



January 4, 2024

**VIA ELECTRONIC MAIL AND HAND DELIVERY**

Melanie Bachman  
Executive Director/Staff Attorney  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

**Re: Response to Council Interrogatories – Set 2  
PETITION NO. 1592 - Santa Fuel, Inc. petition for a declaratory ruling,  
pursuant to Connecticut General Statutes §4-176 and §16-50k, for the  
proposed construction, maintenance and operation of a 3.75-megawatt AC  
solar photovoltaic electric generating facility located at the 159 South Road,  
Somers, Connecticut, and associated electrical interconnection.**

Dear Ms. Bachman:

On behalf of Santa Fuel, Inc., I am enclosing the original and fifteen copies of the Responses to the second set of Interrogatories issued by the Council on December 27, 2023 in connection with the above-referenced petition. Should you have any questions concerning this submittal, please contact me at your convenience. I certify that copies of this submittal have been submitted to all parties on the Petition Services List as of this date.

Sincerely,

Timothy A. Coon, P.E.  
**J.R. Russo & Associates, LLC**

**Enclosures**

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

Santa Fuel, Inc. petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 3.75-megawatt AC solar photovoltaic electric generating facility located at the 159 South Road, Somers, Connecticut, and associated electrical interconnection.

Petition No. 1592

January 4, 2023

**RESPONSES TO THE DECEMBER 27, 2023 PRE-HEARING INTERROGATORIES –  
SET 2 DIRECTED TO SANTA FUEL, INC. FROM THE CONNECTICUT SITING  
COUNCIL**

Petitioner Santa Fuel, Inc (“SFI” or “Petitioner”) hereby submits the following responses to the second set of Interrogatories that were directed to SFI by the Connecticut Siting Council on December 27, 2023.

**Pre-Hearing Interrogatories – Set 2  
December 27, 2023**

57. Referencing the response to Council Interrogatories Set 1, Attachment 4 (Noise Analysis) what is the collective operational noise level of the transformers/inverters on Equipment Pad 2 at the abutting property boundary to the north, owned by the Northern Connecticut Land Trust?
- A. The purpose of noise ordinances is to minimize exposure to excessive noise during different parts of the day for local residents in an effort to preserve their quality of life. As mentioned previously, the inverters and transformer pads have purposely been placed on the eastern portion of the project, in an effort to reduce the potential noise impacts to the property boundaries that are inhabited by residences on South Road and Mountain View Road. The collective operational noise level of the transformers and inverters on Equipment Pad 2 is a maximum of 60.49 dB at the property boundary to the north that is owned by the Northern Connecticut Land Trust.

The mission of the Northern Connecticut Land Trust is to: “preserve the natural resources of the northern Connecticut region including agricultural land and other ecologically important open space”. Given that this parcel will most likely never be formally developed, there will be no residents that will be impacted by the noise emissions on this property boundary. Santa Fuel Inc. is willing to explore noise mitigation solutions for the portion of the property boundary, between points F and H, that exceeds the allowable daytime limit as shown in Figure 3 of Attachment 1, *Noise Emission Analysis – Eastern Property Boundary*, and respectfully requests that the Council

make the submission of a noise mitigation plan a condition of this Petition's approval, should the Council determine that this will be required.

58. Referencing the response to Council Interrogatories Set 1, Attachment 5 (McCann Farm Trails and Whitaker Woods Trails), indicate the general location of the proposed facility on the trail map.
  - A. Per your request, the McCann Farm Trails and Whitaker Woods Trails Map presented as Attachment 5 to the initial interrogatory response has been revised to indicate the location of the proposed project site. The revised map is included as Attachment 2.

**ATTACHMENT 1**  
**Noise Emission Analysis – Eastern Property Boundary**



# **Noise Analysis**

**EASTERN PROPERTY BOUNDARY**

## **Somers Solar**

159 South Rd, Somers, CT 06071

4,790.50 kW DC / 3,850.00 kW AC



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## 1.0 INTRODUCTION

This report is an extension of the Noise Analysis report submitted to the Connecticut Siting Council on 12/20/2023. The purpose of this report is to calculate the noise generated by the solar project and to verify that the noise level is below the maximum noise level allowed by the zoning and land use ordinance of the town of Somers. Noise generated by this project will derive from the operation of fourteen Chint Power CPS SCH275KTL-DO/US-800 string inverters and two 2000 kVA transformers. All the equipment will be installed on an equipment pad, with each equipment pad containing seven inverters and one transformer. The locations of these equipment pads are shown in Figure 1 below. According to the Chint Power equipment specifications, one CPS SCH275KTL-DO/US-800 inverter has a maximum acoustic noise output of 80 dBA at a distance of 1m (3.28'), meanwhile, a single 2000 kVA transformer has a maximum acoustic noise output of 61 dBA at a distance of 1m (3.28'). For the purposes of this study, we have calculated the noise level at the eastern property boundary of the property, as shown in Figure 2.

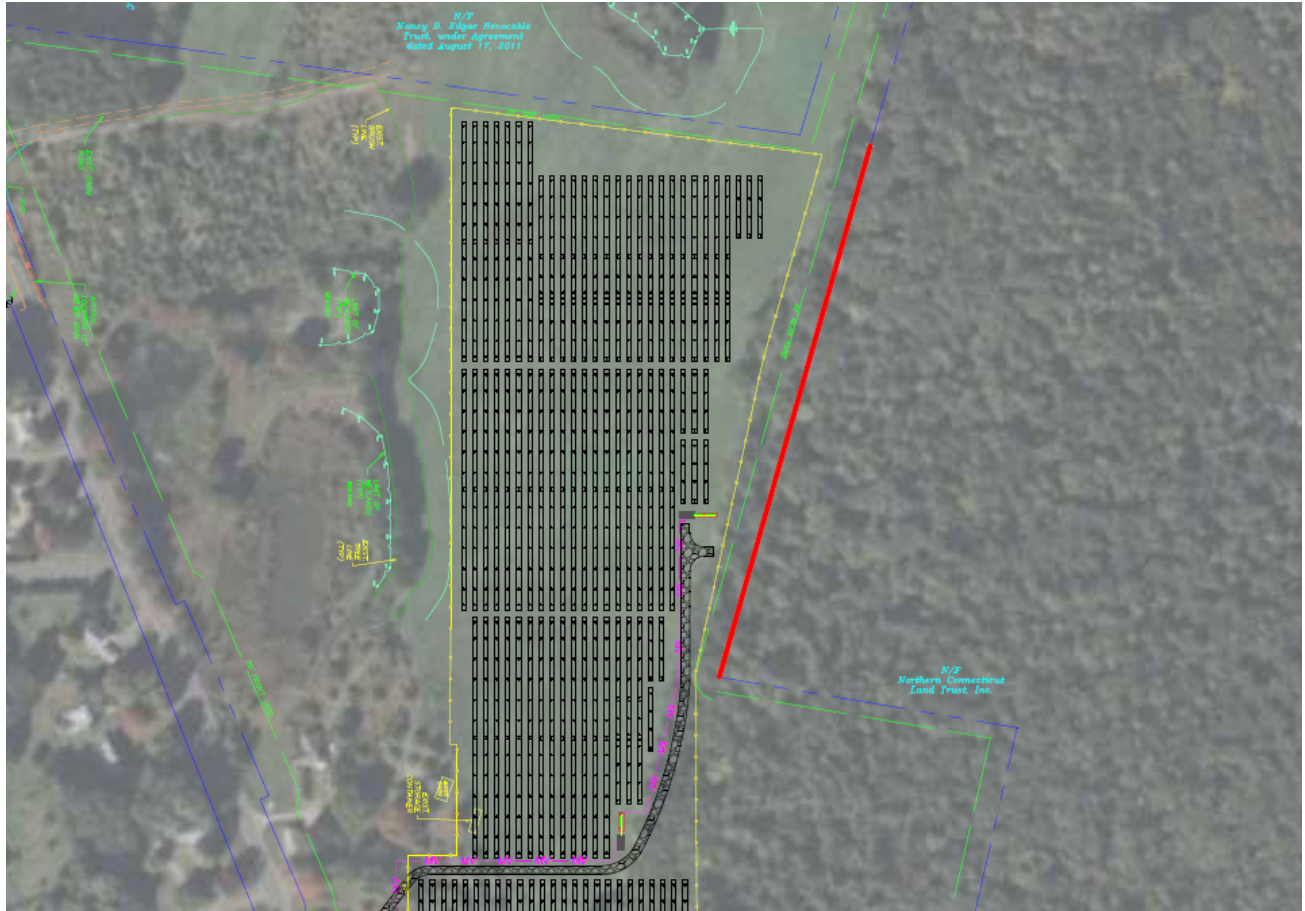
Solar projects only operate during the day hence, they must comply with the daytime noise regulations. As stated in the Zoning Regulations for the Town of Somers Section 7.11 F, the noise emitted from residential zones cannot exceed 55 dBA at a residential zone boundary, 55 dBA at a commercial zone boundary, and 62 dBA at an industrial zone boundary.



*Fig. 1: Equipment pad locations closest to property boundary*



The eastern boundary location is marked in red below:



*Fig. 2: Eastern Property Boundary, abutting Northern Connecticut Land Trust parcel*





## 2.0 CALCULATION

To quantify the noise output of all equipment, a logarithmic decibel addition formula and an audibility formula must be used to accurately determine amplification of sound. This formula and the processes related to calculating a result are illustrated below.

### Equation 1: Decibel Addition

$$L = 10 \text{Log}_{10} \left( \sum_{i=1}^n 10^{(L_i / 10)} \right)$$

### Equation 2: Audibility

$$DL = LP2 - LP1 = 20\text{Log}(R1/R2)$$

DL = Difference in sound pressure (dBA)

LP1 = Sound pressure at location 1

LP2 = Sound pressure at location 2

R1 = Distance from source to location 1

R2 = Distance from source to location 2

For the purposes of this study, the noise level at the eastern property boundary was calculated using the nearest equipment pad. The distance of the nearest equipment pad from the property line is mentioned below:

The distance to the eastern property boundary (Fig. 2), owned by the Northern Connecticut Land Trust, from the nearest equipment pad is 82'.

Noise emission from (1) Chint Power CPS SCH275KTL-DO/US-800 @ 1m (3.28') = 80 dB

Noise emission from (1) 2000kVA transformer @ 1m (3.28') = 61 dB

Using equation 1, noise emission from all seven inverters on an equipment pad during operation = 88.45 dB

Using equation 1, combined noise emission from all the equipment (7 inverters and 1 transformer) during operation = 88.45 dB



The noise level at the eastern property boundary is calculated below:

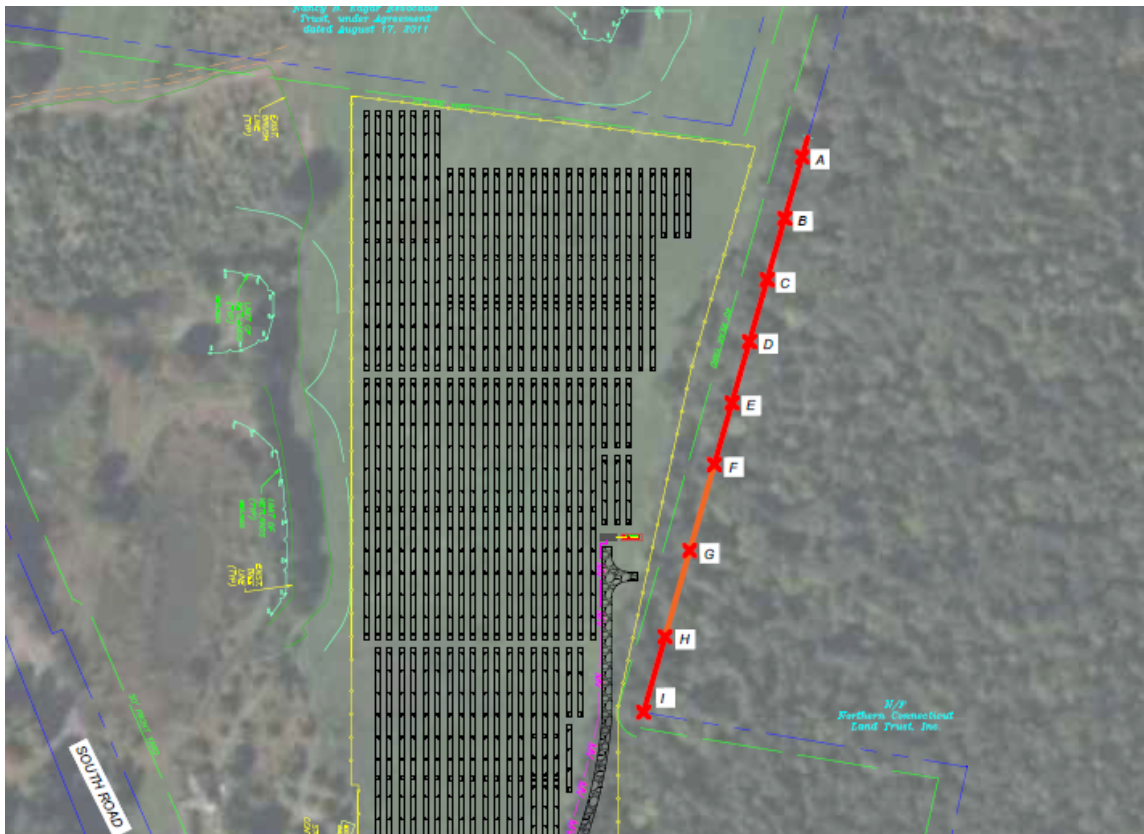
Eastern Boundary, abutting Northern Connecticut Land Trust

Distance between property line and equipment pad = 82'

Using equation 2,  $DL = 20\log(3.28/82) = -27.96$

Noise emission at the parcel boundary =  $88.45\text{dB} - 27.52\text{ dB} = \mathbf{60.49\text{ dB}}$

In order to provide a more comprehensive noise analysis report, we have calculated the noise level at various locations on the eastern property boundary. Figure 3 shows the locations where the noise level was calculated. The maximum noise level was 60.49 dB at location G, which is closest to the equipment pad.



*Fig. 3: Noise level at various locations on the eastern property boundary*



### 3.0 CONCLUSION









The noise level at various locations, as shown in Figure 3, on the eastern property boundary abutting the Northern Connecticut Land Trust is mentioned below.

LOCATION	DISTANCE FROM PAD (FT)	NOISE LEVEL (dBA)
A	647	42.55
B	548	43.99
C	450	45.70
D	351	47.86
E	255	50.64
F	163	54.52
G	82	60.49
H	161	54.63
I	275	49.98

**ATTACHMENT 2**  
**Revised McClain Farm Trail Map**

# McCann Farm Trails and Whitaker Woods Trails

Built and Maintained by NCLT

- The Trails**
-  Jerry Stage Trail
  -  Shady Brook Trail
  -  Old Forest Loop
  -  W - M Link
  -  Pinecone Trail
  -  Upper Shady Brook Trail
  -  Underhill Trail
  -  Overhill Trail

-  McCann Farm
-  Whitaker Woods
-  Fields & Pasture
-  Whit Davis Bird Sanctuary
-  Trail Bridge
-  Stone Wall
-  Spring
-  Pasture Fence

Horses are allowed on Whitaker trails except where noted. Horses are not allowed on McCann trails

