



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

www.ct.gov/csc

CERTIFIED MAIL RETURN RECEIPT REQUESTED

February 28, 2020

Justin Adams
Alicia Surowiec
Bloom Energy Corporation
4353 North First Street
San Jose, CA 95134

RE: **PETITION NO. 1392** – 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 customer-side 300-kilowatt fuel cell facility and associated equipment to be located at the Town of Southington Water Treatment Plant, 999 Meriden Waterbury Turnpike, Southington, Connecticut.

Dear Mr. Adams and Ms. Surowiec:

At a public meeting held on February 27, 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:

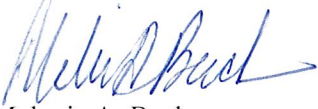
1. Approval of any minor project changes be delegated to Council staff;
2. The use of natural gas as a fuel system cleaning medium during fuel cell construction, installation or modification shall be prohibited;
3. Submit the following information to the Council 15 days prior to any fuel pipe cleaning 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;
- 4. 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
- 5. 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;
- 6. 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 Town of Southington;
- 7. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- 8. 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;
- 9. 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
- 10. 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 January 16, 2020, and additional information received January 28, 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,

A handwritten signature in blue ink, appearing to read "Melanie A. Bachman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Melanie A. Bachman
Executive Director

MAB/RDM/emr

Enclosure: Staff Report dated February 27, 2020

- c: Victoria Triano, Chairwoman, Town of Southington
- Robert Phillips, Director of Planning and Community Development, Town of Southington
- Mark J. Sciota, Town Manager, Town of Southington
- Robert Otis, Chairman, Town of Cheshire
- Sean M. Kimball, Town Manager, Town of Cheshire
- William S. Voelker, AICP, Town Planner, Town of Cheshire



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

Petition No. 1392 **Bloom Energy Corporation** **999 Meriden Waterbury Tpk. - Southington** **Staff Report** **February 27, 2020**

Introduction

On January 14, 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 300-kilowatt (kW) fuel cell facility and associated equipment to be located at the Town of Southington Water Treatment Plant (WTP) at 999 Meriden Waterbury Turnpike in Southington, Connecticut.

Prior to submitting the Petition, a Bloom representative sent a preliminary plan of the proposed project to Town of Southington (Town) officials on December 16, 2019. The Town responded via email stating they have no concerns regarding the site plans. On January 3, 2020 Bloom provided notice of the project to abutting property owners; Town officials; and required state agencies and officials.

On January 15, 2020, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the Town to contact the Council with any questions or comments by February 13, 2020. The Council also sent notice to the Town of Cheshire since it is within 2,500 feet of the proposed installation. The Council has not received any comments to date.

Also on January 15, 2020, and 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 February 13, 2020. No comments were received.

The Council issued interrogatories to Bloom on January 24, 2020. Bloom provided responses to the Council's interrogatories on January 28, 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 a developed, 13.3 acre property, zoned residential R-20/R-25. The parcel hosts the WTP and abuts other town owned properties to the north, south and east used for recreational and education purposes. A multi-unit residential building complex abuts the site to the west/southwest, across the Quinnipiac River. This complex is the closest residential property to the proposed fuel cell site (461 feet).

Proposed Project

The facility would consist of two 150 kW Bloom Energy Server 5 solid oxide fuel cells. The units, one measuring 17'11" long by 4'4" wide by 7'2" high and the second measuring 21'6" long by 4'4" wide, by 7'2" high, would be installed in an existing paved area east of the WTP denitrification building along the south central portion of the WTP facility. The associated equipment includes water deionizers, telemetry cabinets, disconnect switches and utility cabinets. Underground utilities - electric, gas and water - would connect to the fuel cells from existing on-site utilities.

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 90 percent of the average WTP annual baseload. Electricity generated by the facility would be consumed primarily by the WTP, and any excess electricity would be exported to the grid. The Bloom fuel cell units are designed to increase the electrical efficiency. As a result, there would be no useful waste heat generated by the fuel cell units. Additionally, the minimal amount of thermal load present at the site precludes efficient deployment of a combined heat and power application.

The fuel cell facility has an operational life of 15 years equal to a 15 year contract with the Town. The solid oxide fuel cell media would be changed at five year intervals. At the end of the 15 year contract, the Town 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 12-14 weeks of total construction time (i.e. 4 weeks each for site prep, installation, and commissioning). Construction hours are expected to be Monday to Saturday from 7 a.m. to 8 p.m., and Sunday from 11 a.m. to 6 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 (CH₄), sulfur hexafluoride (SF₆), 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 buildings at the WTP and is bordered mostly by Town-owned land as well as wooded areas along the Quinnipiac River.

No wetlands would be disturbed by the Project. The site is not within a Federal Emergency Management Agency-designated flood zone. The site is within a quarter-mile of a DEEP Natural Diversity Database (NDDDB) buffered area that extends in a linear fashion along the Quinnipiac River. Bloom submitted a NDDDB review request to DEEP but no response was received to date. The fuel cell site is entirely within a paved area on the WTP property and no natural habitat would be disturbed.

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 lines.

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 Planning Plan (ERP) for the facility is included within the Petition. Bloom would submit the ERP to the Fire Marshal for review and approval, and would provide training to any identified 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 condition:

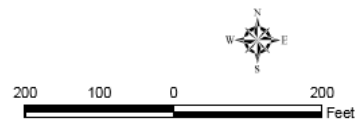
1. Approval of any minor project changes be delegated to Council staff.

Fuel Cell Location



- Legend**
-  Site
 -  Project Location
 -  Approximate Assessor Parcel Boundary (CTDEEP)

Map Notes
Base Map Source: 2010 Aerial Photograph (CTECC)
Map Scale: 1 inch = 200 feet
Map Date: January 2020



Site Plan

