

DRAFT

Petition No. 1522
Bloom Energy Corporation
Allied Printing Services
1 Allied Way (a/k/a 1046R Tolland Turnpike), Manchester, Connecticut

Staff Report
July 29, 2022

Introduction

On June 23, 2022, 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 700-kilowatt (kW) fuel cell facility and associated equipment to be located at Allied Printing Services (APS), 1 Allied Way (a/k/a 1046R Tolland Turnpike) in Manchester, Connecticut (Petition or Project).

Bloom provided Project plans to the Town of Manchester (Town) Director of Planning and Economic Development on June 6, 2022. The Town did not comment on the Project.

On June 13, 2022, Bloom provided notice of the Project to abutting property owners, Town officials, and required state agencies and officials. On June 16, 2022, Bloom received an inquiry from one abutter requesting a copy of the site plan and sound study. Bloom responded to the inquiry on the same date. No other comments were received.

On June 27, 2022, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the municipality to contact the Council with any questions or comments by July 23, 2022. No comments were received.

Also on June 27, 2022, pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, the Council notified all state agencies listed therein, requesting comments regarding the proposed Project be submitted to the Council by July 23, 2022. No comments were received.

The Council issued interrogatories to Bloom on July 13, 2022. Bloom provided responses to the Council's interrogatories on July 25, 2022.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. On July 21, 2022, 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 December 20, 2022, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

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 Low and Zero Emissions Renewable Energy Credit (LREC/ZREC) program. The facility would be installed, maintained and operated by Bloom under a 15-year power purchase agreement with APS.

Project Site

The proposed facility would be located on a 27.23-acre parcel zoned Industrial. The parcel is developed with a commercial printing operation. The proposed facility would be located in a grassy area immediately south of the building.

The surrounding area contains a mix of industrial and commercial development. The nearest residential property line from the proposed facility is approximately 280 feet to the southeast.

Proposed Project

The facility would consist of two 250-kW and one 200-kW Bloom Energy ES-5 solid oxide fuel cell Energy Servers and associated equipment, including water deionizers, telemetry cabinets, disconnect switches, and utility cabinets. The energy servers comprising the fuel cell facility would be installed and skid-mounted within an approximate 125-foot 1-inch long by 24-foot 7-inch wide area. The height of the energy servers would be approximately 7 feet. See Attached Site Plan for detail.

The proposed facility would be located within a grass area south of the building and north of an existing driveway and parking area. The fuel cell facility would be located more than three feet from a raised curb and would be outside of a designated vehicle travel path in accordance with applicable safety codes. The natural gas meter and associated equipment would be installed on the skid to the east and protected by bollards.

Utilities (electric and data) would extend into the building to interconnect with existing on-site utility infrastructure. The water connection would be at the wall near the fuel cell facility. The facility's natural gas meter would connect to new underground natural gas service to be provided from North Main Street via Allied Way.

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 a portion of the electrical needs of APS. The proposed facility is sized to provide at least 44% of the average annual baseload of APS. Any excess electricity created during periods of low energy usage would be exported to the local electric grid under the net metering tariff. The interconnection application was submitted to Eversource in April 2022.

The proposed Bloom fuel cell units are designed to optimize the electrical efficiency alone rather than operate as combined heat and power units. Heat generated by the proposed facilities is used internally to increase the electrical efficiency of the fuel cells, and consequently there is no useful waste heat generated.

The fuel cell facility has an operational life of 15 years. The solid oxide fuel cell media would be changed at five-year intervals. At the end of the 15-year contract, APS 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 and components would be dismantled and removed.

Bloom anticipates construction to start in the third quarter of 2022 and would occur over a four-month period. Construction hours would be Monday-Friday, 7 AM – 5 PM.

The estimated cost of the facility is \$965,022.

Environmental Effects and Mitigation

The fuel cell facility would comply with all applicable Department of Energy and Environmental Protection (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 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, volatile organic compounds 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 the refurbished for reuse at other Bloom fuel cell locations.

No trees would be removed to construct the facility. Visual impact from the proposed Project would be minimal as it is located in a developed area directly south of the building. The building would screen views of the facility from the north. The undeveloped portion of the site is wooded; thus, existing vegetation would screen views from the south, west and east.

No wetlands, forest or prime farmland soils would be disturbed by the proposed Project as it is located within a developed property. The nearest wetland is approximately 275 feet to the southwest. Erosion and sedimentation controls for the proposed facility would comply with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*.

The southern/southeastern portion of the site is located within a DEEP Natural Diversity Database buffer area associated with the Hockanum River. By letter dated May 6, 2022, DEEP indicated that the Project is not expected to negatively impact state-listed species. The site is not within a Federal Emergency Management Agency-designated flood zone nor within an Aquifer Protection Area (APA). The nearest APA is approximately 175 feet to the northwest.

The site is previously disturbed and would not impact historic or cultural resources.

Public Safety

Before commissioning the proposed facility, Bloom would use compressed air 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 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 Town Fire Marshal and would provide on-site training to local officials. The fuel cell components are contained within a locked, metal cover that would prevent unauthorized access.

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.

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 34 dBA at the nearest residential receptor located approximately 280 feet to the southeast of the fuel cell 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.

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 LREC/ZREC 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; and
3. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities.

Fuel Cell Location



Legend

- | | | |
|--------------------------------------|--------------------|--------------------------|
| Project Area | Electrical Service | Existing Electrical Room |
| Site | Water Service | Existing Telecom Room |
| Abutting Property | Data Service | Existing Baler Room |
| Approximate Assessor Parcel Boundary | Gas Service | |

Map Notes:
Aerial Map Source: CTECO 2019 Aerial Photograph
Map Scale: 1 inch = 450 feet
Map Date: June 2022

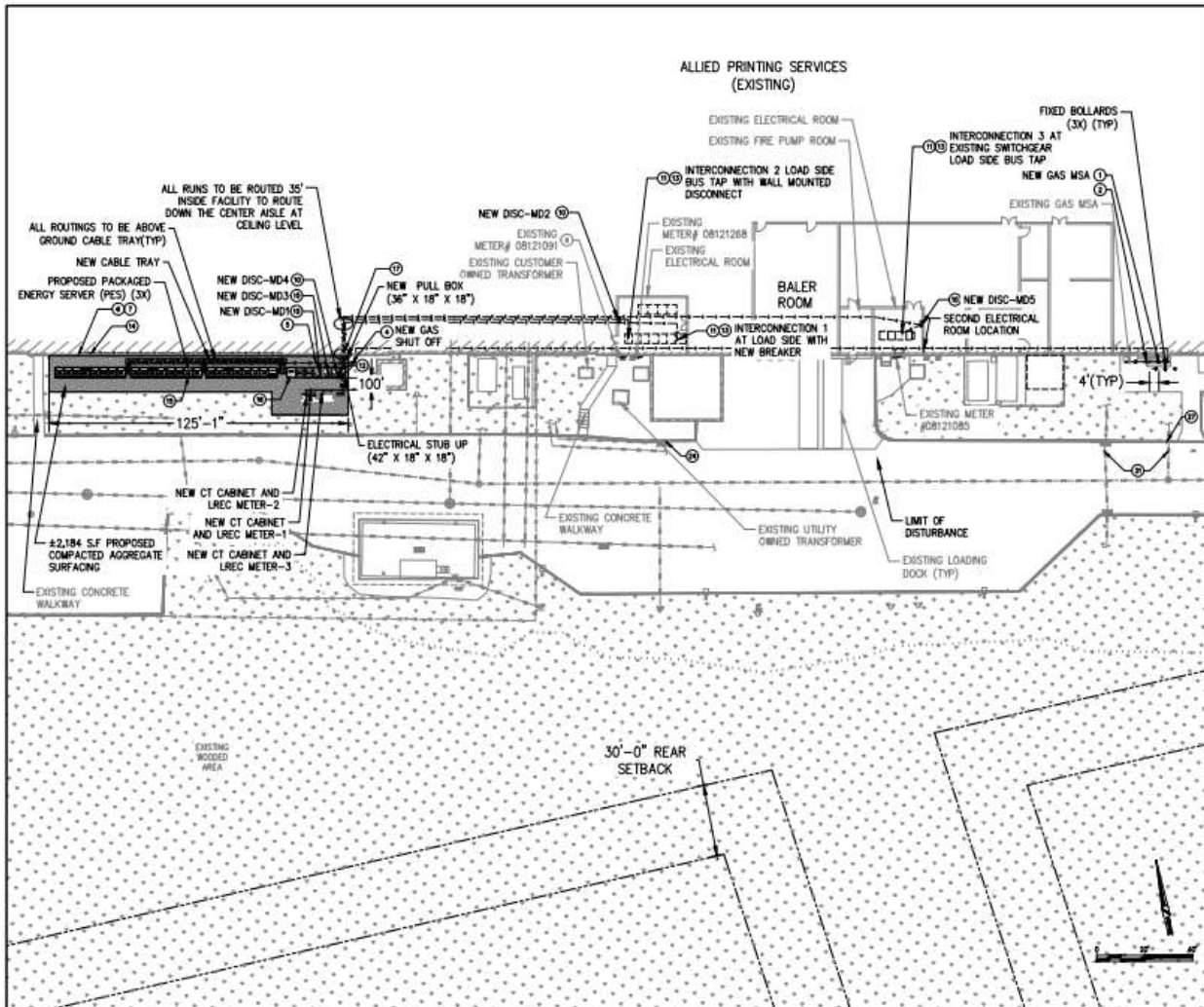


Exhibit 2 Site Vicinity

Proposed Bloom Energy Facility
Allied Printing Services
1 Allied Way
Manchester, Connecticut



Site Plan



Site Location Photograph



Looking northeast toward Facility location