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EverPower Wind Holdings, Inc.; Apex Clean Energy, Inc.; American Wind Energy Association; Capital Power Corporation; and EDP Renewables North America.

MAREC is pleased to note that, based on comments submitted, the support for sensible wind energy regulations in Ohio is strong. Understanding that such regulations will bring more investment in Ohio in order to support and benefit the public interest, MAREC is confident that the Board can strike a balance that allows responsible development to move forward. In this spirit, MAREC respectfully submits the following reply comments for the Board's consideration.

## **II. DISCUSSION AND REPLIES TO COMMENTS**

### **A. Sound and shadow flicker must be measured from residences – Rule 09(F) and (H)<sup>1</sup>**

As emphasized in our comments, measuring sound and shadow flicker from “property boundaries,” as proposed by staff, will substantially impede wind project development in Ohio in an unreasonable manner. These specific proposed standards are, as demonstrated below, significantly more restrictive than those in effect for existing wind farms in Ohio and are out of sync with standards in place in communities across the United States.

MAREC has compiled the attached chart, which compares the measurement requirements for several jurisdictions surrounding Ohio that host wind turbines. The original siting rules are consistent with these neighbors. The House Bill 483 (HB 483) setback requirements are much more stringent<sup>2</sup>. If 45 A-weighted sound standard (dBA) sound and 30 hour/year shadow flicker impacts are measured from property lines rather than the Ohio precedent of homes, the effective property line setback will increase from 541.2 ft. (for a 492 ft. turbine) to, in some cases, 2,640 feet or more (See Attachment A).

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<sup>1</sup> For ease of readability, rule numbers will be referred to without reference to the chapter or division number.

<sup>2</sup> HB 483, 130<sup>th</sup> Ohio General Assembly, eff. Sept. 15, 2014.

MAREC cautions that, when it comes to comparing measurements for sound and shadow flicker, the devil is in the details. Each jurisdiction has its own methodology that takes into consideration different factors and levels of details for determining the applicable measurement and maximum sound levels permitted. For example, some jurisdictions have turbine setback requirements, but no measurement requirement for shadow flicker. Other jurisdictions, like Illinois, have sound impact regulations, but the levels allowed depend on how the property is classed (residence vs. agricultural field) and, in addition, those measurements apply to all industries, not just the wind farm industry. From a broader perspective there are some domestic and international jurisdictions that have adopted excessively restrictive requirements to intentionally create a moratorium on wind development, such as the nation of Poland, whose new anti-renewables government passed such measures in July 2016. It is MAREC's view that the Board should acknowledge the original setback regulations "worked" considering there are nearly zero sound or shadow flicker complaints against the two existing wind farms in Ohio with over 5 years in operation. The Board should not adopt sound and shadow flicker impact setbacks from property lines.

Sound and shadow flicker, and indeed all standards, must be grounded in science and data and should be informed by past practice in Ohio and across the nation. The Board has, can, and should strike a balance between the interests of those voicing concern about wind energy development and the interests of the landowners who welcome these projects on to their land and the other businesses and citizens who benefit from this non-polluting native source of energy.

Given the wealth of public and landowner benefits brought to the state and local communities by the wind industry through economic development, as well as millions of dollars in tax revenues and local activity, it is the Board's responsibility to adopt reasonable, science-

based regulations that achieve the compatible objectives of protecting public health and safety, and the natural environment, while encouraging and supporting wind development in Ohio, which is imperative for achieving the previously stated objectives above.

Both state of Ohio precedent and precedent from other jurisdictions holds that proper sound and shadow flicker measurement should be from habitable structures where neighboring landowners are likely to experience these impacts – this is a well-established practice that strikes a reasonable balance among the interests before the Board.

Neighboring parcels can span dozens if not hundreds of acres; promulgating a sound or shadow flicker regulation based on property lines would hamper development, needlessly limiting the rights of landowners hosting wind turbines, while offering no countervailing benefit to neighbors whose homes are far from the property line. Of course reasonable sound and shadow flicker rules should respect neighbors, and that is easily accomplished through measurements from habitable structures. Neither the commenters nor staff has provided any justifiable reason for extending the sound and shadow flicker requirements to property lines.

**B. Sound must be measured using the project area ambient average sound level from habitable residences and the A-weighting – Rule 09(F)**

A-weighting sound level: The Board should continue its long-standing precedent of measuring sound from habitable structures whose owners could potentially be affected by the sound level. UNU's proposals regarding sound are more restrictive than staff's proposal and are not based on scientific facts or policy.

Measuring sound from property boundaries is not logical as there is no receptor located there to receive the sound. Moreover, as MAREC points out in comments, such restriction would result in the Board imposing a setback requirement on wind turbines that is more than

twice the setback requirement imposed by the statute.<sup>3</sup> (See Attachment B). This alone should suggest the sound standards as proposed are not in keeping with the law's intent.

Initially, MAREC points out that numerous public health studies have concluded that there is no direct health impact from wind turbine sound.<sup>4</sup> When determining the appropriate sound measurement location and level, it is important to keep these scientific studies conducted by reputable organizations in mind. There is no justifiable reason to measure sound from the property boundary; sound should be measured from sensitive receptors/residences.

With the modifications proposed in our comments, MAREC supports staff's proposed sound measurement using the A-weighted sound standard (dBA). The commenters' proposals for making the measurements more restrictive are not based on scientific facts or sound policy.

UNU's proposal that the standard require that the  $L_{eq}$  level for wind turbine sound not exceed the  $L_{90}$  level of background sound by more than 5 dBA and 5 dBC<sup>5</sup> is inappropriate and unnecessary. MAREC notes that the Board's precedent has consistently required that the sound level at sensitive receptors located on nonparticipating properties not exceed the project area ambient average sound level by 5 dBA.<sup>6</sup> This precedent works, as evidenced by the fact that the

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<sup>3</sup> Ohio Revised Code ("RC") 4906.20(B)(2)(a).

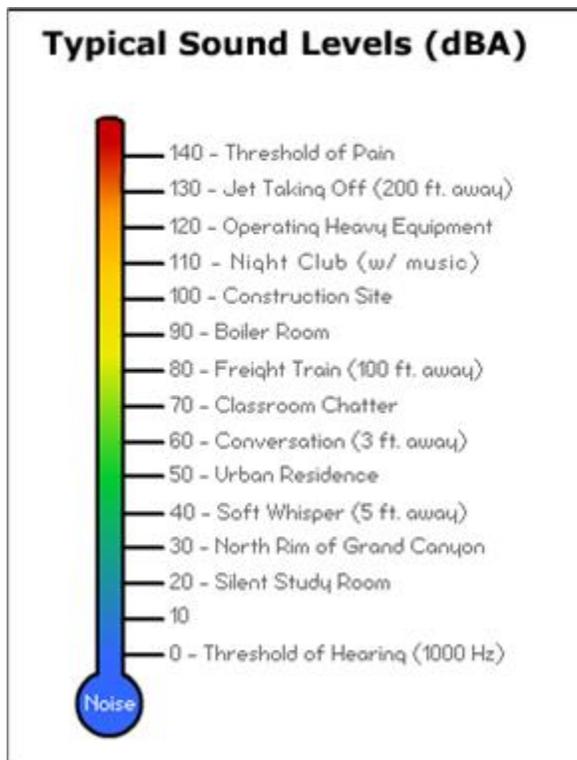
<sup>4</sup> Vt. Dept. of Health, *Potential Impact on the Public's Health from Sound Associated with Wind Turbine Facilities*, (Oct. 15, 2010), [http://healthvermont.gov/pubs/healthassessments/documents/wind\\_turbine\\_sound\\_10152010.pdf](http://healthvermont.gov/pubs/healthassessments/documents/wind_turbine_sound_10152010.pdf); Health Canada, *Wind Turbine Noise and Health Study: Summary of Results* (Oct. 30, 2014), <http://www.hc-sc.gc.ca/ewh-semt/noise-bruit/turbine-eoliennes/summary-resume-eng.php>; Mass. Dept. of Environ Protection and Public Health, *Wind Turbine Health Impact Study: Report of Independent Expert Panel* (Jan. 2012), <http://www.mass.gov/eea/docs/dep/energy/wind/turbine-impact-study.pdf>; Robert J. McCunney, et al., *Wind Turbines and Health: A Critical Review of the Scientific Literature*, 56 J. of Occupational & Environ. Med. 11 (Nov. 2014), [http://journals.lww.com/joe/Fulltext/2014/11000/Wind\\_Turbines\\_and\\_Health\\_A\\_Critical\\_Review\\_of\\_the\\_9.aspx](http://journals.lww.com/joe/Fulltext/2014/11000/Wind_Turbines_and_Health_A_Critical_Review_of_the_9.aspx).

<sup>5</sup> The C-weighted sound level is used to measure low frequency sound.

<sup>6</sup> *Paulding Wind Farm, LLC*, Case No. 09-980-EL-BGN, Order (Aug. 23, 2010) at 30; *Greenwich Windpark, LLC*, Case No. 13-990-EL-BGN, Order (Aug. 25, 2014) at 28; *Hardin Wind, LLC*, Case No. 13-1177-EL-BGN, et al., Order (Mar. 17, 2014) at 26; *Hardin Wind Energy, LLC*, Case No. 09-479-EL-BGN, Order (Mar. 22,

wind farms that are currently in operation have received few, if any, complaints regarding the sound level.<sup>7</sup> Therefore, there is no need to revise the Board’s long-standing precedent.

Further, the majority of jurisdictions use the A-weighted sound level and all of the health-based literature evaluates A-weighted sound levels. The A-weighting measures sound similar to the way a person hears typical environmental sounds, which are generally less than 70 dBA. The following chart depicts typical sound levels measured in dBA:<sup>8</sup>



In addition, numerous studies support using A-weighting. In its study of sound from wind generation facilities, Health Canada concluded that:

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2010) at 28; *Northwest Ohio Wind Energy, LLC*, Case No. 13-197-EL-BGN, Order (Dec. 16, 2013) at 28; *Black Fork Wind Energy, LLC*, Case No. 10-2865-EL-BGN, Order (Jan. 23, 2012) at 44; *Blue Creek Wind Farm, LLC*, Case No. 09-1066-EL-BGN, Order ( Aug. 23, 2010) at 31; *Paulding Wind Farm II, LLC*, Case No. 10-369-EL-BGN, Order (Nov. 18, 2010) at 32; *Champaign Wind, LLC*, Case No. 12-160-EL-BGN, Order (May, 28, 2013) at 88.

<sup>7</sup> *Blue Creek Wind Farm, LLC*, Case No. 09-1066-EL-BGN; *Paulding Wind Farm II, LLC*, Case No. 10-369-EL-BGN.

<sup>8</sup> U.S. Dept. of Labor, Occupational Safety and Health Administration, [https://www.osha.gov/dts/osta/otm/new\\_noise/](https://www.osha.gov/dts/osta/otm/new_noise/)

[n]o additional benefit was observed in assessing [low frequency sound] because C- and A-weighted levels were so highly correlated...that they essentially provided the same information.<sup>9</sup>

Likewise, a study sponsored by the Japanese Ministry of the Environment published in the Noise Control Engineering Journal noted that:

It is often argued that [wind turbine noise] should be assessed by the C-weighted sound pressure level since it contains relatively low frequency components. However, in the results of this study, it was found that the C- and A-weighted sound pressure levels had a reasonably high correlation. Therefore, it can be said that [wind turbine noise] can be assessed by the A-weighted sound pressure level as a primary indicator, similarly to general environmental noises. As a part of this research project, the human loudness sensation was investigated through a laboratory experiment using various kinds of environmental noises including low frequency components down to infrasound frequencies, and it was confirmed that the loudness sensations can be more accurately assessed by the A-weighted sound pressure level than by the C-weighted sound pressure level.<sup>10</sup>

In addition, wind turbine sound studies do not typically assess low frequency sound and/or infrasound because, at standard setback distances, it has been demonstrated that such sound levels are well below International Organization for Standardization (ISO) audibility thresholds. In addition, field studies investigating low frequency sound and infrasound have repeatedly found that higher infrasound and/or low frequency sound levels are generated by common area sound sources such as road traffic and human activity.<sup>11</sup>

In addition, the  $L_{eq}$  metric includes both residual and temporal sound influences and is, therefore, a more realistic representation of existing acoustic environment.<sup>12</sup> The  $L_{eq}$  has proven

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<sup>9</sup> Health Canada, *Wind Turbine Noise and Health Study: Summary of Results* (Oct. 30, 2014), <http://www.hc-sc.gc.ca/ewh-semt/noise-bruit/turbine-eoliennes/summary-resume-eng.php>

<sup>10</sup> Tachibana, H., Yano, H., Sakamoto, S., & Sueoka, S., *Nationwide Field Measurements of Wind Turbine Noise in Japan I-9*, Noise Control Engineering Journal (Apr. 2014).

<sup>11</sup> Colby, W. David et al., *Wind Turbine Sound and Health Effects, An Expert Review Panel* (Dec. 2009) [http://canwea.ca/pdf/talkwind/Wind\\_Turbine\\_Sound\\_and\\_Health\\_Effects.pdf](http://canwea.ca/pdf/talkwind/Wind_Turbine_Sound_and_Health_Effects.pdf).

<sup>12</sup> Resource Systems Group, Inc., *Massachusetts Study on Wind Turbine Acoustics* (Feb. 18, 2016) <http://files.masscec.com/research/wind/MassCECWindTurbinesAcousticsStudy.pdf>.

to be a good model for measuring sound under the Board's long-standing precedent. UNU has presented no justification as to why the current  $L_{eq}$  measurement should not be maintained.

Finally, while MAREC is not opposing reasonable, scientifically-based sound requirements for wind facilities, it is noteworthy that other utility facilities found in the same areas as wind farms are not subject to sound requirements. For example, sound resulting from the drilling, construction, and operation, of natural gas wells, including any pipelines or appurtenances to the well, are exempt from township sound regulations.<sup>13</sup> Therefore, not only is there no scientific reason to hold wind farms to the higher standards proposed by UNU, but to do so would further discriminate against wind development in favor of other utility facilities.

Project area sound measurement: MAREC supports existing precedent for using the project area ambient average sound level for the measurement. The ambient acoustic environment is naturally variable and use of an area-wide ambient level to measure compliance is appropriate. Ambient sound monitoring locations are selected to be representative of the project/receptor areas and the resulting data set is carefully analyzed, with extraneous sound sources removed from subsequent calculations, ensuring a conservative result. Due to the spatial and temporal variability of ambient sound measurements, setting a fixed, area-wide ambient sound level provides a uniform basis for assessing future compliance and removes ambiguity that would introduce undue risk during the post-construction compliance assessment.

UNU suggests the ambient sound level be measured at the location of the neighbor's property line. According to UNU, the rule should not allow using the area-wide ambient level to measure compliance in the quieter portions of the area, because that will allow the facility to

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<sup>13</sup> RC 505.172(C).

impose sound on the quieter areas that could be substantially higher than 5 dB above the actual ambient sound level in those quieted areas.

As stated previously, the current sound measurements required by the Board that uses the area-wide ambient level has worked well and resulted in nearly zero incidents of complaints from neighbors to Ohio's operational wind farms. MAREC is not certain that the measurement advocated by UNU could even realistically be implemented.

Moreover, there is no justifiable reason to treat the low-level sound at wind farms any differently than other facilities that likewise create sound, e.g., fossil fuel generation facilities. To hold wind farm operations to a higher level would be discriminatory and inappropriate.

American National Standard Institute and Acoustical Society of America: UNU suggests that sound measurements comply with the American National Standard Institute (ANSI), and Acoustical Society of America (ASA) standards. However, MAREC notes that neither ANSI nor ASA have developed wind turbine specific guidance. Therefore, UNU's proposal is not workable.

Wildlife and sound: MAREC submits sound should be measured based on a standard intended for humans. In their comments, BSBO/ABC recommend sound be considered as part of the assessment and mitigation measures with regard to the protection of wildlife.

MAREC notes that BSBO/ABC provide no scientific basis or support for this recommendation. There are no established guidelines for measuring the effects of sound on wildlife at wind farms and it is not clear how BSBO/ABC propose that sound would be considered as part of the assessment and mitigation measures for the protection of wildlife.

MAREC agrees that it is appropriate to take into consideration the state's requirements regarding the protection of threatened and endangered species; however, BSBO/ABC's proposal is not appropriate and should be rejected.

C. **Shadow flicker must be measured from habitable residences, not to exceed 30 hours per year – Rules 08(A)(9) and 09(H)(1)**

Nonparticipating residences: As with the measurement of sound, it is vital that shadow flicker be measured from habitable residences in accordance with the Board's precedent that has proven effective in the field. Measuring shadow flicker effects from property lines is significantly (nearly 2 times) more restrictive than the already prohibitive statutory property line setback requirements.<sup>14</sup> (See Attachment B). The proposed rule is overly restrictive because it should use "sensitive receptors" or "residences" rather than "property boundary." Absent a just and reasonable requirement for shadow flicker, wind development in Ohio will be greatly reduced, depriving the landowners who wish to host wind turbines and a broad array of stakeholders of the benefits of these projects.

Contrary to UNU's assertions, the Board's existing practice of measuring shadow flicker from sensitive receptors captures the appropriate and necessary information. UNU believes the proposed standard should be applicable anywhere on any nonparticipating property, whether or not it is adjacent to the property hosting the turbine. UNU's proposal that a shadow flicker analysis cover all areas of a property is unreasonable and overly broad. The focus of review and analysis should be those areas of property where sensitive receptors, i.e., humans, are most likely to be present. To expect the analysis to cover uninhabited fields, lakes, streams, wooded areas,

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<sup>14</sup> RC 4906.20(B)(2)(a).

etc., is unrealistic, irrational, and appears designed to simply drive up project costs and deter development.

30-hours per year limit: MAREC supports the Board's existing precedent of a 30-hour per year limit on shadow flicker, which was included in staff's proposal. This current 30-hour limit is supported by scientific evidence and takes into consideration all realistic environmental conditions. Moreover, the Board's standard is consistent with standards throughout the United States.

MAREC disagrees with UNU's proposal to limit shadow flicker to 8 hours per year. UNU erroneously contends that the Board's 30-hour standard is "unduly lax" compared to standards in the United States and Europe. UNU specifically references Germany's shadow flicker standard for support. However, UNU's allegations do not take into consideration the distinctions in the land use policy and development history, economic, and regulations in the different markets. For example, in Germany, unlike in Ohio, there is no regulatory permitting process and there are no property line setback requirements for turbines.

MAREC believes the Board should apply wind energy standards that are consistent with neighboring United States jurisdictions, rather than adopting rules from foreign nations whose rural landscapes and population densities are vastly different than in those areas where wind farms are proposed in Ohio. A cursory review of Indiana, Illinois, and Michigan wind energy ordinances establishes that Ohio's guidelines are already more restrictive than counties where wind farms both have and have not been built. (See Attachment A). Commonly adopted standards include: setbacks from nonleased/nonparticipating landowner occupied structures of 1,000–1,600 feet; nonparticipant property line setbacks of 1.1 times the tip height of the turbine; sound limits of 50-60 dBA from a nonparticipating occupied structure; and shadow flicker limit

of 30 hours per year from an occupied structure. No wind turbine siting ordinance includes a shadow flicker setback requirement from an agricultural parcel property line. Considering the size and shape of typical shadow flicker contours for a 114 meter rotor turbine with a hub height of 93 meters, a 30 hour per year shadow flicker limit at property lines would effectively set a 3,000 ft. setback from a property line.

Furthermore, MAREC notes that the wind farms that are currently operating in Ohio have received practically zero complaints regarding shadow flicker.<sup>15</sup>

UNU states that, if the Board adopts a 30-hour flicker standard, the standard should be applied to the applicant's pre-certificate modeling to limit maximum astronomical flicker duration. MAREC notes that it is unclear what UNU is specifically requesting in the context of its proposal. Furthermore, it is uncertain what UNU is expecting its proposal to accomplish, as UNU provides no scientific support for or explanation of this idea.

UNU also proposes that the rule be clarified to minimize the risk of modeling errors, i.e., erroneous input assumptions that skew the modeling results. UNU argues the applicant should demonstrate shadow flicker compliance based on maximum astronomical flicker potential rather than based on "obstacle analysis" or other topography-based model refinements. Again, it is not clear what UNU is proposing. However, MAREC notes that it is a proven fact that shadow flicker decreases at receptors significantly when taking in to account mitigating factors such as tree shading, structure shading, weather data, and turbine operation time data. There is no scientific basis for what UNU appears to be proposing. Thus, it does not make sense to not capture these factors in a realistic shadow flicker analysis.

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<sup>15</sup> *Blue Creek Wind Farm, LLC*, Case No. 09-1066-EL-BGN; *Paulding Wind Farm II, LLC*, Case No. 10-369-EL-BGN. The one complaint on shadow flicker that was received was resolved to the satisfaction of the individual.

**D. The shadow flicker, geographical, and other information that is provided in the application and to staff is appropriate - Rules 08(A)(5) and (9)**

Property description: MAREC supports staff's proposed amendments which set forth the information an applicant must file regarding geographical information and the impacts of shadow flicker at habitable structures. MAREC disagrees with UNU's comments that the Board should require applicants to express all parcel-specific information (addresses, parcel numbers, etc.), such as modeling inputs and results. Since this concern is not limited to shadow flicker, UNU recommends the Board enact a general rule applicable to any parcel-specific information incorporated in an application.

MAREC submits that the information currently required for wind farm applications is appropriate and should be maintained. Applicants work with constituents to ensure that the geographical information provides the necessary descriptions of the project areas. Considering the breadth of the projects, providing actual addresses and parcel numbers on the maps is not feasible and could be quite costly. MAREC recommends that the wind developers continue to work with property owners to identify their property in relation to the project area. To require additional parcel-specific information, as proposed by UNU, is neither workable nor necessary.

Mitigation of shadow flicker: The Board's current expectation that wind developers minimize potential impacts of shadow flicker and work with property owners to mitigate any questions that arise is reasonable and appropriate. UNU argues the applicant should be prohibited from working with landowners to mitigate shadow flicker impacts by adding shrubbery, venetian blinds, window tinting, etc., stating a neighboring property should not be required to accept mitigation measures to address excessive shadow flicker. According to UNU, if shadow flicker from a turbine is modeled to exceed the selected standard at a nearby residence,

the turbine should not be built. Likewise, if during operation a turbine cannot comply with applicable standards, operation should be curtailed.

Essentially, UNU is asking the Board to deny property owners and wind developers the right to work together to resolve any issues that may arise. This is absurd. Property owners have the right to use their land and work with wind developers or others for such use in any manner that the law permits. If their actions constitute a nuisance, which results in “an appreciable, substantial, tangible injury resulting in actual, material, and physical discomfort, then an action may be prevented.”<sup>16</sup> However, wind farms do not create such a result; thus, they do not constitute a nuisance that is objectionable under the law.<sup>17</sup> In fact, the wind farms in operation have a proven track record of working well with the property owners and the communities.

Additional information: MAREC submits that the Board should continue to follow the process established in the Ohio Revised Code for determining if additional information must be provided by a wind developer. However, UNU comments that, if the size or blades, etc., on a turbine change after submitting the initial shadow flicker analysis, the applicant should be required to provide a remodeling and reevaluation of the shadow flicker impacts. In addition, UNU argues that, if the reevaluation reveals an increase in shadow flicker exposure to any nonparticipating neighbor that signed a waiver, the applicant should inform the neighbor and obtain a new waiver.

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<sup>16</sup> *Rautsaw v. Clark*, 488 N.E.2d 243 (1985), citing *Antonik v. Chamberlain*, 78 N.E.2d 752 (1947).

<sup>17</sup> See *Walker v. Kingfisher Wind, LLC*, Case No. CIV-14-914-D, (W.D. Okla. 2016) (court denied action to enjoin the development of a wind farm project based on alleged harm from shadow flicker and low-frequency sound, stating that “...the alleged harms over shadow flicker and low-frequency sound presented by the group and its experts was ‘speculative at best’...aesthetic concerns without any significant evidence of adverse health effects were not enough to constitute a nuisance.”). See also *Hager v. Waste Technologies Indust.*, 2002-Ohio-3466 (7th Dist.) (court held that neighboring property owners failed to establish that operation of a hazardous waste incineration facility was a private nuisance; owners did not rebut expert testimony that alleged airborne pollutants and odors emanating from the facility were minimal and non-existent.)

Initially, MAREC notes that an applicant provides this type of information in compliance with its certificate conditions. However, UNU is asking the Board to create a new requirement beyond the certificate conditions.

The requirement proposed by UNU would circumvent the process established by the statute for changes or amendments to certificates. MAREC submits it is unnecessary for the Board to create a specific rule for shadow flicker when staff's new proposed Rule 09(A)(5)(a) and (b) sufficiently covers UNU's concern by noting that any amendment to a wind farm certificate should comply with the rule governing an amendment application.<sup>18</sup>

Trade secrets: UNU argues an applicant should be required to submit to staff any post-certificate evaluation of shadow flicker impacts, including all supporting documentation; however, this information should not be protected by trade secret. MAREC disagrees - trade secret information should be protected in accordance with the statute.

**E. Setback requirements should follow the statute and should not be expanded - Rule 08(C)(3)**

Statutory language: MAREC's comments in this docket are solely focused on the rules presented and not on our general concern regarding the statutory setback language created by HB 483. While we respect and appreciate the Board's important role implementing the statute, MAREC cannot express enough how important it is that the rules track past precedent for wind farm applications and not attempt to rephrase the statute. To do so, would only cause more confusion. Therefore, the setback waiver introduction in Rule 08(C)(3) should be reworded as recommended in MAREC's comments.

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<sup>18</sup> ORC Rule 4906-3-11.

GNU on the one hand comments that the Board has no authority to rewrite or ignore the statutory language regarding the minimum setback language; but on the other hand comments that the Board should rewrite and ignore the statutory language regarding what constitutes “wind farm property.” GNU’s understanding of the statute is unclear and would merely cause further confusion on the setback issue. MAREC highly recommends that the Board follow the statute and not adopt GNU’s interpretation.

There is no doubt that the statutory language is ambiguous. However, as expressed in our comments, any attempt to clarify or rephrase the statute only creates new issues subject to debate. Thus, MAREC recommends the Board continue its current practice and allow interested stakeholders the opportunity to address the proper interpretation in an appropriate forum where due process is afforded. A generic rulemaking proceeding is not the proper place for the Board to establish a hard and fast precedent on the interpretation of the setback provisions.

Waiver process: GNU asserts that a wind farm applicant should be required to demonstrate in its application that it has obtained all the proper setback waivers or the application must be rejected. MAREC notes that the statute provides for a waiver process and tasks the Board with establishing the process in a rule. That is exactly what staff proposed. However, GNU wants the Board to go beyond the statute and mandate rejection of an application if the waivers obtained are not provided with the application.

GNU seems to misunderstand the development process. Wind developers work closely with landowners in the waiver process over the course of the project – from the time a location is initially determined, through the certification process, and up to the initiation of construction. GNU’s proposal is impractical and unworkable. If a waiver is required, but not obtained, a turbine may need to be moved or eliminated; but that does not justify the denial of the overall

project. GNU's proposal would deny wind developers the right to seek certification and deprive the state of economic growth opportunities brought to Ohio by virtue of wind development.

Further, GNU's proposal that setback waivers be dealt with in a separate rule is unfounded. The setback waiver process proposed by staff is appropriate and in compliance with the statute.

New application: GNU further comments that any proposed amendment to a certificate that would increase the invasion of the minimum setback should not be considered as an amendment, but as a new application that requires a hearing. Essentially, GNU is asking the Board to disregard the statutory process regarding substantial or material changes to certificates, in favor of GNU's position that wind applicants should be treated differently than other applicants seeking to construct utility facilities in Ohio, i.e., generation facilities that are not wind-powered, electric substations, and gas and electric transmission facilities. The statute requires notice in amendment cases and sets forth an administratively appropriate process for determining when a hearing is necessary. Again, GNU is attempting to rewrite the statute to suit its purpose – creating insurmountable barriers to wind development in Ohio.

GNU's proposal will have a chilling effect on the implementation of updated and innovative technologies that could benefit the public interest. Moreover, requiring hearings for changes that are not substantial and do not create a material environmental impact will require the applicants, all parties, and the Board to incur costs that are not necessary or warranted.

Waiver content: MAREC does not object to GNU's proposal that the waiver content reflect consent by the property owner to operation of the facility, as well as construction. However, MAREC strongly opposes GNU's request that the waiver content proposed by staff be expanded to include commentary that is not necessary and could be prejudicial to the wind farm

applicant, including that the person seeking the waiver “does not represent the interests of the landowner” and that the minimum setback in the statute “is necessary to protect the rights of adjoining property owners.”

In addition, MAREC disagrees with GNU and Mr. Biglin that items such as ice throw, sound, and blade shear should be part of the waiver content. Such matters are properly addressed and minimized through the Board’s application review process and it would be misleading and inappropriate to include such language in the waivers.

Filing of waivers: MAREC disagrees with GNU’s proposal that the waivers be filed with the Board. Staff has proposed that the waivers be recorded with the county recorder and that is the appropriate place for documentation of the agreement to be placed. Any filing with the Board would be unnecessary and superfluous. The statute requires the Board to set forth the waiver procedure; it does not mandate that the Board consider the waivers themselves in its investigation and consideration of the certificate application. There is no purpose for having the waivers filed with the Board and it creates an additional bureaucratic hurdle that the wind developer must meet, which is contrary to the Governor’s Common Sense Initiative in that it is duplicative and unnecessary.

**F. The statutory minimum setbacks should not be expanded in the rules**

MAREC re-emphasizes how important it is that the Board rejects any proposal by commenters that would further degrade the ability of wind developers to construct farms in Ohio. UNU’s comment that a 3-mile setback should be imposed by the Board in order to protect recreational land use “so that the public can enjoy their use of the recreational areas,” is extra-statutory and not appropriately addressed in rules. No other jurisdiction in the United States or abroad has such an onerous requirement. The Board has applied the minimum statutory setback

requirement and has provided all interested parties due process to present their perspectives and evidence in a particular case. UNU is simply trying to circumvent the quasi-judicial process of the Board and impose its anti-wind agenda.

UNU has failed to provide any justification for its proposed expansion of the statute. In addition, what constitutes “recreational areas” is vague and could be subject to a very broad interpretation. UNU’s additional setback measurement is unreasonable and it should be rejected.

The statute provides that, in a particular case, the Board may determine that a setback greater than the statutory minimum is necessary. GNU comments that the Board cannot establish reasonable setback requirements by directly defaulting to the minimum or indirectly imposing the burden of proving that something more than the minimum is necessary on a party in a particular case. Therefore, GNU urges the Board to set the standard in the rules. However, the statute does not require the Board to set a standard, it specifically provides that the setback applies, unless a waiver is obtained or “in a particular case, the board determines that a setback greater than the minimum is necessary.” (emphasis added). The statute clearly provides for due process in the event a setback other than the statutory minimum is advocated in a particular case. It is unreasonable and contrary to the statute for GNU to expect the Board to use this generic rulemaking docket to dictate a more onerous setback. Such action would deprive wind applicants, and landowners and beneficiaries of wind development (e.g., tax recipients, such as schools) that support wind development in Ohio the due process contemplated by the statute.

**G. Additional reply comments on Rule 08**

Wildlife and Board review of applications: BSBO/ABC recommend a new paragraph be added at the end of Rule 08 in order to ensure that anyone at the Board evaluating the information submitted by the applicant has expertise in bird and bat migratory behavior.

BSBO/ABC advocate that an independent third party review the information submitted in an application "...according to recognized scientific or engineering standards and compiled in a report..." that would be filed in the docket. This recommendation is unnecessary and should be rejected.

The Board, in accordance with the statute, has the authority to conduct hearings and investigations to carry out its responsibilities, including approving, disapproving, or modifying applications for certificates. To accomplish this duty, the Board, which is comprised of 7 voting members from the state agencies, including the Public Utilities Commission of Ohio, Ohio Environmental Protection Agency, and the Ohio Department of Natural Resources (ODNR), employs professional staff who are qualified to review and analyze the technical and managerial information provided by applicants. In practice, MAREC is aware that ODNR reviews and comments on applications; therefore, staff with avian and bat expertise do examine the information submitted in an application. In addition, on a case-by-case basis, the Board has the discretion to hire a consultant.

Moreover, the Board is a quasi-judicial body that is required to provide due process and the opportunity for all parties to present evidence supporting their positions through a formal public and evidentiary hearing. The Board's decisions are based on the facts of the record and parties are afforded the right to directly appeal to the Ohio Supreme Court if they do not agree with the outcome. What BSBO/ABC is proposing is an additional process that is not necessary or warranted.

Landowner leases and agreements: UNU comments that applicants should be required to file the leases and agreements that they enter into with participating landowners, as well as setback waivers, in their cases filed with the Board. According to UNU, this would allow the

public to review these documents to identify potential threats to humans, neighboring properties, and the environment.

MAREC disagrees with UNU's proposal. It is the Board's duty to review each application and consider the environmental issues UNU mentions in support of its comment; that is the purpose of the power siting certification process. The leases and agreements are private contracts between the participating landowners and the developers, and they are not relevant for the Board's consideration of the certification requirements set forth in RC 4906.10. Therefore, it is neither appropriate nor necessary for the documents to be filed in the public record.

Mapping and property line: UNU comments that the maps required in Rule 08(C)(1)(b)(i)-(ii) should show the distance between the "the structure and the property line," not the "structure or the property line." According to UNU, applicants should not continue to provide the distances to only the residences and omit the property line distances needed to evaluate the setback compliance.

MAREC notes that these mapping requirements address all generation facilities and associated facilities, not just wind turbines. In addition, for wind farms, the setback requirements only apply to the wind turbines, not other associated facilities, i.e., access roads, collection lines etc. To require mapping to property lines for all facilities associated with a generation facility is unnecessary and costly. Moreover, such a requirement would be contrary to the Governor's Common Sense Initiative and would require revisions to Item 14 in the Business Impact Analysis in order to reflect the substantial costs that could be associated with additional mapping requirements.

Mapping and facility infrastructure: OFBF requests that Rule 08(A)(5) be revised to require an applicant to file, as part of its application, a map showing the proposed facility and the

approximate placement of all facility infrastructure in relation to "...registered and permitted subsurface interstate, intrastate, utility service and collection pipeline rights-of-way, and related surface support infrastructure...."

MAREC notes that, at the time a wind developer files an application with the Board, it is not likely that all of the information proposed by OFBF would be known. For example, utility service and collection pipeline rights are known later in the engineering and survey process. Therefore, this level of detail, if required, should not be required until the preconstruction meeting with the Board.

Agricultural impacts: Rule 08(E)(2)(b) requires the applicant to evaluate the impact of construction, operation, and maintenance on agricultural facilities. Mr. Biglin comments this requirement should be expanded to include the impact on aerial application of chemicals, fertilizers, and cover crop seeding.

What Mr. Biglin is requesting is impossible to study or depict on a map. In addition, this information is not even known by the developer at the time an application is filed. Moreover, MAREC notes that the wind turbines are painted and have lighting in accordance with the regulations of the Federal Aviation Administration to assist with visibility to any aircraft, including those for aerial applicators. Therefore, MAREC submits that Mr. Biglin's recommendation is unnecessary and unwarranted.

**H. Additional reply comments on Rule 09**

Certificate extensions: UNU comments that applicants should not be allowed to extend the 5-year construction timeframe for a certificate project for more than 3 years. However, UNU provides no justifiable reason for such a restriction. In fact, as acknowledged by UNU, such a restriction would be directly contrary to the Board's past precedent.<sup>19</sup>

The statute and the rules provide that an applicant, as well as any other party to a proceeding, has the right to file a request for extension of any procedural time frame established in a proceeding. As with any procedural motion, the Board has the discretion to request additional information or require that the applicant file the request in another docket or forum. UNU's request for an arbitrary restriction on the due process rights of a wind farm applicant should not be adopted. The Board should not discriminate against wind farm applicants and should preserve its long-standing process of affording all parties the right to request extensions of time frames.

General - wildlife experts: BSBO/ABC recommend that post-construction mortality data be collected by independent third-party experts using standardized methods and that the data should be reported directly to the agencies. According to BSCO/ABC, paid consultants for the wind industry should not collect and report the data.

MAREC points out that the consultants used by the wind developers are independent third parties. The inference of the proposal from BSCO/ABC calls into question the professional integrity of these consultants. BSCO/ABC provide no basis for their proposal. In addition,

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<sup>19</sup> *Lima Energy Co.*, Case No. 00-513-EL-BGN, Entry (July 30, 2012); *Norton Energy Storage, LLC*, Case No. 99-1626-EL-BGN, Entry (June 6, 2008); *Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, et al., Entry (Aug. 25, 2014); *Hog Creek Wind Farm, LLC*, Case No. 09-277-EL-BGN, Entry (Mar. 9, 2015); *Hardin Wind Energy, LLC*, Case No. 09-479-EL-BGN, Entry (Aug. 25, 2014); *Paulding Wind Farm, LLC*, Case No. 09-980-EL-BGN, Entry (Aug. 25, 2014).

BSCO/ABC seem unaware that the data collected by the consultants is already shared with the agencies in accordance with the current rules.

Moreover, the proposal begs the question as to who would pay for the third-party consultant envisioned by BSCO/ABC. This proposal is unnecessary.

Non-government organization criteria for birds: BSBO/ABC request that Rule 09(D)(1) be revised to create a higher standard of review for wind projects located in areas that have been termed Important or Globally Important Bird Areas (IBAs). Specifically, BSBO/ABC ask that the Board require an applicant to “...enumerate proven, effective measures to be taken to avoid impacts on resident and migratory bird and bat populations, particularly in high risk areas such as those designated as Important Bird Areas and Globally Important Bird Areas.”

MAREC emphasizes that IBAs are not recognized in the Ohio Revised Code. Essentially, the proposal by BSBO/ABC, if adopted by the Board, would convert a concept created by a special interest, non-governmental organization (NGO),<sup>20</sup> into a regulatory requirement to be enforced by the Board.

BSBO/ABC, as well as other organizations, employ tactics, like the designation of IBAs, to advocate against wind energy development. NGOs establish such guidelines without any real oversight or review, and without any data to support their assertions of risk.

The criteria used for the establishment of the IBAs proposed by BSBO/ABC have not been subject to agency review and have not been vetted through the proper and necessary process required for inclusion in rules adopted by a state regulatory agency. For instance, the criteria themselves were not subject to a public notice and comment period. Furthermore, when

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<sup>20</sup> IBAs and the criteria to define them were the creation of a British NGO, Birdlife International (BI). BI enlists a partner NGO in each country that then becomes that country's IBA designator. In the United States, that entity is the National Audubon Society.

a specific area is proposed for IBA designation, the reasons for such designation are extremely subjective and arbitrary, and there is no public notice and no opportunity for comment.

Moreover, post-construction fatality studies at wind projects in or proximate to IBAs show that these areas do not, in fact, pose a higher risk to birds than other areas.<sup>21</sup> Therefore, MAREC submits that this proposal from BSCO/ABC should be rejected.

Wildlife reporting period: Rule 09(D)(2) establishes a reporting process if the applicant identifies a state-listed species during construction. BSBO/ABC propose that this reporting requirement be extended to preconstruction activities. MAREC notes that the Board's jurisdiction applies to the construction phase of a project. Therefore, the language proposed by BSBO/ABC is inappropriate for purposes of this rule. That being said, MAREC emphasizes that wind developers currently work very closely with governmental agencies and stakeholders to ensure that any concerns regarding wildlife are addressed and minimized to the greatest extent practical.

Further, BSBO/ABC did not provide support for why immediate notification is necessary during preconstruction surveys. During preconstruction surveys, environmental consultants collect data in the field without any impact to those species. It would be inefficient for the agencies to process and file their own records for every listed wildlife sighting at every wind facility that is collected during preconstruction when there is no harm posed to those animals and there is already a process in place that requires developers to consult with these agencies. It

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<sup>21</sup> Strickland, M. D., E. B. Arnett, W. P. Erickson, D. H. Johnson, G. D. Johnson, M. L. Morrison, J. A. Shaffer, and W. Warren-Hicks. 2011. *Comprehensive Guide to Studying Wind Energy/Wildlife Interactions*. Prepared for the National Wind Coordinating Collaborative (NWCC), Washington, D.C., USA (June 2011).

would be much more efficient for those agencies to discuss the data with the developers once all of the data has been collected rather than receive it intermittently throughout the survey period.

Wildlife avoidance during restricted dates: Rule 09(D)(5) provides that an applicant shall avoid construction in state-listed species' habitats during seasonally restricted dates.

BSCO/ABC recommend that the restricted dates include "migratory periods."

MAREC is uncertain as to the purpose of this recommendation; however, it is not biologically accurate to state that construction has impacts on migration. If construction is in a particular area, migratory birds are free to avoid that area by flying around it. Construction impacts from wind projects are very isolated and no different than construction impacts from other industries, none of which are prohibited from construction activities during migratory seasons. Further, all species have different migratory periods, which collectively would preclude development at any time of the year.

Wildlife mitigation plan during operation and construction: Rule 09(D)(7) provides that, during operation of the facility, the applicant shall develop a mitigation plan. BSCO/ABC recommend the language be revised to require that the applicant submit a mitigation plan "detailing proven, effective measures," as well as a detailed avian and bat mortality monitoring program that will immediately be implemented. If "significant" mortality occurs, BSCO/ABC propose the applicant develop an "enhanced mitigation plan."

Initially, MAREC notes that wind farm applicants currently work with ODNR and provide mitigation and post-construction monitoring plans to the Board. In fact, ODNR has issued post-construction guidance that enables ODNR to "make recommendations on additional

minimization or mitigation measures that, if needed, can be employed.”<sup>22</sup> The wind developers consult with ODNR in the appropriate application of these guidelines for the site.

To date, the process has been effective. BSCO/ABC have provided no scientific support or evidence that would indicate that the current process is not working well. It is also unclear from the proposal what would constitute a “proven, effective measure.” With so much ambiguity, this proposal would be difficult to implement. Thus, the proposal by BSCO/ABC is unwarranted and should be rejected.

In addition, BSCO/ABC recommend Rule 09(D)(9) be revised to require that mitigation measures “shall” be prescribed to the applicant if construction activities result in significant adverse impact to wildlife species. As explained previously, wind farm applicants currently work closely with the agencies and implement mitigation measures on an as-needed, site-by-site basis. Therefore, the proposal by BSCO/ABC is unnecessary and should not be adopted.

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<sup>22</sup> See <https://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/postconstructionmonitoringprotocol.pdf>

### III. CONCLUSION

MAREC appreciates the opportunity to respond to the comments filed by interested parties in response to staff's proposed amended Rule 08 and new Rule 09. MAREC respectfully requests that the Board revise staff's proposal in keeping with our comments and replies herein, in order to comply with the Governor's Common Sense Initiative, encourage economic growth in Ohio, and ensure that the rules treat all players in a fair and nondiscriminatory manner.

Respectfully Submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that a true copy of the foregoing Reply Comments were served by electronic mail or regular mail, as indicated below, upon the following on this 8th day of November, 2016.

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**Attachment A**

State	County	Installed Wind Energy (MW)	Setback from Non-Participant House (in ft)	Setback from Non-Participant Property Line	Sound	Shadow Flicker	Shadow or Sound setback from Property lines?	Property line setback distance (feet) assuming 492 ft tall turbine with 184 ft blade
Indiana	Benton	836.3	1000	1.1x tip height	No requirements	No requirements	No	541.2
Indiana	Randolph	200	1000	1.1x tip height	60 decibels from residence	No requirements	No	541.2
Indiana	White	500.85	1000	1.1x tip height	60 decibels from residence	No requirements	No	541.2
Indiana	Tipton	200	1000	1.1x tip height	60 decibels from residence	No requirements	No	541.2
Michigan	Gratiot	344.2	1000	1.5x hub height	55 decibels from residence	30 hours / year	No	738
Michigan	Huron	466	1320	1.5x hub height	50 dBA or ambient plus 5 dBA at a residence	No requirements	No	738
Ohio	Original guidelines OAC 4906-17	504.8	750 feet + blade length	1.1x tip height	No requirement - developers target 45 dBA at a house	No requirement, target 30 hr/year at a house	No	541.2
Ohio	Current guidelines under HB483	0		1125 ft + blade length				1309
Ohio	Proposed rules	0		1125 ft + blade length	Ambient plus 5 dBA from a property line	30 hours / year from property line	Yes	<b>greater than 2640*</b>

\*For justification of this distance figure, see Attachment B, Sound and Shadow Flicker setback map

References:

- [http://www.in.gov/oed/files/Benton\\_County\\_Wind\\_Ordinance.pdf](http://www.in.gov/oed/files/Benton_County_Wind_Ordinance.pdf)
- [http://www.in.gov/oed/files/Randolph\\_County\\_Wind\\_Ordinance.pdf](http://www.in.gov/oed/files/Randolph_County_Wind_Ordinance.pdf)
- [https://en.wikipedia.org/wiki/Wind\\_power\\_in\\_Indiana](https://en.wikipedia.org/wiki/Wind_power_in_Indiana)
- [http://www.in.gov/oed/files/Tipton\\_County\\_Wind\\_Ordinance\\_\(see\\_Sec\\_522\).pdf](http://www.in.gov/oed/files/Tipton_County_Wind_Ordinance_(see_Sec_522).pdf)
- <http://www.gratiotmi.com/LinkClick.aspx?fileticket=HV9KF5k0PL4%3d&tabid=176>
- [http://www.co.huron.mi.us/documents/WindEnergyFacility\\_007.pdf](http://www.co.huron.mi.us/documents/WindEnergyFacility_007.pdf)



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