



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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www.ct.gov/csc

CERTIFIED MAIL RETURN RECEIPT REQUESTED

January 17, 2020

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

RE: **PETITION NO. 1391** - 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 550-kilowatt fuel cell facility and associated equipment to be located at the Altice USA (formerly Cablevision) building, 28 Cross Street, Norwalk, Connecticut.

Dear Mr. Adams and Mr. Sumrein:

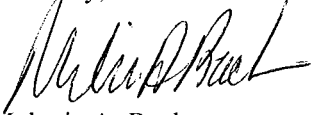
At a public meeting held on January 16, 2020, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of Department of Energy and Environmental Protection and would not have a substantial adverse environmental effect, and 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. Sunday construction hours be limited to an "as needed" basis;
3. Submission of final documentation from the Fire Marshal be provided to the Council;
4. The use of natural gas as a fuel system cleaning medium during fuel cell construction, installation or modification shall be prohibited;
5. 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;

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 December 10, 2019, additional information dated January 7, 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,

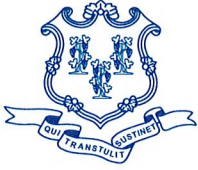


Melanie A. Bachman
Executive Director

MAB/RDM/lm

Enclosure: Staff Report dated January 16, 2020

c: The Honorable Harry W. Rilling, Mayor, City of Norwalk
Steven Kleppin, Director of Planning & Zoning, City of Norwalk



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Petition No. 1391

Bloom Energy Corporation

Altice USA – Norwalk, Connecticut

Staff Report

January 16, 2020

Introduction

On December 13, 2019, 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 550-kilowatt (kW) fuel cell facility and associated equipment to be located at Altice USA (formerly Cablevision) at 28 Cross Street in Norwalk, Connecticut.

In August 5, 2019, a Bloom representative sent plans of the proposed project to the Norwalk Land Use Planner, Bryan Baker. Mr. Baker had no questions or comments on the plans.

On December 5, 2019 Bloom provided notice of the project to abutting property owners; City of Norwalk officials; and required state agencies and officials.

On December 16, 2019, the Council sent correspondence to the City of Norwalk stating that the Council has received the Petition and invited the City to contact the Council with any questions or comments by January 12, 2020. The Council has not received any comments to date.

Also on December 16, 2019, 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 January 12, 2020. No comments were received.

While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies.¹

The Council issued interrogatories to Bloom on December 24, 2019. Bloom provided responses to the Council's interrogatories on January 8, 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.

¹ *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007).

Project Site

The Project site is located on a developed, 1.88 acre property, zoned Business No. 2 at 28 Cross Street in Norwalk. The property is surrounded by commercial, residential and industrial properties. A railroad abuts the site immediately to the west. The nearest developed residential property from the proposed fuel cell facility is located approximately 70 feet to the west/southwest at 10 Wilton Avenue.

Proposed Project

The facility would consist of two Bloom Energy Server 5 solid oxide fuel cells, referred to as ES-1 and ES-2. ES-1 has an output rating of 250 kW and measures approximately 14.8 feet long by 8.7 wide by 7.0-foot high. ES-2 is has an output rating of 300 kW and measure approximately 29 feet long by 7.5 wide by 7.5-foot high. The Bloom fuel cell uses non-combustion solid oxide technology that consumes natural gas as fuel to generate electrical power. No phosphoric acid is used in the fuel cell process. Associated equipment includes water deionizers, telemetry cabinets, disconnect switches and utility cabinets.

Both units would be installed along the western property line within a new 1,642 square-foot concrete pad service area. The new service pad is located in a paved area area used for parking and equipment storage, and along a narrow lawn area adjacent to the building that is used for material storage and building utilities. Existing stored equipment and trash compactors would be relocated to install the fuel cell units, and building parking spaces would be reconfigured. ES-1 would be installed five feet from an existing emergency generator/fuel tank unit. This placement complies with fire code setback distances from stored combustible liquids.

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 98 percent of the average Altice USA annual baseload. Electricity generated by the facility would be consumed primarily by Altice USA, 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 proposed facility would interconnect to Altice USA's existing electric and water service. Bloom would install a new underground natural gas service tap along the west side of the building to connect the proposed facility to existing service within Cross Street in front of the building.

The fuel cell facility has an operational life of 10 years equal to a 10 year contract with Altice USA. The solid oxide fuel cell media would be changed at five year intervals. At the end of the 10 year contract, Altice USA 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 second 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 Friday from 7 a.m. to 4 p.m., Saturday from 8 a.m. to 8 p.m. and Sunday from 9 a.m. to 8 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 not within an Aquifer Protection Area (APA). The nearest APA is located 0.77 mile to the north northwest of the site. 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 standard (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 in a developed, urban area and is adjacent to existing utility infrastructure on the property. A stockade fence along the western property boundary would block views from areas to the west.

No wetlands would be disturbed by the Project. The site is not within the DEEP Coastal Boundary or a Federal Emergency Management Agency-designated flood zone. There are no DEEP Natural Diversity Database buffered areas within 0.25 mile of the site.

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 commercial and 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 Norwalk Fire Marshal for review and approval, and would provide training to any identified emergency responders.

The fuel cell has built in safety features and in-system checks to prevent and alert unauthorized access to facility components. The fuel cell service area would be protected from vehicle impact by bollards.

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:

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

Fuel Cell Location



- Legend**
-  Site
 -  Project Area
 -  Gas Supply Line
 -  Approximate Assessor Parcel Boundary (CTDEEP)

Map Notes:
Base Map Source: 2016 Aerial Photograph (CTDEEP)
Map Scale: 1 inch = 100 feet
Map Date: December 2019

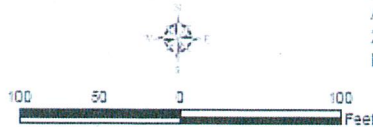


Exhibit 1B Site Schematic

Proposed Bloom Energy Facility
Altice USA - Cablevision Property
28 Cross Street
Norwalk, CT 08851



Site Plan Detail

