DRAFT

Petition No. 1654
Tunnel BESS, LLC
72 Roosevelt Avenue Extension, Preston, Connecticut

Staff Report
July 31, 2025

Notice

On December 30, 2024, the Connecticut Siting Council (Council) received a petition from Tunnel BESS, LLC (TBL), a wholly owned subsidiary of FirstLight Power, Inc. (FirstLight), for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 16.02-megawatt (MW) alternating current (AC) battery energy storage facility (BESF) and associated equipment to replace the existing approximately 17-MW kerosene-fueled Tunnel Jet electric generating facility and associated equipment located adjacent to FirstLight Power, Inc.'s existing approximately 0.97-MW[1] Tunnel Hydroelectric Generating Station, 72 Roosevelt Avenue Extension, Preston, Connecticut, and associated electrical interconnection. (Petition or Project).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40 on or about December 23, 2024 FFL notified abutting property owners and Town of Preston (Town) officials, Town of Lisbon officials, City of Norwich (City) officials,[2] (collectively, "municipalities"), state officials, and agencies of the proposed Project.

On December 30, 2024, the Council sent correspondence to the municipalities stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by January 29, 2025. No comments were received.

On January 2, 2025, the Council issued a notice of incomplete petition to TBL due to the lack of proof of service of a copy of the Petition on the Office of Consumer Counsel (OCC). On January 3, 2025, TBL submitted proof of service of a copy of the Petition on OCC, and the Council deemed the Petition complete.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. During a regular meeting held on February 20, 2025, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than June 28, 2025, which was the 180-day statutory deadline for a final decision under CGS §4-176(i).

The Council issued interrogatories to TBL on March 5, 2025 and May 2, 2025. TBL submitted responses to the Council's interrogatories on March 25, 2025 and May 22, 2025, respectively. On May 22, 2025, TBL requested an extension of time to submit the response to Interrogatory 72 to June 20, 2025. On May 27, 2025, the Council granted such extension of time to submit the interrogatory response and requested an extension of time to render a final decision on this Petition to August 25, 2025 pursuant to CGS §4-176(i). On June 2, 2025, TBL consented to such extension of time.

TBL submitted the response to Interrogatory 72 on June 16, 2025.

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[1] https://www.iso-ne.com/isoexpress/web/reports/operations/-/tree/seson-claim-cap
[2] The Town of Lisbon and the City of Norwich are located within 2,500 feet of the proposed site.

Jurisdiction

Under CGS §16-50x, the Council has exclusive jurisdiction over energy storage facilities. CGS §16-50i(a)(3)(C) specifically exempts facilities with a capacity of 1 MW of electricity or less utilizing ***renewable energy sources***. Under CGS §16-1, renewable energy sources include, but are not limited to, wind, solar, fuel cells, geothermal or biogas. The definition of renewable energy sources does not include BESF.

Pursuant to CGS §16-50k, the Council shall in the exercise of its jurisdiction over the siting of energy storage facilities, approve by declaratory ruling any distributed resources facility with a capacity of not more than 65 MW unless the Council finds a substantial adverse environmental effect.

The capacity of a BESF is determined by the amount of stored energy that could be injected into the grid as electricity, or alternatively, when the BESF acts like a generating facility during discharge. CGS §16-50k(a)(B) directs the Council to approve by declaratory ruling the construction of any customer-side distributed resources facility or grid-side distributed resources facility with a capacity of not more than 65 MW. This includes BESF with output capacities of 1 MW or less. Therefore, pursuant to CGS §16-50i(a)(3)(C) and §16-50k(a)(B), BESF of any output capacity are under the Council's jurisdiction, including the BESF proposed in this Petition.[3]

Community Outreach

The Town is an eligible distressed municipality and may qualify as an environmental justice community. CGS § 22a-20a and DEEP's Environmental Justice Guidelines require applicants seeking a permit from DEEP or the Council for a new or expanded facility defined as an "affecting facility" that is proposed to be located in an environmental justice community to file an Environmental Justice Public Participation Plan (EJPPP). The proposed BESF is not an "affecting facility" under CGS § 22a-20a because it uses non-emitting and non-polluting sources. Thus, Environmental Justice does not apply to the facility, and an EJPPP is not required.

FirstLight formed a partnership with New Leaf Energy (NLE) to develop the Project. They began consultations with the Town in early 2024 by meeting with the Town First Selectperson. On March 28, 2024, FirstLight and NLE met with other Town officials including, but not limited to, the Town Fire Chief and Town Building Official. Questions regarding decommissioning, permitting, flood zones, and fire safety related to fire water supply were addressed at the meeting.

On April 10, 2024, FirstLight and NLE met with the City Fire Department. The City Fire Marshal, Assistant Fire Chief and Director of Training and Public Safety attended the meeting. Questions regarding the BESF, its location, spacing and fire suppression systems; compliance with Underwriters Laboratories (UL) 9540A standard; fire response; and specialized training were addressed at the meeting.

State Agency Comments

On December 30, 2024, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed Project from the following state agencies by January 29, 2025: Department of Energy and Environmental Protection (DEEP); Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Labor (DOL); Department of Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); the State Historic Preservation Office (SHPO); and the Office of Consumer Counsel (OCC).

[3] See Council Declaratory Ruling for Petition No. 1646, available at pe1646_dcltr_022125_a.pdf

On January 23, 2025, CEQ submitted comments regarding core forest, wildlife, stormwater, erosion and sediment controls, and spill prevention.[4] These concerns, among others, are addressed in the Public Health and Safety and Environmental Effects and Mitigation Measures sections of this document, pursuant to CGS §16-50p.

No other state agencies provided written comments on the Project.

Public Act 21-53

Public Act 21-53 "An Act Concerning Energy Storage" established a statewide goal to deploy 1,000 MW of energy storage in Connecticut by the end of 2030. It requires the PURA to develop programs for customer-side and grid-side energy storage systems connected to the electric distribution system and enables DEEP to issue requests for proposals for energy storage systems paired with renewable energy sources and stand-alone energy storage systems connected to the electric transmission or distribution system.[5]

On July 28, 2021, PURA developed a nine-year electric storage program, the Energy Storage Solutions (ESS) program[6], that is administered by the Connecticut Green Bank, Eversource Energy (Eversource) and the United Illuminating Company (UI). It offers performance incentive payments to residential, commercial, and industrial customers who host on-site battery energy storage systems as follows:

1. Behind the Meter (BTM): customer-side distributed resource that serves on-site load (paired or stand-alone) behind a customer meter; and
2. Front of the Meter (FTM): grid-side distributed resource that does not serve on-site load behind a customer meter.[7]

A paired BTM or FTM storage system has a separate input and output source. For example, a paired system could have a solar facility-generated input and a 23-kV electric distribution line output. A stand-alone BTM storage system has the same input and output source, such as a 23-kV electric distribution line. Among the technical requirements for storage systems in the ESS program is the capability of the system to provide backup power or island from the grid during outage events.

The proposed BESF is a stand-alone FTM system. TBL participated in DEEP's recent RFP under PA 21-53 for Energy Storage and is anticipated to participate in forthcoming procurements under PURA Docket 25-01-15. Additionally, TBL would participate in all eligible ISO-NE markets for the Project.

Public Benefit

Pursuant to CGS §16-50p(c), a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity.

[4] https://portal.ct.gov/-/media/csc/3_petitions-medialibrary/petitions_medialibrary/mediapetitionnos1601-1700/pe1654/sac_municipal_official_comments/pe1654_statememo-ceq_commentsrecd_a.pdf?rev=8c6ffec2b09f4c128dcc11d16b07ced7&hash=B5AC068D07E09CF8BE3B5F6C7B357218

[5] The interim goals of the program are 650 MW by year-end 2027.

[6] https://energystoragect.com/

[7] Energy Storage Solutions Program Manual, CT Green Bank, Eversource and UI, dated January 20, 2023, *available at* https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/a3ee00544b1b1fc285258940006564b7/$FILE/ESS%20Program%20Manual_Updated%201.20.2023_CLEAN.pdf

The state Comprehensive Energy Strategy (CES) examines future energy needs and identifies opportunities to reduce ratepayer costs, ensure reliable energy availability, and mitigate public health and environmental impacts. CES Strategy No. 8(B) is "Integrate efficiency, storage, and renewables to meet peak demand." The state Integrated Resource Plan (IRP) assesses the state's future electric needs and a plan to meet those future needs. IRP No. 13 is "Support the development of energy storage resources that can support the reliable integration of variable renewables and avoid fossil peaking generation."

A "customer-side distributed resources" facility is defined under CGS §16-1(a)(34) as "generation of electricity from a unit with a rating not more than 65 MW at customer premises within the transmission and distribution system or a reduction in the demand for electricity at customer premises through conservation and load management. A "grid-side distributed resources" facility, is defined under CGS §16-1(a)(37) as "generation of electricity from a unit with a rating not more than 65 MW that is connected to the transmission or distribution system."

The proposed BESF is a grid-side distributed resource facility. It would benefit the reliability of the electric power supply of the state by drawing energy from generation resources at times of low demand and subsequently injecting that energy back into the system at times of high demand.

The Project would participate in the regional electricity market, contributing to a competitive electric supply by purchasing and storing energy during low demand periods and discharging the energy back into the grid during high demand periods leading to an efficient and cost-effective electric market. The proposed BESF would also reduce reliance on imported energy resources by supporting the storage and use of locally-generated renewable energy.

TBL participated in the ISO-NE England, Inc. (ISO-NE) Forward Capacity Auction 18 and received a Capacity Supply Obligation of 16.02 MW for the Capacity Commitment Period of 2027-2028.

The proposed facility would provide winter reliability benefits in the event that natural gas supplies are curtailed and/or backup oil supplies are limited.

The proposed facility is designed to achieve the goals of the state Conservation and Load Management Plan, including, but not limited to, shifting energy demand and servicing system load. It is located on a "grid edge" circuit, which are identified as circuits that experience higher than usual disruptions to electric service. PURA encourages the siting of resources on these circuits to balance the supply and demand for reliability.

The proposed facility would be dispatched in response to ISO-NE dispatch instructions and any limitations within the Interconnection Agreement. Generally, the facility would charge during times when regional energy demand and prices are lower and discharge to the grid when regional energy demand and prices are higher.

Proposed Site

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the BESF "site." Under RCSA §16-50j-2a(29), "site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located. The Council does not have jurisdiction or authority over any portion of the host parcel beyond the boundaries of the facility "site." This includes portions of the host parcel retained by the property owner and portions of the host parcel the property owner may lease to third parties. Once a facility is decommissioned, the Council no longer has jurisdiction or authority over the "site."

Under a lease agreement with the host parcel owner, TBL proposes to construct the BESF on an approximately 1.9-acre site within a 5.7-acre parcel owned by FirstLight CT Hydro, LLC. The host parcel is zoned Planned Industrial (I), located south of the Quinebaug River and accessed from Roosevelt Avenue Extension to the south via a private driveway.

FirstLight has operated its 0.97-MW hydroelectric Tunnel Generating Station at the site since 1919 and its 17 MW kerosene-fired Tunnel Jet electric generating facility at the site since 1969. The southern portion of the site is developed with the Tunnel Jet facility and associated fuel tank. The Tunnel Jet facility was retired in 2023. The northern portion of the site is undeveloped and forested.

The surrounding area includes forested areas to the north, across the Quinebaug River, agricultural areas to the south, Eversource's existing Tunnel Substation and a transmission line right-of-way to the southeast, a hydroelectric dam to the east, and a forested area to the west and southwest, abutting the Shetucket River.

TBL selected the site due to availability, size and topography, proximity to an electrical interconnection, and to replace a former carbon emitting facility (Tunnel Jet) with a non-carbon emitting facility (BESF). Pursuant to CGS §16-50p(g), the Council has no authority to compel a parcel owner to sell or lease property, or portions thereof, for the purpose of siting a facility.[8]

At the end of the service life, TBL would decommission the Project and restore the site substantially to pre-existing conditions.

The proposed BESF would be located northwest of the substation, encompassing the former Tunnel Jet facility and adjacent forested areas.

Proposed Facility and Associated Equipment

The proposed BESF would consist of the twenty-four 3.44 MWh Hithium lithium-ion battery storage units.

Additional battery storage (e.g. approximately seven battery storage units) may be deployed in the future to counteract battery degradation.

TBL selected lithium-ion rather than lithium-ion phosphate (LFP) because of its higher energy density (i.e. smaller footprint), and its lifespan and efficiency. LFP batteries are a viable option due to safety, longevity and moderate cost. However, the lower energy density per cell may require a larger system footprint, which could impact Project feasibility due to space constraints.

The battery containers would be installed within a fenced compound, arranged in groups of six that are approximately 31.7 feet apart. Each pair of groups would be served by three inverter and transformer pads.

The BESF would be capable of providing a maximum of 64.08 MWh of electrical energy to the grid based on 16.02 MW AC at the point of interconnection over a four-hour period. Each of the battery storage units/battery container has a maximum storage capacity of approximately 3.44 MWh for a total maximum storage capacity of approximately 82.6 MWh. The efficiency of the BESF is approximately 96.25 percent.

Each battery storage unit would consist of 10 battery racks, each rack would consist of 8 battery modules and each module would consist of 48 battery cells. The seals of the battery modules are dust and water ingress resistant. The seals are designed to last for over 25 years or greater than the service life of the Project. The battery container manufacturer is responsible for verification that equipment is not damaged upon receipt.

Other equipment associated with the BESF includes, but is not limited to, six SMA SCS 3960 inverters, six 2,850 kVA transformers, one 650 kVA auxiliary transformer, one 350 kVA auxiliary transformer and collective switchgear. The six transformer/inverter pads would be approximately 19 feet by 9 feet.

Each battery storage unit measures approximately 19.8 feet long by 8 feet wide by 9.5 feet high. Each unit includes, but is not limited to, batteries, battery management system, HVAC equipment, and electrical

[8] *Corcoran v. Conn. Siting Council*, 284 Conn. 455 (2007); CGS §16-50p(g) (2024)

equipment. The thermal management system includes a liquid coolant system connected to a chiller. The battery storage units operate normally between temperatures of -22º F to 140º F.

Distances from the BESF and the nearest property lines and infrastructure are as follows:

a) The nearest property line from the BESF perimeter fence is 2 feet to the southeast (Industrial zoned Eversource property);
b) The nearest residential property line from the BESF perimeter fence is approximately 677 feet to the southwest at 68 Roosevelt Avenue Extension;
c) The nearest property line from the nearest portion of the battery containers is 33 feet to the southeast (Industrial zoned Eversource property);
d) The nearest residential property line from the nearest portion of the battery containers is approximately 705 feet to the southwest at 68 Roosevelt Avenue Extension;
e) The nearest residential structure from the nearest portion of the battery containers is approximately 1,000 feet to the north at 685 River Road, across the Quinebaug River; and
f) The Eversource Tunnel Substation is located approximately 41 feet to the southeast of the BESF perimeter fence.

The Connecticut State Fire Prevention Code (CSFPC) requires a minimum distance of 10 feet 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. The design of the BESF complies with the CSFPC setback requirements. The nearest property line from the nearest portion of the battery containers is approximately 33 feet to the southeast at the Eversource property.

The BESF would be installed within an irregular shaped approximate 370-foot long by 200-foot wide compound enclosed by a 7-foot chain link fence. A BESF control house is not proposed. Two 20-foot wide access gates would be located in the southwest portions of the BESF compound.

Access to the BESF would be via the existing Tunnel Jet paved access drive off of Roosevelt Avenue Extension. Within the compound, an approximately 20-foot wide gravel drive would loop around the interior of the fenced compound to provide access to the battery containers and other equipment.

Construction of the facility, including the access drives, BESF compound and electrical interconnection, would disturb an approximate 1.9-acre area.

The proposed facility would have one 23-kV underground electrical interconnection to Eversource's Tunnel 115-kV/23-kV Substation to the west. It would utilize the existing Tunnel Jet Point of Interconnection.

A System Impact Study (SIS) was completed for the distribution and transmission portions of the system on December 22, 2023 and December 17, 2024. No upgrades are necessary subject to TBL limiting its discharging from 3 pm to 8 pm. The Interconnection Services Agreement was expected to be finalized in spring 2025.

The estimated cost of the facility is approximately $31.7M. Costs would be recovered through the Federal Investment Tax Credit, wholesale market participation, state incentive programs, and energy service revenues.

Public Health and Safety

Noise

The primary sources of equipment noise for the proposed BESF are the battery storage units (especially the HVAC systems within the battery storage units) and the inverters. Noise would be produced during charging and discharging. When the BESF is neither charging nor discharging, the BESF would continue to generate noise through operation of the HVAC system to manage the temperature.

A noise analysis determined the facility would meet state noise control standards without noise mitigation measures. Projected operational noise levels at the nearest industrial property line to the south would be approximately 48 dBA, and projected noise levels at the nearest residential property line to the north would be approximately 46 dBA. This is in compliance with the state noise control standards of 70 dBA and 51 dBA, respectively.

Construction noise is exempt from the DEEP Noise Control Regulations.

Operation of the BESF would not cause discernible vibrations at off-site locations.

Electric and Magnetic Fields

During operation of the BESF, electric and magnetic fields (EMF) would be produced by the power inverters and the distribution interconnection that extends to the nearby substation. EMF levels from these sources would dissipate quickly with distance and therefore would be similar to pre-existing EMF background levels at the property lines.

Security

The facility would be monitored on a 24/7 basis by a third-party operator to detect abnormalities in operations. The facility can be automatically and remotely shut down if abnormalities are detected. Additionally, the facility is designed with manual shutdown switches.

The proposed site would comply with the Council's White Paper on the Security of Siting Energy Facilities. Security measures include, but are not limited to, a locked security fence and security cameras. Safety placards would be installed on the exterior of the fence as required.

The 7-foot tall perimeter fence would comply with the National Electrical Code.[9] The site will have a locked gate, limiting access to authorized personnel only. High voltage warning signs would be posted at the site. BESF lighting would be needed for security and/or maintenance work, and it would be designed to avoid impact to adjacent properties.

Fire Protection

The BESF would be designed in accordance with the National Fire Protection Association (NFPA) 855 – Standard for the Installation of Stationary Energy Storage Systems and the 2022 Connecticut State Fire Code Chapter 52- Energy Storage Systems.

BESF safety factors include module design, module configuration, battery management and safety features, and fire protection systems.

Battery fires are typically caused by electrical issues (e.g. short circuit), mechanical issues (i.e., physical damage, excessive heating both internally and from external fire sources, etc.), or manufacturing defects which can cause a cell to go into thermal runaway. A full state of charge will likely increase the duration of an emergency.

Another type of battery fire source is an inverter malfunction. However, the proposed inverters would be located on the transformer/inverter pads and not within the battery containers.

[9] Section 110.31 of the National Electrical Code (NEC), 2020 Edition notes that for over 1,000 Volts, "…a wall, screen, or fence shall be used…A fence shall not be less than 7 feet in height or a combination of 6 feet or more of fence fabric and a 1 foot or more…utilizing barbed wire or equivalent."

The Hithium battery container is certified to UL 9540, which ensures the batteries are designed and assembled with quality materials and methods reducing the likelihood of manufacturing defects. Each battery cell would be replaced if Battery Management System (BMS) sensors detect any abnormalities.

The facility would be monitored on a 24/7 basis by multiple integrated management systems to continuously monitor system voltage, temperature, and insulation of each battery cell. A BESF BMS is included within each battery unit. The BMS ensures early detection of pre-fault conditions and rapid detection of potential fault events. If parameters exceed pre-determined operational values, the BMS would automatically disconnect the affected rack or module and send an alarm to the operations center, in accordance with the Connecticut State Fire Prevention Code and NFPA 72 – National Fire Alarm and Signaling Code.

Each battery cabinet contains smoke, heat and gas detectors, which are monitored by both the Fire Alarm Control Panel (FACP) and the BMS. When the FACP receives an alarm, such as combustible gas, heat or smoke, the notification is routed to the BMS, which autonomously isolates the respective battery cabinet.

In accordance with NFPA 69 - Standard on Explosion Prevention Systems, each battery storage unit would be equipped with a ventilation system that would exhaust flammable gases during a thermal event. Battery gas from a single cell can be vented within a 1-3 minute time frame. Gases would be detected by the gas detection system installed inside the cabinet, activating the venting system to exhaust the gases from the cabinet to outside ambient air.

The typical equipment separation distances between the battery containers would aid in preventing fire spreading from one battery container to another.

TBL would utilize Hithium's aerosol fire suppression system within the battery cabinets. The aerosol would be FirePro, an environmentally friendly aerosol.

Current guidance from the International Association of Fire Chiefs (IAFC) suggests that BESF fire events should be allowed to burn out in a controlled, contained manner while nearby resources are monitored and protected using water as a proactive cooling agent exterior to the battery containers.[10] Water is considered the preferred agent for managing lithium-ion battery fires, wetting nearby combustibles/vegetation, cooling nearby exposures, and controlling smoke. Water applied directly to compromised battery racks may generate water run-off concerns and the potential for water damage to other battery units. Other traditional fire protection suppression methods, such as gaseous agents, dry chemicals, aerosols, or foams, have been demonstrated not to be effective.

There are no municipal fire water sources in the immediate vicinity of the proposed facility. TBL consulted with the Town regarding fire water alternatives. The Quinebaug River is an adequate water source for the fire department to utilize in case of a fire, and it is located approximately 132 feet away.

NFPA 855 and International Fire Code 1207 - Electrical Energy Storage Systems, require the facility owner/operator to designate and train staff to respond 24/7 within a timely manner to investigate emergency BESF incidents.

TBL has an existing Emergency Response Plan (ERP) for the Tunnel Station facility. TBL is developing an updated ERP with BESF-specific measures.

TBL would maintain emergency contact information on signage at the entrance to the site. Additionally, TBL would provide the fire department with a copy of the ERP and train fire department personnel on the final ERP prior to site operation.

[10] https://www.safetystanddown.org/wp-content/uploads/2023/06/Training-Sheet-Day-2-Firefighting-Operations.pdf

In the event of a fire that includes a battery burst/rupture, toxic decomposition products or gases could be emitted, including but not limited to, carbon monoxide (CO). A site-specific plume analysis was performed to assess the potential impact to the surrounding area. Based on modeled results, it is unlikely that levels of CO above the threshold level for serious health effects would reach the nearest sensitive receptor in the event of a BESF unit experiencing a failure event

Per an August 1, 2023 IAFC guidance on fire response, persons should maintain a distance of at least 150 feet from the battery storage unit involved. This should be maintained until an assessment of the incident severity determines that the separation distance can be safely reduced.

First responders would assess the emergency and determine if real-time monitoring of any smoke/plume is warranted.

Based on water sampling from other fire events at other BESF facilities, fire water runoff is not expected to contain contaminants that exceed regulatory criteria. Water testing would be based upon the actual event conditions and assessed hazards and coordination with the owner/operator of the facility, local emergency responders, and appropriate agencies.

In the event of a fault or other electrical disturbance, the facility would be able to disconnect from the grid automatically via the main disconnect switch and manual shutdown mechanisms. Although disconnected, the battery units would remain energized and can pose an electrical hazard to emergency responders.

Aviation Safety

The nearest airport is Windham Airport located approximately 14.7 miles to the northwest of the proposed BESF fence. The Federal Aviation Administration (FAA) Notice Criteria Tool indicates that no notice to the FAA is required for the proposed facility. If a temporary crane is used, the height of the crane is expected to be under 200 feet, and notice to the FAA would not be required.

Environmental Effects and Mitigation Measures

Air and Water Quality

The facility would not require a DEEP Air Permit. No hazardous air emissions would be produced during the operation of the facility.

Water would not be used during operation of the facility.

Groundwater at the site is classified as GA defined as, "…existing private and potential public or private supplies of water suitable for drinking without treatment…" Notwithstanding, the site is not located within a public water supply watershed area. Additionally, there are no existing wells on the site or proximate to the site.

Three monitoring wells were installed in May 2024 to delineate possible groundwater contamination associated with the Tunnel Jet facility. The Project would conform with any requirements or conditions in the final remedial action plan approved by DEEP. TBL would also coordinate with DEEP on an ongoing basis during construction as necessary. Construction and operation of the BESF is not anticipated to have an impact on groundwater.

The site is not located within a DEEP-designated Aquifer Protection Area or a public water supply watershed area. The proposed facility, except for the stormwater basins, would be located outside of the 500-year Federal Emergency Management Agency-designated flood zone.

The runoff from water used in the response to a fire incident would flow into the stormwater management basins to avoid direct discharge to the Quinebaug River.

TBL has an existing Spill Prevention Control and Countermeasures Plan (SPCCP) for the Tunnel Station facility. TBL is developing an updated SPCCP with BESF-specific measures.

The BESF units utilize an ethylene glycol/water mix as coolant that would be cooled by the chiller system. The battery containers serve as a containment system for any possible coolant leaks.

The nearest wetland is located along the Shetucket River, approximately 124 feet to the northwest of the limits of disturbance. No vernal pools were identified on the host parcel.

Pursuant to C.G.S. §22a-430b, a DEEP Stormwater Permit is required for any disturbance greater than 1 acre. Construction of the facility, including the access drive, BESF compound and electrical interconnection, would disturb an approximate 1.9-acre area; therefore, the Project would require a DEEP Stormwater Permit.

Stormwater flows would be diverted to two stormwater management basins in the northern portion of the site and one stormwater management basin in the western portion of the site.

E&S controls for the proposed facility would comply with the 2024 *Connecticut Guidelines for Soil Erosion and Sediment Control.*

The proposed transformers may be dry or fluid-filled. Fluid-filled transformers would utilize the biodegradable FR3 insulating oil and could be equipped with low oil level alarms.

Forests and Parks

Development of the site would require the clearing of approximately 1.29 acres of trees. The proposed tree clearing area is located within edge forest. It would not impact core forest.

There are no state parks or forests within 0.25-miles of the site.

Scenic, Historic and Recreational Values

There are no properties listed on the National Register of Historic Places within the Area of Potential Effect. SHPO requested a professional archaeological assessment survey (Phase II Survey). The Phase II Survey was performed, and the results were submitted to SHPO. Subsequently, by letter dated May 12, 2024, SHPO determined that a Phase III site investigation for archaeological data recovery to be performed prior to construction.

There are no State-designated scenic roads proximate to the site.

The Project site is located within the Last Green Valley National Heritage Area. Development of the proposed BESF at the same site as the existing Tunnel Jet facility is anticipated to have minimal impacts on this resource.

FirstLight maintains a canoe portage trail on the host parcel for recreational access to the Quinebaug River. It runs from several hundred feet upstream of Tunnel Generating Station across the Project site and along the existing driveway to a public access gate. The BESF would not affect the portage trail.

Views from the surrounding area, including the nearest residence to the north, would be obstructed by existing vegetation to the north, east and west. Areas immediately to the south/southwest are developed with the substation and transmission line. The proposed facility with its approximately 9.5-foot tall battery containers would be significantly shorter in height than the existing 26-foot tall Tunnel Jet facility to be removed. The

battery containers would also be below the existing tree canopy height. The proposed interconnection would be underground.

No landscaping is proposed.

Fish, Aquaculture and Wildlife

Tunnel Generating Station was converted from a pond and release hydroelectric system to a run of the river hydroelectric system in 2000. Run of the river hydroelectric facilities are Class I renewable energy sources. A fish ladder enables upstream and downstream catadromous fish passage.

On July 22, 2024, DEEP issued a Natural Diversity Database determination indicating that two state-listed species may occur at the site: the bald eagle, a state-listed Threatened species; and the blueback herring, a state-listed Species of Special Concern. The proposed Project does not include any in-water work, and thus, no impact to blueback herring is expected. DEEP indicated that a bald eagle nest is located approximately 1,000 feet from the proposed site, which is greater than the recommended minimum buffer of 660 feet. Thus, the proposed Project is not expected to impact the bald eagle.

The northern long-eared bat (NLEB), a federal and state-listed Endangered Species, occurs in Connecticut. There are no known occurrences of NLEB in Preston. There are no known maternity roost trees with 150 feet of the site or hibernacula within 0.25-mile of the site.

Agriculture

There are no prime farmland soils at the site. Approximately 1.3 acres of Statewide Important Farmland soils is within the Project limit of disturbance. No agricultural activities are conducted at the site.

Facility Construction

Prior to the commencement of facility construction, the existing Tunnel Jet facility would be fully decommissioned and removed. Construction would proceed with tree removal, installation of E&S controls, grubbing, civil work, and installation of BESF infrastructure.

Development of the site would require approximately 2,500 cubic yards of cut and 2,500 cubic yards of fill. No net cut material is expected to result from Project construction.

Construction of the BESF is expected to begin in the second quarter of 2026 with completion and commissioning by July 2027. Typical construction hours would be from 7:00 a.m. to 7:00 p.m. Monday through Friday.

Operation and Maintenance

Once operational, the facility would require routine maintenance visits for the electrical equipment at least once per year, plus additional maintenance on a 3, 5 and 15-year cycle, in accordance with the manufacturer recommendations. Vegetative maintenance would occur at least once per year.

TBL would remove snow from the BESF area to ensure access to the site and that the BESF fans and vents remain clear and accessible

The Project has a projected service life of approximately 20 years. The anticipated average annual degradation of the battery units would be approximately 1.73 percent annually. Rather than replace batteries, TBL plans to augment the facility with additional batteries approximately at year 7 to compensate for battery degradation i.e. maintain the energy storage capability.

Decommissioning

At the end of the Project's service life, the BESF would be dismantled and removed, including but not limited to, BESF infrastructure, concrete pads, and fencing. Underground infrastructure and concrete would be removed to a depth of three feet. Equipment would be reused, recycled or sold as scrap to the greatest extent possible.

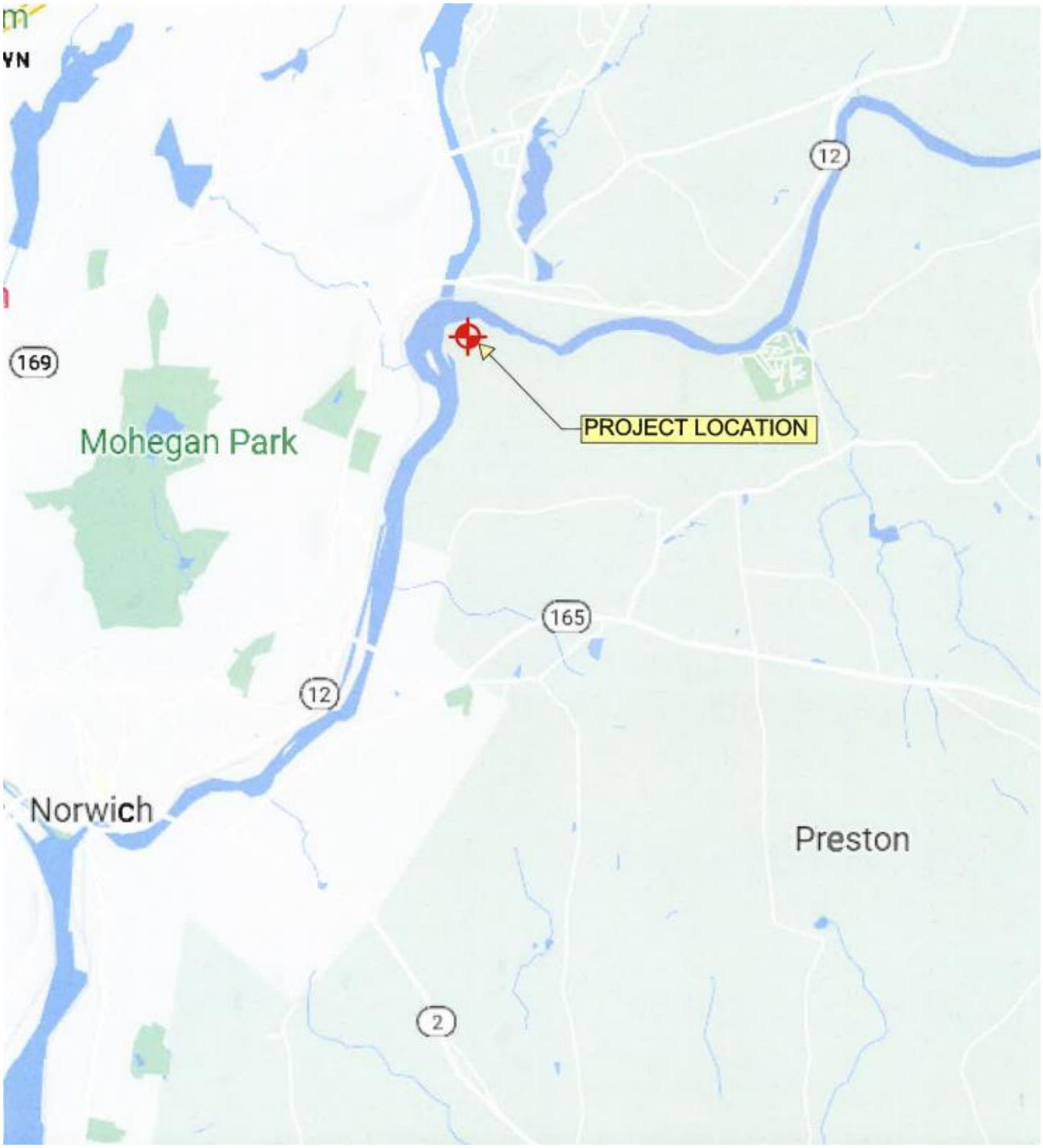
Conclusion

The BESF is a grid-side distributed energy resource with an output capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed Project would further the State's energy policy by integrating storage to meet peak demand and support the reliable integration of variable renewable resources.

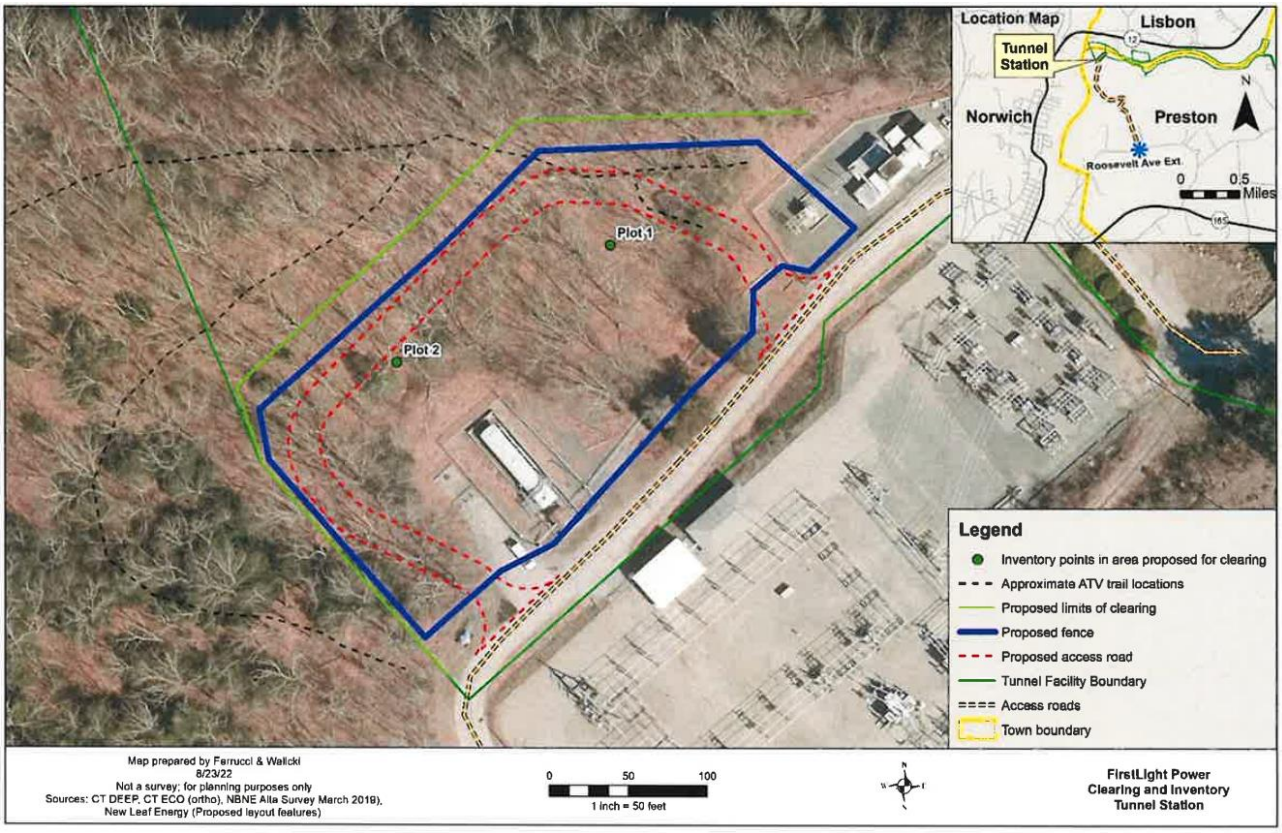
If approved, staff recommends the following conditions:

1. Approval of any Project changes be delegated to Council staff;
2. Submit a copy of the DEEP Stormwater Permit prior to the commencement of construction;
3. Submit a copy of the final DEEP Remedial Action Plan prior to commencement of construction;
4. Submit the final seed mixes for disturbed areas at the site including the stormwater basin that are pollinator-friendly species to the extent feasible, prior to commencement of construction;
5. Submit final staging/laydown area locations and erosion and sedimentation control plans for such areas, if necessary, prior to commencement of construction;
6. Submit final Spill Prevention, Control and Countermeasures Plan for the Project prior to commencement of construction;
7. Provide a copy of the final Emergency Response Plan (ERP) that includes an itemized list of necessary fire suppression equipment to the Council and local emergency responders prior to facility operation, and provide emergency response training;
8. Provide a signed certification by the Fire Chief that training has been completed and the ERP is approved prior to commencement of operation;
9. Submit a copy of the building permit prior to commencement of operation; and
10. Submit a post-construction operational noise study that documents compliance with state standards, and if necessary, the identification of any noise mitigation measures that are employed to adhere to the standards.

Site Location

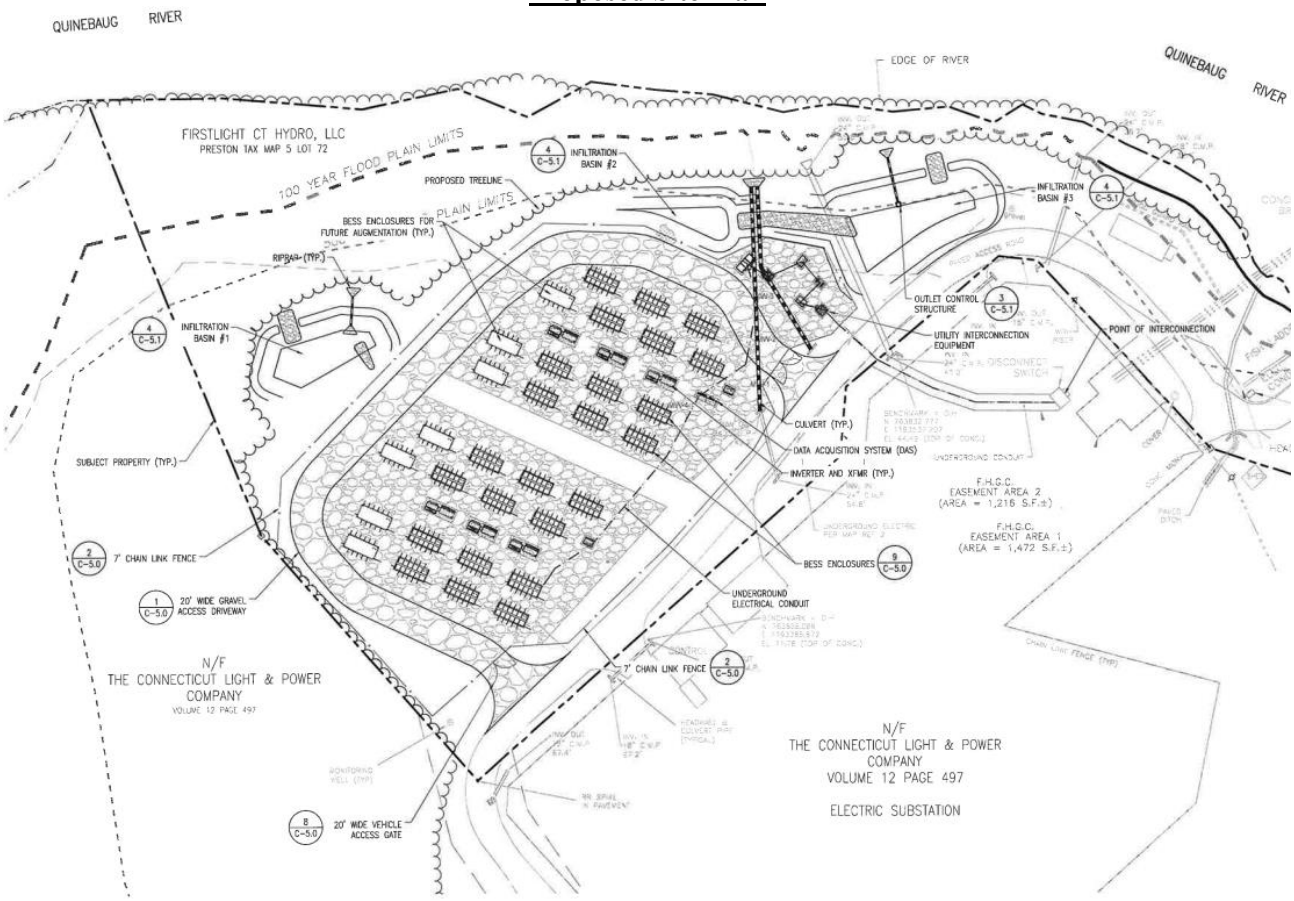


Host Parcel - Existing Conditions



Host Parcel- Proposed Conditions

Proposed Site Plan



Faclity Rendering: Aerial View