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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 25, 2019

Justin Adams
Paul Evan
Bloom Energy Corporation
4353 North First Street
San Jose, CA 95134

RE: **PETITION NO. 1381** – 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 600-kilowatt fuel cell facility and associated equipment to be located at the Hospital for Special Care, 2150 Corbin Avenue, New Britain, Connecticut.

Dear Mr. Adams and Mr. Evan:

At a public meeting held on October 24, 2019, 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 City of New Britain.

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 September 13, 2019 and additional correspondence dated September 24, 2019 and October 4, 2019, 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/MP/emr

Enclosure: Staff Report dated October 24, 2019

c: Hospital for Special Care, Property Owner
The Honorable Erin Stewart, Mayor, City of New Britain
Sergio Lupo, Director of License Permit & Inspections, City of New Britain
The Honorable Nancy Nickerson, Chairman, Town of Farmington
Kathleen Blonski, Town Manager, Town of Farmington
Mark DeVoe, Town Planner, Town of Farmington

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Petition No. 1381
Bloom Energy Corporation
Fuel Cell Facility – Hospital for Special Care
New Britain, Connecticut
Staff Report
October 24, 2019

Introduction

On September 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 600-kilowatt fuel cell facility and associated equipment to be located at the Hospital for Special Care (HSC), 2150 Corbin Avenue, New Britain, Connecticut.

On August 27, 2019, a Bloom representative informed Steven Schiller, City Planner, City of New Britain of the proposed project and provided an opportunity for City of New Britain staff to comment on the proposal. On September 5, 2019, Mr. Schiller responded to Bloom indicating that there would not be any zoning issues associated with the proposed project. Robert Trottier, City Engineer, City of New Britain provided comments regarding the preliminary site plan.

On or about September 10, 2019, Bloom provided notice of the project to abutting property owners, City officials, and state agencies and officials.

On September 16, 2019, the Council sent correspondence to the City of New Britain and the Town of Farmington[1] stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by October 13, 2019. By email dated September 17, 2019, Mark DeVoe, Town Planner, Town of Farmington indicated that the proposed installation would be located closest to the land that lies between the Fienemann Road exit ramp (off of Interstate 84) and the City of New Britain. Mr. DeVoe also noted that all properties with structures in Farmington have access through the City of New Britain only and I-84, and such properties would not be adversely impacted by noise generated by the proposed facility.

On September 17, 2019, 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 October 13, 2019. No comments were received.

On September 17, 2019, the Council deemed the petition incomplete and requested Bloom provide proof of service of a copy of the petition on the Town of Farmington and appropriate federal and state government officials. On September 21, 2019, Bloom provided proof of service of a copy of the petition on the Town of Farmington and appropriate government officials. By letter dated September 26, 2019, the Council deemed the Petition complete for processing per RCSA §16-50j-40.

The Council issued interrogatories to Bloom on September 26, 2019. Bloom provided responses to the Council's interrogatories on October 4, 2019.

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[1] The Town of Farmington is within 2,500 feet of the proposed site.

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 south of Dean Drive and southwest of Governor Street. The HSC property is approximately 32.2 acres and is developed with several buildings and parking lots. The HSC property is located within a S-3 Residence Zone District. Most of the surrounding area is high density residential development. The nearest residential property is approximately 337 feet northwest of the proposed project. Three schools are located southwest of the property.

Proposed Project

The facility would consist of three Bloom ES-5[2] solid oxide fuel cell Energy Servers, rated at 200 kilowatts each. 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.

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 HSC baseload. Electricity generated by the facility would be consumed primarily by HSC, 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.

Each of the three fuel cell units would be approximately 7 feet 2-inches high by 4-feet 4-inches wide. Two units of the units would be approximately 25-feet 1-inch long, and one unit would be approximately 21-feet 6-inches long. Associated equipment includes water deionizers, telemetry cabinets, disconnect switches and utility cabinets. The equipment would be located on concrete pads in a new approximately 90-foot by 21-foot paved area adjacent to a parking lot. Bollards would be installed on the south, west and north sides of the facility to protect it from potential vehicle encroachment. The proposed facility would interconnect to HSC existing electric and water service. Bloom plans to extend gas service and telecommunications from existing service points along Dean Road north of the project site. These connections would be installed underground.

The fuel cell facility has an operational life equal to the 10 year contract with the HSC. The solid oxide fuel cell media would be changed at five year intervals. At the end of the 10 year contract, HSC may renew the contract, return the facility, 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. The concrete pads would remain unless requested to be removed, and the site would be restored as nearly as practicable to its original condition.

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[2] One 200-kW fuel cell unit would be the ES-5-FADAAN model, and two 200-kW fuel cell units would be the ES-5-FABAAN model.

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 Saturday between 7 a.m. and 9 p.m. and Sunday between 9 a.m. and 9 p.m., consistent with the City of New Britain's noise ordinance.

The estimated cost of the proposed facility is provided in the table below:

Projected Project Cost Estimates October 10, 2019	Current Forecast
Install Labor	$ 140,000
Ancillary Equipment	$150,000
Design	$ 36,000
Construction	$ 430,000
Shipping/Rigging	$70,000
Other (utility fees, contingency)	$200,000
Total	$ 1,026,000

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 1.25 miles southwest of the proposed facility. The proposed fuel cell facility would have virtually no water usage or discharge. Water consumption would only occur at system fill.

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 as an ingredient in 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 to the rear of the hospital adjacent to parking areas. The hospital building and vegetation at the perimeter of the property would buffer such views of the facility. No trees would be removed to install the facility.

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

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.

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.

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 (FPEPP) for the facility is included within the Petition. Bloom would meet with the local Fire Marshal during the building permit review phase of the project. At that time, Bloom would provide a copy of the FPEPP to the fire marshal and answer any questions.

The proposed facility would not be enclosed by a fence. The fuel cell has built in safety features and in-system checks to prevent and alert unauthorized access to facility components.

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

- Subject Property
- Limit of Disturbance for Proposed Proposed Energy Servers
- Proposed Underground Gas Line
- Proposed Underground Communication Line
- Approximate Assessor Parcel Boundary (CTDEEP)

Map Notes:
Base Map Source: 2016 Aerial Photograph (CTECO)
Map Scale: 1 inch = 250 feet
Map Date: August 2019

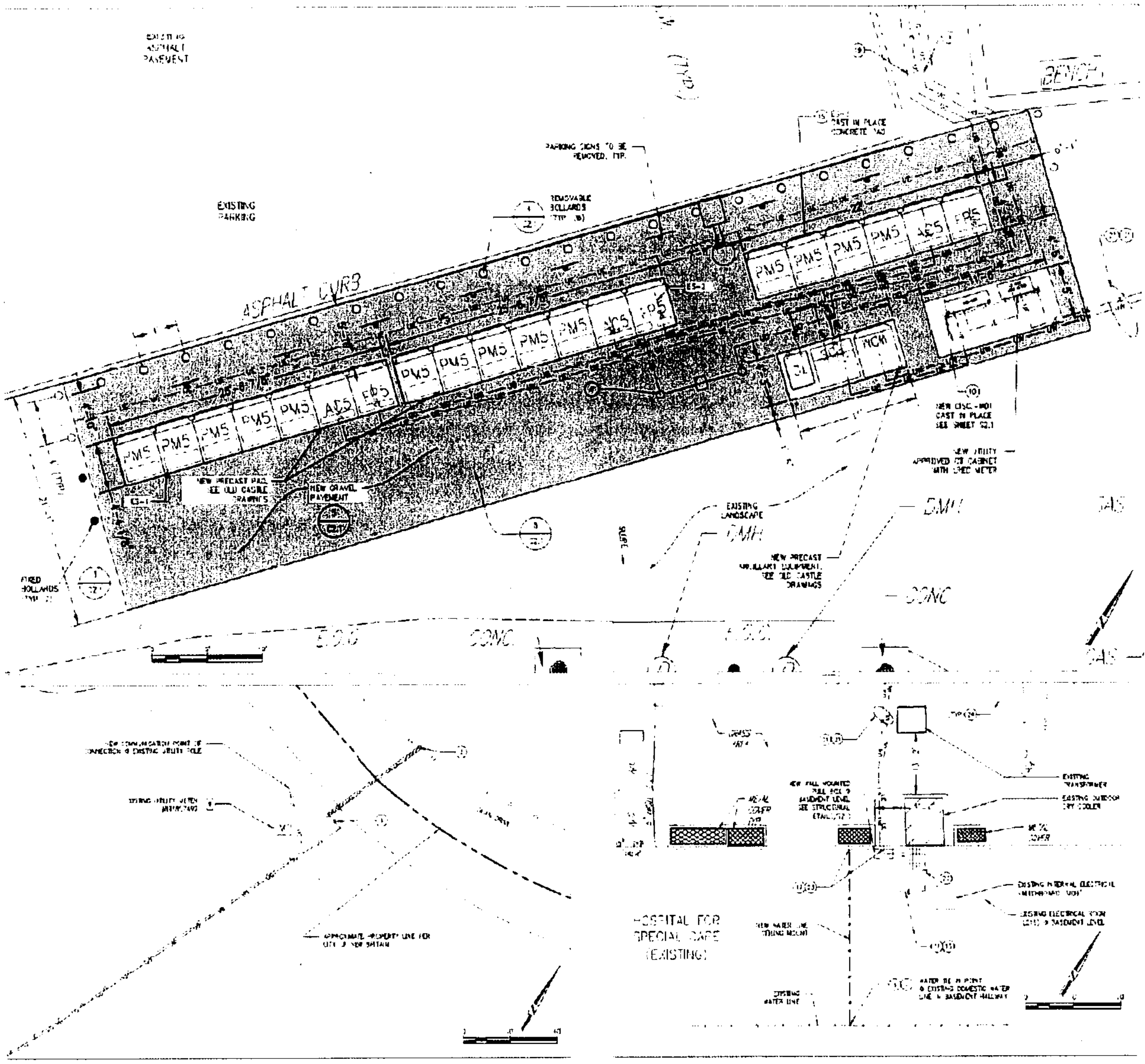
250 125 0 250
Feet

Exhibit 1B
Site Schematic

Proposed Bloom Energy Facility
Hospital For Special Care
2150 Corbin Avenue
New Britain, CT 06053

Bloomenergy

Site Plan


EXISTING PARKING
ASPHALT CURB
BENCH
HOSPITAL FOR SPECIAL CARE (EXISTING)