrome>.

- 1-9) Identify any expert witnesses you plan to have testify on your behalf, and for each expert witness, describe the subject matter regarding which the witness will testify.

None.

- 1-10) Are you asserting the Project will negatively impact property value? If so, provide copies of any appraisals that have been conducted for your property within the last ten (10) years.

The value of anything is determined by agreement between a willing seller and a willing buyer. It would seem logical that the pool of willing buyers who intended to reside on a small farm surrounded in close proximity by multiple wind turbines would be smaller than the pool of willing buyers for such a property not surrounded by wind turbines. While the pool of willing buyers who would not reside there may be larger, the pool of willing sellers to such buyers in this case would be zero. The smaller the pool of potential buyers the less likely agreement of value would be found. There have not been any appraisals of which I am aware.

1-11) Identify any communications, written or otherwise, you have had with units, officials, and/or representatives of local, state, and/or federal governments or agencies concerning the Project.

- a) For any written communications, provide a copy of the communication; and  
See attachments.
- b) For any unwritten communications, provide the date of the communication, the persons involved, and the subject matter of the communication.

Dated this 30th day of August 2018.

By /s/ Lisa Agrimonti  
Mollie Smith  
Lisa Agrimonti  
FREDRIKSON & BYRON, P.A.  
Attorneys for Applicant  
200 South Sixth Street, Suite 4000  
Minneapolis, MN 55402  
Phone: (612) 492-7270  
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**IN THE MATTER OF THE  
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**STAFF’S FIRST SET OF DATA  
REQUESTS TO INTERVENORS**

**EL18-026**

Below, please find Staff’s First Set of Data Requests to Intervenors. Please submit responses by August 22, 2018, at 5:00 pm, or promptly contact Staff to discuss an alternative arrangement.

- 1-1) Provide copies to Staff of all data requests served on Applicant at the time of service.  
None served at this time.
  
- 1-2) Provide copies to Staff of all of your answers to data requests from Applicant at the time they are served on Applicant.  
None received at this time.
  
- 1-3) Refer to SDCL 49-41B-22. Please specify particular aspect/s of the applicant's burden that the individuals granted party status intend to personally testify on.
  - 1) Inaccuracies, errors, and omissions in the applicant’s application and supplemental information may cause injury to the environment leading to the economic detriment of some inhabitants and businesses within and near the project as well distressing other activities.
  - 2) The applicant fails to substantially prove that placement of turbines twice as powerful as existing turbines and at distances even closer than existing turbines will not substantially affect the health, safety or welfare of either participating or non-participating inhabitants. Unless health, safety, and welfare have been quantitatively measured prior to construction the amount of substantial impairment can not be measured after. Personal health and well-being will be particularly emphasized.
  - 3) There will likely be no future “orderly development” at all in the footprint of the facility if constructed as proposed.

- 1-4) Refer to SDCL 49-41B-25. Identify any “terms, conditions, or modifications of the construction, operation, or maintenance” that the Intervenors would recommend the Commission order. Please provide support and explanation for any recommendations.

The “terms, conditions or modifications” that would ameliorate nuisance, health, and negative financial concerns raised by the facility would be to simply deny the permit.

Should the permit be approved, full frequency spectrum analysis should be performed, not just modeling of projected dB(A) levels. The complete sound output needs to be accounted for not just the audible portion as with the dB(A) weighted scale. Dr. Alec Salt and colleagues, Washington University School of Medicine, St. Louis have explained the effects of extremely low frequency sound on the inner ear leading to the distress of sleep disruption, sleep deprivation and subsequent adverse health effects. Larger and more powerful turbines produce an even larger proportion of low frequency noise than earlier smaller models. This needs to be accounted for by someone.

If appropriate sound power level studies are not implemented and standards set and enforced, an alternate condition for safety, health, and welfare would be setbacks of 2 miles from non-participating residences, businesses, churches, cemeteries, and schools with waivers for those so inclined and 1500 foot setbacks from property and right of way lines. All setback measurements need to be made to the tip of the blade when horizontal not to the center of the tower.

Aircraft Detection Lighting Systems should be installed. The air ambulances from the Sioux Falls hospitals make multiple trips to the Wagner hospitals every week at all hours of the day and night through the proposed facility area.

Shadow flicker should be eliminated at non-participating residences and business and should be reduced to 8 hours annually actual following the German model at participating residences so as not to imprison people their homes behind shuttered windows unable to use their own property.

Decommissioning monies should be made available in whole upfront and reevaluated every 2 years to account for inflation and other increasing costs. Decommissioning should include complete removal of all installed components not just visible portions.

- 1-5) Is there a specific objection (example health, blinking lights, sound) you have with respect to the Project? Please briefly explain.

- a. What, if anything, do you feel could be done to remedy that issue?

Concerning sight, sound, health, and safety issues:

If constructed as proposed our horizon will be in constant motion when the wind blows except for about 60 degrees to the north. As someone susceptible to motion sickness and having suffered vertigo episodes within the last few months, this may well be an unbearable situation. Infrasound and low frequency noise from existing turbines may contribute to these issues as per Navy nauseogenic studies but I can not imagine that having larger turbines on all sides could possibly help.

Existing turbine noise is routinely audible at our residence at 1.25 miles distant. Note that applicant's sound study indicates that in 2 of 3 measurements at measuring points 1 and 2 there is audible sound from existing turbines at distances of approximately 2 miles. Again, being completely surrounded by larger turbines will not help the situation.

Both audible sound and inaudible low frequency noise are known to contribute to sleep disruption and sleep deprivation. The distress of sleep deprivation over time is known to cause physiological disruptions of several body systems. We already experience sleep problems. Being surrounded by more and larger turbines can not possibly help.

Possible remedies for these issues could include but are not limited to:

- 1) Not approving the permit.
- 2) Requiring 2 mile setbacks from habitable residences, businesses, churches, cemeteries, etc. with waivers if desired by participating landowners so as to protect by distance from sound, inaudible noise, and sight disruption. All property and right of way line setbacks should be at least 1500 feet for safety from blade fragmentation and ice throw. For risk assessment it should be presumed that a person is always present at the property or right of way line.
- 3) Requiring 2 kilometer setbacks (as many European countries and Australian states have previously required 1000 meters for much smaller turbines as per summary by K. M. B. Haugen, Minnesota Department of Commerce) but from non-participating landowners property lines, along with noise limits of 25-40 dB(A) (again foreign country guidelines adjusted for turbine size per Haugen summary) at non-participating landowner property lines with lower values for measured quiet areas or 5 dB(A) above measured preconstruction background noise levels Leq with 5-15 dB penalties for tonality, impulsiveness, and modulation (Haugen summary) at the property line of non-participants so as not to imprison people in their homes unable to use or enjoy their entire property.
- 4) Further remedies to reduce audible sound and low frequency noise could include shutting down the entire facility from 7:00 pm to 7:00 am so that all inhabitants could sleep peacefully, shutting down all turbines within 2 miles of non-participating residences or 2 kilometers of non-participating owner property lines from 7:00 pm to 7:00 am, using Noise Reducing Operations (NRO) on all turbines from 7:00 pm to 7:00 am, or using NRO on turbines within 2 miles of non-participating residences or 2 kilometers of non-participating landowners property lines 24 hours a day.

Setbacks from property lines are stressed because our practice of animal husbandry requires working afoot on the majority of our property on a daily basis. Measurements to the residence are useless except for sleeping hours. No one should be denied the use of the entirety of their property.

- 1-6) Please list with specificity the witnesses the Intervenors intend to call. Please include name, address, phone number, credentials and area of expertise.

Potential witness other than self are unknown at this time.

- 1-7) Do the you intend to take depositions? If so, of whom?

Unknown at this time but doubtful.

21 August 2018  
Sherman Fuerniss  
40263 293<sup>rd</sup> Street  
Delmont, So. Dak. 57330  
605-779-5041  
sol@midstatesd.net

Dated this 8<sup>th</sup> day of August 2018.



Amanda M. Reiss

Kristen Edwards

Staff Attorneys

South Dakota Public Utilities Commission

500 East Capitol Ave.

Pierre, SD 57501



**Duffus, Bridget**

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**From:** Edwards, Kristen <Kristen.Edwards@state.sd.us>  
**Sent:** Monday, August 06, 2018 1:57 PM  
**To:** & Sherman, Lori  
**Subject:** RE: Prevailing Winds

No problem!

**From:** sol <[sol@midstatesd.net](mailto:sol@midstatesd.net)>  
**Sent:** Monday, August 6, 2018 1:49 PM  
**To:** Edwards, Kristen <[Kristen.Edwards@state.sd.us](mailto:Kristen.Edwards@state.sd.us)>  
**Subject:** RE: [EXT] Prevailing Winds

Thanks so much for your prompt response to my inquiry. It is greatly appreciated!

Regards,

Sherman Fuerniss

On Aug 6, 2018 9:50 AM, "Edwards, Kristen" <[Kristen.Edwards@state.sd.us](mailto:Kristen.Edwards@state.sd.us)> wrote:

Not at all critical. No big deal, they never deny anyone party status.

**From:** sol <[sol@midstatesd.net](mailto:sol@midstatesd.net)>  
**Sent:** Monday, August 6, 2018 9:49 AM  
**To:** Edwards, Kristen <[Kristen.Edwards@state.sd.us](mailto:Kristen.Edwards@state.sd.us)>  
**Subject:** Re: [EXT] Prevailing Winds

Good morning,

How critical is it that I be included in the conference call tomorrow when the PUC is considering party status applications for EL18-026, Prevailing Wind ? Unfortunately I do not anticipate being able to be on the phone or even able to monitor the meeting tomorrow morning.

Sincerely,

Sherman Fuerniss

On Jul 31, 2018 9:28 AM, "Edwards, Kristen" <[Kristen.Edwards@state.sd.us](mailto:Kristen.Edwards@state.sd.us)> wrote:

Good morning,

I am email because you have filed for party status in t



Virus-free. [www.avg.com](http://www.avg.com)

July 21, 2018

Charles Mix County Commissioners

Keith Mushitz  
Neil VonEschen  
Jack Soulek

Dear Commissioners:

Several items from last Thursday's meeting kept nagging at me afterwards. It took a couple of days to sort out, but I would like to make the following points.

- 1) When Neil reported that Jonathan Wuertz said that they don't want any towers closer than 1 mile from the colony, keep in mind that the closest existing tower is about 1.25 miles from the colony. The new towers will be half again as tall and more than twice as powerful. One mile is simply not far enough! Also realize that when Jonathan says that the colony does not want any towers within a mile, the current PUC application shows that of the 9 towers on colony land only 1 is about a mile from the colony while the rest are from 1.25 to 4.5 miles from the colony while still being on colony land, but are the following approximate distances from other residences:

Tower 32 about .5 mile from T. Koupal, .75 mile from S. Fuerniss and K. Andersh

Tower 40 about .5 mile from K. Andersh, .75 mile from T. Koupal and less than 1 mile from S.Fuerniss

Tower 16 less than 1 mile from L. Peters and S. Fuerniss

Tower 57 less than 1 mile from from K. Andersh, .75 mile from L. Peters and G. Link, and about 1 mile from P. Schoenfelder

Tower 48 about .5 mile from G. Link and .75 mile from L. Peters

Tower 23 less than 1 mile from G. Link and P. Schoenfelder

Tower 58 about .75 mile from C. Pazour and P. Schoenfelder

Tower 49 less than .75 mile from C. Pazour and less than 1 mile from P. Schoenfelder

So should towers be a mile or more from colony homes but towers on colony land be allowed to be closer than a mile to other homes???

- 2) Mr. Jurgens stated that there would be 57 towers. The application to the PUC shows 63 towers. Which sites have they already eliminated?
- 3) If I remember correctly, the "letter" offered by s-Power would keep towers about .75 mile from residences - was that participating or non-participating? Three-fourths of a mile would not seem to move very many towers very far and is essentially no concession from s-Power. The 40 dB(A) at non-participant and 45 dB(A) at participant residences they proposed is already what they would like the PUC to approve, so it is no concession either. Shadow flicker is also as already proposed. They stick with their plan as proposed essentially without change.
- 4) Mr. Podhrasky seemed overly impressed that the meeting room sound level of 60-70dB(A) -very unofficially measured- was not so loud. Of course, he was not trying to sleep there. Sleep deprivation/ disruption can begin at 30dB(A).

- 5) Mr. Jurgens mentioned that even your heart creates low frequency sound waves and they are not harmful. But God created the heart for the body and the body for the heart to work together. To equate the low frequency sound waves of the heart to those produced by turbine blades that are a football field and a half in diameter and moving at 200 miles per hour at the tips is ludicrous. The dangers of low frequency sound to the human body are known, what is not known is what standards for safety should be adopted. The only present safety is distance.
- 6) At the PUC meeting in Avon nearly 4 times as many people spoke against this wind energy conversion facility as spoke in favor of it. I do not believe any of those in favor were from Charles Mix County.
- 7) By my count there are 24 residences in Charles Mix County (7 in Lone Tree, 15 in Choteau Creek South, 2 in Choteau Creek North) that are in the footprint of the wind energy conversion facility. Only 7 of those 24 have their land signed up. How many of those 7 have appealed to use their property as they see fit to the potential detriment of the others?

I will continue to urge the adoption of strict regulations on wind energy conversion facilities, but especially setbacks of 2 miles or their equivalent in multiples of tower height from residences, business, etc. with waivers available and a setback of 2.5 times tower height from property lines and rights of way for the protection of Charles Mix County residents.

Sincerely, a lifelong resident of Charles Mix County,

Sherman Fuerniss  
40263 293rd Street  
Delmont, So. Dak. 57330

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\* **STAFF’S SECOND SET OF DATA**  
\* **REQUESTS TO SHERMAN FUERNISS**  
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\* **EL18-026**  
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Below, please find Staff’s Second Set of Data Requests to Sherman Fuerniss. Please submit responses by October 5, 2018, at 5:00 pm.

- 2-1) Refer to the rebuttal testimony of Mr. Fuerniss, Page 5, subpart (7).
  - a) Provide and specifically identify all “misidentifications of land use” that Mr. Fuerniss is aware of.
  - b) Provide and specifically identify all “misidentifications of participating/nonparticipating residents” that Mr. Fuerniss is aware of.
  - c) Has the “misidentifications of participating/nonparticipating residents” that Mr. Fuerniss is aware of been corrected as part of independent review of residences within the Prevailing Wind Park project and verification area attached to Bridget Canty’s rebuttal testimony?
  - d) Please explain in detail what consideration should be provided for rural cemeteries. Please provide evidence to support this consideration.

Dated this 28<sup>th</sup> day of September 2018.

  
Amanda M. Reiss  
Kristen Edwards  
Staff Attorneys  
South Dakota Public Utilities Commission  
500 East Capitol Ave.  
Pierre, SD 57501