NEW TECHNOLOGY APPLICATION

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Energy Storage Solutions is overseen by the Public Utilities Regulatory Authority (PURA), is paid for by ratepayers, and is administered by the Connecticut Green Bank, Eversource, and United Illuminating (Program Administrators).

ALL SUBMITTED INFORMATION IS PUBLIC RECORD
DO NOT SUBMIT ANY PROPRIETARY OR CONFIDENTIAL INFORMATION

Section 1 – Introduction

Thank you for your interest in Connecticut Energy Storage Solutions (Program). **The New Technology Application (NTA) is for the qualification of complete Battery Energy Storage Systems (BESS[1]) in the Program.** The resulting approval to the Eligible Equipment List will be for a battery and inverter combination that holds all necessary UL certifications and has a means of communicating with the Distributed Energy Resource Management System (DERMS) associated with the BESS's target customer sector. A complete Glossary of Terms is provided at the end of this document.

NTAs submitted for a battery only (with no inverter listed or integrated) or for an inverter only (with no battery listed) will be rejected. The intent of this document is to qualify **complete BESS** for use in Energy Storage Solutions. **Applications are to be submitted on a per-UL 9540 listing basis.** If a BESS holds multiple UL 9540 listings for multiple configurations, you must submit an additional application per UL listing.

Before completing this Application, first confirm if the BESS is already eligible by visiting energystoragect.com/submitted_ess_system_status_list/. If the equipment is not on the Eligible Equipment List or requires revision, follow these steps:

1. **Complete this Application**:
    - Equipment status will be based on your responses. Make certain to answer ALL required and applicable questions.
2. **Obtain and attach all UL certifications from Nationally Recognized Testing Laboratories (NRTL)[2].** The following UL listings are required:
    - UL 1973
    - UL 1741 SA (with reference to IEEE 1547-2018 2nd ed.)
    - UL 9540

Obtain and attach all product data specification sheets.

3. **Submit the Application and supporting documents** at energystoragect.com/new-technologies-request-application/.

ALL BESS MUST BE ABLE TO COMMUNICATE WITH THE APPLICABLE DISTRIBUTED ENERGY RESOURCE MANAGEMENT SYSTEM (DERMS) PLATFORM TO RECEIVE FINAL APPROVAL.

[1] See definition in Section 6 – Glossary of Terms

[2] Program Administrators reserve the right to request additional and new certifications as they become available in the markets. All certifications must be current.

Section 2 – Applicant

APPLICANT COMPANY INFORMATION			
Applicant Company Name			
Applicant Contact Name			
Applicant Company Address			
	Street, City, State, Zip		
Contact Phone		Contact Email	
Target Customer Class	☐ Residential ☐ Commercial & Industrial (C&I) ☐ Both		
What is Applicant Company's role in deploying BESS? (Select all that apply)			
☐ ESS Aggregator ☐ ESS Operator ☐ BESS OEM ☐ Inverter OEM ☐ Battery OEM ☐ Other (describe)			
Other role:			
Applicant Company Description			

Section 3 – BESS Equipment

Note: If you are applying for a BESS with multiple size or inverter configurations, all configurations must be included under the same UL 9540 listing. If any configuration is part of another UL 9540 listing, you must submit separate applications for those configurations.

Complete the section below for the **battery** portion of the BESS.

BATTERY INFORMATION			
Battery Manufacturer Company Name			
Contact Name			
Contact Email			
Contact Phone			
Battery Model(s)			
Battery Nameplate Power (kW)			
Battery Nameplate Energy Capacity (kWh)			
Battery Maximum Continuous Discharge Rate (kW)			
Battery Nominal Voltage (VAC)			
Battery Round Trip Efficiency (%)			
Battery Warranty Term (Years)			
Battery model(s) certified to UL 1973?	☐ Yes ☐ No	If no, expected date:	
Battery model(s) commercially available?	☐ Yes ☐ No	If no, expected date	
Additional notes (if applicable)			

Complete the section below for the **inverter** portion of the BESS.

INVERTER INFORMATION			
Inverter and Battery are integrated as a single model	☐ Yes ☐ No		
Inverter Manufacturer Company Name			
Contact Name			
Contact Email			
Contact Phone			
Inverter Model(s)			
Inverter Nameplate Power (kW)			
Inverter Phase	☐ Single Phase ☐ Multi Phase		
Inverter Output Voltage (V)			
Inverter Maximum Continuous Current (A)			
Inverter Maximum Continuous Power (VA)			
Inverter Warranty Term (Years)			
Inverter model(s) received UL 1741 SA?	☐ Yes ☐ No	If no, expected date:	
Inverter model(s) commercially available?	☐ Yes ☐ No	If no, expected date:	
Additional notes (if applicable)			

Complete the section below for the BESS. **The BESS is defined as the combination of the above Battery(s) and Inverter(s)**. No incentive will be issued for a BESS that does not hold a UL 9540 certification. UL 9540 field certifications may be accepted on a case-by-case basis.

BESS INFORMATION	
BESS is certified to UL 9540?	☐ Yes ☐ No
If no, please explain reason and estimated timeline for UL 9540 certification:	

Section 4 – BESS Operator and DERMS Communication

Provide information about the **BESS Operator** by completing the section below. The BESS Operator is the entity responsible for connecting the BESS equipment to the relevant DERMS provider.

The **BESS Operator** is often the inverter manufacturer but can also be a third-party integrator such as a developer or owner-operator.

If the Applicant Company only manufactures batteries and the BESS utilizes an inverter made by a different company, you may need to coordinate with the inverter manufacturer to complete this section.

This section will determine if the BESS:

1. Is capable of transmitting data to its respective DERMS platform,
2. Can meet Passive Dispatch requirements, **and**

Meets UL 9540 safety certification requirements.

BESS OPERATOR INFORMATION	
BESS Operator Company Name	
Contact Name	
Contact Email	
C&I Only: BESS Operator is integrated with Generac Grid Services?	☐ Yes ☐ No
If no, expected integration date	
Residential Only: BESS Operator is integrated with EnergyHub?	☐ Yes ☐ No
If no, expected integration date	
Does BESS Operator charge a Vendor Fee[3]?	☐ Yes ☐ No
If yes, what fee?	

[3] See definition in Section 6 – Glossary of Terms

COMMUNICATION CRITERIA	
1. Can the BESS Operator receive a control signal from a DERMS and pass that control signal to the BESS at the customer site?	☐ Yes ☐ No
2. As part of the control signal, can the BESS Operator, at a minimum, communicate start time, end time, and magnitude of discharge on a per-event basis for each BESS?	☐ Yes ☐ No
3. Can the system dispatch and cancel/override an event if it receives notification from a DERMS provider?	☐ Yes ☐ No
4. Is the company willing to commit to developing a communication pathway at their own expense to the DERMS platform through an API integration?	☐ Yes ☐ No
5. **C&I only**: Is the BESS Operator capable of integrating using the DERMS Vendor API Self Development Kit (SDK) for Concerto?	☐ Yes ☐ No ☐ N/A
6. **Residential only**: Is the BESS Operator capable of integrating using Open ADR Protocol?	☐ Yes ☐ No ☐ N/A
If you answered No to 5 or 6 above, describe the resources you have available to commit to integration with the respective DERMS, along with estimated timeline for integration:	

TELEMETRY REQUIREMENTS	
1. Does the BESS Operator maintain cloud storage of telemetry data?	☐ Yes ☐ No
If so, describe:	
2. At what interval does the BESS Operator maintain telemetry data? (i.e. 15 minutes, 1 hour, 1 day, etc.). The Program requires a 15-minute interval, at minimum.	
3. At what latency does the BESS Operator communicate telemetry data with the DERMS? (i.e. 15 minutes, 1 hour, 1 day, etc.). The Program requires a one-month latency, at most.	
Additional notes on telemetry (if applicable):	

Passive Dispatch is a requirement of the Program for customers receiving upfront incentives. The BESS Operator will be responsible for meeting the Passive Dispatch criteria.

SCHEDULING REQUIREMENTS - PASSIVE DISPATCH	
1. BESS can be pre-programmed by BESS Operator to discharge to 20% rated capacity Monday through Friday (except holidays) during the months of June, July, and August uniformly between the hours of 3PM and 8PM.	☐ Yes ☐ No
If no, describe:	
2. The BESS Operator will ensure BESS discharge is regulated to an even discharge over those 5 passive dispatch hours (Existing charge – 20% SOC)/5.	☐ Yes ☐ No
If no, describe:	
3. BESS Operator can override Passive Dispatch events for BESS when Active Dispatch events are requested for those scheduled days **or** when requested by DERMS due to forecasted severe weather.	☐ Yes ☐ No
If no, describe:	

Section 5 – Application Submission

WHAT HAPPENS NEXT?

1. After the Application and supporting documents (UL Certifications and Product Specification Sheets) are submitted, you will receive an email confirmation including an application number (NTA-####).
2. The Program Administrators will request additional information, if necessary, and/or inform you of the decision, along with comments, to approve or deny the BESS in the Program.
3. Application resubmittal guidelines are stated in the *Program Guidelines for Energy Storage Solutions*.

Contact energystorage@ctgreenbank.com with any questions or concerns.

Section 6 – Glossary of Terms

TERM	DEFINITION
Active Dispatch	Events where a BESS dispatches energy to reduce demand during summer and winter peak periods as determined by the EDCs based on anticipated grid demand. Active Dispatch events are typically scheduled day-ahead.
Aggregator	Entity responsible for the coordination of the BESS with a BESS Operator to participate in dispatch events within the Program
API	Application Programming Interface, which is a software intermediary that allows two applications to talk to each other
Eligible Equipment List	The Eligible Equipment List includes equipment that has been submitted to be included in the Energy Storage Solutions program. Final approval requires the equipment to be fully of integrated with the respective DERMS platform (residential and/or commercial)
BESS	Battery Energy Storage System: electrical, electrochemical, mechanical and other types of energy storage technologies for systems intended to supply electrical energy. Includes battery and inverter for the purposes of this Program.
BESS Aggregator	Entity responsible for the coordination of BESS participating in dispatch events within the Program, working as an intermediary between the DERMS and the BESS Operator.
BESS Operator	Entity responsible for the coordination of the BESS participating in dispatch events within the Program
DERMS	The “Distributed Resource Energy Management System” is the platform utilized by the Electric Distribution Companies to notify the Battery Operators of scheduled events requiring Battery Energy Storage System actions.
EDCs	Electric Distribution Companies (Eversource Energy and The United Illuminating)
OpenADR	Open Automated Demand Response, provides a non-proprietary, open standardized demand response interface that allows electricity providers to communicate demand response signals directly to existing customers using a common language and existing communications
Passive Dispatch	Events where a BESS dispatches energy to reduce demand during summer peak periods. Passive Dispatch events are pre-scheduled by the Program Administrators and BESS Operators must program this event schedule into the BESS. See energystorageCT.com for complete schedule.
Program	Energy Storage Solutions is a program offered through the Program Administrators
Program Administrators	Collectively the Connecticut Green Bank, Eversource Energy, and The United Illuminating Company

Round Trip Efficiency	Round-trip efficiency is the percentage of electricity that can be put into storage and later retrieved
UL 1741 SA	Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources, Supplement A for United Laboratories 1741 – Details safety requirements applicable to a variety of equipment for use in standalone or interactive power systems
UL 1973	Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications – A certification standard for batteries used for energy storage with a focus on the battery's ability to withstand simulated abuse.
UL 9540	Standard for Energy Storage Systems and Equipment - As specified in the National Fire Protection Association (NFPA) 855, United Laboratories 9540 certifies the safety requirements for Battery Energy Storage Systems.
Vendor Fee	Any fee taken by a BESS Operator in exchange for operating a customer's BESS, either as a flat rate or a percentage of incentives paid.