

Draft

**Petition No. 1636
Bloom Energy Corporation
Assa Abloy, 100 Sargent Drive
New Haven, Connecticut**

**Staff Report
November 29, 2024**

Notice

On August 1, 2024, the Connecticut Siting Council (Council) received a petition from Bloom Energy Corporation (Bloom) for a declaratory ruling, pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the installation of a 900-kilowatt (kW) customer-side fuel cell facility and associated equipment located at Assa Abloy, 100 Sargent Street, New Haven, Connecticut. (Petition or Project).

On April 22, 2024 and July 18, 2024, Bloom provided Project plans to the City of New Haven (City). Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on July 22, 2024, Bloom provided notice of the Project to abutting property owners, City officials and required state agencies and officials. No comments were received.

On August 2, 2024, the Council sent correspondence to the City stating that the Council has received the Petition and invited the municipality to contact the Council with any questions or comments by August 31, 2024. No comments were received.

Also on August 2, 2024, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments regarding the proposed Project from the following state agencies be submitted to the Council by August 31, 2024: 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); and the State Historic Preservation Office (SHPO). No comments were received.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition for a declaratory ruling within 60 days of receipt. At a public meeting held on September 12, 2024, 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 January 28, 2025, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

The Council issued interrogatories to Bloom on September 23, 2024. Bloom provided responses to the Council's interrogatories on October 14, 2024.

Public Benefit

The Project would be a “customer-side distributed resources” facility, as defined in CGS § 16-1(a)(49). CGS § 16a-35k establishes the State’s energy policy, including the goal to “develop and utilize renewable energy resources...to the maximum practicable extent.” The proposed facility is a distributed generation resource and will contribute to fulfilling the State’s Renewable Portfolio Standard as a low emission Class I renewable energy source.

The Project was selected as part of the Non-Residential Renewable Energy Solutions (NRES) Program, the successor to the low and zero emissions (LREC/ZREC) renewable energy credit program to further develop the state's Class I renewable energy objectives and to encourage the participation by customers in underserved and environmental justice communities through 20-year contracts.

The proposed facility is not proposed to be undertaken by state departments, institutions or agencies, and is not to be funded in whole or in part by the state through any contract or grant. It is a privately funded project.

The facility would be owned, operated and maintained by Bloom under a 20-year power purchase agreement with Assa Abloy.

Proposed Site

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the proposed fuel cell facility "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 Project "site." This includes portions of the host parcel retained by the landowner and portions of the host parcel the landowner may lease to third parties. Once a facility is decommissioned, the Council no longer has jurisdiction or authority over the Project "site."

The proposed facility is to be located within an approximately 1,780-square foot site on a 30-acre host parcel owned by Assa Abloy. The site is zoned Light Industry (LI) and is developed with a building and paved parking area. The facility would be located in the west-central portion of the parcel adjacent to the southwest corner of the building.

The surrounding area consists of industrial, commercial, and transportation development. The nearest residential property line from the proposed facility is approximately 1,320 feet to the west at 6 Cedar Street.

Proposed Facility and Associated Equipment

The facility would consist of three Bloom Energy 300-kW ES-6 solid oxide fuel cell Energy Servers and associated equipment, including water deionizers, telemetry cabinets, disconnect switches, a transformer and utility cabinets.

The proposed facility would be a customer-side, distributed resources project, designed only to provide electricity. The proposed facility would operate in parallel with the utility grid and provide at least 50% of the average annual baseload of Assa Abloy. Any excess electricity created during periods of low energy usage, would be exported to the grid under the net metering tariff. The fuel cell is designed to optimize the electrical efficiency alone rather than operate as a combined heat and power unit. Heat generated by the proposed facility is used internally to increase the electrical efficiency of the fuel cells, and consequently there is no useful waste heat generated.

The interconnection application was filed with United Illuminating in May 2024 and is under review.

The fuel cell facility would be installed on a 44 foot 7 inch by 39-foot 11 inch asphalt apron within a lawn area. One existing concrete barrier and the existing asphalt curb would be removed to accommodate the proposed facility. The total area of disturbance will be 0.15 acres.

The fuel cell facility would consist of three energy servers measuring approximately 33 feet long by 4 feet 5 inches wide by 7 feet tall installed on concrete footings on an asphalt apron. The facility would be raised four feet above grade due to flooding potential. A six-foot wide ramp will provide access to the raised facility. The ramp consists of a 90-foot asphalt access road at a 5 percent grade.

The fuel cells are tamper proof and can only be accessed by essential personnel with a unique access key.

The natural gas interconnection would run underground to nearby existing gas utility infrastructure located northwest of the facility. Electrical connections would extend west to an existing electrical service box within the electrical room located on the ground floor of the existing building. New meters and other electrical equipment would be installed adjacent to the proposed facility. A water connection would also be installed to the east within the boiler room of the existing building.

Project construction would begin in the second quarter of 2025 and continue over an approximately 4 month period. Construction days/hours would be Monday-Friday, 7AM – 5 PM.

The fuel cell has an operational life of 20 years. The solid oxide fuel cell media in the fuel cell unit would be changed at five-year intervals. At the end of the 20-year contract, Assa Abloy may renew the contract, return the facility at no cost, or buy the facility at fair market value. If the facility is to be removed at the end of the contract, the fuel cell units and associated equipment would be dismantled and removed.

The estimated cost of the facility is \$1,666,481.

Public Health and Safety

Before commissioning the proposed facility, Bloom would use nitrogen as pipe cleaning media, in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission.

The fuel cell facility has internal and remote 24/7 operational monitoring. Abnormal operation would cause the facility to automatically shut down. The facility can also be shut down through a remote operations center as well as manually. The fuel cell facility is designed in accordance with current American National Standards Institute and Canadian Standards Association (ANSI/CSA) America FC 1-2004 and the National Fire Protection Association, Inc. Standard 853 for stationary fuel cell power systems and includes extensive safety control systems, including both automatic and manual shutdown mechanisms that comply with pertinent engineering standards.

An emergency response plan (ERP) for the facility is included within the Petition. Bloom would submit the ERP to the New Haven Fire Department and provide training to emergency responders related to fire safety at the site.

The fuel cell system is controlled electronically and has internal sensors that continuously measure system operation. If safety circuits detect a condition outside normal operating parameters, the fuel supply is stopped, and individual system components are automatically shut down. In addition, manual emergency shut down push buttons would be located at the site.

A fence is not required per National Electrical Code requirements as there is no high voltage equipment. Bollards would be installed around the facility. No lighting would be installed at the site. A facility traffic management plan would be developed in consultation with Assa Abloy to maintain vehicular access within the parking lot and driveways.

Specific measures would be taken during construction to protect existing utility infrastructure including marking of existing utilities, contractor verification of utility location, immediate repair of any damage to existing utilities and regular monitoring of construction activities.

A crane will be used for construction. The boom would extend to a maximum of 50 feet. Notice to the Federal Aviation Administration is not required for use of the crane.

The nearest airport, Tweed New Haven Airport, is located 2.2 miles southeast of the proposed facility. Notification to the Federal Aviation Administration is not required.

The New Haven Yard Maintenance Facility services the Metro-North rail cars and provides track storage. It is the nearest property boundary to the facility site that is located to the north and west. The proposed facility is approximately 110 feet from the nearest railroad tracks. There is no heavy or fast train activity in this area and an existing railroad repair shop is located between the Project and the railroad tracks. No additional protection from train derailment is necessary.

Noise associated with the construction of this Project would be temporary and exempt from DEEP Noise Control Regulations. Operation of the facility is expected to produce noise emissions no greater than 31 dBA at the nearest residential receptor located approximately 610 feet to the south of the site and would comply with DEEP Noise Control Regulations. The fuel cell would have a noise dampening foam material at the doors and exhaust of the fuel cell to lower its noise emissions by up to 5 dBA.

Environmental Effects and Mitigation Measures

The fuel cell facility would comply with all applicable DEEP water quality standards as no water would be consumed or discharged once the facility is operational. The proposed fuel cell facility would operate without water discharge under normal operating conditions. Water consumption would only occur at system fill and during restart operations.

Air emissions produced during fuel cell operation would not trigger any regulatory thresholds and are shown below.

Fuel Cell Facility	
Compound	lbs/MWh
NO _x	<0.01
CO	<0.05
VOCs	<0.02
CO ₂ *	679-833

* DEEP amended its regulations in 2016 to eliminate the CO₂ permit requirements from the New Source Review and Title V Programs as a result of a United States Supreme Court decision that overturned states' regulatory CO₂ permit requirements (*Utility Air Regulatory Group v. U.S. Environmental Protection Agency*, 573 U.S. 302 (2014))

The proposed facility would emit no methane (CH₄), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), which are greenhouse gases defined in RCSA §22a-174-1(49), and would emit negligible amounts of sulfur oxides, and particulate matter.

The fuel cell desulfurization system would remove sulfur that is used as an odorant in natural gas because it is a fuel cell system contaminant. Sulfur compounds would be collected within a desulfurization unit (desulf unit) using a filter media – a composite copper catalyst. The U.S. Department of Transportation has certified the desulf unit as an acceptable form of transport for the desulfurization material that meets hazardous waste shipment standards. When a desulf unit is taken out of service, it is transported by a Bloom contractor to an out of state facility where the composite copper catalyst within the unit is removed, and the copper is used for other products. The empty desulf units are then refurbished for reuse at other Bloom fuel cell locations.

The Project is located entirely within a previously disturbed area on a developed property. No wetlands, or prime farmland soils would be disturbed by the proposed Project. No tree clearing is required. Erosion and sedimentation controls for the proposed facility would comply with the *2024 Connecticut Guidelines for Soil Erosion and Sediment Control*.

The proposed facility is located within the Coastal Boundary. The nearest coastal resource to the proposed facility site is intertidal flats and tidal wetlands associated with New Haven Harbor located more than 1,400 feet to the southeast of the site.

Utility uses are consistent with the City's LI zoning district. The City Plan of Conservation and Development focuses on energy conservation that includes, but is not limited to, development of renewable energy resources. Additionally, the City Long Wharf Responsible Growth Plan identifies Assa Abloy as a key anchor in that area.

The site is within Special Flood Hazard Zone AE and Moderate Wave Action (LiMWA) Coastal AE 12 - designated flood zone. The Connecticut State Building Code requires the facility location to be no less than two feet above the base flood elevation (BFE). The BFE is 12 feet; therefore, the proposed facility design elevation would be at 14 feet. The fuel cell facility would be constructed on concrete footings rather than an originally proposed earthen berm with a minimum elevation of 14.2 feet above mean sea level (amsl). The bottom of the fuel cell energy servers would be at an elevation of no less than 15.37 feet amsl. Based on comments received from the state National Flood Insurance Protection coordinator, the concrete footings will serve as the primary structural foundation for the facility.

The site is not within an Aquifer Protection Area (APA). The nearest APA is 8.3 miles to the south. The site is not located within a DEEP Natural Diversity Database buffered area.

The site is previously disturbed and not expected to impact cultural resources.

Visual impact from the proposed Project would be minimal as it is located on the Assa Abloy property among existing buildings and parking lots. The Assa Abloy building would block views from the east and northeast. Views from the New Haven Harbor walkways are obscured by I-95 and the existing industrial infrastructure. Some visibility would occur from the rail yard, but the yard is not an area of public access.

Conclusion

The Project is a distributed energy resource with a 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. It would reduce the emission of air pollutants that contribute to smog and acid rain, and to a lesser extent, global climate change, and furthers the State's energy policy by developing and utilizing renewable energy resources and distributed energy resources. Furthermore, the Project was selected under the state's NRES Program.

If approved, staff recommends the following conditions:

1. Approval of any Project changes be delegated to Council staff;
2. Provide a copy of the Fuel Cell Emergency Response Plan to local emergency responders prior to facility operation and provide emergency response training that includes an itemized list of necessary fire suppression equipment; and
3. Provide a Construction Spill Prevention Control and Countermeasure Plan with contractor information and appropriate reporting forms.

Fuel Cell Site Location



- Legend**
- Site
 - Abutting Property
 - Approximate Assessor Parcel Boundary
 - Equipment
 - Asphalt Service Apron
 - Limit of Grading
 - Electrical Service
 - Water Service
 - Gas Service

Map Notes:
 Base Map Source: CTECD 2019 Aerial Photograph
 Map Scale: 1 inch = 300 feet
 Map Date: July 2024

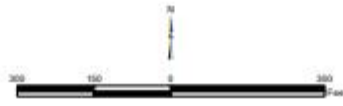


Exhibit 2
Site Vicinity
 Proposed Bloom Energy Facility
 Assa Abloy
 100 Sargent Drive
 New Haven, Connecticut



Site Plan

