

# DRAFT

**Petition No. 1510  
Bloom Energy Corporation  
Bozzuto's, Inc.  
400 Industrial Avenue, Cheshire, Connecticut**

**Staff Report  
July 1, 2022**

## **Introduction**

On May 5, 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 1-megawatt (MW) fuel cell facility and associated equipment to be located at Bozzuto's Inc. (Bozzuto's) at 400 Industrial Avenue in Cheshire, Connecticut (Petition or Project).

Bloom provided Project plans to the Town of Cheshire (Town) Planner on April 4, 2022. The Town did not comment on the Project.

On April 28, 2022, Bloom provided notice of the Project to abutting property owners, Town officials, and required state agencies and officials. No comments were received.

On May 6, 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 June 4, 2022. No comments were received.

Also on May 6, 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 June 4, 2022. No comments were received.

The Council issued interrogatories to Bloom on June 8, 2022. Bloom provided responses to the Council's interrogatories on June 13, 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 June 23, 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 November 11, 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 Bozzuto's.

### **Project Site**

The proposed facility is to be located on a 49-acre parcel zoned Industrial (I-1). The parcel is developed with a warehouse and distribution facility with associated access drives and parking areas for tractor-trailer trucks. The proposed facility would be located in a paved area immediately to the west of the warehouse building.

The surrounding area contains a mix of industrial and commercial uses and vacant land with some residentially developed parcels. The Farmington Canal Heritage Trail is located to the west of the site. The nearest residential property line from the proposed facility is approximately 1,200 feet to the west-northwest.

### **Proposed Project**

The facility would consist of four Bloom Energy 250-kW 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 within an approximate 57-foot 3-inch long by 46-foot 7-inch wide area surrounded by Jersey barriers. 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 paved area currently designated for three tractor-trailer truck parking spaces. To protect the fuel cell facility from potential vehicle damage, existing Jersey barriers approximately 32 inches tall would remain along the southern side of the facility. Three existing 32-inch tall Jersey barriers along the building on the east side of the facility would be relocated to the north side of the facility, and three new 32-inch tall Jersey barriers would be installed on the west side of the facility to ensure that the facility is protected on all sides.

The electrical interconnection would be run in an overhead conduit to the electrical room immediately to the south. The natural gas connection route would be along the rooftop to reach a new 10-foot by 4-foot natural gas pad located on the ground and protected by bollards. The natural gas meter on the pad would be supplied by an underground line from the point of connection. The water connection route for the fuel cell facility would be mostly above ground and would enter the building to the south to connect inside the building. Bloom would include heat trace (a/k/a heat tape) along certain sections of the water line as necessary to protect against freezing.

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 the warehouse. The proposed facility is sized to provide at least 91% of the average annual baseload of warehouse operations. 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 for review.

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, Bozzuto's 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 fourth 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 \$1,202,617.

### **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 <sub>x</sub>	0.01
CO <sub>2</sub> *	679-833

\*DEEP amended its regulations in 2016 to eliminate the CO<sub>2</sub> 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 CO<sub>2</sub> permit requirements (*Utility Air Regulatory Group v. U.S. Environmental Protection Agency*, 573 U.S. 302 (2014))

The proposed facility would emit no methane (CH<sub>4</sub>), sulfur hexafluoride (SF<sub>6</sub>), 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 on the warehouse property. The building would screen views of the facility from the north, south and east. The facility may be visible from the west and southwest, but such views would be obstructed by trucks and trailers utilizing the parking lot and mature wooded areas to the west. The Farmington Canal Heritage Trail is located farther to the west at a distance of approximately 795 feet, but any potential views from the trail would be obstructed by mature off-site and on-site vegetation.

No wetlands, forest or prime farmland soils would be disturbed by the proposed Project as it is located entirely within paved areas on a developed property. Erosion and sedimentation controls for the proposed facility would comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

The western portion of the site is located within a DEEP Natural Diversity Database buffer area. By letter dated May 3, 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 0.38 mile to the east.

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 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 36 dBA at the nearest industrial receptor located approximately 340 feet to the west 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.

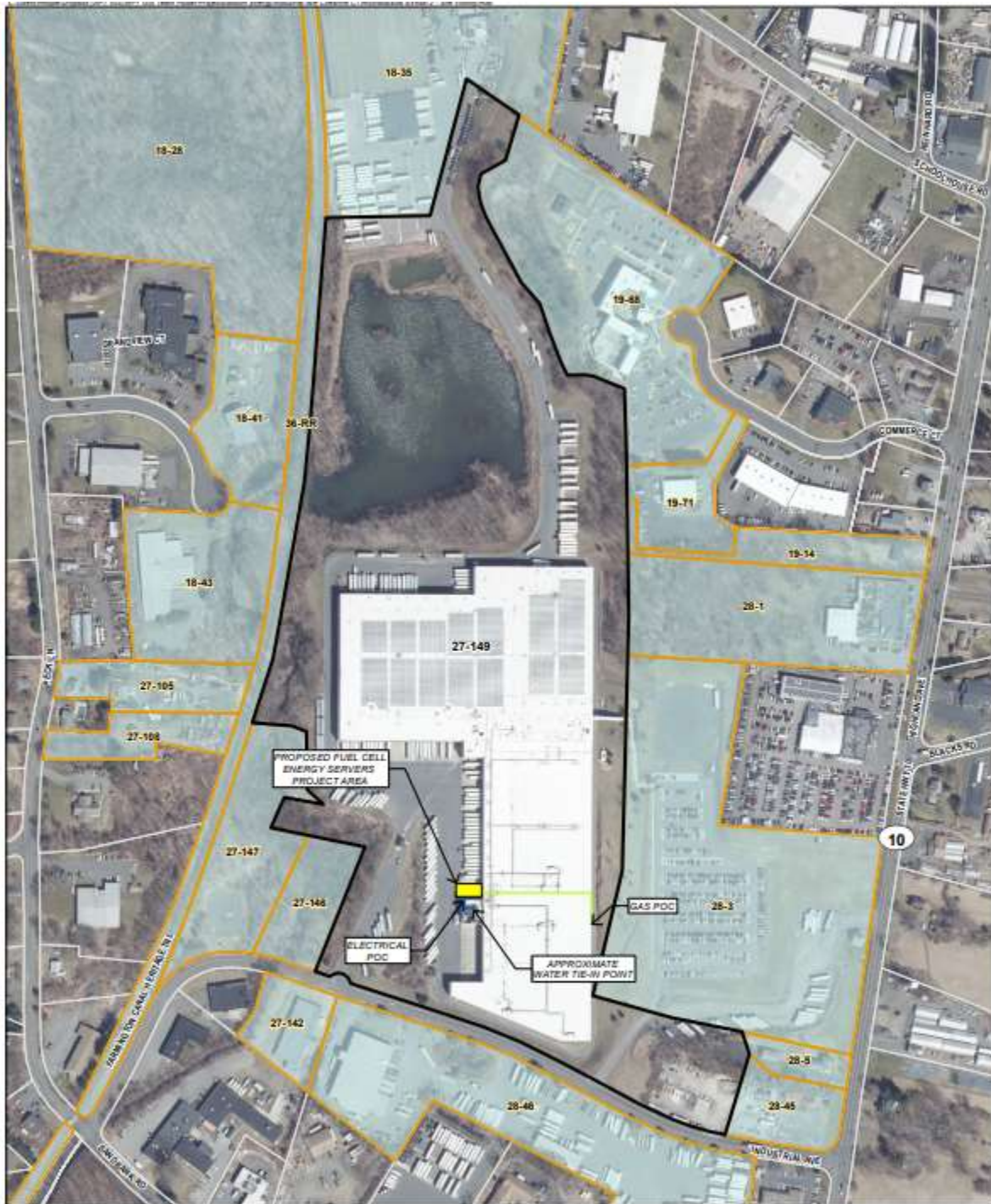
### **Conclusion**

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

- Site
- Abutting Property
- Approximate Assessor Parcel Boundary
- Project Area
- Electrical Service
- Water Service
- Gas Service

Map Notes:  
Base Map Source: CTDCQ 2019 Aerial Photograph  
Map Scale: 1 inch = 400 feet  
Map Date: April 2022



### Exhibit 2 Site Vicinity

Proposed Bloom Energy Facility  
Bozzuto's Inc.  
400 Industrial Avenue  
Building B  
Cheshire, Connecticut





**Looking east towards Facility location.**