State of Oregon Department of Environmental Quality

Written Comments

Solar Noise 2024 Rulemaking Advisory Committee Meeting

This document is a compilation of written comments received related to the advisory committee meeting for the Solar Noise 2024 Rulemaking held April 11, 2024, in partnership with the Oregon Department of Energy, Energy Facility Siting Council.

Comments

April 19, 2024

TO: DEQ & EFSC Rulemaking Staff

FROM: Oregon Solar + Storage Industries Association

RE: Comments on DEQ Solar Noise Rulemaking Advisory Committee

The Oregon Solar + Storage Industries Association ("OSSIA") is a trade association founded in 1981 to promote clean, renewable, solar technologies. OSSIA provides a unified voice of the solar industry; OSSIA members include businesses, non-profit groups, and other solar industry stakeholders. OSSIA is a member of the Department of Environmental Quality Solar Noise Rulemaking Advisory Committee engaged in the review of Solar Noise Regulations (OAR 340-035-0035). We appreciate the opportunity to participate in the process and offer support for the first two changes put forward by DEQ and ODOE rulemaking staff and opposing the inclusion of the third change focused on the calculation of the floor.

1. Assumed Ambient Noise Level for Wind and Solar Facilities, Subpart (iii)(I) and (II)

The proposed rules mirror the changes made during the 2004 wind noise rulemaking in that now a solar facility, like a wind facility, may use "an assumed background L50 ambient noise level of 26dBA or the actual ambient background level" when performing a noise analysis. OSSIA is strongly supportive of this change as it affords solar the same treatment as wind, which will reduce the permitting burden by not requiring each solar facility to produce a noise study to determine the actual ambient noise. The rule also allows for flexibility for applicants who might seek to calculate their own projects noise level if they choose too and that is a good thing too in case circumstances warrant field measurements.

OSSIA, however, strongly opposes the language proposed in the last sentence of subpart (iii)(I) that would require a wind or solar facility to account for other energy facilities (whether renewable or not) in its noise analysis. First off, this rulemaking is about solar not wind so there should be no changes to any language affecting wind. Second, this concept is outside the scope of the rulemaking which was included to streamline the noise analysis for solar facilities, not impose new burdens and requirements. To the extent DEQ and EFSC want to address cumulative effects, that must be done in a separate rulemaking. OSSIA, similarly, opposes the new language in the last sentence of subpart (iii)(II) to redefine "Actual ambient background levels" for the same reasons. *See also* OSSIA's comments under Section 3 below.

2. Waiver, Subpart (iii)(III)

The proposed rules also mirror the changes made during the 2004 wind noise rulemaking in that now solar, like wind, will be able to acquire waivers from affected homeowners if the proposed facility increases sound levels higher than 10dBA. OSSIA is supportive of this additional flexibility for solar projects, these rules have been in effect for wind projects for 20 years and

have worked well. These waiver provisions allow for a new option other than mitigation for projects that might exceed the 10dBA threshold from the rules.

3. Calculation of Floor

The new language in subpart (iii)(I) and (II) that propose to include or exclude, depending, other approved energy facilities in the analysis, is unworkable.

First off, the proposed language it is directly in conflict with the policy objective of the RAC. The stated Policy Objectives of the RAC are: "This rulemaking is intended to update OAR 340-035-0035 ("The Noise Control Regulations for Industry and Commerce") so that the wind specific provisions allowing for various modifications to the standard noise rules for wind energy facilities also apply to solar energy facilities. The objective is to streamline the process for obtaining a site certificate for solar energy projects in the same way and for the same reasons the rules were modified were wind projects." While the previous two changes seem directly within the stated objectives, this third change does not move the rules towards streamlining the process for obtaining a site certificate for solar energy projects. In fact, the change would apply to wind facilities in addition to solar facilities, which is out of scope of the rulemaking. It also is an odd position to be applying this standard only to wind and solar instead of all facilities that EFSC or local government can permit. The objective is to streamline the solar siting process by mirroring the 2004 wind noise rulemaking, the objective does not contain any hint that it may also make the process more cumbersome by applying a new ambient noise floor calculation. DEQ must initiate a new, different rulemaking process to the extent DEQ or EFSC want to address consideration of other approved energy facilities in a wind or solar noise analysis.

Further, the proposed language creates a new standard for new projects that existing projects would not have had to meet. It disadvantages those who are later in time and have no control over existing approved projects. The RAC talked about the calculation as intending to address edge cases, but these are the rare circumstance and there are other mechanisms, both within DEQ's noise rules, local codes, and EFSC standards for dealing with edge cases that result in unaddressed impacts.

Conclusion

In conclusion, OSSIA is extremely supportive of the efforts to set a presumed ambient noise level for solar and allow solar to take advantage of waivers like wind. OSSIA is opposed to the inclusion of the calculation of floor language, as it attempts to regulate an edge case that is not directly tied to solar noise.

Thank you for considering these comments.

Signed,

Oregon Solar + Storage Industries Association

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April 19, 2024

TO: EFSC and DEQ Rulemaking Staff

FROM: Renewable Northwest

RE: Comments on EFSC and DEQ Rulemaking on Solar Noise

Renewable Northwest is a regional, non-profit renewable energy advocacy organization based in Oregon, with a mission to decarbonize the Northwest through the responsible development of renewable energy resources throughout the region. Our members include renewable energy developers, and environment and consumer groups. We appreciate the opportunity to offer comments for consideration in the rulemaking to add solar facilities to Oregon noise rules under 340-035-0035. Our concerns center around the additional language included in the draft rules that, rather than simply "adding solar" to create parity with wind in the noise rules, creates a cumulative noise standard, going beyond the charter of the rulemaking. Also included as Attachment A to these comments is a memorandum from a registered Professional Engineer specializing in acoustics, that further evaluates and describes the potential challenges associated with the current draft rule language.

Background

This rulemaking originally comes from Executive Order 20-04 which directs state agencies to "take actions to reduce and regulate greenhouse gas emissions."[1] The order directs agencies, including the Oregon Department of Energy (ODOE) and the Department of Environmental Quality (DEQ) to "prioritize and expedite any processes and procedures, including but not limited to rulemaking processes and agency dockets, that could accelerate reductions in GHG emissions" to the full extent allowed by the law.[1] This order is meant to make it easier to site clean energy facilities that Oregon needs in order to achieve the state's greenhouse gas reduction goals. After the adoption of EO 20-04, the Oregon legislature passed HB 2021 (2021), setting binding emission reduction targets for the state's electricity sector, adding urgency to the need to efficiently site and permit clean energy resources.

[1] Executive Order No. 20-04

Comments

Renewable Northwest appreciates the addition of “or solar” to the elements of the noise standard that currently applies only to wind facilities. Our understanding is that this rule language has worked well for wind, and simply adding solar without making other substantive changes should achieve the stated goal of this rulemaking: to make siting and permitting of clean energy facilities more efficient. Therefore we support the addition of the language “or solar” to the rules where wind is mentioned under 340-035-0035(1)(b)(A) and (B).

As to the cumulative language under 340-035-0034(1)(b)(B)(iii)(I) and (II), however, Renewable Northwest has concerns. We understand that this additional language was added to the draft rules to capture unique cases where solar noise from multiple projects could potentially accumulate above 10dBA with an assumed L50 background ambient noise level of 26dBA. However, this additional language runs contrary to the stated purpose of this rulemaking, singles out clean resources for uniquely restrictive treatment, and creates a standard that may be impossible to implement while also reflecting circumstances that cannot physically occur. Even if it is designed to apply only to edge cases, the language is problematic on its face and appears to be a solution in search of a problem. We respectfully request that it be removed.

First, this additional language is beyond the scope and charter of the rulemaking. Under the heading “Policy Objectives,” DEQ’s Advisory Committee Charter states that “The objective is to streamline the process for obtaining a site certificate for solar energy projects in the same way and for the same reasons the rules were modified for wind projects.”[2]

The limited intended scope of the rulemaking carried through to the DEQ website summarizing the rulemaking:

> The primary purpose of this rulemaking is to amend Division 35 to allow solar photovoltaic energy generation facilities to demonstrate compliance with noise regulations in the same manner as allowed for wind electrical generation facilities.
>
> This includes:
>
> 1. Allowing the use of an assumed ambient background baseline noise level of 26 dBA for solar energy facility sites, unless evidence shows that the actual background level is higher
> 2. Allowing for a willing landowner to waive the ambient noise degradation standard for their property, while maintaining the Table 8 limits

[2] DEQ Advisory Committee Charter

And even the summary of the proposed rules circulated by DEQ and EFSC did not reflect the addition of a cumulative noise standard that was actually contained in the text of the rules:

> Summary of rule changes: Amend OAR 340-035-0035(1)(b)(B(iii) to allow solar energy generation facilities to demonstrate compliance with noise regulations in the same manner as allowed for wind electrical generation facilities:
>
> 1) Maintain the Commission's Table 8 maximum noise limits for all wind and solar energy facilities.
> 2) Allow use of an assumed ambient background baseline noise level of 26 dBA for solar energy facility sites, unless evidence shows that the actual background level is higher.
> 3) Provide that any willing landowner may waive the ambient noise degradation standard for their property, while maintaining the Table 8 limits. Require waiver to be recorded with the county to accompany the legal title to the property.

Viewed all together, this material suggests that the cumulative noise language is well outside the rulemaking's intended -- and communicated -- scope. Not only do none of these materials reference cumulative noise, but also none of these materials indicates that this rulemaking will impose new requirements on wind projects. Communication to this effect likely would have brought a broader set of interested stakeholders to the RAC and certainly would have raised alarm bells that messaging on flexibility and efficiency did not.

Second, rather than creating a more streamlined process to site solar in Oregon, the added language imposes new restrictions only on wind and solar in a time when policy and mandates require increased buildout of renewable energy generating resources to ultimately reduce GHG emissions. The issue here is straightforward: under DEQ's rules no other noise source is responsible for the noise created by other sources. This means new fossil generators would not be responsible for noise generated by other fossil generators, but new wind generators would be responsible for noise generated by other wind generators -- an outcome that runs directly contrary to Oregon energy policy. Meanwhile DEQ's noise rules completely exempt certain other noise sources supported by Oregon policy from the rule, such as agricultural activities.[3] Against this backdrop, singling out clean energy for harsh treatment would be a perplexing outcome of this rulemaking.

Finally, the additional cumulative-noise language added to the rules may have unintended impacts, whether reflecting noise profiles that are speculative or even physically impossible to realize, or even proving impossible to meaningfully analyze in the manner reflected in the rule text. These concerns are described in more detail in the attached acoustical evaluation (Attachment A), so we will not repeat them here.

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[3] OAR 340-035-0035(5)(l).

Conclusion

In sum, we appreciate DEQ's and EFSC's proposed addition of "or solar" to the existing noise rules for wind, but we again respectfully recommend that the agencies remove the additional language regarding cumulative noise because that language is outside the scope of this rulemaking, discriminatory toward clean energy resources, unnecessary, and impracticable.

Thank you for your consideration of these comments.

Submitted this 19th day of April, 2024,

/s/ Emily Griffith, Oregon Policy Manager
/s/ Max Greene, Deputy Director
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ATTACHMENT A

Jacobs

Proposed Changes to Oregon Noise Rule

Date: April 18, 2024

Attention: Max Greene/Renewable Northwest
Emily Griffith/Renewable Northwest

Prepared by: Mark Bastasch, P.E. (OR), INCE Bd. Cert./Jacobs

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1. Purpose and Background

The purpose of this memorandum is to provide an initial overview of concerns related to proposed changes to the Oregon Noise Rule (Oregon Administrative Rule [OAR] 340-035-0035). By way of background, I am a registered Professional Engineer (P.E.) in Oregon with more than 20 years of experience conducting acoustical evaluations. I was engaged by the Renewable Northwest Project in 2003 to assist with updating the Noise Rule and provided testimony supporting previous changes to the rule. I am a member of the United States (U.S.) National Committee and participate in International Electrotechnical Commission (IEC) standards development working groups as well as the American National Standards Institute (ANSI) and International Organization of Standards (ISO) working groups, including the group that developed the international standard for propagation of sound outdoors (ISO 9613). I have more than 20 years of experience conducting acoustical evaluations for conventional and renewable energy and critical infrastructure projects domestically and internationally. Examples include the first major wind energy project in the U.S., the Stateline Project, which was at the time the largest in the world; the first coal seam gas power plant in Australia; and multiple other power plants in the U.S. I was previously appointed by the State of Oregon to develop and grade the Acoustical P.E. exam. I am also Board Certified by the Institute of Noise Control Engineering-USA (INCE) and am one of approximately 20 individuals in the U.S. who is both an Acoustical P.E. and Board Certified by INCE.

2. Regulatory Context

Oregon has had and continues to have among the most restrictive noise rules in the United States. As you are aware, the Oregon Noise Rule consists of two parts: (1) the "Table 8" test and (2) the ambient degradation rule. The ambient degradation rule is relatively unique to Oregon and limits the increase in sound level by any previously unused site to 10 decibels on an A-weighted scale (dBA). The "Table 8" rule establishes a fixed limit for both previously used and previously unused sites. The "Table 8" approach is the more typical regulatory approach in the United States.

The previous rule change allowed willing parties to enter into a noise easement for wind projects that would waive Oregon's unique ambient degradation test. Solar development was not prevalent and therefore not considered at that time. As noted in the italicized summary below, the purpose of the proposed changes was to treat solar energy facilities similarly to the existing wind energy facilities.

***Summary of Rule Changes**: Amend OAR 340-035-0035(1)(b)(B(iii) to allow solar energy generation facilities to demonstrate compliance with noise regulations in the same manner as allowed for wind electrical generation facilities:*

1) *Maintain the Commission's Table 8 maximum noise limits for all wind and solar energy facilities.*

2) *Allow use of an assumed ambient background baseline noise level of 26 dBA for solar energy facility sites, unless evidence shows that the actual background level is higher.*

3) *Provide that any willing landowner may waive the ambient noise degradation standard for their property, while maintaining the Table 8 limits. Require waiver to be recorded with the county to accompany the legal title to the property.*

The Advisory Committee Charter states the Policy Objective as follows:

This rulemaking is intended to update OAR 340-035-0035 ("The Noise Control Regulations for Industry and Commerce") so that the wind-specific provisions allowing for various modifications to the standard noise rules for wind energy facilities also apply to solar energy facilities. The objective is to streamline the process for obtaining a site certificate for solar energy projects in the same way and for the same reasons the rules were modified [for] wind projects.

3. Comments on Proposed Changes

As currently drafted, the proposed rules make substantially more dramatic changes to how noise from both solar and wind energy facilities is assessed and single out these two types of project sites for a unique requirement not imposed on any other source of noise in Oregon. The last proposed sentences of OAR 340-035-0035(1)(b)(B)(iii)(I) and OAR 340-035-0035(1)(b)(B)(iii)(II) both imply that the standard applies to multiple sites rather than a single site at a time. The rationale is not explained in the summary of the rule change nor the policy objective, which leads me to believe this was inadvertent and the potential complications of doing so were not well understood. The main objective, as I understand it, was to allow willing landowners to enter noise easements for solar facilities like those allowed for wind.

There are several potential challenges associated with the proposed approach, a few of which I will touch on briefly. The first is the appropriateness of establishing a unique threshold for wind and solar – of all the existing and potential future noise sources in the State of Oregon, it is unclear why such a change would focus solely on these two renewable energy sources. What existing problem is this trying to address or is it speculating as to a future potential concern that is unique to renewable energy? If there is such a concern, I suspect Oregon's rigorous land use requirements provide more efficient ways to address it than by modifying the Noise Rule.

Renewable energy development and deployment is dynamic. Technology is rapidly evolving and increasing in efficiency and generation capacity. What was originally analyzed and approved may be modified or amended to incorporate improved equipment that facilitates cost-effective deployment. In some cases, a project may be delayed or ultimately canceled. Requiring multiple sites to be analyzed simultaneously creates an interdependency that an individual project proponent does not control, and no other developer of any other noise source is subject to such complications.

Second and perhaps most importantly, the proposed approach is not easily implemented given the robust standard analysis procedures currently in place. For wind facilities, the source sound level is determined by the IEC 61400-11 standard. This international standard is based on downwind conditions (wind blowing from the source to the receiver) as these conditions yield the highest sound levels. In Oregon, an additional penalty or margin historically has been added to vendors' IEC 61400-11 sound power levels. These adjusted higher source sound levels are then input into the ISO 9613-2 sound propagation model, which similarly assumes downwind conditions. When evaluating multiple sources, the ISO 9613-2 modeling algorithm assumes that each receptor is downwind from each source simultaneously. In essence, the model assesses each receptor as if it is a black hole with the sound from all sources flowing into it simultaneously. While this is physically impossible, it ensures a robust analysis for facilities with multiple sound sources and ensures all wind directions are considered. Expanding these standardized approaches

to multiple project sites will treat each receptor as if it is simultaneously downwind from all sources in all projects, which is not likely to align with realistic conditions.

The same ISO 9613-2 sound propagation model with the inherent downwind conditions discussed above for wind facilities is routinely used to assess solar facilities. Noise from a solar facility is primarily associated with the inverters' cooling systems. Those systems are designed to accommodate hot days and during more temperate times, the cooling load and sound level are expected to be less. These factors are not often considered as (1) vendors may only publish their sound levels as "not to exceed" and details at lower operating conditions are lacking or unavailable and (2) the compliance assessment is based on all equipment operating under these rated conditions. Similarly to wind facilities, expanding the analysis approach to multiple project sites treats each receptor as if it is simultaneously downwind from all sources in all projects.

4. Summary

Robust engineering calculations are facilitated by the IEC 61400-11 and ISO 9613-2 standards. Each project evaluation must be based on the premise that all turbines or inverters are operating simultaneously at their highest rated sound level at a downwind location. Enactment of this sound modeling approach provides a repeatable calculation method for obtaining clear and definitive results. Adding requirements that are unique to solar and wind facilities has the potential to complicate that analysis, increasing the uncertainty and negating alignment with the stated purpose of the proposed rule modifications.