



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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### **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

January 20, 2017

Justin Adams  
Bloom Energy Corporation  
1299 Orleans Drive  
Sunnyvale, CA 94089

**RE: PETITION NO. 1274** - Bloom Energy Corporation, as an agent for Frontier Communications Corporation, petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, operation and maintenance of a Customer-Side 200-Kilowatt Fuel Cell Facility to be located at the Frontier building, 39 West Street, Danbury, Connecticut.

Dear Mr. Adams:

At a public meeting held on January 19, 2017, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal 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:

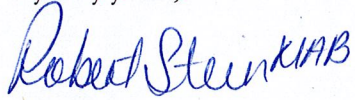
1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;
3. Approval of any minor project changes be delegated to Council staff;
4. Submission of a final site plan prior to commencement of construction;
5. The use of natural gas as a fuel system cleaning medium during fuel cell construction, installation or modification shall be prohibited.
6. 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.
7. Compliance with the following codes and standards during fuel cell construction, installation or modification, as applicable:
  - a. NFPA 54
  - b. NFPA 853; and
  - b. ASME B31.
8. 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;
9. 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;
10. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
11. 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;
12. 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
13. 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 November 11, 2016, additional information dated December 28, 2016, 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.

Very truly yours,

A handwritten signature in blue ink that reads "Robert Stein" followed by the initials "KIAB" in a larger, bold font.

Robert Stein  
Chairman

RS/MP/cm

Enclosure: Staff Report dated January 19, 2017

- c: The Honorable Mark D. Boughton, Mayor, City of Danbury
- Sharon Calitro, Director of Planning & Zoning, City of Danbury
- Alicia Surowiec, Bloom Energy Corporation



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### Petition No. 1274

#### Bloom Energy Corporation

#### Frontier Communications Corporation

39 West Street, Danbury, Connecticut

#### Staff Report

January 19, 2017

On November 14, 2016, the Connecticut Siting Council (Council) received a petition from Bloom Energy Corporation (Bloom), as an agent for Frontier Communications Corporation (Frontier), for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the installation of a 200-kilowatt (kW) fuel cell facility at the Frontier building located at 39 West Street, Danbury, Connecticut. A field review of the project was conducted on December 29, 2016. Council Acting Executive Director/Staff Attorney Melanie Bachman, Michael Perrone of the Council staff and Bloom representative Justin Adams attended the field review.

Bloom mailed notification of the project via Certified Mail to abutting property owners, City of Danbury officials, and required state agencies and officials on or about December 22, 2016.

Frontier's building, surrounding parking, driveways, and grounds occupy four parcels that total about 1.19 acres in area. The proposed facility would be constructed to the rear (i.e. north) of the Frontier building in proximity to existing mechanical equipment. The site is located within the Downtown Revitalization Overlay Zone and is zoned as Light Commercial (CL-10). The abutting properties to the proposed site include churches, businesses, law offices, a multi-family residential use structure, and Danbury City Hall. The nearest residential structure is the three-story multi-family residential structure located approximately 80 feet to the west.

The facility would be installed, maintained and operated by Bloom and owned by Key Equipment Finance, a third party financing source of Bloom under an agreement with Frontier. The Connecticut Public Utilities Regulatory Authority, in its Final Decision in Docket No. 12-02-09, determined that Bloom's Energy Server qualifies as a Class I renewable energy source fuel cell as defined in Connecticut General Statutes §16-1(a)(26)(A).

Bloom's fuel cell facility would be a customer-side, distributed resources project. The proposed fuel cell uses non-combustion solid oxide technology that consumes natural gas as fuel to generate electrical power. It would provide baseload power for the Frontier building. The average base load for the building is 186 kW or close to the 200-kW for the facility. Any surplus electricity would feed into the distribution system for use by the grid. The fuel cell would not have an Uninterruptible Power Module and would not provide backup or grid-isolated power. The fuel cell unit would not provide combined heat and power. It is designed to provide electricity only. The operational life is for the life of the 20-year contract.

The fuel cell would be located in a paved area to the rear of the Frontier building, near an existing retaining wall. The dimensions of the facility would be approximately 29-feet 3-inches long by 4-feet 3-inches wide by 6-feet 9 inches tall. The facility would be located on a pre-cast concrete pad. A 9-foot 4-inches wide by 5-foot 6-inches wide auxiliary equipment pad would be located immediately to the west of the fuel cell facility. Bollards would be installed to protect the facility from being accidentally struck by a vehicle.

The fuel cell would interconnect with the existing electrical switchgear located inside the building. Natural gas piping to connect the fuel cell would extend underground to the west.

Existing parking spaces are not delineated for the site. Bloom submitted a parking plan and proposed rear drive aisle (Parking Plan) to the City of Danbury Planning and Zoning Department (Danbury P&Z) and the Fire Marshall for review on or about the time of filing the Petition. Bloom's Parking Plan includes delineating 17 standard parking locations and three Americans with Disabilities Act (ADA) parking locations directly to the west of the Frontier Building.

By letter dated December 28, 2016, the Danbury P&Z provided the following comments:

- The site plan (with includes the Parking Plan) only depicts partial views of the site and does not show the connection between the rear of the site and the western portion of the property and does not include the recent utility/transformer improvements to the southwest corner of the site;
- There may be potential impacts to residents at the adjacent multi-family residence, located at 6 New Street; and
- The placement of the fuel cell equipment results in the loss of approximately 12 parking spaces; thus, the parking table on the Parking Plan should be amended to identify both uses by Frontier and the Greater Danbury Chamber of Commerce (Chamber). Sufficient parking should be provided for all uses at the site.

On January 3, 2017, Bloom responded to Danbury P&Z concerns and provided a site survey plan and noise analysis report. By letter dated January 11, 2017, the Danbury P&Z notes that the noise analysis report complies with City noise ordinances, and based on the number of Frontier employees, there appears to be adequate parking for the uses at the site. The Danbury P&Z requests that Bloom submit the updated site plan to the City that includes all of the improvements shown on the survey including a parking table that denotes the employee count for the Chamber and Frontier. Council staff recommends that such plan be provided to the Council prior to commencement of construction.

The fuel cell facility would comply with all applicable Department of Energy and Environmental Protection (DEEP) water quality standards. The proposed fuel cell site is not located within a DEEP-designated Aquifer Protection Area (APA). The nearest APA is approximately two miles to the west. The nearest wetland is approximately 0.4 miles to the south of the fuel cell site. The fuel cell does not consume or discharge water during normal operation. Bloom's design only requires an initial input of roughly 75 gallons of water at startup.

Air emissions produced during fuel cell operation would be below the DEEP applicable limits, as shown in the table below – thus, no air permit is required.

Comparison of the Fuel Cell Facility with RCSA Criteria *		
Compound	Fuel Cell Facility (lbs/MWh)	Emissions standards (lbs/MWh)
NO <sub>x</sub>	<0.01	0.15
CO	<0.05	1
CO <sub>2</sub>	679 to 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 project would result in a net carbon dioxide reduction for the environment because it would displace emissions from traditional fossil-fueled generation. The proposed facility would reduce net CO<sub>2</sub> emissions for the environment by at least 25 percent per year when compared to the United States Environmental Protection Agency (EPA) eGRID fossil fuel output emissions rate for the ISO New England, Inc. (ISO-NE) territory.

The proposed facility would emit no methane (CH<sub>4</sub>), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (known as HFCs) or perfluorocarbons (known as PFCs), which are greenhouse gasses defined in Regulations of Connecticut State Agencies Section 22a-174-1(49).

The Bloom fuel cell facility has a desulfurization process to remove the sulfur compounds which were added to the natural gas as an odorant. The desulfurization canister has a filter made for this process. When a desulfurization canister is taken out of service, it is taken by a Bloom contractor to a licensed out of state facility. Its safety as a container for transportation has been certified by the U.S. Department of Transportation.

Bloom utilizes an EPA exemption that provides for the regulation of the desulfurization canisters up to the point of removal of any waste. The EPA exemption has also been incorporated into Connecticut's Hazardous Waste Management Regulations. Thus, Bloom will dispose of desulfurization canister substances at an EPA-permitted Transportation, Storage and Disposal Facility in Texas.

Visual impact from the proposed project would be minimal as it is located to the rear of the building adjacent to the existing Frontier HVAC equipment, and the fuel cell facility has an aesthetic design/shape as indicated on the specifications sheet photograph. The facility would meet DEEP noise control regulations (per the noise analysis report) without the need for sound remediation. The fuel cell construction site is in a paved lot devoid of any vegetation. The site is not located within the shaded area of the DEEP Natural Diversity Database. The facility would be located outside of the 100-year and 500-year flood zones.

The facility would be remotely monitored by Bloom on a 24/7 basis to detect abnormalities in operation. 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. (NFPA) 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 has been developed by Bloom.

The proposed installation would not have any 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.

If approved, Bloom estimates that the project would require a total of six to eight weeks to complete construction and commission the facility.

Staff recommends the following conditions:

1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;
3. Approval of any minor project changes be delegated to Council staff; and
4. Submission of a final site plan prior to commencement of construction.

Site Location



Staff Google Earth Image