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5372 Sweetland Wind - T69 Move_Sound & Flicker Summary.docx

October 20, 2023

Epsilon Ref. 5372

Mr. Zach Lasek
Project Manager – East Region
Scout Clean Energy
1805 29th Street, Suite 2050
Boulder, CO 80301

**Subject: Turbine 69 Shift - Sound Level & Shadow Flicker Analysis Impacts
Sweetland Wind Project – Hand County, South Dakota**

Dear Mr. Lasek:

Pre-construction sound level and shadow flicker analyses were originally performed for the Sweetland Wind Project (“Project”) with the results presented in reports dated March 5, 2019. These analyses were updated and reported in an addendum letter dated November 15, 2019 for a revised layout. The analyses were again updated and reported in a letter dated March 8, 2021 for a layout dated February 23, 2021 (“Array 210223”). Array 210223 contained 80 General Electric (GE) 2.82-127 wind turbines at an 89-meter hub height. Nine of the 80 wind turbine locations were alternate locations.

It is Epsilon’s understanding that the Sweetland Wind Project has since been constructed with 71 of the 80 proposed wind turbines. One of the 71 constructed wind turbines, #69, was shifted approximately 85 feet southwest due to an unanticipated field discovery. Epsilon was tasked with assessing whether this shift would result in major impacts to the sound levels or shadow flicker from the Project at nearby occupied residences in Hand County, South Dakota.

The attached Figure 1 presents Array 210223 and the receptors included in the last round of modeling (reported in the March 8, 2021 letter). Given the distance between turbine 69 and the closest receptors (over 1,000 meters [3,280 feet]), this small shift would result in negligible impacts, or perhaps no impacts, to the modeled sound levels. Furthermore, since only 71 of the 80 modeled wind turbines were constructed, actual post-construction sound levels will be lower than those presented in the March 8, 2021 letter in locations where wind turbines were not built. Therefore, the Project still meets the requirements with respect to sound in the Hand County Development Agreement dated December 4, 2018 (Development Agreement).

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Figure 1 displays the modeled shadow flicker durations from Array 210223, i.e., before the shift of turbine 69. The Development Agreement limits expected shadow flicker from the Project to 30 hours per year. A 30-hour/year isoline is shown on the figure. It can be concluded from a review of this isoline, and the significant distance of any receptors to turbine 69, that the small shift of this wind turbine would not significantly impact shadow flicker durations predicted in the modeling of Array 210223, and no receptor would change from below 30 hours of predicted annual shadow flicker to over 30 hours. Furthermore, since only 71 of the 80 modeled wind turbines were constructed, actual shadow flicker durations will generally be less than or equal to those presented in the March 8, 2021 letter. Therefore, the Project still meets the requirements with respect to shadow flicker in the Development Agreement.

If you have any questions on this letter, please call me at (978) 461-6236, or e-mail me at roneal@epsilonassociates.com.

Sincerely,
EPSILON ASSOCIATES, INC.



Robert O'Neal, CCM, INCE Bd. Cert.
Managing Principal

Attachment Figure 1: Array 210223 Shadow Flicker Modeling Results

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