KEY CAPTURE ENERGY

# Key Capture Energy

## KCE CT 11 BESS

## Q3 2024

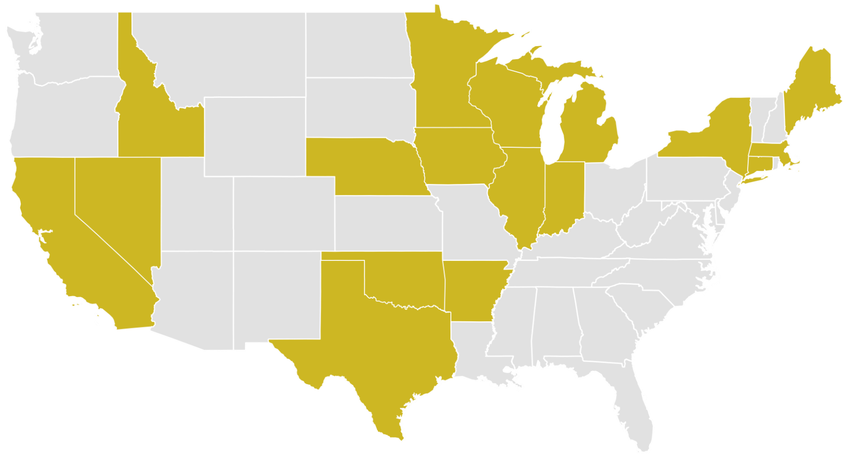
# Key Capture Energy Background

## Industry Pioneer Leading Innovative Clean Energy Technology

### Key Capture Energy

- Key Capture Energy (KCE) was founded in 2016 and is headquartered in Albany, NY with offices in New York, NY and Houston, TX.
- KCE has 623 MW of projects in operation and construction and development pipeline of 9+GW in 17 states across the country.
- KCE is backed by SK E&S, which has invested over $2 billion in the US energy transition and brings deep industry expertise.

KCE Operating and Development Map



Existing Development / Construction

### *Battery Storage + The Grid of Tomorrow*

- Battery storage enables more wind and solar energy and keeps the grid stable by storing intermittent renewable energy and providing that energy to the grid even when the sun isn't shining, and the wind isn't blowing.
- The battery storage industry is expected to grow from 43GWh installed in 2023 to 400+GWh by 2030, a 10X increase.

KEY CAPTURE ENERGY

# Key Capture Energy Current Status

- Headquartered in Albany NY with additional offices in NYC and Houston, TX.
- **100-person** team (>35% Albany based); 35 full-time hires in the past year. Interns and employees hired out of SUNY system.
- **623** MW of energy storage projects in construction or operations in the U.S.
- In New York, **3 projects and 44** MW in operations and >1000 MW **in development across the state.**
- In **Texas, 11 projects and 580** MW in operations or **in construction** and >1000 MW **in development across the state**
- **KCE has invested over $500 million in communities across the country.**

# Benefits of Energy Storage

## Supporting the Electric Grid

Performance

### Enhancing power reliability

Consistent, reliable power to consumers such as improving power quality for manufacturing processes

### Servicing peak demand

Leverage existing infrastructure to replace expensive and environmentally damaging generation

### Greater penetration of Renewables

Smooth output variability as increasing amounts of renewables come online

### Deferral of upgrades to Transmission and Distribution infrastructure

Necessity of infrastructure upgrades from increase in peak demand

Development

Low noise profile

No emissions

Near existing electrical substations

Energy dense, requires minimal footprint

# Benefits of Energy Storage in Connecticut

## KCE New England Activities

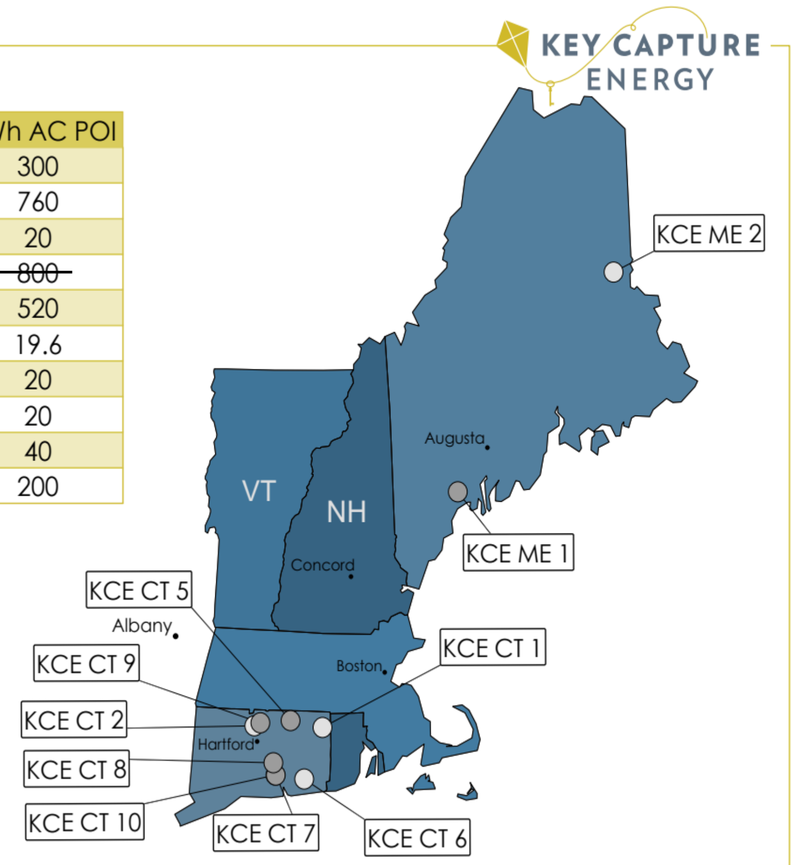
Connecticut State Goals for energy Storage:

- 1,000 MW of deployed energy storage by 2030
- 420 MW Front-of-Meter (FTM)
- 580 MW Behind-the-Meter (BTM)
- Interim targets of 300 MW by 2024 and 650 MW by 2027
- State-level procurements for both small-scale (~5 MW) and large-scale (20 MW+) FTM projects

ISONE

| Project Name | Current Stage | MW AC POI | MWh AC POI |
|---|---|---|---|
| KCE CT 1 | Stage 3 | 105 | 300 |
| KCE CT 2 | Stage 3 | 190 | 760 |
| KCE CT 5 | Stage 3 | 5 | 20 |
| ~~KCE CT 6~~ | ~~Stage 2~~ | ~~200~~ | ~~800~~ |
| KCE CT 7 | Stage 3 | 130 | 520 |
| KCE CT 8 | Stage 3 | 4.9 | 19.6 |
| KCE CT 9 | Stage 3 | 5 | 20 |
| KCE CT 11 | Stage 3 | 5 | 20 |
| KCE ME 1 | Stage 3 | 20 | 40 |
| KCE ME 2 | Stage 2 | 100 | 200 |

Current Stage
- Construction
- Operations
- Stage 1
- Stage 2 (5)
- Stage 3 (5)
- Stage 4
- Stage 5



# Proposed Technology

## Battery enclosures, medium voltage power conversion system and project substation

| | |
|---|---|
| BESS | • Battery enclosures and medium voltage power conversion system (inverter/transformer) connected to project substation via electric line.<br>• Lithium Iron Phosphate (LFP) technology |
| Point of Interconnection (POI) | • Direct Connect to Granby- Eversource Distribution System at 23kV |

**Canadian Solar liquid cooled solution 20ft. containers**

# Battery Energy Storage System (BESS)

## Aggregation of cells into modules into racks

- Cells are organized into modules, which each have a dedicated control system to balance load between cells

- Modules are stacked into racks, which also have a dedicated control system across modules

- State of charge, voltage, and  temperature are reported to Battery Management System (BMS) from rack aggregations

# Battery Energy Storage System (BESS)

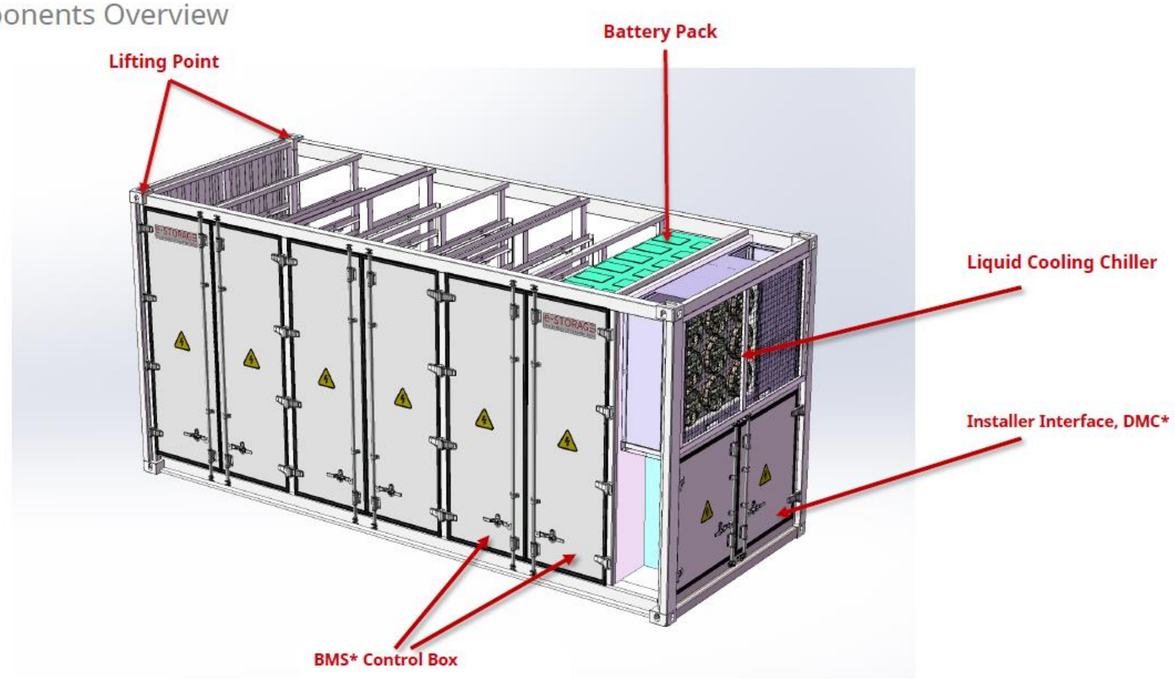
## Containerized system

All racks are organized within a container, passing data to the Battery Management Software (BMS), informing automated procedures and personnel through supervisory control and data acquisition (SCADA) systems

**SOLBANK 3.0**

e-STORAGE
A subsidiary of Canadian Solar

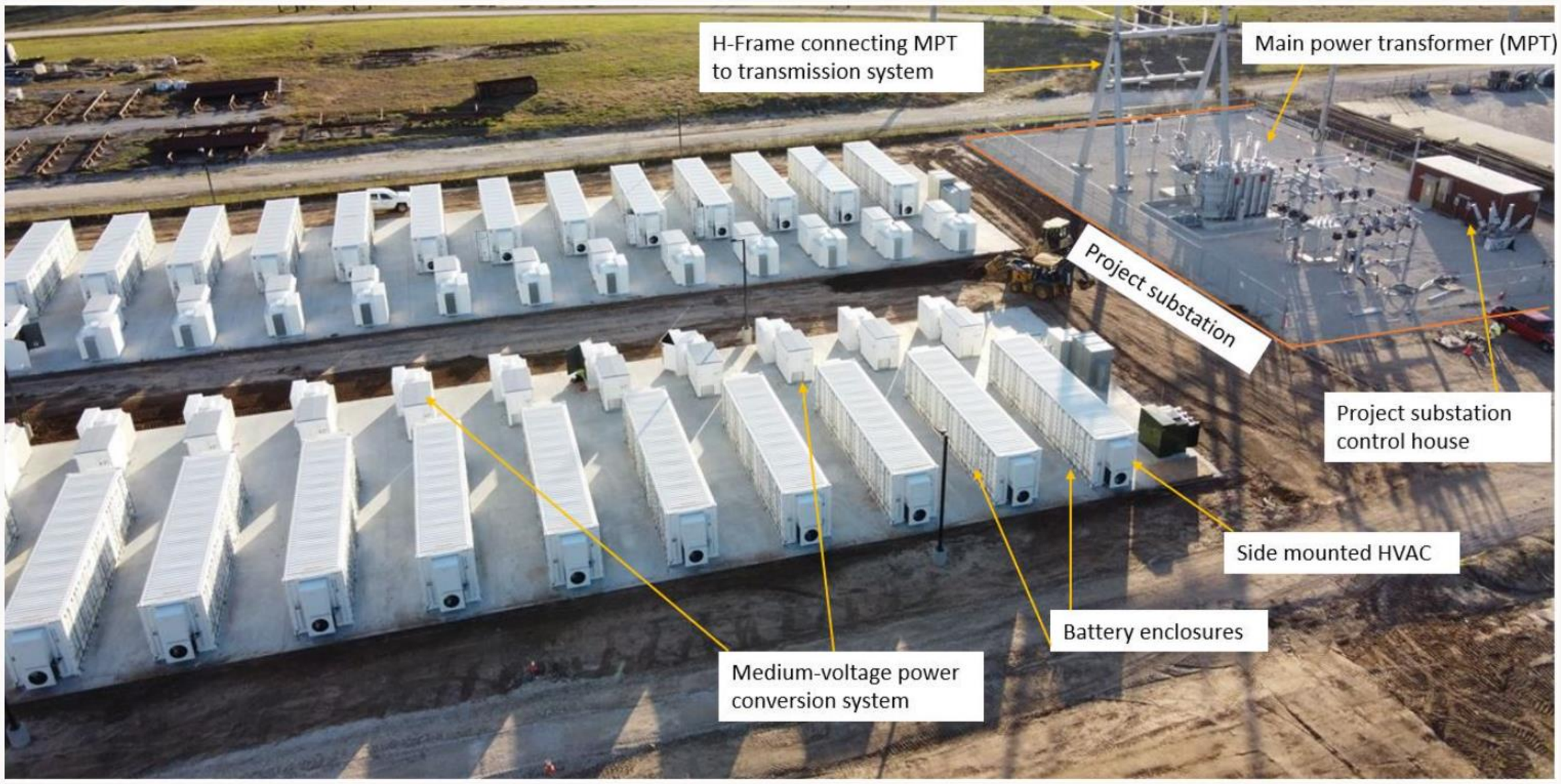
Major Sub-components Overview




*BMS: Battery Management System
DMC: Distribution Management Cabinet

Preliminary drawing for product introduction only

# Example BESS System – KCE TX 23 50MW, 50MWh



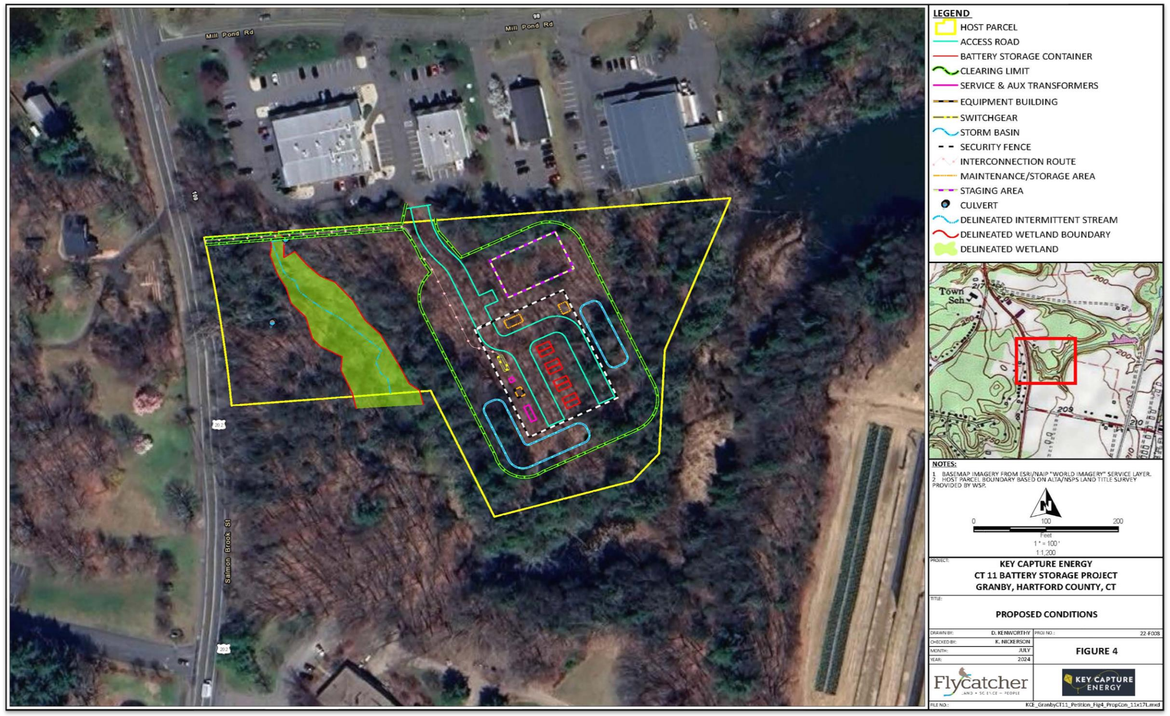
# KCE CT 11, LLC Overview

**Planned COD:** Q4, 2026

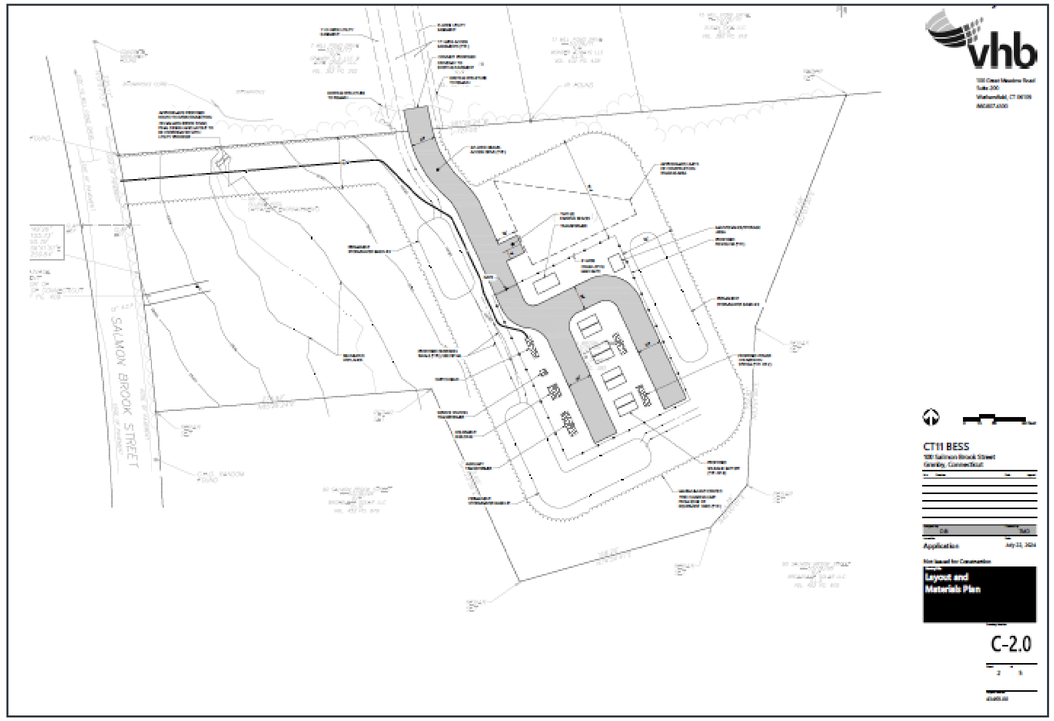
**Location:** 100 Salmon Brook St
Granby, undefined 06035
Lat/Lon: 41.933159 -72.788246

**Project Specs:**

- 4.99 MW/ 19.96 MWh




Preliminary layout *




Engineered Site Plan for Permitting *

* Site Plan may go through iterations through permitting cycle

# Development Cycle- updated Q2 2024

## Land control, permitting, and interconnection studies

- All projects begin with a comprehensive analysis of the electrical grid, possible revenue source models, and an understanding of key trends in the political and regulatory landscape.
- Permitting and environmental / electrical due diligence before construction
- Construction start date likely in Q4 2025. Operations Date Q12 2026.
- ~12-18–month construction period.

| | Months 0-12 | Months 12-24 | Years 2-4 |
|---|---|---|---|
| **Interconnection** | File Queue Requests | ISO NE conducts studies to determine required system upgrades | Finalize ISO NE studies and sign interconnection agreement |
| **Land** | Secure option to lease / purchase contract | Make option payments | Enter lease or purchase contract with owner |
| **Permits** | Initial meetings with local municipality and due diligence on property | Perform environmental studies, complete system design and submit permit applications | Finalize permits |

# KCE CT 11 – Land

## Site:

- Project will be located on a 4.85 acre parcel H-53-78-26 at 100 Salmon Brook ST
- Access will be through deeded right of way to Mill Pond Dr.
- The Project will interconnect to the Eversource 23 kV NE Simsbury 43F3 circuit distribution system via a primary service, Salmon Brook St.

## Site Control:

**Primary parcel:**

- Option to Purchase executed 5/8/2023, 3-year option period with all extensions exercised through 4/19/2027

# KCE CT 11 – Permitting

**Major Permitting:** Energy Projects greater than 1 MW are under the jurisdiction of the Connecticut Siting Council (CSC) for a *Petition for Declaratory Ruling*. Local ordinances and zoning do not apply, although the CSC may take local considerations into the final determination.

- Major permit to be submitted to the CSC: **August 2024**, with approval ETA **January 2025**
- Requirements will include:
  - Performing an operational noise study and carrying out mitigation measures if deemed necessary.

**Studies Performed:**

- Vernal Pool Survey- April 2024
- Wetland Delineation- April 2024
- Cultural Resource- April-June 2024
- Geotechnical Surveys- July 2024
- Sound and Visual Studies- June 2024

**Permit Requirements:**

- **Connecticut Siting Council Petition for Declaratory Ruling**
- **U.S. Army Corps of Engineers:** Not expected.
- **Connecticut General Permit for the Discharge of Stormwater** required from CT DEEP. This permit should be filed prior to start of construction and requires a 60-day review.
- **Development and Management Plan** is required to be filed to the CSC. should be filed prior to start of construction and requires a 60-day review.
- **Local Building and Electrical Permits:** Must be filed with the Town of Granby prior to start of construction. Requires a 60-day review.

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# BESS Safety Considerations

# KCE Treats BESS Safety as Primary Goal

## KCE's CT projects will be designed to meet or exceed all applicable standards

| Applicable Code | Component Part Covered | |
|---|---|---|
| 2021 International Fire Code (IFC) | Whole System | |
| 2018 International Building Code (IBC) or 2021 pending release | Whole System | |
| National Fire Protection Association<br>NFPA69<br>NFPA855<br>NFPA72 | Whole System | Standard for the Installation of Stationary Systems |
| UL 9540A | Whole System | Requirements for installation, providing appropriate instruction manuals |
| NFPA70 | Whole System | Benchmark for safe electrical design, installation, and inspection |
| NFPA70e | Whole System | Workplace injuries and fatalities due to shock, electrocution, arc flash, and arc blast, and assists in complying with OSHA |
| UL 9540A | Battery Rack + enclosure | Installation ventilation requirements; fire protection (integral or external); Fire service strategy |
| UL 1973 | Battery Rack + cell | Test ability to withstand fire from the outside and inside of BESS without cascading between modules |
| UL 1741 | Inverter | Inverters capable of managing grid reliability functions. |
| UL 1642 | Battery Cell | Reduce the risk of fire or explosion and for the responder when dealing with damaged product |
| UL 2054 | Battery Cell | Type of plastic, wall thickness, amount of non-UL qualified material used, etc |
| IEC<br>• IEC 62619 - Q2, 2024<br>• IEC 63056 - Q2, 2024<br>• IEC 62477-1 - Q3, 2024<br>• IEC 62933-5-2 - Q4, 2024<br>• IEC 61000-6-2 - Q4, 2024 | Battery Cell Transportation | Safe transport as hazardous material |
| UN38.3 - Q2, 2024 | | |

# Emergency Response Plan

Connecticut Siting Council Application for Certificate will include:

- An emergency response plan per CHAPTER 277a: PUBLIC UTILITY ENVIRONMENTAL STANDARDS ACT section 16-50l and 16-50p.
- Operations and Maintenance plan with chain of notice and emergency procedures.
- Will consult with Town Fire Departments for review before submission to CSC.
- This will be a living documents with periodic input and updates from KCE and local emergency responders.

# Stakeholder Outreach Process

## Communication and Training Throughout Project Lifecycle

Including:

1. Introductory meeting with the Fire Departments and safety officials. KCE will develop and submit safety information, and recommended safety response plan for input.

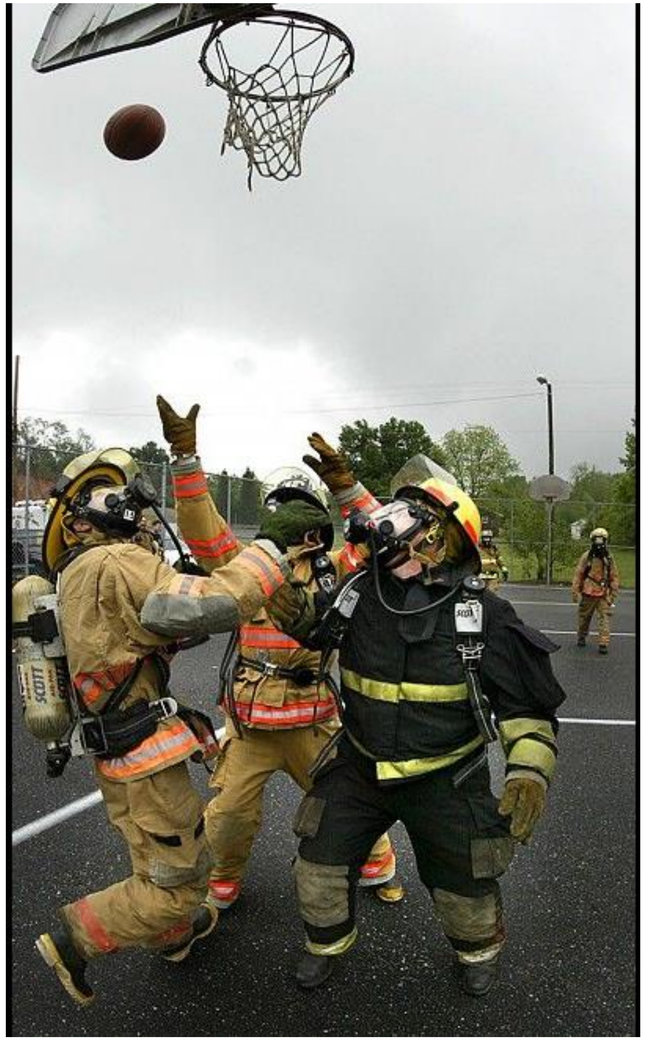
2. Future meetings with fire department to discuss any comments or concerns pertaining to the site design. KCE will continue communication throughout the design process.

3. Fire Department review of proposed Operations and Maintenance Plan and fire safety response plan.

4. Training session detailing the project, the battery technology, all applicable fire codes and emergency response plans prior to construction with first responders, FD, and any mutual aid departments that wish to participate.

5. Training during construction phase. Emergency response plan finalized.

6. Onsite training during operations with tabletop exercise. Site has clear and actionable signage which includes 24/7 contact information. Routine updates and / or training performed annually or as needed.



# Remote Monitoring and Emergency Response

## 24/7 Remote Response Team

**KCE Projects include security equipment installed (e.g., lighting, cameras and key card access).**

**Construction**: Onsite personnel will call 911 in case of any emergency

**Operations**: BESS have two independent alarm systems:

1) The **battery management software (BMS)** monitors battery voltage, current and temperature. The software can autonomously shut down the BESS and disconnect the battery racks from the inverters.

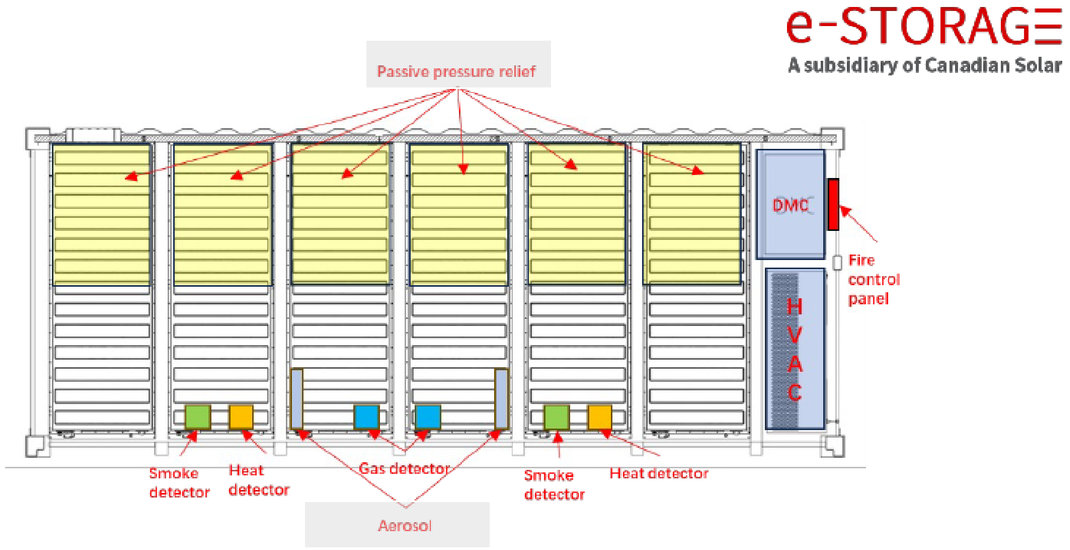
2) Site level **Data panel** that aggregates data from each of the battery containers.

BMS continuously communicates with a 24/7 control center. In the case of any out of the ordinary operational signal, the control center team will call Eversource and Key Capture Energy, and in the case of a fire alarm at the BESS, local emergency services. In an emergency, Eversource would dispatch a line crew to disconnect the project from the local distribution network.

# Fire Safety

## Prevent, Limit and Isolate Fire Risks

Multiple layers of monitoring, fire detections for enhanced safety. Redundancy design ensures reliability throughout product life cycle




Fire Safety System Layout (Top View)

- Complete **fire propagation verification** from cell, module (pack) to unit level based on the latest UL 9540A: 2019 (4th Edition). Designed to meet the newest fire and safety codes globally.
- **Integrated multi-level** fire detection, timely detects and reports any fire incidents. Integrated E-STOP actions within the product and with other system equipment for immediate response.
- **Explosion prevention** with gas detection, NFPA69 rated active ventilation system with optional NPFA68 deflagration panels

| | |
|---|---|
| **Fire Detection** | Heat and smoke detection – dual independent operation |
| **Gas Detection** | Combustible gas detection – dual independent operation |
| **Explosion Prevention & Mitigation** | Active air ventilation system with optional passive deflagration panels |
| **Fire Alarm** | Local strobes and bells, remote to master panel and EMS |
| **UPS Backup** | Built in UPS for 24+ hrs backup for fire alarm, 2+ hrs backup for ventilation |
| **Local Emergency Stop** | Yes |
| **Coolant Leak Detection** | Yes |
| **Interface with External Fire Panel** | Optional ethernet or fiber networking |

# Emergency Response

## Fire Response Procedures

### Response procedures and steps:

1. Isolate area of all nonessential personnel.
2. Use of water to promote cooling and reduce spread of fire.
3. Review status of both building and ESS alarm system with available data.
4. Review status of any fire protection system activation.
5. Perform air monitoring of all connected spaces.
6. Identify location of overheated battery.
7. Isolate affected battery, string, or entire system based on the extent of damage by remotely disconnecting the impacted area.
8. Contact person or company responsible for O&M of system.
9. Continue temperature monitoring to ensure mitigation of overheating condition.

# For consideration: Chemical Spills

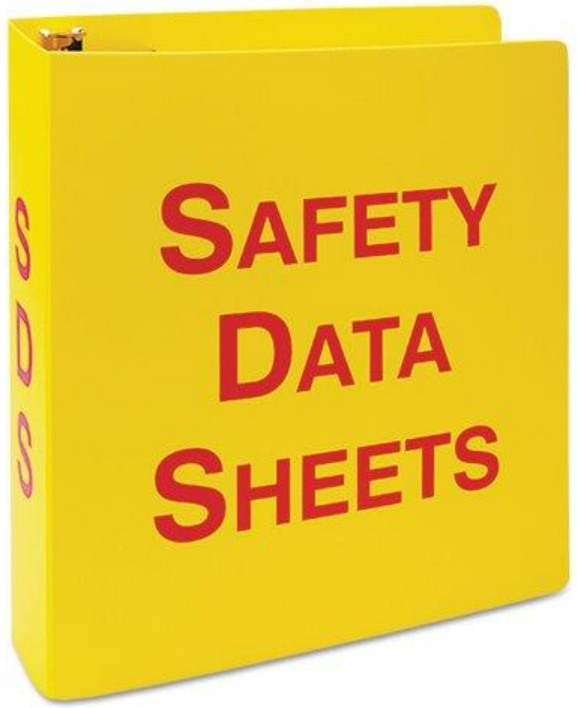
Construction and Operations

**Construction**

- Motor Vehicle fluids
- Heavy equipment fuel/fluid spills

**Operations**

- Battery Coolant System fluids
- Motor Vehicle fluids
- Transformer oil spill
- Spill Prevention, Control, and Countermeasure plan (SPCC) onsite
- SDS will be available onsite



# For Consideration: Personal Injury

Construction and Operations

**Construction**

- Trips/Slips/Falls
- Struck by object / equipment
- PPE includes Hard hat, vest, safety glasses, safety toed boots, gloves
- Onsite AED and CPR/AED trained personnel

**Operations**

- Remotely operated.  Servicing personnel will have appropriate PPE