



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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### CERTIFIED MAIL

### RETURN RECEIPT REQUESTED

December 6, 2019

Justin Adams

Bloom Energy Corporation

4353 North First Street

San Jose, CA 95134

RE: **PETITION NO. 1278A** - Bloom Energy Corporation, as an agent for Medtronic Inc., request to amend its declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed Phase II construction, operation and maintenance of a Customer-Side 2000-Kilowatt fuel cell facility to be located at 86 Middletown Road and a second Customer-Side 2000-Kilowatt Fuel Cell Facility to be located at 195 McDermott Road, both located at the Medtronic campus in North Haven, Connecticut.

Dear Mr. Adams:

At a public meeting held on December 5, 2019, the Connecticut Siting Council (Council) considered and approved the amendment to the declaratory ruling and ruled that the above-referenced Phase II project 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. Prior to construction, submit a site plan with erosion and sedimentation control details consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*;
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;



CONNECTICUT SITING COUNCIL

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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 amendment request, dated October 11, 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

Enclosure: Staff Report dated December 5, 2019

MAB/RDM/emr

c: Alicia Surowiec, Bloom Energy Corporation  
The Honorable Michael J. Freda, First Selectman, Town of North Haven  
Laura Magaraci, Zoning Enforcement Officer, Town of North Haven  
The Honorable Joseph Carfora, Mayor, Town of East Haven  
Christopher Soto, Planning & Zoning Enforcement Officer, Town of East Haven  
The Honorable Toni N. Harp, Mayor, City of New Haven  
Sean Matteson, Chief Administrative Officer, City of New Haven  
Aïcha Woods, A.I.A., Executive Director, City Plan Department, City of New Haven





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### **Petition No. 1278A**

### **Bloom Energy Corporation - Fuel Cell Facility Medtronic Campus, North Haven, Connecticut**

### **Staff Report December 5, 2019**

### **Introduction**

On February 21, 2017, the Connecticut Siting Council (Council) issued a Declaratory Ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, approving a proposal from Bloom Energy Corporation (Bloom), as an agent for Medtronic Inc., for the installation of two separate solid oxide fuel cell units at the Medtronic Inc. campus located at 195 McDermott Road and 20 Middletown Avenue in North Haven, Connecticut (Petition 1278). A 200-kW fuel cell was installed adjacent to the campus office building and a 300-kW fuel cell was installed adjacent to the main manufacturing plant in December 2017. The Council's Declaratory Ruling, includes but is not limited to, the condition that Bloom adhere to the Department of Energy and Environmental Protection's (DEEP) recommended Eastern Box Turtle Protection measures.

Bloom submitted a request to amend the Declaratory Ruling to the Council on October 15, 2019 for the construction, operation and maintenance of two additional 2,000-kW fuel cell units, referred to by Bloom as the Phase II facility, at the Medtronic campus.

On or about October 2, 2019, Bloom provided notice of the proposed amendment to the property owner, abutting property owners, and Town of North Haven. The Town of East Haven and the City of New Haven were also sent notice on October 2, 2019 as both municipalities are within 2,500 feet of the proposed project.

On October 16, 2019, the Council sent correspondence to the Town of North Haven, the Town of East Haven and the City of New Haven, stating that the Council has received the request to amend the declaratory ruling and invited the municipalities to contact the Council with any questions or comments by November 14, 2019. The Council has not received any comments to date.

On October 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 November 14, 2019.

On October 23, 2019, the CEQ submitted comments to the Council. A copy of the CEQ comments is attached. 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.<sup>1</sup>

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<sup>1</sup> *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

### **Public Benefit**

The Phase II facility 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 Phase II 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).

### **Project Site**

The Medtronic campus consists of several buildings located on six abutting parcels, zoned light-industrial, that encompass 38 acres. The parcels are generally bound by Quinnipiac Avenue, McDermott Road, and Middletown Avenue and abut other industrially-zoned property as well as Interstate 91. The Phase II facility would consist of two separate fuel cell installations: Location 1, on a parcel identified as 195 McDermott Avenue, and Location 2, on a parcel identified as 86 Quinnipiac Avenue.

### **Proposed Project**

Electricity generated by the Phase II facility would be consumed primarily by Medtronic, and any excess electricity would be exported to United Illuminating’s electric distribution system. The interconnection application for the Phase II facility has been submitted to United Illuminating. The Phase II facility would not have an Uninterruptible Power Module and would not provide backup or grid-isolated power.

The Bloom fuel cell uses non-combustion solid oxide technology that consumes natural gas as fuel to generate electrical power. The Bloom fuel cell units are designed to use generated heat to increase the electrical efficiency of the units. As a result, there would be no waste heat generated by the fuel cell units that would be useful in a combined heat and power system.

Each Phase II installation (Locations 1 & 2) would consist of seven Bloom solid oxide fuel cell Energy Servers (five 300-kW units and two 250-kW units), and associated water deionizers, telemetry cabinets, disconnect switches and utility cabinets.

Location 1 consists of an approximate 85-foot by 42-foot asphalt fuel cell pad located in a maintained lawn area immediately east of the manufacturing plant and approximately 250 feet southeast of the existing manufacturing plant fuel cell. The asphalt pad would include the fuel cell units arranged in two rows, and associated operational equipment. Underground gas and water service would extend from the existing manufacturing plant fuel cell location to the proposed fuel cell pad. Underground electric connections would extend west to the manufacturing plant.

Location 2 consists of an approximate 82-foot by 40-foot asphalt fuel cell pad located in a paved area in the northeast corner of the campus, and 41 feet west of an existing utility building. The asphalt pad would include the fuel cell units, arranged in four rows, and associated equipment. Underground gas service to the fuel cell pad would extend from existing service 60 feet to the south. Water and electric connections would be installed underground for a distance of 210 feet from the northeast corner of a campus office building.

The proposed Phase II fuel cell facility has an operational/contract life of 10 years. The solid oxide fuel cell media would be changed at five year intervals. At the end of the 10 year contract, Medtronic 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 (4 weeks of site prep, 4 weeks of installation, and 4 weeks of commissioning). Work would be conducted during daytime hours.

### **Environmental Effects and Mitigation**

The fuel cell facility would comply with all applicable 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 5.2 miles northwest of the site. The proposed fuel cell facilities 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)
NO <sub>x</sub>	<0.01	0.15
CO <sub>2</sub>	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<sub>4</sub>), sulfur hexafluoride (SF<sub>6</sub>), 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 Phase II facility would be minimal as it is remote from public roads and is located in a developed industrial/commercial area. There are no residential properties near the two installations.

DEEP previously issued a Natural Diversity Database (NDDB) review letter for Petition 1278, dated December 9, 2016 that indicated the box turtle, a State Special Concern species, could occur at the site, and recommend box turtle protection measures to prevent potential construction-related impacts to turtles. The DEEP NDDB review letter was valid for two years. On October 4, 2019, Bloom filed a request with DEEP for an updated NDDB review for the Phase II project. Bloom would adhere to previously established turtle protection strategies if recommended by DEEP.

Prior to construction, appropriate erosion and sedimentation controls would be installed and subsequently maintained until completion of the project. Sediment protections would be installed within parking lot catch basins.

No wetlands would be disturbed by the Project. The Little River is located approximately 75 feet to the north of the Location 2 fuel cell pad, on abutting property. The Phase II facility locations are not within the DEEP Coastal Boundary or a Federal Emergency Management Agency-designated flood zone.

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. 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 would be installed in compliance with applicable building, plumbing, electrical, and fire codes.

A Fire Prevention and Emergency Planning Plan for the proposed Phase II facility is included within the Petition. Bloom would meet with the Medtronic personnel for site specific training.

Each fuel cell pad would be protected from point vehicle impact by perimeter bollards.

### **Conclusion**

The amended 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.

### **Recommendations**

If approved, staff recommends the following conditions:

1. Approval of any minor project changes be delegated to Council staff; and
2. Prior to construction submit a site plan with erosion and sedimentation control details consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*.

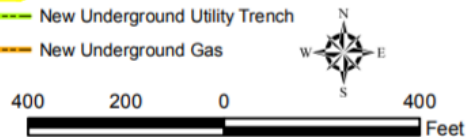
## Location of Phase II Facilities



### Legend

- Subject Properties
- Approximate Assessor Parcel Boundary (CTDEEP)
- Municipal Boundary
- CTDEEP Watercourse
- CTDEEP Waterbody
- CTDEEP Wetlands
- Existing Fuel Cell Area (Approved)
- New Equipment Area
- New Underground Utility Trench
- New Underground Gas

**Map Notes:**  
Base Map Source: 2016 Aerial Photograph (CTECO)  
Map Scale: 1 inch = 417 feet  
Map Date: October 2019





## ATTACHMENT A



STATE OF CONNECTICUT

### COUNCIL ON ENVIRONMENTAL QUALITY

Susan D. Merrow  
*Chair*

Keith Ainsworth

Alicea Charamut

David Kalafa

Lee E. Dunbar

Alison Hilding

Kip Kolesinskas

Matthew Reiser

Charles Vidich

Peter Hearn  
*Executive Director*

October 23, 2019

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

RE: PETITION NO. 1278A - Bloom Energy Corporation request to amend its declaratory ruling for the proposed Phase II construction, operation and maintenance of a Customer-Side 2000-Kilowatt fuel cell facility to be located at 86 Middletown Road and a second Customer-Side 2000-Kilowatt Fuel Cell Facility to be located at 195 McDermott Road, both located at the Medtronic campus in North Haven, Connecticut.

Dear Ms. Bachman:

The Council on Environmental Quality ("the Council") has reviewed the Petition for Declaratory Ruling noted above and offers the following comments for consideration by the Connecticut Siting Council. The Council supports the deployment of clean, distributed generation technologies at appropriate sites in Connecticut to reduce energy costs to consumers, increase energy reliability, and enhance environmental quality.

#### 1. State Listed Species

The Petitioner, Bloom Energy Corporation, has appropriately reviewed the Connecticut Department of Energy and Environmental Protection (DEEP) Natural Diversity Database (NDDDB) pre-screening tool to identify any known state listed species on or near the proposed site. Given the fact that the NDDDB pre-screening tool indicates the possible presence of box turtle, a State Special Concern species, the Council recommends that the Siting Council defer a decision regarding the proposed project until DEEP is able to issue a determination regarding appropriate protection measures for any box turtles in the vicinity of the proposed project at Site 2.

#### 2. Wetlands and Watercourses (195 McDermott Road)

The Petitioner notes that "There are no identified wetlands or watercourses within the proposed location of the Facility. The Little River runs to the north of Site 2; however, Site 2 is located within a paved trailer storage yard and no additional clearing is required for development of Site 2." Site 2 appears to be paved; however, the Petitioner has failed to identify if there are wetlands associated with the Little River, which based on the aerial image, could be as close as 25 feet to the proposed facility at Site 2. The Overall Site Plan, sheet 1 of 3, makes no notation of wetlands near the proposed Site 2. There is no detail regarding the proposed erosion and sedimentation (E&S) control

measures that the Petitioner would employ to protect the Little River and any associated wetlands. The Council recommends that the Siting Council require that the Petitioner provide additional details regarding 1) the potential presence of any identified wetlands and watercourses that may be proximate to the proposed facility on Site 2, and 2) the methods and manner in which the E&S measures would be employed to minimize, if necessary, potential impacts on wetlands and watercourses.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Peter Hearn", with a long horizontal flourish extending to the right.

Peter Hearn  
Executive Director