STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: www.ct.gov/csc

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 22, 2020

Justin Adams
Nedal Sumrein
Bloom Energy Corporation
4353 North First Street
San Jose, CA 95134

RE: **PETITION NO. 1402 -** Bloom Energy Corporation petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 350-kilowatt customer-side fuel cell facility and associated equipment located at Western Connecticut State University, 7 University Boulevard, Danbury, Connecticut.

Dear Mr. Adams and Mr. Sumrein:

At a public meeting held on May 21, 2020, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of Department of Energy and Environmental Protection and would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. Approval of any minor project changes be delegated to Council staff;

2. Provide a copy of the Emergency Response Plan to local emergency responders prior to facility operation, and provide emergency response training, if requested;

3. The use of natural gas as a fuel system cleaning medium during fuel cell construction, installation or modification shall be prohibited;

4. Submit the following information to the Council 15 days prior to any fuel pipe cleaning operations related to fuel cell construction, installation, or modification:
    a. Identification of the cleaning media to be used;
    b. Identification of any known hazards through use of the selected cleaning media;
    c. Description of how known hazards will be mitigated, including identification of any applicable state or federal regulations concerning hazard mitigation measures for such media;
    d. Identification and description of accepted industry practices or relevant regulations concerning the proper use of such media;
    e. Provide detailed specifications (narratives/drawings) indicating the location and procedures to be used during the pipe cleaning process, including any necessary worker safety exclusion zones;
    f. Identification of the contractor or personnel performing the work, including a description of past project experience and the level of training and qualifications necessary for performance of the work;

g. Contact information for a special inspector hired by the project developer who is a Connecticut Registered Engineer with specific knowledge and experience regarding electric generating facilities or a National Board of Boiler and Pressure Vessel Inspector and written approval of such special inspector by the local fire marshal and building inspector; and
h. Certification of notice regarding pipe cleaning operations to all state agencies listed in General Statutes § 16-50j(h) and to the Department of Consumer Protection, Department of Labor, Department of Public Safety, Department of Public Works, and the Department of Emergency Management and Homeland Security;

5. Compliance with the following codes and standards during fuel cell construction, installation or modification, as applicable:
    a. NFPA 54
    b. NFPA 853; and
    c. ASME B31;

6. Submit a copy of an Emergency Response/Safety Plan within 90 days of the date of this decision that includes, but is not limited to the following:
    a. A description of the results of any simulated emergency response activities with any state and/or local emergency response officials;
    b. Details of any facility site access system; and
    c. Establishment of an emergency responder/local community notification system for on-site emergencies and planned construction-related activities that could cause community alarm. The system shall include notification to the following: local emergency responders, city or town officials, state legislators, and local residents that wish to participate;

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

8. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the City of Danbury;

9. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

10. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;

11. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and

12. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition, dated April 17, 2020, and additional information received May 6, 2020, and in compliance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,

s/ Melanie A. Bachman

Melanie A. Bachman
Executive Director

MAB/RDM/emr

Enclosure: Staff Report dated May 21, 2020

c: The Honorable Mark D. Boughton, Mayor, City of Danbury
Sharon Calitro, Director of Planning & Zoning, City of Danbury
Terry Timan, Fire Marshal, City of Danbury

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Petition No. 1402
Bloom Energy Corporation
Western Connecticut State University
7 University Boulevard
Danbury, Connecticut

Staff Report
May 21, 2020

Introduction

On April 17, 2020, the Connecticut Siting Council (Council) received a petition from Bloom Energy Corporation (Bloom) for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a customer-side 350-kilowatt (kW) fuel cell facility and associated equipment to be located on the Western Connecticut State University (WCSU) Westside Campus at 7 University Boulevard in Danbury, Connecticut.

On April 15, 2020 Bloom provided notice of the project to abutting property owners; City of Danbury officials; and required state agencies and officials. On April 30, 2020, the Danbury Deputy Planning Director responded to Bloom indicating that the Planning Department has no objection to the proposed project.

On April 20, 2020, the Council sent correspondence to the City stating that the Council has received the Petition and invited the City to contact the Council with any questions or comments by May 17, 2020. The Council has not received any comments to date.

Also on April 20, 2020, pursuant to Regulations of Connecticut State Agencies §16-50j-40, the Council notified all state agencies listed therein, requesting comments regarding the proposed project be submitted to the Council by May 17, 2020. No comments were received.

The Council issued interrogatories to Bloom on April 28, 2020, followed by a second set issued on April 30, 2020. Bloom provided responses to the both sets of the Council's interrogatories on May 6, 2020.

Public Benefit

The project would be a "customer-side distributed resources" facility, as defined in Connecticut General Statutes (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. In its final decision in Docket No. 12-02-09, the Connecticut Public Utilities Regulatory Authority determined that the Bloom Energy Server qualifies as a Class I renewable energy source under CGS §16-1(a)(20)(A). The project was selected as part of the Low and Zero Emissions Renewable Energy Credit (LREC/ZREC) program.

Project Site

The Project site is located on the 273-acre Westside Campus of WCSU, located in the central portion of Danbury. The property is zoned RA-40, Single Family Residential. The campus is on the east side of University Boulevard, which extends from Lake Avenue Extension north through the campus. West Lake Reservoir abuts the property to the north. Areas to the west, north and east of the campus are primarily residentially developed. Commercial development is to the south along Lake Avenue Extension.

The proposed facility is located between a parking lot and the rear of the William O'Neill Athletic and Convocation Center (O'Neill Center). The closest residentially developed property is approximately 1,216 feet to the northeast of the proposed facility.

Proposed Project

The facility would consist of two Bloom solid oxide fuel cell Energy Servers: one 200-kW model ES5-FABAAN, and one 150-kW model ES5-MA4AAN, and associated equipment including water deionizers, telemetry cabinets, disconnect switches and utility cabinets. The facility would be installed on a 54.5-foot long by 19-foot wide concrete pad, accessed by a new six-foot wide, six-foot long service walkway extending from an existing sidewalk.

Underground utilities - electric, gas and water - would extend from the Visual and Performing Arts (VPA) Center to the facility. Electric supply connections from the facility would extend to the VPA center and the O'Neill Center. The facility has been sized to provide approximately 98 percent of the annual average baseload of the O'Neill Center and approximately 95 percent of the average baseload of the VPA. Any excess power being exported to the grid will be sold under the Net Metering tariff.

The proposed facility would be a customer-side, distributed resources project, designed only to provide electricity. Electricity generated by the facility would be consumed primarily by WCSU, and any excess electricity would be exported to the grid. The Bloom fuel cell units are designed to increase electrical efficiency, and as a result, there would be no useful waste heat generated by the fuel cell units. Although WCSU was initially interested in a combined heat and power application, the associated costs to efficiently utilize the Bloom Energy Servers in such a system was too costly to pursue.

The fuel cell facility has an operational life of 20 years equal to a 20 year contract with WCSU. The solid oxide fuel cell media would be changed at five year intervals. At the end of the 20 year contract, WCSU 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 2020 with 14 weeks of construction time including site prep, installation, and facility commissioning. Construction hours are expected to be Monday to Friday from 7 a.m. to 5 p.m.

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 site is within an Aquifer Protection Area. The proposed fuel cell facility would have virtually no water usage or discharge. Water consumption would occur at initial system fill and during restart operations.

Air emissions produced during fuel cell operation would be below DEEP applicable limits for a new distributed generator, as shown below, and thus, no DEEP air permit is required.

Comparison of the Fuel Cell Facility with RCSA Criteria *		
Compound	Fuel Cell Facility(lbs/MWh)	Emissions standards(lbs/MWh)
NOx	<0.01	0.15
CO_2	679-833	1,650

* Regulations of Connecticut State Agencies Section 22a-174-42(b)(3)(C); 22a-174-42(d)(2)(B)(ii) & Table 42-2

The proposed facility would emit no methane (CH_4), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), which are greenhouse gases defined in Regulations of Connecticut State Agencies Section 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. Because the spent desulf units are used to make copper products, the desulf units are exempted from hazardous waste requirements as "excluded recyclable material."

Visual impact from the proposed project would be minimal as it is located among several campus buildings. An eight-foot tall chain link fence with privacy slats would be installed on the south and west sides of the facility to provide screening from an adjacent parking lot. The fuel cell cabinets are approximately 7.1 feet tall and would not protrude above the fence. Additionally, landscape plantings would be installed along the south fenceline. Bollards would be installed along the south and west edges of the concrete facility pad but within the fenceline and thus, would not be visible.

No wetlands would be disturbed by the Project. The site is not within a Federal Emergency Management Agency-designated flood zone or within a quarter-mile of a DEEP Natural Diversity Database buffered area. Due to the previously disturbed nature of the site, no historic or cultural resources would be impacted. Three trees in a lawn area would be removed to construct the facility.

Any noise associated with the construction of this project would be temporary in nature and exempt per DEEP Noise Control Regulations. The operation of the proposed facility would meet DEEP Noise Control Regulations at the nearest residential property line (313 feet to the west).

Public Safety

Before commissioning of the proposed facility, the natural gas fuel lines would be cleaned in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission using nitrogen.

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 by manual switches for the facility and for the natural gas feed. The fuel cell facility is designed in accordance with American National Standards Institute and Canadian Standards Association (ANSI/CSA) America FC 1-2014 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. A Fire Prevention and Emergency Response Plan (ERP) for the facility is included within the Petition. Bloom would submit the ERP to the City Fire Marshal for review and approval, and would provide training to emergency responders.

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.

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.

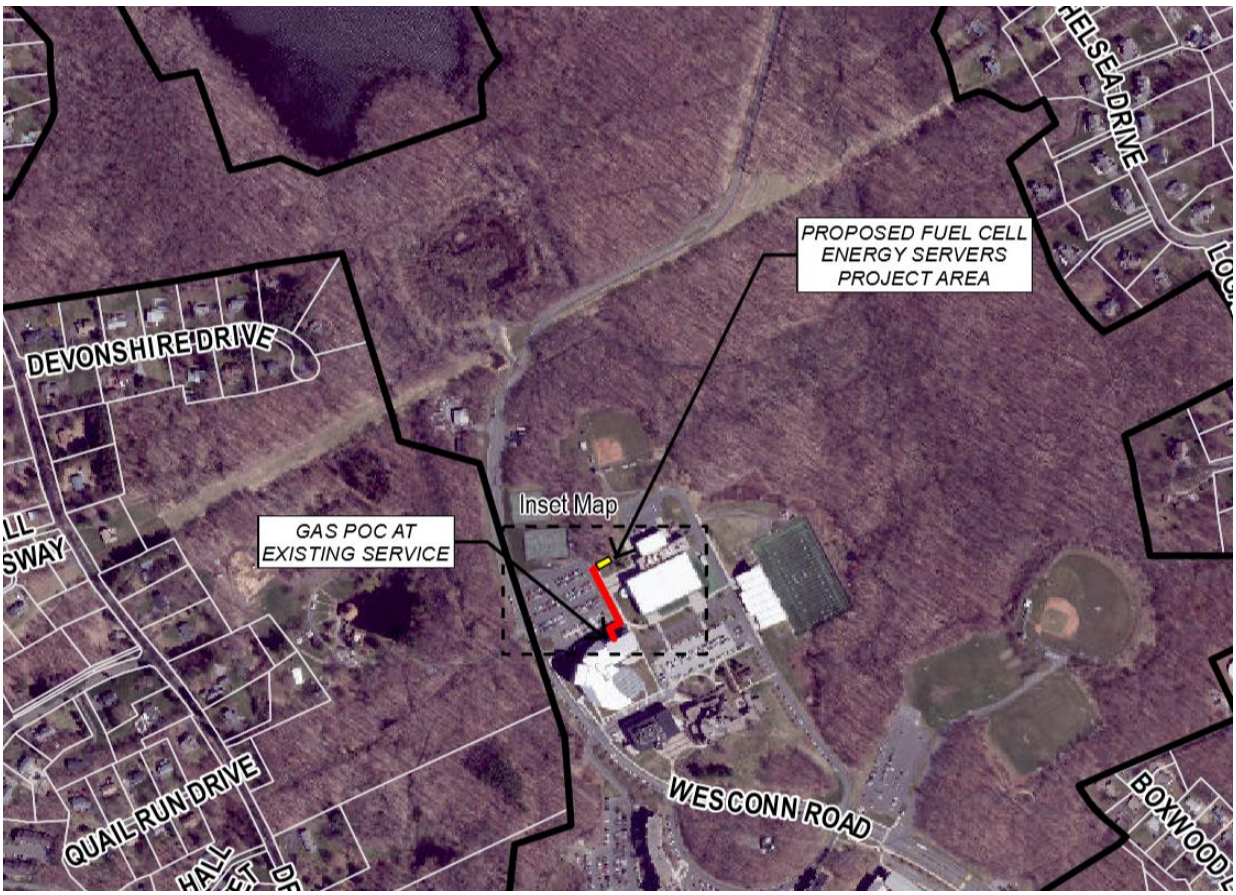
Recommendation

If approved, staff recommends the following conditions:

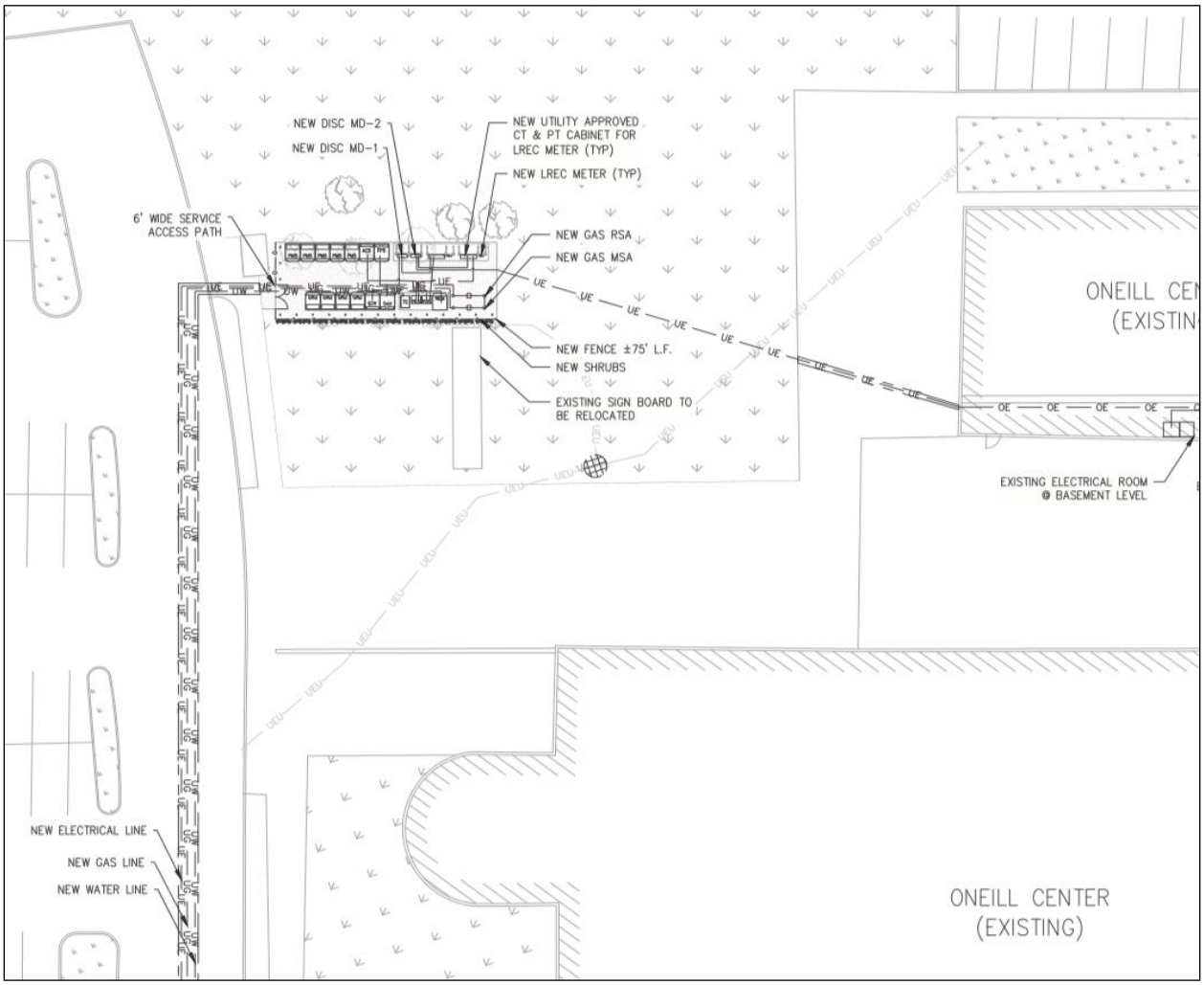
1. Approval of any minor project changes be delegated to Council staff.

2. Provide a copy of the ERP to local emergency responders prior to facility operation, and provide emergency response training, if requested.

Fuel Cell Location



Site Plan


NEW DISC MD-2
NEW DISC MD-1
NEW UTILITY APPROVED CT & PT CABINET FOR LREC METER (TYP)
NEW LREC METER (TYP)
6' WIDE SERVICE ACCESS PATH
NEW GAS RSA
NEW GAS MSA
NEW FENCE ±75' L.F.
NEW SHRUBS
EXISTING SIGN BOARD TO BE RELOCATED
EXISTING ELECTRICAL ROOM @ BASEMENT LEVEL
NEW ELECTRICAL LINE
NEW GAS LINE
NEW WATER LINE
ONEILL CENTER (EXISTING)