

MEMORANDUM

Date: August 18, 2023

To: Paul Williamson – Key Capture Energy

From: Clint Cyr, PE, INCE – Epsilon Associates, Inc.

Subject: **Overview of the Sound Level Impact Assessment for the Proposed KCE CT 5 BESS Project in Willington and Stafford, Connecticut**

Key Capture Energy (KCE) is proposing to construct a battery energy storage system (BESS) to the west of Village Hill Road and east of Willington Avenue/Blair Road on the town line of Willington and Stafford, Connecticut (the Project). Epsilon Associates, Inc. (Epsilon) has been retained by KCE to conduct a sound level impact assessment for the Project.

The assessment included sound level modeling of operational sound from the proposed BESS and an evaluation against the Connecticut Department of Energy and Environmental Protection (DEEP) regulatory standards, specifically CGS §22a-69. The Project is considered an industrial sound source (Class C). A brief overview of the modeling and the sound level evaluation is provided herein.

Modeling Methodology

The primary sources of sound from the BESS project will be the battery containers and the inverters (“PCS”). There are 12 containers and 2 PCS proposed for the Project. The model utilized sound level data from the proposed manufacturer. The locations of the modeled equipment overlaying aerial imagery are shown in Figure 1.

Sound levels from the facility were predicted using the Cadna/A noise calculation software developed by DataKustik GmbH. This software uses the ISO 9613-2 international standard for sound propagation (Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation). The benefits of this software are a refined set of computations due to the inclusion of topography, ground attenuation, multiple building reflections, drop-off with distance, and atmospheric absorption. Elevation contours for the modeling domain were directly imported into Cadna/A which allowed for consideration of terrain shielding where appropriate.

Epsilon used Cadna/A, the proposed site plan, and the sound level data from the manufacturer to predict “Project-only” sound levels. A modeling grid with a 10-meter spacing was calculated for the area

surrounding the Project. The grid was modeled at a height of 1.5 meters above ground level to mimic the ears of a typical standing person. This modeling grid allowed for the creation of sound level isolines as shown in Figure 1. The figure also shows 12 discrete modeling receptor locations that represent the closest neighboring properties. The receptors were also modeled at a height of 1.5 meters.

Sound Level Evaluation

Table 1 presents an evaluation of broadband sound levels at each of the 12 modeling receptors. Because the BESS will be able to operate at any time of day, the more stringent, i.e., nighttime standards have been evaluated. The nighttime broadband sound level standard from an industrial source (Class C) at a residential zone (Class A) is 51 dBA.

Modeled Project-only broadband L_{eq} sound levels are provided in the table and range from 30 to 53 dBA. The highest sound level from the Project at a receptor in a residential zone as defined by the CT DEEP is 53 dBA (R12). The landowner of the residential property to the immediate north of the Project to which this modeling receptor represents has signed a statement of no objection to sound levels above the residential sound standard of 51 dBA; therefore, the predicted sound level of 53 dBA should be acceptable. The statement is attached to this memorandum. The Town of Stafford was informed of this condition and also has no objection; see attached. The second highest sound level from the Project at a receptor in a residential zone is 46 dBA (R04, R05, R06, R07, and R08). As shown in the table, all predicted levels are below the Connecticut DEEP broadband sound standards for industrial sources at properties where the standards must be met.

The CT DEEP also considers prominent discrete tones (tones) as excessive noise under certain conditions. Prominent discrete tones are defined in the regulation using one-third octave band sound levels. One-third octave band sound levels from the Project were calculated in the model using data from the manufacturer. According to the regulation, a tone is considered excessive when a broadband sound level that is 5 dBA below the applicable broadband standard is exceeded when the tone is present. The modeling shows tones at receptors R01, R03, R08, and R09; however, Table 1 shows that the broadband levels at these receptors are 13 dBA, 6 dBA, 5 dBA, and 8 dBA below the standard, respectively. Receptor R12 also shows a tone, but the respective landowner has signed a statement acknowledging and accepting possible sound levels above the sound standards on their property. Therefore, and in summary, the Project meets the Connecticut DEEP regulatory standards with respect to noise.

Table 1 CT DEEP Evaluation of Broadband Sound Levels

ID	Receptor Type	Modeled Project Only L_{eq} Sound Level (dBA)	CT DEEP Nighttime Standard for Industrial Source (dBA)	Meets CT DEEP Standard?
R01	Residential	38	51	YES
R02	Residential	30	51	YES
R03	Residential	45	51	YES
R04	Residential	46	51	YES
R05	Residential	46	51	YES
R06	Residential	46	51	YES
R07	Residential	46	51	YES
R08	Residential	46	51	YES
R09	Residential	43	51	YES
R10	Residential	42	51	YES
R11	Residential	35	51	YES
R12	Residential	53	51	N/A ¹

Notes:

1. The respective landowner has signed a statement acknowledging and accepting possible sound levels above of the sound standards on their property. The Town of Stafford also has no objection.

**Jason Zeiger
81 Village Hill Road
Stafford, CT 06076**

June 13, 2023

Connecticut Siting Council
~~[Insert address of recipient]~~

Re: Acceptance of Noise Levels

To whom it may concern:

I, Jason Zeiger, owner of an approximate 12.86-acre parcel of land located at 81 Village Hill Road, Stafford CT, and being designated as Parcel ID 71/17 on the Stafford Assessor Map, hereby agree that I do not object in any manner to KCE CT 5, LLC's installation of an Energy Storage Project to be located on a certain property off of Village Hill Road, Willington, CT, and being designated as Map 52, Block 001, Lot 00 on the Willington Assessor Map, with such installation including, but not being limited to, seeking any land use approvals, including setback waivers or adjustments, affecting or in connection with the Energy Storage Project, from the Towns of Stafford or Willington, or the Connecticut Siting Council. I further acknowledge that certain aspects inherent to the operation of the Energy Storage Project may result in the possibility of increased noise levels exceeding 51 dBA on a limited wooded portion of my property. Results of a sound study have been provided to me by KCE CT 5, LLC and upon review, I find the results and projected impacts to my property as minimal and acceptable, and I hereby waive any objections to the Energy Storage Project and resulting sound emissions caused thereby.

Thank you,



Jason Zeiger

From: [First Selectman](#)
To: [Rousseau, Christopher M.](#)
Cc: [Paul Williamson](#); [Lara Rippeon](#)
Subject: RE: 83 Village Hill Road
Date: Wednesday, July 12, 2023 1:54:39 PM
Attachments: [image001.png](#)
[image002.png](#)

Hi Chris,

Based on consultation I had earlier this morning with the chairman of Planning and Zoning the Town of Stafford has no objection.

Thank you,
Sal Titus



Sal P. Titus, M.B.A.
First Selectman – Town of Stafford
1 Main Street, Stafford CT 06076

Office 860-684-1777

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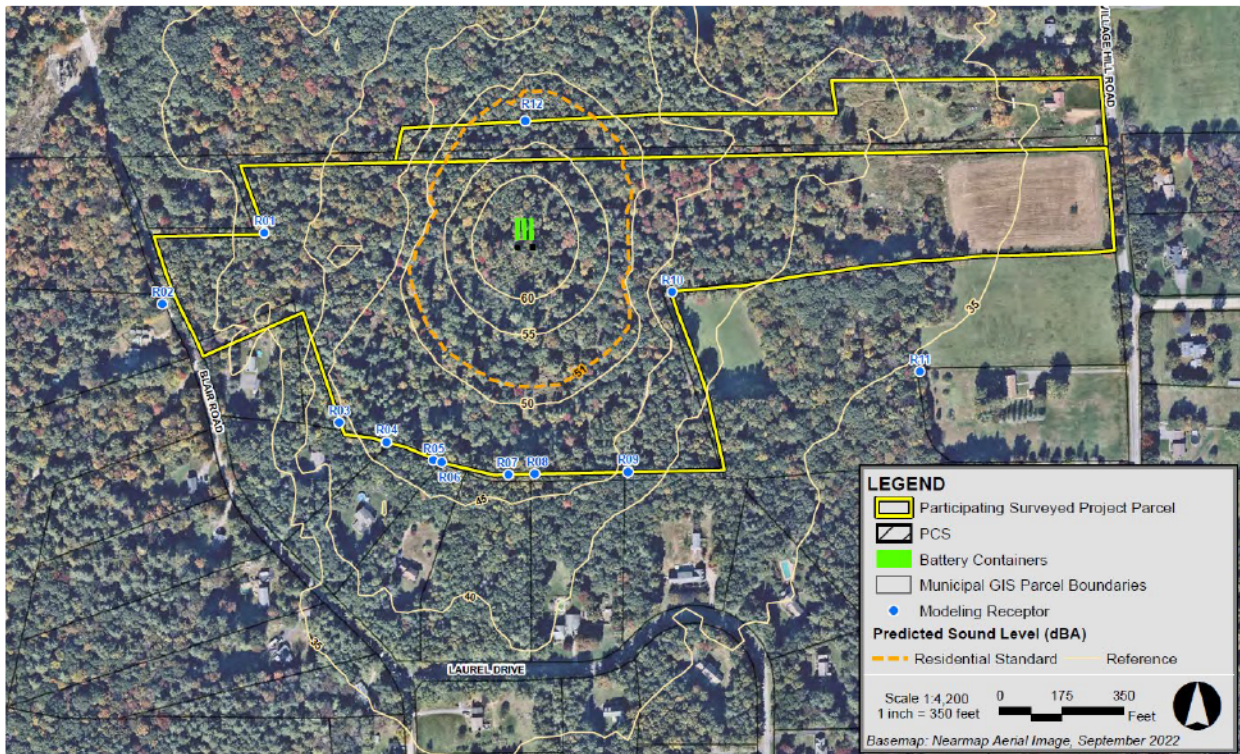
From: Rousseau, Christopher M. <CRousseau@pullcom.com>
Sent: Wednesday, July 12, 2023 10:41 AM
To: First Selectman <firstselectman@staffordct.org>
Cc: Paul Williamson <paul.williamson@keycaptureenergy.com>; Lara Rippeon <lara.rippeon@keycaptureenergy.com>
Subject: RE: 83 Village Hill Road

Sal:

Thanks for taking the time to speak with us yesterday afternoon and sending us the applicable regulation/ordinance sections.

For this particular discussion of sound standards, the local codes (or lack of existing codes) is not so much the guiding principle relating to sound. The Project is under the jurisdiction of the Connecticut Siting Council and thus State standards apply rather than local zoning regulations/ordinances. The State standards provide guidance for the proposed project to demonstrate that the overnight noise levels not exceed 51 DBA at the property line of a parcel not participating in the project. The project sound modeling KCE had produced indicates that the project may exceed that standard at the property line of Jason Zeiger of 81 Village Hill Road, Stafford (Parcel ID 71//7). The image below shows the sound level at the Residential Standard of 51 DBA crossing onto Mr. Zeiger's property north of Reference Point R12. The sound standard will only be exceeded in a completely remote and heavily wooded area of the property, far from Village Hill road, and in an area of property far from Village Hill Road or any Stafford residents. As a result, Mr. Zeiger reviewed the project sound modeling and provided us with the written communication that he does not object to the Connecticut Siting Council approving the project with recognition of the sound standard being exceeded at his property line in the heavily wooded area.

Because Mr. Zeiger's property is located in the Town of Stafford, we would also like to request that the Town confirm it has no objection to a Siting Council approval with the sounds modeling results being considered in connection therewith. As mentioned above, the small area where the sound may travel is completely wooded, and nowhere near any residents of the Town. We would be happy to provide you with more information regarding the sound modeling results or schedule a call to discuss further if that would be helpful to you. The written communication can be either a written letter or come via email.



KCE and I appreciate all of your help thus far. I have copied both Paul Williamson and Lara Rippeon on this email. Please let us know if you have any questions or comments. On a separate note, a call invite was circulated this morning for our 10:00am call on Monday. If possible, can you please forward it over to Mary? If easiest for you, please provide me with her email and I can take care of forwarding.

Best,

Chris

Christopher M. Rousseau, Attorney
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From: First Selectman <firstselectman@staffordct.org>
Sent: Tuesday, July 11, 2023 2:57 PM
To: Rousseau, Christopher M. <CRousseau@pullcom.com>
Subject: RE: 83 Village Hill Road

Hi Chris,

Please see the following:

The regulations only include the following regarding noise;

4.4 Supplementary Regulations to the Tables of Permitted Uses

A. Regulations for utility lines and substations: Utility transmission lines and substations are permitted uses in all zoning districts provided that:

1. The location, construction, and right-of-way of any transmission line shall be such as to prevent hazard to the public and surrounding property.
2. A utility substation shall be located on a lot at least ten thousand (10,000) square feet in area. There shall be suitable fencing to protect the public and landscaping to effectively screen the substation from surrounding property. Yard setbacks of the district, in which the substation is located, shall be met. In addition, there shall be adequate off-street parking areas.
3. Minor structures, such as hydrants, telephone, or light poles, or similar equipment, shall not be subject to these regulations.

B. Uses expressly prohibited in all districts:

15. Similar uses to the above that are dangerous by reason of fire or explosion; or injurious, noxious, or detrimental to the neighborhood because of emission of dust, fumes, odor, smoke, wastes, **noise**, or vibrations; or because of other objectionable features.

Thank you,
Sal Titus



Sal P. Titus, M.B.A.

First Selectman – Town of Stafford
1 Main Street, Stafford CT 06076

Office 860-684-1777

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From: Rousseau, Christopher M. <CRousseau@pullcom.com>

Sent: Monday, July 10, 2023 1:31 PM

To: First Selectman <firstselectman@staffordct.org>

Subject: 83 Village Hill Road

Sal,

Thanks for the call. As we discussed, the letter we received from Mr. Zeiger (the current owner of 81 Village Hill Road) is attached. He addressed it directly to the Town.

I look forward to speaking with you and Mary tomorrow at 2:30.

Best,

Chris

Christopher M. Rousseau
Attorney

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