



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: portal.ct.gov/csc

VIA ELECTRONIC MAIL

October 9, 2020

Justin Adams
Bloom Energy Corporation
4353 North First Street
San Jose, CA 95134
Justin.Adams@bloomenergy.com

RE: **PETITION NO. 1420** - 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 150-kilowatt fuel cell facility and associated equipment to be located at the Home Depot, 225 Berlin Turnpike, Berlin, Connecticut.

Dear Mr. Adams:

At a public meeting held on October 8, 2020, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of the 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 project changes be delegated to Council staff;
2. Provide a copy of the Fuel Cell 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. 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;

7. 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 Towns of Berlin and Newington;

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

9. 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;

10. 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

11. 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 July 15, 2020, and additional information received August 19, 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/IN/emr

Enclosure: Staff Report dated October 8, 2020

c: Alicia Surowiec, Bloom Energy Corporation (Alicia.Surowiec@bloomenergy.com)
The Honorable Mark H. Kaczynski, Mayor, Town of Berlin (mkaczynski@town.berlin.ct.us)
Arosha Jayawickrema, Town Manager, Town of Berlin (ajayawickrema@town.berlin.ct.us)
Maureen Giusti, Zoning Enforcement Officer, Town of Berlin (mgiusti@town.berlin.ct.us)
Steven Waznia, Fire Marshal, Town of Berlin (swaznia@town.berlin.ct.us)
The Honorable Beth DelBuono, Mayor, Town of Newington (bdelbuono@newingtonct.gov)
Keith Chapman, Town Manager, Town of Newington (kchapman@newingtonct.gov)
Craig Minor, Town Planner, Town of Newington (cminor@newingtonct.gov)



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Petition No. 1420

**Bloom Energy Corporation
Home Depot, 225 Berlin Turnpike
Berlin, Connecticut
Staff Report
October 8, 2020**

Introduction

On July 15, 2020, the Connecticut Siting Council (Council) received a petition from Bloom Energy Corporation (Bloom) for a declaratory ruling, pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 150 kilowatt (kW) fuel cell facility at the Home Depot store located at 225 Berlin Turnpike in Berlin, Connecticut (Petition).

On July 10, 2020, Bloom provided notice of the project to abutting property owners, Town of Berlin officials, Town of Newington officials (within 2,500 feet) and required state agencies and officials.

On July 16, 2020 and September 1, 2020, the Council sent correspondence to the Towns of Berlin and Newington stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by August 14, 2020 and September 17, 2020, respectively. The Council has not received any comments to date.

On July 16, 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 August 14, 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 August 14, 2020. Bloom provided responses to the Council's interrogatories on August 19, 2020.

Public Benefit

The project would be a “customer-side distributed resources” facility, as defined in 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. 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 proposed project site is located on the eastern portion of a 38.47-acre parcel that hosts the Home Depot store. The property is located within the Town's Planned Shopping B (PS-B) commercial zone and abuts retail development to the north, south and west, and residences to the north and east. The proposed facility would be located on an existing paved area behind the existing Home Depot building about 204 feet from the nearest residential property line to the east of the facility.

Proposed Project

The facility would consist of one Bloom Energy 150-kW ES-5 solid oxide fuel cell Energy Server, model ES5-VA4AAN and associated equipment, including water deionizers, telemetry cabinets, disconnect switches, a transformer and utility cabinets. The fuel cell unit would be approximately 21-foot 6-inches long by 4-foot 4-inches wide by 7-foot 2-inches tall and installed on an existing paved, fenced area north of the Home Depot loading docks.

The electric, natural gas and water interconnections would run underground from existing utilities associated with the Home Depot building.

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 all the electrical needs of the Home Depot store. Any excess electricity created during periods of low energy usage, would be limited to 1-2 percent throughout the year and would be exported to the grid under the net metering tariff.

The proposed Bloom fuel cell units are designed to optimize the electrical efficiency alone rather than operate as combined heat and power units. Heat generated by the proposed facility is used internally to increase the electrical efficiency of the fuel cell, and consequently there is no useful waste heat generated.

The fuel cell facility has an operational life of 15 years. The solid oxide fuel cell media would be changed at five-year intervals. At the end of the 15-year contract, Home Depot 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 - 6 weeks for site prep, 4 weeks for installation and 4 weeks for commissioning. Construction hours are expected to be Monday through Saturday from 7:00 a.m. to 8:00 p.m. and 12:00 p.m. to 6:00 p.m. on Sundays.

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 located within a DEEP-designated Aquifer Protection Area. The proposed fuel cell facility would operate without water discharge under normal operating conditions. Water consumption would only occur at system fill and during restart operations.

Air emissions produced during fuel cell operation would not trigger any regulatory thresholds and are shown below.

Fuel Cell Facility	
Compound	lbs/MWh
NOx	0.01
CO ₂ *	679-833

* DEEP amended its regulations in 2016 to eliminate the CO₂ permit requirements from the New Source Review and Title V Programs as a result of a United States Supreme Court decision that overturned states' regulatory CO₂ permit requirements (*Utility Air Regulatory Group v. U.S. Environmental Protection Agency*, 573 U.S. 302 (2014))

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 behind the Home Depot building and visibility would be limited by mature tree growth to the north and east, existing structures to the south and the Home Depot building to the west.

No wetlands would be disturbed by the proposed project. The nearest wetland is approximately 170 feet north of the proposed facility. Erosion and sedimentation controls for the proposed facility would comply with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*.

The site is not within a Federal Emergency Management Agency- designated flood zone. The site is located within ¼-mile of a DEEP Natural Diversity Database (NDDDB) buffered area. The DEEP NDDDB determined the proposed project would have no impacts on state-listed species. The site is previously disturbed and not expected to impact cultural resources.

Any noise associated with the construction of this project would be temporary in nature and exempt per DEEP Noise Control Regulations. Noise levels at the property boundary with the residential property to the east of the facility are predicted to be 34.5 dBA. DEEP's Noise Control Regulations thresholds for a commercial emitter to a Class A (residential) receptor is 61 dBA (day) and 51 dBA (night). The residential property is classified as a Class A receptor.

Public Safety

Before commissioning the proposed facility, Bloom would use atmospheric air under pressure as pipe cleaning media, 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 manually. The fuel cell facility is designed in accordance with American National Standards Institute and Canadian Standards Association (ANSI/CSA) America FC 1-2004 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. An emergency response plan (ERP) for the facility is included within the Petition. Bloom would submit the ERP to the Berlin Fire Marshal and would provide any on-site training requested by local officials.

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 project changes be delegated to Council staff; and
2. Provide a copy of the Fuel Cell Emergency Response Plan to local emergency responders prior to facility operation, and provide emergency response training, if requested.

Fuel Cell Location



Site Plan

