

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **South Branch**)
Solar, LLC for a Certificate of Environmental)
Compatibility and Public Need for a Solar Facility) Case No. 21-0669-EL-BGN
Located in Hancock County, Ohio.)

DIRECT TESTIMONY OF

**ALEX ODOM
Acentech Incorporated**

on behalf of

South Branch Solar, LLC

May 18, 2022

1 **Q-1. Please state your name, title, and business address.**

2 **A-1.** My name is Alex Odom, and I am a Consultant at Acentech Incorporated (“Acentech”).

3 My business address is 33 Moulton Street, Cambridge, MA 02138.

4 **Q-2. What are your duties as a Consultant?**

5 **A-2.** I am an acoustician, specializing in noise assessments for environmental sound sources,
6 consultation on building acoustics, and structural vibration measurement and analysis. I am
7 involved in pre- and post-construction sound level measurement, sound propagation
8 modeling, design of noise mitigation, construction noise and vibration monitoring, and
9 project management.

10 **Q-3. What is your education and professional background?**

11 **A-3.** I have a Bachelor of Mechanical Engineering degree from the University of Minnesota
12 Twin Cities and a Master of Engineering degree in Acoustics from The Pennsylvania State
13 University. I have 5 years of experience in acoustical consulting. I am a member of the
14 Acoustical Society of America.

15 I have experience particular to renewable projects including solar farms, wind farms, and
16 battery storage facilities. I have been involved in preconstruction ambient sound level
17 measurement or noise modeling for at least ten solar power projects. A copy of my resume
18 is attached to my testimony as Attachment AO-1.

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

20 **A-4.** I am offering testimony on behalf of South Branch, LLC (“Applicant”), regarding its
21 Application filed in Case No. 21-0669-EL-BGN.

Q-5. What is the purpose of your testimony?

A-5. The purpose of my testimony is to describe the noise assessment study included in the December 20, 2021 Application Modification as Updated Appendix N (see Applicant Exhibit 1, at Updated Appendix N) and to summarize the results of that study.

Q-6. Have you testified previously before the Ohio Power Siting Board (“OPSB”)?

A-6. Yes, in the Case of Kingwood Solar I LLC (Case No. 21-0117–EL-BGN).

Q-7. Please describe the study you and your firm undertook on behalf of the Applicant.

Acentech carried out a noise assessment of Solar Branch Solar (“Project”). The first step of the assessment was to measure the existing ambient sound levels in the Project area. These measurements were used to calculate the sound level limit for the Project at nearby sensitive receivers. Background sound level monitoring was conducted at two locations. The two monitors were representative of residences (i) on the north end of the Project area (“Location 1”) and (ii) on the south end of the Project area (“Location 2”). Noise measurements were continuously measured from April 9 to April 19, 2021.

A-7. Sound propagation modeling of the major sound producing equipment (inverters, transformers, and trackers) was then carried out to estimate Project sound levels at nearby sensitive receivers. For nighttime operation, the inverters and tracker motors will be inactive, but the transformers will likely be energized and producing noise. Because the distribution transformers are integrated into the inverters, and we do not have sound data for the separate components, the modeling conservatively included sound from the inverters at night.

In addition, construction noise estimates were based on typical construction equipment and distances from construction activities to residential receivers.

Q-8. Please describe the result of the field surveys you conducted on the Project.

A-8. Background sound level monitoring results conducted at the two locations in the Project area indicated average existing ambient daytime equivalent sound levels (“Leq”) of 50 A-weighted decibels (“dBA”) at Location 1 and 52 dBA at Location 2, and an average nighttime Leq of 46 dBA at Location 1 and 51 dBA at Location 2.

There is currently no specific sound level limit for solar power projects in Ohio Administrative Code. OPSB’s general requirement that operational wind energy facility impacts be 5 decibels (“dB”) or less over measured ambient on an Leq basis at non-participating receptors was applied. This set a goal of 54 dBA during the day and 50 dBA during the night for receivers near Location 1, and 56 dBA during the day and 55 dBA during the night for receivers near Location 2.

Q-9. Please describe the modeling you performed for the Project.

A-9. Acoustic modeling was conducted at 20 existing non-participating residences and one participating residence in the area surrounding the Project. The acoustic model was developed using Cadna/A software to estimate the contributions of various noise sources to the community sound levels. Cadna/A complies with International Organization for Standardization (“ISO”) 9613-2 “Attenuation of sound during propagation outdoors - Part 2: General method of calculation.” The Project is expected to include up to 40 inverters with integrated MV transformers, and a single substation transformer. Approximately 3,000 tracker motors are expected. Sound emissions from all sources operating simultaneously were analyzed in the assessment. Representative equipment was modeled for the inverters and trackers, using manufacturer sound emission data. The substation

transformer was modeled using data from a similar unit with an additional 3 dB in every octave band to account for measurement uncertainty.

Q-10. What did the modeling of the potential sound emissions from the Project indicate?

A-10. Acentech predicted the noise in the community from Project equipment, including inverters, transformers, and tracker motors. Project-only operational nighttime sound levels range from 28 dBA to 37 dBA at the receivers closest to the Project Area, resulting in no increase in sound level over the measured nighttime ambient (Leq). Predicted Project-only operational daytime sound levels range from 37 dBA to 46 dBA; we did not predict an increase in sound levels over the daytime ambient (Leq) greater than 1 dB. The difference between the predicted daytime and nighttime levels is a result of daytime tracker motor operation. These results are conservative because they assume the tracker motors will all be operating at the same time and continuously, when in reality they will not all operate at the same time and typically run for 5-10 seconds every 1-2 minutes.

The construction noise estimates were based on documentation provided by Haley & Aldrich describing the construction phases for a similar solar facility and distances from construction activities to residential receivers. These predictions of short-term sound impacts range from 56 dBA to 90 dBA depending on equipment and setback distances in different phases of construction. The predicted construction sound levels are intended to be conservative, representing a “worst case scenario” for noise emission.

Q-11. Does this conclude your testimony?

A-11. Yes, it does. However, I reserve the right to offer supplemental testimony if necessary.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Testimony was served upon the parties of record listed below this 18th day of May 2022 via electronic mail.



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Alex Odom

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EDUCATION

B.M.E., Mechanical Engineering, University of Minnesota - Twin Cities, 2016

PROFESSIONAL SOCIETIES

Acoustical Society of America (ASA), Member

EXPERIENCE AND RESPONSIBILITIES

Alex Odom consults on a wide range of projects within Acentech's Acoustics and Noise and Vibration Groups, assisting in the certification of lab/sensitive facilities, construction monitoring, and environmental noise issues. He has been involved in environmental noise modeling, mechanical systems noise control, and psychoacoustic analysis of the audibility of police sirens. He applies these skills across a broad range of environmental, transportation, renewable energy, and commercial facility types.

PRESENTATIONS | PUBLICATIONS

- > "Addressing Noise Concerns in Cleanroom Environments," ESTECH, 2020
- > "Boston's Construction BOOM: Help Me Understand My Noise Problem, ABX, October 2018

REPRESENTATIVE PROJECTS | POWER/ENERGY

- > Brookhaven Battery Storage, Brookhaven, NY
- > Confidential Solar Farm, Noise Evaluation, Dartmouth, MA
- > Cortlandt Solar Farm Noise Evaluation, Cortlandt, NY
- > Duke Energy Corporation, Rockingham Combustion Turbines, Reidsville, NC
- > Fairland Farm Solar Project, Norton, MA
- > Gemma Powers System, Harrison Power Project, Harrison County, WV
- > Guernsey Power Station, Valley Township, OH
- > Harvard University, Allston Energy Facility, Allston, MA
- > Invenergy, Number 3 Wind Farm, Lowville and Harrisburg, NY
- > Kingwood Solar, Greene County, OH
- > Lilly del Caribe Cogeneration Project, Carolina, PR
- > Norton Solar Farm, Norton, MA
- > Ohio State University, Combined Heat and Power Project, Columbus, OH
- > Ohio State University, Smart Campus Energy Project, Columbus, OH
- > Pacifico Energy Solar Farm, Attleboro, Maring Road Solar Project, Kingston, MA
- > Pittsfield Generating Company, Gas Turbine Attenuator Removal, Pittsfield, MA
- > South Branch Solar, Hancock County, OH
- > South Wrentham Battery and Energy Storage Site, Wrentham, MA
- > Total Peaking Liquid National Gas Facility, Vaporization Capacity Increase and BOG Compressor, Milford, CT
- > Township Power Plant, Riga, MI
- > Watertown Solar Project, Watertown, MA

REPRESENTATIVE PROJECTS | LABS

- > 1 Winthrop Square Lab Fit-out, Boston, MA
- > 20 Cambridgeside Place, Cambridge, MA
- > 599 Somerville Ave Lab Core and Shell, Somerville, MA
- > Harvard Maxwell Dworkin Building Vibration and EMI, Cambridge, MA
- > Harvard Medical School NRB Church Lab Microscopy Suite, Boston, MA

Alex Odom

Consultant | Acoustics, Noise & Vibration

- > Harvard SEAS ESL Vibration and EMI Measurements, Cambridge, MA
- > Harvard University Engineering Science Laboratory Renovations SEAS ESL, Cambridge, MA
- > Harvard - Mitrano Lab - Jefferson Hall, Cambridge, MA
- > Kenmore Square 11-19 Deerfield Street Core and Shell, Boston, MA
- > Kenmore Square 648 Beacon street, Boston, MA
- > Kenmore Square Beacon Building, Boston, MA
- > Harvard University, Laboratory for Integrated Science and Engineering, McKay Laboratory, EMI and Vibration Measurements, Allston, MA
- > Philips Healthcare at Parcel JK, Cambridge, MA
- > UPenn Vagelos Laboratory for Energy Science and Technology, Philadelphia, PA
- > USC Michelson Center, Vibration. Noise & EMI Surveys for Cleanroom and Imaging Areas, Los Angeles, CA

REPRESENTATIVE PROJECTS | HIGHER EDUCATION

- > Boston College, Campion Hall Academic Building, Chestnut Hill, MA
- > Dartmouth College, Thayer Hall Construction Noise Monitoring, Hanover, NH
- > Harvard University, Houghton Library Construction Vibration Mitigation, Cambridge, MA
- > Harvard University, Maxwell Dworkin Vibration and EMI Survey, Cambridge, MA
- > Harvard University, Paulson School of Engineering and Applied Science, EMI and Vibration Measurements, Cambridge, MA
- > Ohio State University, New Combined Heat and Power Plant, Columbus, OH
- > University of Connecticut, Construction Noise and Vibration Measurements, Storrs, CT
- > University of Connecticut, Science One, Storrs, CT
- > University of Chicago, New Science Facility Site Selection Survey, Chicago, IL
- > University of Minnesota, Transit Vibration Survey, St. Paul, MN
- > University of Pennsylvania, Vagelos Institute for Energy, Science, and Technology, Philadelphia, PA

REPRESENTATIVE PROJECTS | REMOTE MONITORING

- > 201 Brookline Avenue, Construction Noise Monitoring, Boston, MA
- > City of Portland, Citywide Sound Monitoring, Portland, ME
- > Dartmouth College, Thayer Hall Construction Noise Monitoring, Hanover, NH
- > Norton Estates, Industrial Noise Measurements, Norton, MA
- > Prudential Center, Mechanical Noise Monitoring, Boston, MA
- > Quin House, Remote Environmental Noise Monitoring, Boston, MA

**This foregoing document was electronically filed with the Public Utilities
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Summary: Testimony of Alex Odom on behalf of South Branch Solar, LLC
electronically filed by Teresa Orahoad on behalf of Sommer Sheely