STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

PETITION NO. 1637 – KCE CT 11, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 4.99-megawatt AC battery energy storage facility located at 100 Salmon Brook Street, Granby Connecticut and associated electrical interconnection.	**Petition No. 1637**
	November 12, 2024

Petitioner KCE CT 11, LLC ("KCE") hereby submits the following responses to the Pre-Hearing Interrogatories that were directed to KCE by the Connecticut Siting Council ("Council") on October 25, 2024.

Project Development

1. Has KCE CT 11, LLC (KCE) received any comments since the Petition was submitted to the Council? If yes, summarize the comments and how these were addressed.

Yes, a summary of public questions received are in the attached document labeled Attachment A. Additionally, KCE made a presentation to the Granby Town Board of Selectmen on August 5, 2024 and held a public open house-project information event at the Granby Senior Center on August 7, 2024. Verbal questions were responded to at that time and information was provided for submission of additional questions in writing and electronically. A full summary record of these meetings is included Attachment B.

2. Referencing Petition Exhibit M, KCE Project Municipal Meeting Record, dated June 25, 2024, in the last row under "Recorded responses from participants," the Town indicated it would like KCE to present Project information to the Town Selectboard and schedule a public information meeting. Did KCE present Project information to the Town Selectboard and schedule a public information meeting? If so, when were the meetings held, how many people were in attendance, what were their concerns and how were the concerns addressed?

As indicated in the response to Interrogatory No. 1, Paul Williamson made a presentation of the KCE CT 11 BESS project details to the Town of Granby Board of Selectmen on August 5, 2024. At the end of the presentation, Mr. Williamson responded verbally to questions provided by the

Board of Selectmen after the presentation. During this time, KCE invited further town participation, including the opportunity to have town safety officials meet directly with BESS fire safety subject matter experts. The Selectboard then took comments and questions from the audience. However, the format of the meeting did not allow for responses to public comment at that time. The Audience was invited to attend the Public Open House meeting held at the Granby Senior Center on August 7, 2024 for the opportunity to ask questions directly to project representatives and subject matter experts. The town posted a recording of the meeting at: https://www.granby-ct.gov/AgendaCenter/Board-of-Selectmen-10.

During the meeting that KCE held with Town Officers on June 25, 2024, and during the meeting with the Town of Granby Selectboard on August 5, 2024, Paul Williamson invited the opportunity to schedule a meeting with town emergency responders and one of the country's premier BESS safety subject matter experts, Fire and Risk Alliance. The purpose of the meeting would be to allow the Town Safety officials to have detailed knowledge of risk and mitigation guidance association with BESS, as well as the opportunity to discuss training and response resource requirements. Paul Williamson made numerous efforts to schedule this meeting with the Town Fire Chief, Town Fire Marshall, First Selectmen and Town Manager. The outreach efforts to these individuals were redirected to the attorney representing the Town, and no reply was received. KCE will continue to make efforts to schedule these types of meetings and trainings. A summary record of the outreach is provided in Attachment B

On August 7, 2024, KCE held a Public Open House project informational event. The event allowed individuals to ask specific questions to project representatives and subject matter experts. The project was represented by the following personnel: Paul Williamson, KCE Director, Development –New England; Gautam Jain, KCE Manager, Development; Chris Linsmeyer, KCE Senior Manager, Public Affairs- Regulatory; Maddison Holaday, KCE Development Intern; Steve Kochis, PE, VHB Engineering CT Energy Market Lead, VHB CT - Land Development; Katelin Nickerson PWS, NHCWS, Flycatcher Environmental, Project Director.

Information boards included BESS information, Design, Engineering and Layout, Environmental, Safety and Sound study data. Questions were responded to verbally with use of reference materials. Comment cards and a QR code were made available to allow participants to submit additional comments in writing or electronically. The received comments and a list of participants can be found in Attachment A.

During the event, the Town of Granby Fire Chief, John Horr, was introduced to project representatives with the intent of discussing BESS operations and safety issues. However, he was called away and needed to leave immediately, but requested a follow up opportunity. KCE made numerous efforts to schedule a follow up meeting with Chief Horr, KCE representatives and the subject matter expert, Fire and Risk Alliance. The invitation for such meeting has not yet been accepted. KCE will continue to make efforts to establish future meetings and trainings to allow local officials to have the best knowledge available related to this topic.

3. If the project is approved, identify all permits necessary for construction and operation and which entity will hold the permit(s)?

Local building and electrical permits from the Town of Granby will be needed prior to commencement of construction. It is also anticipated that the project will need to secure a CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. There is no direct fill within wetlands or watercourses proposed for the project. Therefore, federal permitting under the Clean Water Act is not being triggered.

KCE CT 11, LLC will hold the General Permit and the selected EPC contractor will hold the local permits.

4. What is the estimated cost of the project? How are costs recovered? Is the energy being purchased at market rates?

KCE objects to this interrogatory to the extent it seeks information that is beyond the scope of a petition to declaratory ruling as provided for under the Public Utility Environmental Standards Act, Conn. Gen. Stat. § 16-50g, et seq ("PUESA"). In addition, KCE believes that its cost information consists of trade secrets that are protected from disclosure under Connecticut's Freedom of Information Act, Conn. Gen. Stat. § 1-200 et seq. ("FOIA"). Subject to the foregoing objection, KCE replies that it has provided the Council with a Motion for Protective Order and accompanying Affidavit of Taylor Quarles, which has been sent to the Council in a separate filing and contains an answer responsive to this interrogatory.

5. Referencing page 2 of the Petition, was the project selected for the state Energy Storage Solutions Program? If yes, when was the project selected and what program incentives apply to the project?

The KCE CT 11 project is a proposed stand-alone, front-of-the-meter (FTM) energy storage system that holds a capacity supply obligation (CSO) for ISO NE. KCE CT 11 is not currently eligible for the Energy Storage Solutions Program, which provides incentives for behind-the-meter (BTM) energy storage systems for residential, commercial and industrial electric customers. However, KCE anticipates that the CT PURA may initiate a program to incentivize front of the meter, distribution-connected energy storage systems in the future. If such a program becomes available, KCE would seek to enroll this project.

6. What is the term of the agreement for KCE to provide energy storage, and with which entity? If the facility operates beyond the terms of such agreement, will KCE decommission the facility or seek other revenue mechanisms?

KCE objects to this interrogatory to the extent it seeks information that is beyond the scope of a petition to declaratory ruling as provided for under the PUESA. KCE may pursue other revenue mechanism options at the end of the agreement and may possibly extend the life of the system. If such a revenue mechanism is not available at the end of the agreement period, KCE would decommission the system at that time.

7. If KCE transfers the facility to another entity, would KCE provide the Council with a written agreement as to the entity responsible for any outstanding conditions of the Declaratory Ruling and quarterly assessment charges under CGS §16-50v(b)(2) that may be associated with this facility, including contact information for the individual acting on behalf of the transferee?

If KCE transfers the facility to another entity, KCE will provide notice of the entity responsible for management and operations of the Project and any outstanding conditions of the declaratory ruling and said entity's contact information.

Proposed Site

8. Describe the surrounding land uses adjacent to the host parcel.

The properties to the north of the project are within the commercial (C2) zone and are currently the location of multiple commercial businesses. West of the property and Salmon Brook Street (Route 202), there are multiple residences and businesses within the Neighborhood and Commercial Transition Zone (Z1). The property to the south and east of the Project is the location of a commercial greenhouse facility (no longer in use) within the Economic Development Zone (ED) and has a vegetated buffer along the project property of approximately 200ft-400ft.

9. What are the benefits of the proposed site location? For example, is the proposed site located within a "load pocket" area or on the "grid edge"?

The site has access to the distributed grid where there is currently capacity to operate a 4.9MW BESS. A BESS located here will provide distributed grid reliance while also allowing further adoption of renewable energy and use of this energy at the highest demand periods. The site allows for a short distance from the project to the Point of Interconnection (POI) with a simple interconnection method.

KCE consulted with Eversource to identify the best point of interconnection, which was identified as Salmon Brook Street. The consultation and interconnection study also confirmed assumptions for system capacity at this location.

The site is located in a commercially zoned area and will make beneficial use of commercial land that does not have other high value uses. The site property is bounded by commercial properties on all sides and is not located within close proximity to residential areas. Vegetative screening is present and will be left on all sides of the project site with the exception of the clearing required for the access road at the generation line corridor. Therefore, the project will not be highly visible and sound emissions will have limited impacts. Once established, the project will draw little notice or attention while providing benefits to the State of Connecticut.

10. Referencing Exhibit A, Sheet C-2.0 Layout and Materials Plan, what is the length of the existing access drive extending from Mill Pond Road to the point where it would merge with the proposed access drive for the battery energy storage facility (BESF)? Would the width of the existing access easement be sufficient for construction vehicles?

The access and utility easement is deeded and recorded in the Granby Town Records in Volume 297 Page 545 and Volume 297 Page 543. Distance from Mill Pond Rive to the project parcel boundary is 268.01 total width of 34.15 feet. The easement requires that the parties with easement rights execute a shared use and maintenance agreement. The affected parties have met and agreed to terms that are currently being drafted for a legal agreement. Those terms include the removal of the existing traffic island at the entrance from Mill Pond Drive to the easement area. VHB performed a turning radius study using fire trucks larger than those owned by the Town of Granby and the appropriate sized construction and delivery trucks. This study found the vehicles were able to properly navigate the entrance and easement even with the traffic island in place. However, removal of the traffic island will improve accessibility. Please see Attachment C for a copy of the study.

11. Referencing Exhibit A, Sheet C-2.0 Layout and Materials Plan, what is the length of the proposed 24-foot wide access drive for the BESF? Would the proposed access easement be sufficient for construction vehicles?

See response to Question 10. The length of the proposed 24 foot-wide access drive to the fenceline of the BESF is approximately 200 feet. A proposed access easement is not required for the construction vehicles, but VHB has performed truck turning analyses to confirm that tractor trailers can access the BESF and turn around during construction.

12. Please submit a copy of the deeded access easement from Mill Pond Drive that is referenced on Petition p. 4.

The access and utility easement are deeded and recorded in the Granby Town Records in Volume 297 Page 545 and Volume 297 Page 543. Copies of the deeds have been included as Attachment D.

13. Provide the distance, direction and address of the nearest residential property line from the proposed BESF.

The nearest residential property line at 105 Salmon Brook Street is approximately 396 feet away from the northwest corner of the BESF fenceline.

14. What is the distance direction and address of the nearest residential structure from the proposed BESF?

The nearest home at 105 Salmon Brook Street is approximately 478 feet away from the northwest corner of the BESF fenceline.

15. Referencing Petition Figure 2, provide the distance of the proposed facility from the existing solar facility on the adjacent parcel to the east. Are there any standards or recommendations for a minimum distance between the two facilities? Explain.

The adjacent parcel to the east of the project property is not an existing solar facility but the location of a commercial greenhouse facility with a hoophouse that is no longer in use. There are no industry standards for minimum setbacks from the adjacent property or solar facilities, generally.

Proposed Facility and Associated Equipment

16. Referencing Petition pp. 3 and 4, provide the number of battery racks per battery storage unit, the number of battery modules per battery rack and the number of battery cells per battery module.

There are 12 battery racks per container, 4 battery modules per rack and 104 battery cells wired in series per module.

17. Referencing Petition pp. 4 and 5, provide the dimensions (e.g. length, width and height) of the control house.

The equipment building will be approximately 12' long, 10 feet wide and 8 ft high. The final dimensions may vary by a small amount based on final project design and equipment availability.

18. Referencing Petition Exhibit A – Sheet C-2.0, identify where within the compound the control house would be located.

Please refer to the petition Exhibit A, page C2.0 of the site plans. The control house is labeled as "equipment building" on the plans.

19. Referencing Petition Exhibit A – Sheet C-2.0, list the equipment that would be installed on each equipment pad.

Please refer to the permit application Exhibit A, page C2.0 of the site plans.

Energy Output

20. How will the facility be dispatched and by whom?

Notwithstanding anything to the contrary required for participation in a potential future PURA program, the facility will be operated in response to direction from ISO-NE's dispatch instructions. Those instructions will be based on bids and offers submitted by KCE and will permit KCE to respond to ISO-NE price signals regarding the needs of the wholesale electricity system.

21. When would the facility be dispatched (actively and passively) and for what duration?

Notwithstanding anything to the contrary required for participation in a potential future PURA program, the facility will be operated in response to direction from ISO-NE's dispatch instructions. Those instructions will be based on bids and offers submitted by KCE and will permit KCE to respond to ISO-NE price signals regarding the needs of the wholesale electricity system.

22. Is the facility required to reserve any battery storage capability for backup power? Where would the backup power be used and by whom?

Backup power for SCADA and peripheral devices are provided from a UPS (uninterrupted power supply) powered by an external battery supply in the control house. At this time, the project is not designed or configured to provide third party back-up power or any service specific to one electric customer. The facility may hold power in reserve based on price signals provided by ISO-NE in energy and ancillary services markets.

23. What is the cumulative efficiency of the discharge output (e.g.- the BESF can only discharge 90% of its stored capacity)?

The cumulative efficiency of the discharge output 96.95%.

24. When would the facility recharge (ex. off-peak hours)? What factors are considered for the recharge interval? Explain.

The facility recharges when commanded to do so by the Qualified Scheduling Entity (QSE), based upon electrical needs of the grid. Some examples of use cases include energy arbitrage (charging while grid energy is too high relative to load) or frequency response (charging in response to frequency deviation and bringing frequency back to nominal ranges).

Per the results of the interconnection study and the draft interconnection agreement with Eversource, the project will be subject to the following charge limitations:

• Per the following table, in the summer months (June, July & August) the maximum Charge Rate from 10:00-23:00 will be 0.1 MW. All other times the Maximum Charge Rate will be 4.99 MW.

Charging Schedule				
Charge Limiting Schedule	Maximum Charging Rate (MW)			
	00:00 – 10:00	10:00 – 12:00	12:00 – 23:00	23:00 – 00:00
Spring (March, April, May)	4.99	4.99	4.99	4.99
Summer (June, July, August)	4.99	0.1	0.1	4.99
Fall (Sep, Oct, Nov)	4.99	4.99	4.99	4.99
Winter (Dec, Jan, Feb)	4.99	4.99	4.99	4.99

25. What storage capacity losses are anticipated for ambient temperatures below freezing?

Storage capacity losses anticipated for below freezing temperatures are primarily energy utilized due to heating the containers to normal temperature operating ranges. For example, if the BESS is in an idle state, it would be using energy to power its heat exchangers for keeping batteries at optimal temperatures.

26. Is the 4.9 MW AC output based on the point of electrical interconnection?

Yes, the project was established in the current location due to system capacity availability data from Eversource, and further consultation and study performed in cooperation with Eversource to identify the capacity of the system at this location. KCE determined that 4.9 MW was the appropriate size for the project at this location. This information was confirmed during the interconnection study.

27. Referencing Petition p. 4, the facility would have a maximum export capacity of 4.9 MW with a four-hour duration allowing a maximum delivery of 19.96 MWh. The eight proposed battery containers have an energy storage capability of approximately 4.7 MWh each or approximately 38.4 MWh in total. Is the remaining balance of approximately 18.44 MWh a reserve storage, due to electrical losses, to prevent a full depletion of the batteries or other reason(s)? Explain.

The additional energy balance of approximately 38.4 MWh is due to the following factors: electrical losses, ideal depth-of-discharge operating regions, and to maintain 19.96 MWh at the Point of Interconnection (POI) for the lifetime of the project. When operating a BESS, a proper depth-of-discharge average operating region can help extend the life. Batteries naturally degrade over time. In other words, on year 10 of the system, for example, the state-of-health of the system can be 80% of the original rating compared to year 1. This additional energy will ensure 19.96 MWh can be maintained at the POI throughout the project lifetime.

28. Referencing Petition pp. 2 and 3, what are KCE's capacity supply obligations to ISO-NE?

On February 5, 2024, KCE CT 11 participated in the ISO NE Forward Capacity Auction 18 and won capacity supply obligations for 4.9MW for delivery during the Capacity Commitment Period June 1, 2027 through May 30, 2028.

29. How is the proposed facility consistent with the objectives of the state Conservation & Load Management Plan?

Similar to the CT Energy Storage Solutions Program, The Conservation and Load Management Plan (C&LM Plan) is an energy efficiency and demand management investment plan that develops programs and initiatives to help Connecticut residents and businesses become more energy efficient. The activities outlined in this plan are directly related to residential, commercial, and industrial energy customers and users. The KCE CT 11 project and any other stand-alone BESS participating on wholesale energy markets cannot directly participate in this program. However, the noted benefits provided by this project address the same needs and goals of the C&LM of shifting energy on the system from periods when it is most abundant to periods when it is in greatest demand and servicing system load.

30. Would the BESF utilize power for cooling and heating of the battery packs? If yes, would this power source be from stored energy or from the local distribution system?

Yes. The BESS sources energy from itself to supply energy to its HVAC. In this case, the energy would flow from the battery cells, through the inverter and into the auxiliary transformer. We've found this is more reliable than sourcing energy from the local distribution system.

Electrical Interconnection

31. What is the feasibility of alternative interconnection routes such as via the existing and proposed access drive to an electrical distribution line on Mill Pond Road?

KCE consulted with Eversource on alternative interconnection points within the vicinity of the project. In particular, KCE asked if interconnecting to the line running down Mill Pond Drive might be possible. Joe Debs, Eversource Distributed Resources Program Manager, responded by stating that interconnecting on Mill Pond Drive would not be a possibility due to the line set up and structure, and the best and only interconnection point would be the Eversource 23 kV NE Simsbury 43F3, located on Salmon Brook St.

32. Is the existing electrical distribution on Salmon Brook Street three-phase, or would it have to be upgraded from single-phase to three-phase?

The Eversource NE Simsbury 43F3 circuit, located on Salmon Brook St., is a three phase 23 kV circuit and no further upgrades are required as a result of the project interconnection at this location.

33. Referencing Petition p. 6, did the System Impact Study determine whether the project would have a cumulative impact on facilities used for the provision of regional transmission service?

The system impact study showed the project would have no adverse impact on the system when operated within the parameters defined in the study. The Draft Interconnection agreement includes these operational parameters and the related control systems.

System Impact Study Conclusion: "KCE 11, LLC has applied to interconnect 4990 kW of inverter-based battery storage to the NE Simsbury 43F substation via the 43F3 feeder. This project is approximately two miles from the NE Simsbury 43F substation. The project must adhere to a charging schedule defined in Table 3 of this report to avoid exceeding the N-1 substation thermal limit of the NE Simsbury 43F substation during peak summer load. If the battery adheres to the operational limits, the project will not have any adverse impacts to power quality, or thermal limits. If the project adheres to the operational limits, the required circuit upgrades will be a new service with a primary meter and a recloser, and an RTAC to enforce the charge and discharge schedule."

34. What is the status of the final interconnection agreement referenced on p. 6 of the Petition?

KCE has provided Eversource with the required technical data for the proposed BESS equipment changes from Sungrow to Canadian Solar with the same export limit and operational parameters. The revised data is under review. Upon approval, Eversource will issue a revised Interconnection Agreement to KCE for final review. Based on past conversations with Eversource KCE expects its changes will be approved and the interconnection agreement will include terms agreed to in July. The revised agreement is expected within the next month and KCE will execute the agreement after final internal review near the end of this quarter, 2024.

35. Referencing Petition pp. 4 and 5 KCE notes that "The Project inverters will export energy at 23 kV, so there will be no need for an additional main step-up transformer or substation." However, according to Petition Exhibit B, Equipment Specifications Sheet, references a 34.5-kV operating Grid voltage. Explain how the 23-kV output is obtained from the proposed facility.

The project will be using two Power Electronics NZ, Freemaq PCSK FP4390K inverters which will be set to export a maximum of 4.99 MW at 23kV.

36. Referencing Petition p. 5, would the step up transformer paired with each inverter step-down the 23-kV AC grid voltage and then convert it to DC to recharge the batteries? Explain.

Yes, these transformers can be thought of as bi-directional. Converting the local grid voltage to the inverter-level voltage while charging and converting the inverter-level voltage to grid voltage while discharging. The inverter is also bi-directional and will converter AC to DC and DC to AC depending on the BESS operating mode.

37. Provide the distance of the interconnection route from the switchgear to the Eversource utility distribution pole. Identify the Eversource utility distribution pole.

The distance from the project to the POI is approximately 550 ft. The nearest pole to the POI is the Connecticut Light and Power Pole # 37.

38. Referencing Petition p. 4, and Exhibit A Sheet C-2.0, how many poles in total would be required for the interconnection from the facility to Salmon Brook Street. What is the height of the utility poles above ground level after installation? Provide the distance apart of each pole.

At this time, Eversource states that the new service will consist of approximately three new poles, a recloser, a primary meter, and a real time automation controller (RTAC). KCE anticipates installing approximately 2 additional poles to run the line from the Eversource Poles to the project.

Per the Interconnection Agreement, within 10 days of executing the agreement, KCE will file a New Service Request. Upon receipt of the New Service Request, Eversource will begin full design of the interconnection with 100% design being completed 7 months prior to the In-Service Date. The final interconnection design, and the number and placement of poles will be according to Eversource standards and requirements. The exact dates of these activities are dependent upon Eversource issuing the final revised Interconnection Agreement.

A schematic layout of proposed utility poles has been added to the site plans for benefit of the photo-simulations prepared with the understanding that final pole locations will be determined through ongoing consultation with Eversource. It is estimated that approximately three new poles would be needed for project interconnection and an additional two poles would be needed to span the onsite wetland (five total).

39. Would the facility be able to automatically disconnect from the grid in the event of a fault or other electrical disturbance? Explain.

Once the project is operational, it will be monitored 24/7 by a NERC compliant remote operations control center (ROCC). The project will be equipped with a Power Plant Controller (PPC),

informing automated procedures and personnel through supervisory control and data acquisition (SCADA) systems. The PPC has the ability to disconnect the plant from the grid in case of a fault or abnormal electrical disturbance.

Public Health and Safety

KCE Comment to this Section of these Interrogatories:

The following series of questions from the Council and similar questions contained within the Town's Interrogatory Requests hint that BESF fires are typical and should be expected. We understand and appreciate the concerns regarding fire safety, particularly in relation to BESFs, however, it's important to note that the risk associated with BESF fires is not significantly higher than the risks posed by other common community hazards, such as fires in homes, businesses, and facilities with non-monitored fuel tanks, oil and solvent storage, and electrical systems. There is no documented reason why permitting authorities or communities consider these facilities any more dangerous than homes and businesses with plain everyday use and activities and with non-monitored fuel tanks, battery systems, oil and solvent storage, etc.

BESF Safety Performance and Data:
BESS currently account for at least 2% of the total capacity on the U.S. power grid, with a failure rate comparable to or lower than traditional generation facilities like coal or natural gas plants, which often operate with combustible fuels.

Key data points from the Electric Power Research Institute (EPRI) underscore the safety and reliability of BESS:

- Low Failure Rate: The failure rate for BESS in 2023 was under 0.05%, which is exceptionally low.
- Decreasing Failure Rates: Failure rates have been consistently decreasing, particularly for systems deployed after updated safety regulations were put in place in 2022.
- Limited Incidents: The EPRI's database of BESS failure events, which includes incidents during transportation and pre-installation, has reported relatively few events worldwide since data collection began in 2011. If we exclude pre-operation failures, the rate is even lower.

For more details, you can reference EPRI's BESS Failure Incident Database.

Risk Comparison with Other Community Risks:
It is important to acknowledge that fire risks exist in all communities and stem from a variety of sources—homes, businesses, and even non-monitored fuel storage tanks or electrical systems. While fire is a critical safety concern, the risks associated with BESFs should not be viewed in isolation. In fact, BESFs are designed with advanced safety systems to prevent fires, including active monitoring and prevention technologies. Additionally, these facilities are spaced apart from other structures, reducing the potential for spreading any fire that might occur.

Comparatively, many other structures in the community, such as residential or commercial buildings, are often located closer together and do not have the same level of safety oversight or prevention systems in place. In terms of fire prevention and risk mitigation, BESFs are among the most rigorously designed and monitored facilities.

While fire is a significant risk to any community, the risk posed by BESFs is no higher—and in many cases lower—than the risks posed by other common hazards that we manage daily. The systems in place at BESFs represent a proactive approach to safety that minimizes the likelihood of incidents, and the data supports that the performance of these systems is improving over time. KCE is committed to ensuring that the BESF operates safely and responsibly, and we welcome further discussion to address any concerns and demonstrate the robust safety measures in place.

40. Would the project comply with the current National Electrical Code (NEC) and the National Electrical Safety Code (NESC)? What codes and standards apply to battery storage facilities?

Yes, the project will comply with the 2020 NEC with Connecticut amendments as required by the Connecticut Building Code (CBC). The Connecticut State Fire Prevention Code (CSFPC) provides requirements for BESF and will apply to this facility.

41. Referencing the safety section on page 2 of Exhibit B and Petition p. 15, would the aerosol-based suppression system be installed within the battery cabinets? What type of fire suppression media can be applied to directly to a battery fire?

The battery cabinets will be installed without the optional aerosol-based suppression system. Fire & Risk Alliance (FRA) does not recommend direct suppression of battery fires due to the unique fire hazards associated with lithium-ion batteries (i.e. deep seated, shielded thermal event). Water applied directly to the outside of an outdoor rated battery container provides minimal benefit and may generate water run-off concerns and the potential for water damage to non-involved batteries. Industry guidance advises that batteries should be allowed to burn while exposure protection is provided when required. If manual firefighting tactics are used, water is considered the preferred agent for managing lithium-ion battery fires, suppressing nearby combustibles/vegetation, cooling nearby exposures, and controlling smoke. Other traditional fire protection engineering suppression methods, such as gaseous agents (CO2, Halon), dry chemical suppressants, aerosols, or foams, are unlikely to be effective and no independent, large-scale testing has been performed demonstrating that these suppression agents are effective for utility scale battery cabinets. Response tactics will be outlined in the Emergency Response Plan (ERP) during site development and KCE will facilitate three rounds of training, provided by FRA, to ensure fire department familiarity with the hazards and response tactics. KCE will continue to provide annual training once the facility is operational.

42. What are the typical causes of a battery fire? What is the typical duration of a battery fire before it self-extinguishes?

Battery fires are typically caused by electrical abuse (i.e. short circuit, overcharge, etc.), mechanical abuse (i.e. physical damage, excessive heating both internally and from external fire sources, etc.), or manufacturing defects which cause a cell to go into thermal runaway. Thermal runaway is a chemical reaction which results in an uncontrollable temperature increase within a battery cell and can result in a release of flammable gases from the battery cell. A single battery cell gas release and/or fire duration typically is in the range of 1-3 minutes.

43 Referencing Petition Exhibit 12, p. 30 what mechanisms are in place to reduce the possibility of a fire from spreading from one battery unit to an adjacent battery unit?

The SolBank3.0 has multiple layers of safety provided to maintain optimal operating conditions and prevent any thermal runaway event from occurring. These include a battery management system (BMS), a thermal management system (TMS), and passive barriers to prevent a full container fire event. In the unlikely event of failure and a fire in one container, the BESS containers have a physical separation distance to prevent the likelihood of fire propagation between containers. These separation distances are determined through fire testing and other engineering analyses, which evaluates the likelihood of a fire propagating from one BESS container to adjacent containers.

See also, KCE's response to the Town's Interrogatory No. 47.

44. Referencing Petition Exhibit 12 pp. 48-50:

a) Would smoke from a battery unit fire be considered hazardous and require notification to state and local authorities?

Smoke from all fires is inherently composed of hazardous products of combustion and soot. Because of this, all fires may pose a risk to first responders, however, battery fires do not release any unique or atypical fumes which first responders do not typically encounter in common fire scenarios, such as a house or vehicle fire.

For instance, as part of the SolBank3.0 UL 9540A product testing, the cell is forced into thermal runaway and the gases vented from the cell are captured inside an enclosure. These gases are then identified and quantified. The UL 9540A test identified carbon monoxide (CO) and carbon dioxide (CO2) as nonflammable toxic gases that are vented from the battery during a thermal runaway event. CO and CO2 are common byproducts that are released in all fires. Other toxic gases many times attributed to battery fires, such as hydrogen chloride (HCL), hydrogen cyanide (HCN), and hydrogen fluoride (HF), were not detected.

In addition, independent research, included in Attachment E attached hereto, has shown that BESS fires do not release unique or atypical fumes. According to a New York State Energy Research &

Development Authority (NYSERDA) study, the average toxicity level of fumes from a BESS fire is similar to those from burning plastic-based household materials such as sofas, mattresses, or office furniture (Con_Edison_-_NYSERDA_BESS_Final_Report_-_Feb- Considerations for ESS Fire Safety, Rev. 4, Feb. 9, 2017). A copy of that report can be found at: file://brpt-vnx-cifs/users/lhoffman/Downloads/20170118-ConEd-NYSERDA-Battery-Testing-Report%20(1).pdf.

Real world BESS fire events have also demonstrated that there are no measurable toxic hazards off site. Real time air monitoring conducted during previous BESS events (SDGE Battery Fire Air Quality Report and Canyon County AHJ-Air Monitoring Report-18OCT23) have found that "there were no detections observed during real-time air monitoring that exceeded health-based action levels for chemicals potentially associated with the fire." A copy of that Air Quality Report can be found at: https://www.escondido.gov/DocumentCenter/View/6716/SDGE-Battery-Fire-Air-Quality-Report-PDF?bidId=.

Lastly, understanding this is a serious concern for not just first responders, but the general public in this area, FRA is currently performing a Plume Study which will evaluate the extent of toxic gases produced from a battery failure event. Based on experience with these analyses, and the setback distances already built into the BESF site, FRA is confident the results of the plume analysis will demonstrate the area of impact is limited to the BESF site. In other words, toxic gases in quantities dangerous to the general public will not impact individuals outside the BESF perimeter fence, even in worst-case battery failure event scenarios. These results will also be used to coordinate appropriate response procedures, setback distances (i.e., minimum approach distances), and PPE requirements with the local first responders.

b) Would smoke from a battery unit fire require area residences to stay in place or evacuate? If yes, who would determine if these actions are necessary and who ensures notifications have been made?

The nearest residence is located approximately 400 ft from BESF equipment. As described above in KCE's response to the Council's Interrogatory No. 44a, based on product testing of the battery cells themselves, independent testing on BESS, and experience with previous real world BESS fires, the potential impact of toxic gases from a BESS fire event is anticipated to be limited to the site. Furthermore, FRA is performing a plume study, which will evaluate the extent of toxic gases produced from a battery failure event. Based upon FRA's experience with these analyses, and the setback distances incorporated into the design of this BESF, FRA anticipates the results will demonstrate that the potential impact of toxic gases will not extend outside the perimeter of the BESF. These results will also be used to coordinate appropriate response procedures, setback distances (i.e., minimum approach distances), and PPE requirements with the local first responders during the development of a site-specific, emergency response plan.

c) Would the final Emergency Response Plan contain a map with addresses of all properties requiring evacuation and/or isolation for certain types of emergencies? What methodology was used to determine the size of the evacuation and isolation zones?

As described above in KCE's response to the Council's Interrogatory No. 44a, based on product testing of the battery cells themselves, independent testing on BESS, and experience with previous real world BESS fires, the potential impact of toxic gases from a BESS fire event is anticipated to be limited to the site.

However, to provide guidance to local first responders and develop site-specific emergency response procedures, FRA is performing a plume study that will evaluate the extent of toxic gases produced from a battery failure event. These results can be used to inform evacuation decisions. Based on the forementioned analysis, evacuations are not recommended. KCE will continue to work with local emergency responders in development of the ERP and make adjustments based on feedback KCE receives to ensure all required information has been included.

d) What type of emergency would require the evacuation of all persons downwind of the BESF? To what distance from the BESF would evacuation take place in the event of a fire?

As described above in our responses to question 44a, based on product testing of the battery cells themselves, independent testing on BESS, and experience with previous real world BESS fires, the potential impact of toxic gases from a BESS fire event is anticipated to be limited to the site. Furthermore, FRA is performing a plume study, which will evaluate the extent of toxic gases produced from a battery failure event. Based upon FRA's experience with these analyses, and the setback distances incorporated into the design of this BESF, FRA anticipates the results will demonstrate that the potential impact of toxic gases will not extend outside the perimeter of the BESF. These results will also be used to coordinate appropriate response procedures, setback distances (i.e., minimum approach distances), and PPE requirements with the local first responders during the development of a site-specific, emergency response plan.

e) Provide an aerial image showing all properties within the evacuation and isolation zones.

Please refer to KCE's response to the Council's Interrogatory No. 44c. Based on that response, there are no anticipated evacuation or isolation zones.

45. Referencing Petition page 16, how much oil will each transformer hold, and will there be alarms (such as low-level oil alarms) that can alert monitors of a leak?

The transformer uses a dielectric heat transfer fluid made from 100% vegetable oil for use in electrical transformers and other electrical equipment. Each transformer holds approximately 695 gallons of oil. The vegetable-based dielectric oil provides improved fire safety over mineral oils. The oil is readily biodegradable with over 99% biodegradation within 28 days. The oil is non-hazardous and non-toxic in soil and water. The vegetable-based oil-filled medium voltage transformers are equipped with port sensors that include a low oil level trip and alarm when oil drops below the minimum level required, which would alert the operations team to potential issues and to perform a visual inspection.

Under normal operating conditions there should not be any release to the environment. However, in the case of an accidental release to the environment the appropriate spill response measures will be taken per the site specific SPCC plan to ensure that any oil that escapes is appropriately mitigated in accordance with the SPCC plan. The measures will help to mitigate the potential for the vegetable oil entering any catch basins, wetlands, or streams in the area. Any oil that infiltrates soils onsite is biodegradable, non-hazardous, non-toxic and will be cleaned up in accordance with the site-specific SPCC plan. Any oil on impervious surfaces will properly be cleaned up in accordance with the site-specific SPCC plan. All soiled absorbent materials and collected oil will be disposed of in accordance with all State and Federal regulations and the site-specific SPCC Plan.

It should be noted these transformers with leak detection and alarm safety features represent less of a contamination threat to Granby than the various businesses located within the Town Aquifer Protection Zone that have used-oil storage facilities without such leak detection and alarms. A partial list of examples is provided in Attachment F to these responses.

46. Referencing Petition Exhibit G – Acoustic Analysis, will the system generate noise during charging of the facility, discharge of the facility, neutral conditions (i.e. neither charging nor discharging), or all three? Was the modeling performed for the worst-case scenario, and does such scenario also take into account any fans for the cooling system? Explain.

The sound level modeling represents the worst-case scenario for the project, which includes all eight battery container systems operating at full load with the cooling system also running at full capacity. The inverters and transformers were also modeled under full load conditions. The project will be operated within the parameters of the sound modeling.

47. Is a gap proposed between the bottom of the fence and grade? What animal deterrents are in place for small animals, such as nesting birds, chewing rodents, etc.?

During Council proceedings for previous BESS projects, KCE has submitted designs to the Council which followed examples of recent solar development practices, which include a 6-inch gap at the bottom of the fence to allow the passage of small animals. KCE received feedback with these past projects that this fence design was not preferred. NDDB had been consulted for past

projects and did not request such a gap in the perimeter fence. KCE prefers to have the fence secured to the ground to deter any pests from entering. Additionally, the BESS containers/enclosures are designed prevent small animals from entering the containers where they may chew or cause damage.

48. How would first responders access the site? Would a secondary access point be necessary for first responders?

Emergency responders will access the project area through the access drive as shown on the site plans. No secondary access point is planned or necessary.

49. Are there municipal fire water sources located in the immediate vicinity of the proposed project for response tie-in in the event of a fire? Explain.

An existing fire hydrant is located on the corner of Mill Pond Drive and the project access easement is approximately 270 feet from the entrance to the specific project property. The northwest fenceline for the BESF is approximately 470 feet from the existing hydrant.

50. Would operation of the BESF cause discernible vibrations at off-site locations?

No.

51. Provide the distance and direction of the nearest airport from the proposed facility.

Based on review of the FAA Circle Search tool for airports, the nearest federally-obligated airport is Simsbury Airport, which is located 1.1 miles the southeast of the project.

52. Is there a standard or recommended minimum distance of a BESF to a publicly accessible area?

The CSFPC requires a minimum of 10 ft distance between BESF battery containers and lot lines, public ways buildings, stored combustible materials, hazardous materials, high-piled stock and other exposure hazards not associated with the electrical grid.

53. What type of media and/or specialized equipment would be necessary to extinguish a battery storage/electrical component fire? Specifically, based on any history of fires at installed battery systems, is there specialized firefighting equipment necessary to

extinguish a Lithium-ion battery fire? Is there a concern with runoff and cleanup caused by fire extinguishment?

No specialized equipment is necessary to respond to a battery fire. Fire department response guidance typically involves staging a safe distance from the event and providing cooling to adjacent exposures when necessary, as described above in KCE's response to the Council's Interrogatory No. 41. Water is the preferred agent when providing defensive firefighting tactics to provide cooling to adjacent exposures.

Real world BESS fire events have not required specialized equipment to respond to the events. During those events, fire department response has been to stage equipment a safe distance from the event, providing cooling to adjacent exposures when necessary with water, and act defensively, as described above in our responses to KCE's response to the Council's Interrogatory No. 41.

Real world BESS fire events have not found contaminants in levels dangerous to people. For instance, as referenced in the response to Interrogatory No. 44.a. above, an analysis was conducted on fire water runoff following the Escondido fire event and concluded "the water quality is within acceptable limits for most contaminants, especially when considering public health standards for drinking water. The low levels of metals detected, combined with the absence of more toxic elements like lead and cadmium, suggest that the water poses minimal risk both to human health and the environment" (SDGE Water Run-Off Report, *See*, Attachment G). As discussed above in KCE's response to the Council's Interrogatory No. 41, applying water directly to a distressed battery container is not recommended. It is recommended that water is only applied to adjacent exposures for cooling purposes.

54. What are the industry Best Management Practices for Electric and Magnetic Fields at battery storage facilities?

BESS EMF emissions are expected to be similar to those of transmission substations with respect to 60-Hz magnetic fields, however, the sources inside the facility are not generally substantial sources of 60-Hz magnetic fields outside the facility. The transmission and distribution lines entering and exiting the facility are the dominant sources of EMF at the property line and beyond. In the case of the KCE CT 11 project, the generation tie line that is connecting the project to the POI on Blair Hill Rd. has the same 23kV rating as the existing roadside line and will not create any greater level of EMF than already exists at this location or across most areas of the state.

This conclusion is confirmed by the following two reports. In addition, the World Health Organization has determined that there is no evidence of health concerns from low levels of EMF.

1. National Institute of Environmental Health Sciences, National Institutes of Health, EMF, Electric and Magnetic Fields Associated with the Use of Electric Power, June 2002, available at http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf.

2. National Research Council, Research on Power-Frequency Fields Completed Under the Energy Policy Act of 1992, National Academy of Sciences, 1999, available at http://books.nap.edu/openbook.php?isbn=0309065437.

Because EMF is expected to be minimal at the site, and due to the lack of evidence that this is a significant issue from the forementioned studies, there are no industry BMPs for EMF.

55. Please describe how the proposed facility would comply with the Council's White Paper on the Security of Siting Energy Facilities, *available at*: https://portal.ct.gov/-/media/CSC/1_Dockets-medialibrary/Docket 346/whitepprFINAL20091009114810pdf.pdf

BESS project security is very similar to methods employed for transmission substations and includes the use of a locked security fence and recording security cameras. The project will comply with the state compliance regulations as described under Compliance on page 4 of the White Paper on the Security of Siting Energy Facilities.

Environmental Effects and Mitigation Measures

56. What is the distance from the limit of disturbance to the wetland boundaries?

The distance from the wetland boundary to the limit of clearing for the BESF is 30 feet. The nearest distance from wetlands to the BESF fenceline itself is 86 feet. The interconnection route will require the clearing of some trees within the northwest boundary of the wetland. No structures will be constructed within the wetland but will be located on either side of the wetland with overhead wires spanning the resource. No direct fill is proposed within wetlands.

57. Referencing Petition p. 7 and Figure 7, provide the total area of farmland soils within the host parcel. Provide the total area of farmland soils that would be impacted by the construction and operation of the proposed facility.

There is approximately 2.5 acres of prime farmland within the project parcel, per the US Department of Agriculture Natural Resources Conservation Service. Of the 2.5 acres of mapped prime farmland soils, approximately 1.6 acres will be impacted by the construction and operation of the proposed facility.

58. Are there any wells on the site or in the vicinity of the site? If so, how would KCE protect the wells and/or water quality from potential construction and operational impacts?

While it is anticipated that the nearby residences are served by private wells based upon a review of Connecticut Department of Health (CTDPH) Public Water Supply Map, attached hereto as

Exhibit H, there are no known wells in close proximity to the proposed battery facility and the battery facility is sited approximately 478 feet from the nearest residence. Notwithstanding that fact, KCE intends to meet the State's stormwater quality standards for the Project and will apply for a General Permit.

59. Referencing Petition pp. 7 and 9, KCE notes that up to 2 acres of tree clearing would be required. Of that acreage of tree clearing, indicate how many acres would be cleared and grubbed versus cleared only (i.e. not grubbed).

It's estimated that 1.6 acres will be cleared and grubbed for the final operation of the proposed facility, including the access road, BESF, and associated stormwater basin features.

60. Referencing Petition p. 8, provide a copy of the vernal pool survey, if available.

Results of the vernal pool survey conducted on April 10, 2024 can be found in Section 4 of the Natural Resources Survey Report found in Exhibit D of the petition. No vernal pools were identified within the project property.

61. Please submit photographic site documentation with notations linked to the site plans or a detailed aerial image that identify locations of site-specific and representative site features. The submission should include photographs of the site from public road(s) or publicly accessible area(s) as well as Site-specific locations depicting site features including, but not necessarily limited to, the following locations as applicable:

    For each photo, please indicate the photo viewpoint direction and stake or flag the locations of site-specific and representative site features. Site-specific and representative site features include, but are not limited to, **as applicable**:

    1. wetlands, watercourses and vernal pools;
    2. forest/forest edge areas;
    3. agricultural soil areas;
    4. sloping terrain;
    5. proposed stormwater control features;
    6. nearest residences;
    7. Site access and interior access road(s);
    8. utility pads/electrical interconnection(s);

9. clearing limits/property lines;

10. mitigation areas; and

11. any other noteworthy features relative to the Project.

A photolog graphic must accompany the submission, using a site plan or a detailed aerial image, depicting each numbered photograph for reference. For each photo, indicate the photo location number and viewpoint direction, and clearly identify the locations of site-specific and representative site features show (e.g., physical staking/flagging or other means of marking the subject area).

The submission shall be delivered electronically in a legible portable document format (PDF) with a maximum file size of <20MB. If necessary, multiple files may be submitted and clearly marked in terms of sequence.

A photo log exhibit has been prepared and is attached hereto as Attachment H.

62. Provide a photo-simulation of the proposed facility.

A photo-simulation has been prepared portraying a visualization of the project from both Salmon Brook Street to the west and from the parking area to the north, and is attached hereto as Attachment H.

63. Would the existing vegetative barrier remain between the plaza and the site?

The Project intends to keep the existing vegetative barrier between the plaza and the site to the maximum extent practicable. As the project design has advanced, the current buffer between the property line, that is equal to the tree line, and the limit of clearing is approximately 55 feet. *See*, Attachment I.

Facility Construction

64. Referencing Petition p. 2, "the Project will occupy approximately two acres." Estimate the total area of disturbance in acres.

Approximately 1.6 acres will have ground disturbance, which includes permanent and temporary disturbance.

65. What is the status of the Geotechnical Investigation referenced on Petition p. 8?

The geotechnical report was completed in September by GEI Consultants, a copy has been included as Attachment J.

66. Referencing Petition p. 12, since submission of the Petition has KCE met with the DEEP Stormwater Division and/or submitted an application for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from the Department of Energy and Environmental Protection? If yes, please describe any recommendations, comments or concerns about the project provided by the Stormwater Division and when an application was filed.

The CT DEEP Stormwater General Permit has not been submitted, but a pre-application meeting was held on August 15th, 2024. The follow-up email from CT DEEP has been included as Attachment K, which states there are no special concerns about the project.

67. Would the proposed concrete pads be poured on site or delivered to the site? Explain.

The EPC contractor selected to oversee the construction of the project will choose the best method for establishing concrete pads and foundations based on the project's 100% engineered design for construction. Any work performed on site will follow best general practices for containment and clean up of any construction materials and methods.

68. Quantify the amounts of cut and fill that would be required to develop the proposed facility. If there is excess cut, will this material be removed from the site or deposited on the site?

It is estimated that up to 1150 CY of cut will be required to excavate the gravel access driveway and three (3) stormwater basins. The excess cut will be deposited or spread around the site. It is not anticipated that the material will be removed from the site.

69. Would any blasting be required to develop the site or stormwater features?

The Geotechnical Report found that the soils on site were almost entirely sand and did not contain ledge or boulders, so blasting is therefore not anticipated. Refer to the attached Geotechnical Report for more information.

70. Provide the estimated typical construction hours and days of the week (e.g. Monday through Friday 8 AM to 5 PM)? Provide the estimated duration of construction.

Construction hours will be 7 AM to 5 PM Monday-Friday and we would notify Council with changes to the schedule (i.e. over time or weekend work).

Facility Maintenance/Decommissioning

71. Referencing Petition pp. 15 and 28, please provide the following information:

a. What is the anticipated annual degradation of battery storage capacity?

While battery degradation is non-linear, the average degradation over a 20-year lifetime is 1.48%.

b. At what remaining battery capacity is replenishment recommended?

Industry standard practices suggest that 60% state-of-health is the time for battery replenishment, or decommissioning.

c. What is the estimated cost of replenishment?

If decommissioning and replenishment is selected, then it should match the CapEx price of the original system with a future value 20-years after the signing price plus decommissioning fees.

72. Referencing Petition Exhibit J p. 47, what minimum snow depth would require removal within the BESF compound? At what height could snow block the airflow to the chiller and/or electronic compartments?

KCE's general practice is to remove snow within the yard when it reaches 18-24" or when maintenance is needed. The low side of the cooling exchange fan for the chiller system is 1450 mm (57 inches) from the bottom of the container. The Estop button on the container is located at 1450 mm (57 inches) from the bottom of the container.

73. At what intervals and how would vegetation management occur?

Vegetation management inside the fence would generally happen once annually and would be done via a third-party contractor in compliance with all local permits and regulations. Vegetation control outside the fence (mowing and trimming) would also be contracted out and would be done, as needed.

74. At what time intervals would the transformers, inverters and switchgear need replacement?

Transformers: 20 - 30 years, Switchgear: 20 - 25 years, Inverter parts: 10 - 15 years.