



6257-411ReynoldsRd-Sound Modeling-Summary.docx

PRINCIPALS

October 21, 2021

Mr. Brandon Smith

Borrego Solar

Via email: bsmith@borregosolar.com

Subject: 411 Reynolds Road – Sound Modeling Summary and Recommended Sound Level Limit Review

Dear Mr. Smith:

Epsilon Associates, Inc. (Epsilon) has reviewed language of recommended sound level limits applicable to wind energy facilities and compared those limits to the proposed 411 Reynolds Road Project. The Sound Level Modeling Report prepared by Epsilon dated August 31, 2021 reveals that the proposed Reynolds Road Wind Project will comply with the limits as presented. Additional details of the sound modeling and the proposed sound level limits are provided in this letter.

Summary of Noise Study and Sound Limit Language

The recommendation for the project with respect to sound states the following:

“The analysis should show that the proposed location of the wind turbine will not exceed 50 dBA at off-site property lines and 45 dBA at surrounding residences. If the proposed wind turbine contains a pure tone component, it shall be located so that Wind Turbine Only Sound at off-site property lines shall not exceed 45 dBA at off-site property lines and 40 dBA at surrounding residences.”

The Sound Level Modeling Report dated August 31, 2021 presents worst-case wind turbine only sound levels from the proposed Reynolds Road Project. The sound impacts associated with the proposed wind turbine were predicted using the CadnaA sound level calculation software developed by DataKustik GmbH. This software uses the ISO 9613-2 international standard for sound propagation.

The predicted worst-case sound levels reveal that the project will remain below 50 dBA at all off-site property lines and will be 39 dBA or lower at all nearby residences. Therefore, the Project will meet the sound level limits presented in the language above.

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In addition, the Project is not anticipated to produce any 'pure tones'. A paper by Pedersen and Persson Waye states that modern wind turbines with upwind blades do not have prominent discrete tones from aerodynamic sources and that mechanical equipment associated with the wind turbine may emit prominent discrete tones; however, tones due to mechanical equipment can be reduced "efficiently".¹ In addition, Epsilon has measured sound levels at residences near existing wind farms and has not found any prominent discrete tones from wind turbines. Therefore, no pure tone resulting from the operation of the proposed wind turbine is expected in the community.

If you have any questions on this summary, please contact me at (978) 461-6229 or e-mail me at RCallahan@epsilonassociates.com.

Sincerely,

EPSILON ASSOCIATES, INC.



Ryan Callahan, INCE
Senior Consultant

¹ Eja Pedersen and Kerstin Persson Waye, Dept of Environmental Medicine, Goteborg University, Sweden, "Perception and annoyance due to wind turbine noise-a dose-relationship," published by the Journal of the Acoustical Society of America, Melville, NY. JASA 116(6), December 2004, pgs 3460-3470.