Petition No. 1416
Bloom Energy Corporation
The Home Depot, 89 Interstate Park Drive
Southington, Connecticut
DRAFT Staff Report
August 21, 2020

Introduction

On June 30, 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 89 Interstate Park Drive in Southington, Connecticut.

On June 22, 2020, Bloom provided notice of the project to abutting property owners, Town of Southington (Town) officials, and required state agencies and officials.

On June 30, 2020, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the municipality to contact the Council with any questions or comments by July 30, 2020. The Council has not received any comments to date.

On June 30, 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 July 30, 2020. On July 17, 2020, the Connecticut Department of Transportation responded that it has no comments. On July 23, 2020, the Council received comments from the Council on Environmental Quality (CEQ) which are attached hereto. No other 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 July 21, 2020. Bloom provided responses to the Council's interrogatories on July 22, 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.

Project Site

The Project site is located on the northern portion of a 9.74-acre parcel that hosts the Home Depot store. The property is located in the Town's Business Zone and abuts a largely wooded campground to the north (Connecticut Advent Christian Campground), I-84 to the east and southeast and residences to the west. The proposed facility would be located behind the existing Home Depot building about 9 feet from the campground property line and about 190 feet to the nearest residential property line to the east of the facility.

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

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 a grassy slope adjacent to a paved drive. A 3-foot high retaining wall would be installed on the north, east and west sides of the facility. Landscaping is proposed around the perimeter of the retaining wall on the north, east and west sides of the facility.

The electrical interconnection would run underground to the south to the proposed utility cabinet and meter. Natural gas would be supplied underground from the southwest from an Eversource service tap located adjacent to the Home Depot building. Water would also be supplied underground from 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 would be exported to the grid.

The proposed Bloom fuel cell units are designed to optimize the electrical efficiency alone rather than operate as combined heat and power (CHP) 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, The 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.

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 (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 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 the woodland to the north, the mature tree growth to the east and west and the Home Depot building to the south.

No wetlands would be disturbed by the proposed project. The nearest wetland is approximately 200 feet west and southwest 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-designed flood zone. The site is not located within ¼-mile of a DEEP Natural Diversity Database (NDDB) buffered area. 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 campground are predicted to be 61.7 dB without the use of noise dampening materials. However, Bloom proposes to install noise dampening materials during the on-site construction of the facility, which is expected to reduce the level of noise emissions to approximately 58.7 dB at the property boundary. DEEP's Noise Control Regulations for a commercial emitter to a Class B (commercial) receptor is 62 dB. The adjacent campground is classified as a Class B receptor.

Public Safety

Before commissioning the proposed facility, Bloom would use inert nitrogen gas or 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 Southington 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.

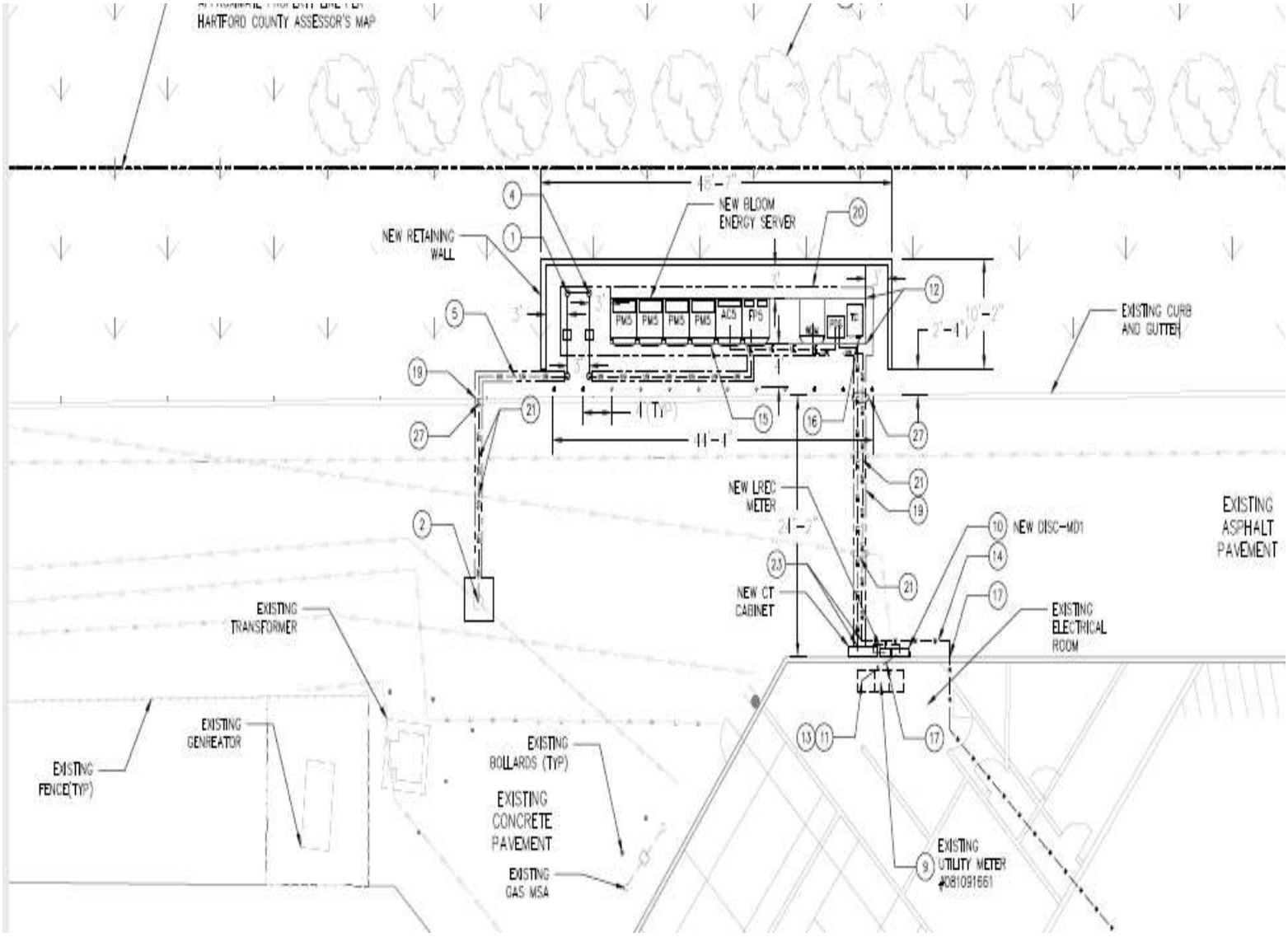
Recommendation

If approved, staff recommends the following condition:

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

Fuel Cell Location

Site Plan


HARTFORD COUNTY ASSESSOR'S MAP
NEW BLOOM ENERGY SERVER
NEW RETAINING WALL
EXISTING CURB AND GUTTER
NEW LREC METER
NEW DISC-MD1
NEW CT CABINET
EXISTING ELECTRICAL ROOM
EXISTING ASPHALT PAVEMENT
EXISTING TRANSFORMER
EXISTING GENREATOR
EXISTING FENCE(TYP)
EXISTING BOLLARDS (TYP)
EXISTING CONCRETE PAVEMENT
EXISTING GAS MSA
EXISTING UTILITY METER #081091661

Comments from the Council on Environmental Quality

STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

July 22, 2020

Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: PETITION NO. 1416 - Bloom Energy Corporation petition for construction, maintenance and operation of a 150-kilowatt customer-side fuel cell facility and associated equipment at the Home Depot, 89 Interstate Park Drive, Southington.

Dear Ms. Bachman:

The Council on Environmental Quality ("the Council") offers the following comments with regard to Petition No. 1416 (Petition):

1. Noise: The Petitioner states that the proposed facility would have sound levels equal to 61.7 dB at the nearest property line. However, the Petition states that if the fuel cell facility "is installed close to a building or tall wall so noise from the ES is reflected off of the structure and added to the noise from the other side of the ES making it sound louder than normal." In the calculations for Scenario 1, (with a structure in close proximity to the fuel cell) the sound level is projected to be 64.7, which would exceed the Connecticut noise standard of 62 dBA (day or night) that applies to the site.

The Council recommends that the Petitioner confirm that the fuel cell facility will be sufficiently distant from the retaining wall and the wall of the adjacent Home Depot that the sound generated by the proposed fuel cell would not be amplified by reverberation that will force it out of compliance with the State's noise regulations. Further, it is recommend that the Petitioner conduct post-construction noise monitoring to verify compliance.

Thank you for your consideration of these comments. Please do not hesitate to contact the Council if you have any questions.

Sincerely,

Peter Hearn
Executive Director

79 Elm Street, Hartford, CT 06106
Phone: (860) 424-4000 Fax: (860) 424-4070
http://www.ct.gov/ceq