

BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of)	
Willowbrook Solar I, LLC)	
for a Certificate of Environmental)	Case No. 18-1024-EL-BGN
Compatibility and Public Need)	

DIRECT TESTIMONY OF DAVID HESSLER

Q.1. Please state your name and business address.

A.1. My name is David M. Hessler. The address of my company's administrative offices is 38329 Old Mill Way, Ocean View, Delaware 19970, and my personal office is located at 1012 W. Las Colinas Dr., St. George, Utah 84790.

Q.2. Mr. Hessler, by whom are you employed and in what capacity?

A.2. I have been employed for over 28 years by Hessler Associates, Inc., as Vice President and a Principal Consultant. Hessler Associates, Inc. is an engineering consulting firm that specializes in the acoustical design and analysis of power generation and industrial facilities of all kinds, including solar energy projects.

Q.3. What is your educational and professional background?

A.3. I received my Bachelor of Science in Mechanical Engineering (B.S.), 1997, *Summa cum Laude*, at the A. James Clark School of Engineering, University of Maryland, College Park, Maryland, and a Bachelor of Arts (B.A.), 1982, at the University of Hartford, Hartford, Connecticut. I am a registered Professional Engineer (P.E.) in the Commonwealth of Virginia and I am a member of the Institute of Noise Control Engineering (INCE). My professional specialization is the measurement, analysis, control and prediction of noise from both fossil fueled and renewable power generation facilities. I have been the principal acoustical designer and/or test engineer on hundreds of power

1 station projects all over the world, roughly 70 wind energy projects and, more recently, a
2 number of large-scale solar projects, including several in the State of Ohio. My resume is
3 also attached for reference as Exhibit_DH-1.

4 **Q.4. On whose behalf are you offering testimony?**

5 **A.4.** I am testifying on behalf of the Applicant, Willowbrook Solar I, LLC in support of
6 its application filed in Case No. 18-1024-EL-BGN.

7 **Q.5. What is the purpose of your testimony?**

8 **A.5.** The purpose of my testimony is to describe the noise assessment study my firm
9 undertook on behalf of the Applicant and to summarize the results of that study.

10 **Q.6. Please describe the study that you and your firm undertook on behalf of the**
11 **Applicant.**

12 **A.6.** We carried out a noise impact assessment for the project to determine if its sound
13 emissions, primarily from the substation transformer, might have a potentially adverse
14 effect on the surrounding community. The study included a field survey of the existing
15 sound level conditions near the substation site so that projections of future facility sound
16 could be compared to the existing level. Generally speaking, the sound from any project
17 would have to significantly exceed the existing sound level to be perceptible and possibly
18 disturbing. Consequently, the survey was essentially carried out to establish what the
19 existing baseline conditions were.

20 The proposed substation for the Willowbrook project is located immediately south
21 of the existing AEP Wildcat substation on Wildcat Road in Concord Township. There are
22 several homes directly across the street on the north side of Wildcat Road and the sound
23 survey was designed to measure the sound emissions from the existing substation

1 including, importantly, its frequency content because transformer noise is predominately
2 tonal in nature, at least at short distances. One third octave frequency analyzers were set
3 up at the existing substation fence, at the distance to the nearest house (300 ft.) and at twice
4 that distance to observe the rate of sound decay from the existing transformer. Sound levels
5 were measured continuously day and night over a one-week period in 10-minute
6 increments through a variety of wind and weather conditions.

7 **Q.7. What did the survey results indicate with respect to the sound levels that currently**
8 **exist at the nearest homes?**

9 **A.7.** The measurements showed that the existing AEP transformer produces significant
10 tones at 240 and 720 Hz at the substation fence but that these tones die out quickly and are
11 no longer prominent or even audible much of the time 300 feet away at the nearest houses.
12 More generally, the data indicate that the background sound level at the residences is
13 overwhelmingly driven by natural and man-made environmental sounds that are unrelated
14 to the existing substation.

15 **Q.8. How would the addition of a new transformer in the Willowbrook collector substation**
16 **affect this situation?**

17 **A.8.** The sound emissions from the Willowbrook transformer were conservatively
18 estimated and projected to the nearest homes, which are over 500 feet from new substation
19 area. These projections show that the sound from the new transformer will be comparable
20 to or below the existing measured sound level, which means in qualitative terms that there
21 will be no, or no significant, change in what is audible at the houses. Consequently, I

1 would not anticipate any adverse noise impact at these nearby residences or at any other
2 potentially sensitive receptors further away from the proposed substation.

3 **Q.9. Apart from the substation, are there any other potential noise issues associated with**
4 **the project?**

5 **A.9.** There is a minor amount of noise produced by the DC to AC inverters that are
6 intermittently distributed throughout the panel arrays; however, this sound is only
7 perceptible at short distances and it is highly unlikely to be significant or problematic at
8 any residences, which would all generally be hundreds of feet from any given inverter.

9 In addition to operational sound, a certain amount of unavoidable noise will be
10 generated during project construction. Activities such as driving in the panel rack supports
11 could result in some temporary disturbance. This noise would be fairly short-lived and
12 would only occur during the daytime.

13 **Q.10. What are your overall conclusions regarding the potential noise impacts of the**
14 **Willowbrook Solar Project?**

15 **A.10.** In contrast to all other forms of power generation, the sound emissions from
16 photovoltaic projects are almost totally benign and, moreover, have the unique
17 characteristic of only occurring during the day when the possibility of disturbance is much
18 less likely in the first place. Based on a careful survey of the existing environmental sound
19 levels in the vicinity of the proposed Willowbrook substation and conservative projections
20 of the project's future sound emissions, I would conclude from this quantitative evidence
21 that any noise from the new transformer will be insignificant at the nearest residences and
22 beyond. More broadly, I would not expect the operational sound emissions from the
23 project in general to have any negative impact on the surrounding community.

1 **Q.11. Does this conclude your direct testimony?**

2 **A.11.** Yes, it does.

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to this case. In addition, the undersigned certifies that a courtesy copy of the foregoing document is also being served upon the persons below via electronic mail this 22nd day of February 2019.

/s/ Michael J. Settineri

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Summary: Testimony of David Hessler electronically filed by Mr. Michael J. Settineri on behalf of WILLOWBROOK SOLAR I LLC