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September 8, 2023

VIA ELECTRONIC MAIL AND HAND DELIVERY

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

Re: Petition of KCE CT 5, LLC for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is Required for the Proposed Construction, Operation and Maintenance of a 5-megawatt (“MW”) Battery Energy Storage System, to be Located at 83 Village Hill Road in Stafford and Willington, Connecticut

Dear Ms. Bachman:

I am writing on behalf of my client, KCE CT 5, LLC, a subsidiary of Key Capture Energy, which is submitting the enclosed petition for a facility to be located at the above-referenced location in Stafford and Willington, Connecticut.

With this letter, I am enclosing the original and fifteen copies of the Petition, including Exhibits for the Petition. I am also enclosing a check for \$625.00, made payable to the Connecticut Siting Council.

I will send you an e-mail under separate cover with a link to an electronic version of the Petition and Exhibits.

Should you have any questions concerning this submittal, please contact me at your convenience.

Sincerely,

Lee D. Hoffman
Enclosures

cc: Town Clerks; Towns of Stafford, Ellington and Willington, Connecticut.

PETITION BY KEY CAPTURE ENERGY FOR A
DECLARATORY RULING, PURSUANT TO
CONNECTICUT GENERAL STATUTES § 4-176 AND §
16-50K, FOR THE PROPOSED CONSTRUCTION AND
OPERATION OF A 5 MW BATTERY ENERGY
STORAGE SYSTEM LOCATED AT 83 VILLAGE HILL
ROAD IN STAFFORD AND WILLINGTON,
CONNECTICUT

Prepared for:

The Connecticut Siting Council

September 8, 2023

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SECTION 1. PETITIONER INFORMATION

Key Capture Energy (KCE or Petitioner) is an experienced owner and operator of energy storage projects. KCE was founded in 2016 as a utility-scale storage company headquartered in Albany, New York, with additional offices in Houston, Texas, and New York City. KCE seeks to identify, develop, construct, and operate energy storage solutions to foster greater deployment of renewable energy, create a more stable electric grid, and provide value to all customers. KCE has over 6,000 megawatts (MW) of storage capacity in its development pipeline across the United States and is on track to operationalize over 400 MW of battery storage projects in the U.S. by the end of 2023. SK E&S Co. Ltd., KCE’s parent company, has deployed over \$2 billion in investment capital in energy storage, electric vehicle charging, hydrogen, and distributed generation in North America. The KCE CT 5 Battery Energy Storage System (BESS) Project (the Project) is being proposed by KCE CT 5, LLC, a wholly owned subsidiary of KCE.

1.1 Petitioner

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1.2 Legal Representation

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1.3 Project Purpose and Need

The Petitioner is seeking a declaratory ruling from the Connecticut Siting Council (CSC) that a Certificate of Compatibility and Public Need is not required for the development of the KCE CT 5 5 MW BESS Project in Willington and Stafford, Connecticut. This petition is submitted pursuant to Connecticut General Statutes (CGS) § 4-176 and § 16-50k and in response to the Connecticut General Assembly’s June 2021 passage of Public Act No. 21-53 “An Act Concerning Energy Storage”. Connecticut’s Public Utilities Regulatory Authority (PURA) set ambitious goals for Connecticut’s energy storage capacity by targeting

energy storage incentives for commercial, industrial, and residential customers as a result of this legislation.

SECTION 2. PROJECT AND PROPERTY DESCRIPTION

2.1 Project Setting

The Project is a proposed 5 MW BESS located at 83 Village Hill Road in Stafford and Willington, also known as Tax Parcel IDs 71-6 (in Stafford), and 52-001-00 (in Willington) (the Property). The Project is located in a rural and residential area between Blair Road and Village Hill Road in Stafford and Willington (as shown on Figure 1 and Figure 2). The site is within an area zoned as residential (R-80). Residential houses are located north and south of the Property. The eastern portion of the Property contains a house, outbuildings, and agricultural fields, and the remainder of the Property is second-growth forest. Figures 3.1 and 3.2 depict the existing conditions, including neighboring properties and topography. The Project will be centrally located within the Property with access from the east from Village Hill Road and interconnection to the west with the point of interconnection being a direct tap to roadside distribution lines on Blair Road. Exhibit A depicts the civil design and site plan for the Project.

2.2 Project Purpose

Connecticut Public Act 21-53 was published in June 2021. This act establishes the goal of reaching 1,000 MW of energy storage in Connecticut by 2030. This Project is proposed in response to this program and the anticipation of future incentives being developed by PURA for energy storage systems that will help to achieve Connecticut’s ambitious goals for development of renewable energy in the State.

The details of the PURA incentive program are still in development. The Project will seek to participate in the incentive program once released. In addition, the Project has also obtained Capacity Supply Obligations (CSO’s) through the ISO NE Forward Capacity Auction 17, with CSOs to be delivered June 2026 through June 2027. Depending on the structure of the incentive program, KCE may also seek to participate in the wholesale energy markets and frequency regulation markets.

2.3 Project Benefits

Battery energy storage provides several benefits that will help to modernize the electrical grid, including:

- Enhancing power reliability;
- Servicing (shaving) peak demand;
- Greater penetration of renewable energy; and
- Deferring transmission and distribution infrastructure upgrades.

The State recognized these benefits in Public Act 21-53, which includes incentives for front of the meter (FTM) projects on the distribution network. The Project is being developed in response to the state goals as an FTM project on Connecticut Light and Power Company d/b/a Eversource Energy’s (“Eversource”) 23kV 15M3 circuit. The Project provides another benefit through its participation in the ISO-NE Forward

Capacity Market and has received obligations to operate as a resource that can provide electric capacity as needed during capacity scarcity events.

The Project's electricity will be used for several purposes, each of which represents a different market sector, including:

- Shifting time of day supply and demand by utilizing the purchase and storage of excess energy at times when area generation exceeds demand and then selling energy back into the grid when demand exceeds generation. This is a scenario frequently seen given the increase of solar generation when excess electricity generated midday is not available during the high-demand evening hours.
- Providing capacity supply to the ISO-NE markets to ensure reliability during electrical scarcity events.
- Providing frequency regulation to limit the level of system disruption due to large injections or withdrawals of electricity from generators and high-volume users.

The Project is located at an area on the distribution network with appropriate charging and injection capacity to allow a project of this size to operate. The Project will be able to support future build out of renewable intermittent energy in this rural area of the grid. The Project will be able to indirectly benefit the system due to the availability to draw from resources that may be generating at a time of low demand and make the energy available during periods of high demand. As a stand-alone facility, the BESS will be able to provide this benefit with a variety of generation resources adding greater flexibility for the system.

The Project location will have little impact on surrounding properties. The remote location away from homes and surrounded by wooded areas will result in very little notice of the Project's presence during typical activities.

2.4 Project Description

The 5 MW/20 megawatt-hour (MWh) battery energy storage system will include two Sungrow SC3150-MV-US inverters with twelve Sungrow ST2752UX-US, 2.752MWh battery containers. Through consultation with Eversource, KCE has determined that 5 MW is the appropriate size for the Project at this location. Exhibit B includes the technical specifications for this equipment.

The energy storage system consists of lithium-ion batteries installed in battery racks and connected in series and in parallel. The batteries will be housed within battery containers constructed on a concrete slab. They will be connected to inverters via underground conduit. The battery modules and cooling system are fully encased in the containers. The cooling system uses a mixture of ethylene glycol and water and includes an anti-leak design with a collection sump capable of storing 241.3% of the total volume of liquid coolant installed inside the container.

The Project will include an auxiliary power skid, switchgear, and control house which is approximately 10 feet long by 8 feet wide and 8.5 feet high. A seven-foot-high chain link security fence, meeting applicable electric codes, will surround the facility. The number of required new electrical poles will be determined by Eversource along with the appropriate heights of such poles. Security at the site will be similar to that used by typical utility substations and will be provided by the fence, a locked gate, motion-activated

lighting, and security cameras. The maximum height of all facility equipment onsite excluding electrical line poles will be less than three meters (9.8 feet).

The Project's 23kV generation tie-in will be installed as an overhead line that runs west from the Project and will interconnect via a direct connection to the Eversource 23kV circuit 15M3 on Blair Road in Willington. The Project inverters will export energy at 23kV, so there will be no need for an additional main step-up transformer or substation.

The Project will be operated by KCE Remote Operation Center to respond to market signals and opportunities. Dispatch will be conducted in response to these opportunities. Any variation of this may occur in response to capacity supply obligations instructions received by ISO-NE. The Project may also choose to enter into a contract with an entity to provide specific services before or during the operations period. Any such contact may include additional terms and requirements for dispatch management.

The Petitioner completed a pre-application meeting for the Project with Connecticut's Department of Energy and Environmental Protection (DEEP) on March 20, 2023, and is designed to meet DEEP's standards for air and water quality and the protection of the environment.

2.4.1 Site Access

The Project will be accessed through a new curb cut in Village Hill Road in Stafford. A portion of the access road will improve an existing woods road including an existing stream crossing. Stormwater will drain to the west and into a basin on the west side of the developed area. Figure 2 depicts the proposed Project overlain on aerial imagery.

2.4.2 Equipment and Energy Storage Capacity

The Sungrow batteries will be housed in metal storage containers equipped with cooling systems, fans, and electrical equipment. Specification sheets for the Sungrow BESS are provided in Exhibit B.

The Project will have a maximum export capacity of 5 MW with a four-hour duration allowing a maximum delivery of 20 MWh. The proposed BESS will include:

- Two Sungrow SC3150-MV-US inverters;
- Twelve Sungrow ST2752UX-US, 2.752MWh battery containers;
- One auxiliary power skid;
- One switchgear;
- One control house;
- Maximum height of all facility equipment onsite (not including electrical line poles) will be less than three meters;
- A seven-foot-high chain link security fence;
- New access road originating from Village Hill Road;
- A 23kV generation tie-in will be installed as an overhead line running west from the Project to Blair Road and interconnecting via a direct connection to the Eversource 23kV 15M3 circuit; and
- The Project inverters will export energy at 23kV, so there will be no need for an additional main step-up transformer or project substation.

The proposed system design includes an excess of containers/energy to cover electrical loss, to prevent a full depletion of batteries, and to cover degradation loss over the system's life. A full depletion of batteries would cause batteries to degrade faster, would cause voltage regulation issues on the MV bus, and thus on the HV bus, and cause setpoint deviation issues. Batteries also degrade over time. To meet POI energy requirements throughout the Project's life, the Project is designed to maintain additional energy storage. In 4 to 5 years, the Petitioner will add or replace batteries to maintain contracted energy capacity. For example, during initial battery plant installation, the Petitioner may only install 10 containers. In 5 years, 1 additional container will be installed. In 5 more years (on year 10), 1 more container will be installed, for a total of 12 containers. KCE's analysis concludes that amount of energy will satisfy the Project energy storage goals with an estimated 20-year life.

Each of the inverter units SC3150U is manufactured by SunGrow with a coupled inverter step up transformer. The inverter step up transformers can be ordered with a few different high side voltage ratings and winding configurations. For this Project, the high side of the inverter step up transformer will be ordered at 23kV.

An Auxiliary Power Transformer will be installed with the Project to reduce the voltage from 23kV to 480 volts at the point of interconnect for use by the BESS mechanical and maintenance systems (largely comprised of the HVAC system).

The BESS containers, inverters, transformers, and other equipment will be mounted on concrete pads. After the Project has received full approvals, 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 construction engineering plans.

The facility can charge and discharge between 0 and 5 MW. The energy management system (EMS) divides the total QSE/ISO power setpoint between each power-conversion-system (PCS) evenly or in a manner that would allow the plant to discharge evenly. In fast frequency response priority mode, the facility may reach full output within 250 milliseconds of the dispatch signal. In normal reserves priority (P or Q priority mode), the facility ramps to full power output within 4 minutes time. The fastest the facility can fully recharge 20 MWh with 5 MW charge at POI, is 4 hours and 40 minutes.

2.4.3 Electrical Interconnection

The Project will interconnect to the local electrical distribution system along Blair Road. The exact number and location of utility poles for the overhead line running west from the Project to Blair Road is pending coordination with Eversource, the local utility provider. The Project anticipates a 50 foot wide powerline pathway along the interconnection route depicted in Figure 4.

The Petitioner filed an interconnection request on June 1, 2022 with Eversource Energy and has been assigned project number INT-63495. The Petitioner executed a Feasibility Study Agreement with Eversource. The Petitioner received the results of this report in December 2022 and then entered a system impact study on January 13, 2023. It is currently under study, with completion of the study expected in February 2024. An Interconnection Agreement with Eversource is pending with completion expected Q3 of 2024. It is not anticipated that the interconnection will require review by ISO-NE.

2.4.4 Site Control

The Project site will be acquired through a lease and easement agreement by the Petitioner. Documentation demonstrating the Petitioner's option to lease and associated easement agreements with the landowner are provided in Exhibit C.

ENVIRONMENTAL CONSIDERATIONS

3.1 Air Emissions

Normal operations of the Project will not produce hazardous air emissions. Therefore, the Project will be in compliance with CGS Chapter 446c and an air permit will not be required. Liquid cooling systems used by BESS projects operate similar to a closed-loop air conditioner, where cool air is circulated and maintained within the enclosure. This system is made up of a fan, water pump, and ethylene glycol/water system.

Temporary air emissions from construction activities are expected and will include emissions from construction vehicles and equipment transportation. Implementing an efficient work sequence for construction activities, limiting idling times, and maintaining equipment properly will reduce these emissions. During periods when the existing access road will be constructed and the earth work for the Project site is prepared, the Project will have the potential to cause dust emissions. The Project will use a water spray to control dust emissions during construction as needed.

3.2 Water Resources

3.2.1 Wetland and Watercourse Analysis

Biologists from Flycatcher completed wetland delineations of the site in November 2022 and February 2023. Wetland delineations were conducted in accordance with the US Army Corps of Engineers (USACE) Wetland Delineation Manual and the Northcentral and Northeast Regional Supplement. Additionally, wetland and watercourses surveys were completed in accordance with DEEP's Inland Wetland and Watercourses Act and with the Towns of Willington and Stafford Inland Wetlands and Watercourses Regulations.

Flycatcher mapped two wetlands and one watercourse within the Property. These resources occur in forested, generally undeveloped areas of the Property. The watercourse flows west into a tributary to the Willimantic River.

Figure 5 depicts the results of the wetland and watercourse delineation effort and detailed information on the results of the wetland and watercourse survey is provided in Exhibit D.

3.2.2 FEMA Flood zone

There are no mapped flood hazard areas within the immediate vicinity of the Property. Figure 6 depicts the water resources present on the Property and surrounding area.

3.2.3 Aquifer protection areas

The Project does not intersect with any areas mapped as aquifer protection areas. Figure 6 depicts the water resources present within the Property and surrounding area.

3.2.4 DEEP Groundwater classification

The proposed Project occurs within an area with a groundwater quality classification of GA. This means that designated use is for existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies.

3.2.5 Analysis of impact on resource

The Project will not require a source of water for operation. The water used for liquid cooling will be recycled through the system and will not require an outside source. The Project is avoiding direct impacts to wetlands within the Property. Additionally, the proposed stream crossing will utilize and improve an existing crossing. By improving the existing road within the Property, impacts to these resources have been avoided and minimized to the extent practicable.

3.3 Soils

Five soil map units are mapped within the Property. Natural Resource Conservation Service (NRCS) mapped soils are depicted on Figure 7. One of these soils within the focus area is mapped as prime farmland soil. The field and house located along Village Hill Road are located on an area mapped as Paxton and Montauk fine sandy loams. None of the soils within the Property are classified as hydric, alluvial, or floodplain, however, hydric soils were observed within areas mapped as wetland (as shown on Figure 5).

In addition to natural resource surveys and hand-dug test pits, a geotechnical investigation was completed at the site in April 2023. The results of this investigation are provided in Exhibit E.

3.4 Wildlife and Vegetation

3.4.1 Wildlife Habitat

The Property consists of a home, outbuildings, fields, the existing woods road, and undeveloped forest land. Forested areas consist of mature woods with American hornbeam (*Carpinus caroliniana*), white oak (*Quercus alba*), red oak (*Q. rubra*), cherry birch (*Betula lenta*), eastern hemlock (*Tsuga canadensis*) and American beech (*Fagus grandifolia*). The understory is relatively clear with coastal sweet pepperbush (*Clethra alnifolia*), and highbush blueberry (*Vaccinium corymbosum*) growing in the wetland areas.

The intermittent stream observed on the Property has a small crossing for a woods road, but otherwise is not impacted from human development within the survey area. The groundwater hydrology of the wetland is a source of water for this stream that flows to a tributary of the Willimantic River.

Including the Project area, access road improvements and generation tie route, the Project requires clearing of up to 4 acres of forest.

3.4.2 Vernal Pool Surveys

A vernal pool survey was conducted on April 4, 2023. Definitions from Calhoun et al. (2005) and the USACE Connecticut General Permit (2021) as well as the presence of indicator species were used to make vernal pool determinations. Flycatcher investigated the Project site for indicators of obligate vernal pool species during the spring amphibian breeding season. Two vernal pools were identified within the property. Descriptions of these resources are provided in the Natural Resources Survey Report in Exhibit D, and the location of each pool is shown on Figure 5.

3.4.3 Listed Species

State

The Connecticut DEEP Natural Diversity Data Base (NDDDB) maps general locations of endangered, threatened, and special concern species as well as rare natural communities across the state of Connecticut. The program uses species data based on information collected by NDDDB staff, scientists, landowners and historic records to provide maps showing approximate listed-species locations for landowners and petitioners to reference as a Pre-Screening Tool. NDDDB maps do not show exact locations to protect sensitive species but depict general locations as polygons with ‘cross-hatching’ over state maps.

The Petitioner has consulted the NDDDB program mapping for this area, and the Project does not intersect with areas mapped by NDDDB according to the most recent maps, dated June 2023.

Figure 8 depicts the proposed Project site in relation to mapped NDDDB polygons.

Federal

The Endangered Species Act, 16 U.S.C. § 1531 et seq. (ESA) protects federally threatened and endangered wildlife. The U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries are the federal agencies responsible for administering the ESA. Typically, the USFWS is the lead agency in issues dealing with wildlife species and habitat, while NOAA Fisheries often takes the lead with marine fish species and habitat.

An official species list was acquired using the USFWS Information for Planning and Conservation (IPaC) system, which identified the Northern Long-eared Bat (*Myotis septentrionalis*, Endangered), monarch butterfly (*Danaus plexippus*), and small whorled pogonia (*Isotria medeoloides*) that may potentially occur in the Project area. The IPaC report also notes that there is no Critical Habitat within the vicinity of the Project area and that there is likely no effect on the Northern Long-eared Bat as a result of this Project. This Project will require a federal permit for the proposed stream crossing, and the Petitioner will consult with the USACE and USFWS during this process.

3.4.4 Vegetation

As stated above, up to 4 acres of forest will be cleared to construct and operate the Project. The forested areas predominantly consist of mature trees with a generally open understory. Common species include red maple (*Acer rubrum*), American hornbeam, white oak, red oak, eastern hemlock, cherry birch, and American beech along with mountain laurel (*Kalmia latifolia*) and saplings of the tree species occurring in

the understory. Invasive species were observed around the edges of the Property including Asian bittersweet (*Celastrus orbiculatus*) and rambler rose (*Rosa multiflora*), and Japanese barberry (*Berberis thunbergia*).

3.4.5 Analysis of impact on resources

The Project includes improvement of one existing stream crossing for development of the access road. Following the initial results of the natural resources survey, the Project team discovered that the initially proposed access for the Project would require a significant amount of clearing and fill within a wetland to access the BESS location from Village Hill Road without including partial use of a second parcel. The Project team then completed surveys on an additional parcel of land to the north to find an alternative access route. The proposed Project access road is designed to follow an existing woods road and cross a stream at an existing crossing. The stream crossing design incorporates calculations of the local hydrology to support proper sizing of the culvert. While the improved crossing will be wider than the current conditions, the culvert will be installed to match the slope of the stream.

The Project team has consulted with staff at DEEP to support design of the stream crossing and solicit feedback on the approach. The crossing, as proposed, will increase the habitat connectivity to upstream and downstream areas through eliminating a perched culvert that currently exists within the stream.

Some clearing within uplands will be required, however, a majority of the Property will remain forested, which will continue to provide habitat connectivity in the local area.

3.5 Cultural

A Phase 1A cultural resources survey was completed by Heritage Consultants in December 2022. This included a pedestrian survey and photo-documentation of the survey area. Based on the results of the background research and site visit, Heritage recommended that a Phase 1B survey be completed in two sensitivity areas totaling 2.75 acres. The Phase 1B survey was completed in April 2023 utilizing 33 shovel test pits within the sensitivity area. Reporting from Heritage Consultants indicates that 50 post-European contact artifacts, one precontact-era artifact, and one precontact cultural material were discovered during this investigation. Given the low density of artifacts and intact soils, the precontact era component is characterized as an isolated find spot. The post-European Contact component did not have significant concentrations from stratified soils or association with other cultural features and characterized as unassociated field scatter. None of the components found during the Phase 1B investigation are eligible for listing on the National Register of Historic Places.

Both reports were submitted to the Connecticut State Historic Preservation Office (SHPO) for review. The Project received a response from SHPO concurring with Heritage's opinion that no historic properties will be affected by the proposed Project. The Phase 1A and Phase 1B reports and SHPO's response letter are provided in Exhibit F.

3.6 Noise

To determine the proposed Project's compliance with Connecticut's regulations for the control of noise under CGS § 22a-69, an acoustic analysis was completed by Epsilon Associates, Inc. In accordance with CGS § 22a-69, the Project would be considered an industrial use (Class C). The standard for industrial use is that projects not exceed 51 dBA at the nearest residential (Class A) property.

The results of the study indicate that the highest sound level from the Project at a receptor in a residential zone is 53 dBA. Otherwise, the projected noise from the Project would fall within the sound standard of 51 dBA. The sound level modeling represents the worst-case scenario for the Project which would involve all 12 battery container systems operating at full load with the liquid-cooling system also running at full capacity. The PCS was modeled under reduced noise operation. "Reduced noise operation" data was provided by the manufacturer and can be achieved by reducing PCS power and cooling fan operations. This lowers sound levels by approximately 8 dBA, and this represents worst-case conditions and was used in the sound level analysis. The Project will at all times be operated within the parameters of this sound modeling.

The landowner on the property with projected higher sound levels has signed a statement of no objection to sound levels above the residential sound standard. The Town of Stafford has also provided a communication stating it has no objection to sound levels above the residential sound standard. The full analysis and report, along with the statements of no objection, are provided in Exhibit G.

3.7 Visual

A visual impact cross-section was created from the nearest residence (106 Blair Road, Willington). As demonstrated in the cross-section provided in Exhibit H, due to topography, existing vegetation, and other barriers, the BESS facility is likely to be extremely screened from Blair Road.

The full results of VHB's visual impact analysis are provided in Exhibit H.

Based on publicly available data, the nearest designated scenic road is State Route 30 (Tolland Stage Road), located approximately six miles southwest of the site. The nearest public recreational area is the Chenes Roches Preserve located approximately 0.3 miles southwest of the site. Neither of these resources are expected to have visibility of the Project based on proximity, landforms, and tree cover in the area.

SECTION 4. PROJECT CONSTRUCTION AND MAINTENANCE

4.1 Construction Schedule and Phasing

The Petitioner anticipates that construction of the Project will begin during the summer of 2025 and will take approximately twelve months to complete. Construction is expected to take place from 7 a.m. to 6 p.m., Mondays through Fridays.

Once equipment is staged and temporary erosion and sedimentation (E&S) controls are installed, the construction contractor will begin to build the concrete equipment pads and then install the batteries, inverters, and interconnection equipment. The perimeter fence and gate access will be installed with final grading and seeding as needed.

Table 1: KCE CT 5 Milestone Schedule

KCE CT 5 Milestone Schedule	
Interconnection	
Impact Study Report	2/6/2024
Interconnection Agreement Executed	8/23/2024
Permitting	
All Permits Secured	3/12/2024
Engineering	
90% Construction Eng. Design	12/19/2024
90% Interconnection Eng. Design	12/26/2024
Procurement	
BESS Supplier Contract Awarded	1/13/2025
EPC Contract Awarded	2/18/2025
Other Major Equipment Procured	8/5/2025
BESS Delivered to Site	11/25/2025
Auxiliary Power Transformer Procured	4/14/2026
Construction	4/22/25-6/5/26
COD - Project Online	6/5/2026

4.2 Stormwater Management

It is anticipated the Project will exceed 1 acre and will apply for a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities from DEEP under CGS § 22a-430b. The Project will include a permanent stormwater basin to treat water quality and to mitigate potential increases in post-construction peak rates of runoff. Existing drainage patterns on the site will remain as is.

A stormwater report for the Project is provided in Exhibit I.

The plan set provided in Exhibit A outlines the best practices for erosion and sediment control to be implemented during the construction phase of the Project.

4.3 Operations and Maintenance

Once the Project is operational, it will be continually monitored 24/7 by a remote operations control center (ROCC). The Project will be equipped with Battery Management Software (BMS), informing automated procedures and personnel through supervisory control and data acquisition (SCADA) systems. Routine maintenance schedules will include work for on-site inspections and preventative maintenance. The schedule will include maintenance with necessary frequency for adherence to all manufacturers' recommendations and applicable codes and/or laws. Occasional vegetative control, mowing, and snow plowing will be required to maintain the site and guarantee access throughout the year. An Operations and Maintenance Plan for the Project, including the Sungrow operations manual, is provided in Exhibit J.

The Petitioner has drafted an Emergency Operations Plan (EOP), also provided in Exhibit J. The EOP is intended to be an operational document. The Petitioner has also provided Safety Management Recommendations based in the most updated industry standards. The Project Petitioner has sent a copy of the EOP and Safety Management Recommendations to the Fire Marshal's office for both Willington and Stafford for review and feedback, and the Petitioner will be in continued dialogue with the responding fire department and emergency responders throughout the development process. The EOP will continue to be refined as the Project goes through further iterations of engineering and design. Prior to construction of the Project, the plan will be finalized and parties listed in the plan will have received the information, initial safety trainings, and debriefs as outlined in the EOP.

4.4 Public Health and Safety

The Project will be constructed to be in compliance with applicable National Fire Protection Association and other state and local safety standards and National Electric Safety Code standards. A seven-foot-tall chain link fence will be installed around the perimeter of the Project. Additionally, the site will be monitored remotely twenty-four hours a day to allow for remote power shut-off and to notify local emergency responders if there is an issue. The Project will be continually monitored by the ROCC. The Project will be equipped with BMS, informing automated procedures and personnel through SCADA systems. The BMS monitors battery voltage, current, and temperature and continuously communicates with the ROCC. In the case of any out of the ordinary operational signal, the BMS elevates the issue to the ROCC and, as needed, to KCE representatives, the utility, and/or first responders.

The Petitioner has consulted with the Towns of Stafford and Willington, including representatives from the fire department and emergency response services. It is the Petitioner's intention to continue this communication with the local emergency staff once the Project is operational to provide site-specific information and training in preparation for emergency response preparedness, including for Lithium-ion battery fires. The EOP is intended to be an operational document and will go through refinement upon further project design, engineering, and stakeholder input.

The Project qualifies as a Tier 1 facility by the United States Environmental Protection Agency (USEPA) to develop a self-certified Spill-Prevention, Control, and Countermeasure (SPCC) Plan. As such, a template SPCC Plan is provided in Exhibit J. The template has been provided with partial process and notification information as currently known. Final verified information will be completed upon final project approvals and design. The SPCC will be finalized and executed at that time.

As part of the EOP, during Project construction a site-specific health and safety plan will be developed and implemented to protect the safety of construction personnel and Project staff.

The Project will implement best industry standards for public safety and emergency management, including the following:

General Security

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

System Monitoring and Detection

The BMS has the ability to disconnect the battery from the grid under certain conditions, as per the control system design. The first and most important line of defense for thermal runaway is the 24/7 ROCC monitoring using the BMS. The system is equipped to detect anomalies and ensure appropriate personnel are notified in response to an emergency condition. As needed, controls are designed to allow isolated modules, individual containers, or the full system to be shut down remotely.

In addition, each BESS container is equipped with:

- Two (2) heat detectors
- Two (2) smoke detectors
- Two (2) combustible gas detectors

If any of the above detectors is triggered, the Fire Alarm Control Panel (FACP) will send signals to the central station associated with the FACP monitoring company and/or the ROCC or other appropriate entity in order to initiate the appropriate internal response. In addition, alarms requiring dispatch of the local fire department will immediately be relayed to the local Fire Department dispatch station.

Fire Response

Training for local emergency responders prior to systems operation will be provided with a full review of these systems and guidance for the appropriate approach and recommended response actions. Training will be provided prior to construction, prior to commissioning, and once more prior to operations. Please refer to the Project's draft Emergency Response Plan.

Emergency response guidance for BESS facilities has been evolving with advances in safety testing, practices and lessons learned from operational experience. The protection of human life and surrounding structure/environment is of the highest importance. In concurrence with current industry guidance, KCE strongly recommends a containment strategy until any fire is exhausted while monitoring and protecting human life and nearby resources using water as a proactive cooling agent on the exterior of the surrounding battery containers, structures, and environment. This action should only be taken after clearance is authorized by appropriate KCE personnel. The system is designed to contain any incident to prevent spread to further portions of the system as demonstrated through equipment stress and fire testing.

Response recommendations include avoiding applying water directly to the exterior of an affected BESS container, as this provides little benefit for fire response and may result in undesired run-off.

The battery units proposed for this Project come with a dry pipe sprinkler system with external connection points. Use of this equipment is performed by having the responding fire department connect a tank truck to the system from outside of the container. The inclusion of this equipment is due to previous designs for emergency response that are now outdated. With respect to improved system testing and understanding that has led to updated safety best practices, KCE strongly recommends not utilizing the sprinkler system and instead adhering to the containment strategy described above.

Defensive firefighting tactics are recommended, with water being applied to nearby containers and other equipment for cooling, as necessary. Any hose line operations should be limited to hose and master stream application from outside of the Project's perimeter as far back as hose and stream ranges allow. The decision to provide thermal cooling via hose lines would only be made by the System Owner / Operator and any other required SMEs with consultation with the local emergency responders.

In all instances, power shut down and isolation involving any high voltage feeder lines must be confirmed before any defensive measures are taken involving application of water to the site.

Management of Gases

Each ST2752UX-US unit is equipped with an exhaust ventilation system designed in accordance with NFPA 69 to remove gases from the container to prevent unsafe concentrations within the container. The system consists of two (2) 100 CFM fans (200 CFM total) per compartment and is triggered by the included gas detectors upon detection of 10% LFL of the volume of the container.

Management of Chemical Runoff

The BESS consists of an outer container with fire walls between compartments to separate the equipment within which includes the electrical components, the cooling system, and the detection/ventilation systems. Lithium-ion batteries are designed into fully enclosed modules which are installed in series within battery racks to achieve the system voltage. The battery racks are then wired in parallel for electrical storage capacity. The cooling system uses a mixture of ethylene glycol and water and includes an anti-leak design with a collection sump capable of storing 241.3% of the total volume of liquid coolant installed inside the container. The detection system will automatically shut down the system, while the ventilation system will vent any gases from the container to prevent unsafe concentrations within the container. Use of water as the primary agent on the surrounding structures and environment prevents the contaminated runoff from any chemicals associated with the BESS and HVAC system.

The Project's inverters/medium voltage transformers use FR3 as a dielectric heat transfer fluid made from 100% vegetable oil for use in electrical transformers and other electrical equipment. FR3 provides improved fire safety over mineral oils. FR3 is readily biodegradable with over 99% biodegradation within 28 days. FR3 is non-hazardous and non-toxic in soil and water. The FR3-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 as per the site-specific SPCC plan to ensure that any FR3/Oil that escapes is appropriately mitigated in accordance with said plan.

Any FR3 that infiltrates the soil onsite is biodegradable, non-hazardous, non-toxic and will be cleaned up in accordance with the site-specific SPCC plan. Any FR3 on impervious surfaces will properly be cleaned up in accordance with the site-specific SPCC plan. All soiled absorbent materials and collected FR3 will be disposed of in accordance with all State and Federal regulations and the site-specific SPCC Plan.

Electric and Magnetic Fields (EMF)

BESS EMF emissions are expected to be similar to those of transmission substations with respect to 60-Hz magnetic fields. As such, the sources inside the BESS facility are not expected to be 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 this Project, the generation tie line that is connecting the project to the point of interconnection on Blair Road 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.

4.4.1 Federal Aviation Administration Consultation

The Federal Aviation Administration (FAA) Notice Criteria Tool indicates that the Project does not exceed notice criteria for the permanent development nor for the temporary cranes up to 100 feet height. Thus, a Request for Determination to FAA is not required. The results of this analysis are provided in Exhibit K.

4.5 Decommissioning

A decommissioning plan, developed by the Petitioner, explains the process and costs associated with decommissioning the Project once it is no longer in use and restoring the site to its former condition. The full decommissioning report is provided in Exhibit L.

SECTION 5. OUTREACH

Throughout the development process, the Petitioner has engaged with representatives of the Towns of Stafford and Willington. Documentation of outreach is provided in Exhibit M. Additionally, as described earlier, KCE has completed a pre-application meeting with the DEEP concierge service and solicited feedback on the Project. A summary of the pre-application meeting is provided in Exhibit M.

Abutting property information is provided in the existing conditions survey in Figure 3. Project abutters have been notified of the Project via certified mail, with mailing logs provided in Exhibit M.

Table 2 lists the outreach completed by the Petitioner for the Project. Copies of records and notes from individual meetings and other correspondence are included in Exhibit M.

Table 2: Record of Outreach

Record of Outreach for KCE CT 5		
Date	Purpose	Attendees
9/12/2022	Project introductory meeting	Mike D’Amato, Willington Zoning Agent; Lara Rippeon and Paul Williamson, Key Capture Energy
3/3/2023	Project fire/safety introductory meeting	Trevor Gantick, Willington Fire Marshal; Lara Rippeon and Paul Williamson
3/23/2023	DEEP pre-application meeting	From DEEP: Emily Tully, Jamie Sydorik, Robin Blum, Chris Stone, Bianca Beland, Linda Brunza, Frederick Riese, and Camille Fontanella. From Petitioner’s team: Lara Rippeon, Paul Williamson, Steven Kochis, Jeffery Shamas, and Katelin Nickerson.
5/3/2023	Pre-petition submission meeting	Glenn T. Setzler, Stafford Building Official; Mark Morrison, Stafford Fire Marshal; Sal Titus, Stafford First Selectman; Lara Rippeon and Paul Williamson
5/9/2023	Pre-petition submission meeting	Mike D’Amato; Randy Heckman, Willington Building Official; Lara Rippeon and Paul Williamson
5/23/2023	Project notification	Letter notification of proposed Project to the Towns of Willington and Stafford
5/23/2023	Project notification	Letter notification of proposed Project to abutting property owners.
7/11/2023	Project notification	Letter notification of proposed Project to the Town of Ellington

