DRAFT

Petition No. 1278C
Bloom Energy Corporation
Medtronic Campus, North Haven, Connecticut

Staff Report
July 18, 2025

Introduction

Petition No. 1278

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[1] located at 195 McDermott Road and 20 Middletown Avenue in North Haven, Connecticut (Petition 1278). A 200-kilowatt (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.

Petition No. 1278A

On December 6, 2019, the Council approved an amendment to the Declaratory Ruling to install two, 2.0 megawatt (MW) fuel cell facilities at the Medtronic campus, one at 86 Middletown Road and one at 195 McDermott Road in North Haven. The fuel cell facilities were installed adjacent to buildings on the parcels in July and October 2020, respectively.

Petition No. 1278B

On October 12, 2023, the Council approved an amendment to the Declaratory Ruling to install a 2.0 MW fuel cell facility at the 195 McDermott Avenue parcel on the Medtronic campus. On April 7, 2025, the Council approved a change to rotate the facility 30 feet to the northeast. Construction of this approved facility has not commenced.

Petition No. 1580

On October 13, 2023, the Council issued a Declaratory Ruling to CT Solar PDF, LLC approving the construction, operation and maintenance of a 1.45 MW alternating current solar photovoltaic electric generating facility on the 86 Quinnipiac Avenue and 195 McDermott Road parcels of the Medtronic campus. On February 14, 2025, the Council approved a change to increase the facility output to 1.7 MW. Construction would begin in 2025.

Petition 1278C

On April 14, 2025, Bloom submitted a third request to the Council to amend the Declaratory Ruling for the installation of a 1.0 MW fuel cell facility at the 60 Middletown Avenue parcel on the Medtronic campus (Petition or Project).

[1] The campus consists of several buildings located on six abutting parcels that encompass approximately 58 acres.

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on or about April 1, 2025, Bloom provided notice of the request to amend the Declaratory Ruling to the Town of North Haven (Town), Town of East Haven and City of New Haven[2] (collectively, the municipalities), abutting property owners and state officials and agencies. No comments were received.

On April 15, 2025, the Council sent correspondence to Bloom noting a deficiency in the completeness of the Petition. Specifically, proof of service to the Office of Consumer Counsel (OCC) was not provided to the Council. On April 25, 2025, Bloom submitted proof of service to OCC and the Council rendered the Petition complete.

The Council submitted interrogatories to Bloom on May 29, 2025. Bloom submitted responses to the Council's interrogatories on June 20, 2025.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. On May 29, 2025, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than October 11, 2025, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

On June 30, 2025, Bloom submitted notice of transfer of the Project to DG Fuel Cell IV, LLC consistent with Condition No. 10 of the Council's Declaratory Ruling in Petition No. 1278, as follows: [3]

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.

DG Fuel Cell IV LLC agrees to comply with all the terms, limitations, and conditions that may be issued by the Council and on the timely payment of apportioned assessment charges for the 1,040-kW fuel cell facility under CGS §16-50v(b)(1).

On July 2, 2025, the Council acknowledged the notice of transfer of the Project to DG Fuel Cell IV, LLC.

Community Outreach

Bloom provided site plans to the Town Land Use Administrator on March 24, 2025. The Town did not comment on the site plans.

On April 14, 2025, the Council sent correspondence to the municipalities 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 May 14, 2025. No comments were received.

State Agency Comments

On April 14, 2025, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed Project from the following state agencies by May 14, 2025: DEEP; Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ);

[2] The Town of East Haven and City of New Haven are located within 2,500 feet of the proposed facility site.
[3] The Council acknowledged a partial transfer of the Petition No. 1278 Declaratory Ruling to DG Fuel Cell III, LLC on January 8, 2025.

Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Labor (DOL); Department of Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); State Historic Preservation Office (SHPO); and the OCC.

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.[4]

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 facility would be installed, maintained and operated by Bloom under a ten-year power purchase agreement with Medtronic.

The proposed facility would operate as a microgrid and will only generate what the load demands in real time.

The Project is not proposed to be undertaken by state departments, institutions or agencies, and is not to be funded in whole or in part by the state through any contract or grant. It is a privately funded project.

Proposed Site

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the proposed fuel cell facility "site." Under RCSA §16-50j-2a(29), "site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located. The Council does not have jurisdiction or authority over any portion of the host parcel beyond the boundaries of the Project "site." This includes portions of the host parcel retained by the landowner and portions of the host parcel the landowner may lease to third parties. Once a facility is decommissioned, the Council no longer has jurisdiction or authority over the Project "site."

The proposed facility would be installed on the 60 Middletown Avenue parcel of the Medtronic campus. The host parcel, zoned light-industrial, encompasses 8 acres and contains a manufacturing building and associated driveways and parking areas.

The proposed facility would be located in a former parking area west of the existing manufacturing building and south of a recently constructed manufacturing building.

The area surrounding the Medtronic campus consists of industrial and commercial development. The nearest off-campus property line from the proposed facility site is 50 Middletown Avenue, a commercial property approximately 480 feet to the south. The nearest residential property line and residence is located at 35 Quinnipiac Avenue, approximately 790 feet and 845 feet southwest of the proposed facility site, respectively.

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

Proposed Facility and Associated Equipment

The facility would consist of four Bloom Energy solid oxide fuel cell Energy Servers (260-kW ES6), and associated equipment, including water deionizers, telemetry cabinets, disconnect switches, a transformer and utility cabinets installed on concrete pads. The fuel cell facility would be constructed within a 52-foot x 63-foot area, surfaced with gravel. Due to the presence of gravel surfaces, stormwater management structures are not required.

The fuel cell would interconnect with existing underground utilities adjacent to the site. The proposed gas meter and gas regulator would be installed at the north side of the site. A 1,500 kVA transformer would be installed on the west side of the site.

The proposed gas meter and gas regulator would be protected by existing bollards. No fence or additional bollards are proposed for the energy servers or associated equipment as they are located in a secured area of the Medtronic campus. The internal portions of the energy servers are tamper-proof and can only be accessed by personnel with a unique access key.

The proposed facility would be a customer-side, distributed resources project, designed only to provide electricity. The proposed fuel cell facility is sized to provide 100% of the average annual baseload of Medtronic's recently constructed manufacturing building. The facility would only generate enough power to meet the manufacturing building's electrical loads. There is no interconnection to The United Illuminating Company's distribution system, thus an interconnection agreement is not necessary.

Initially, in addition to the proposed fuel cell facility, a backup diesel generator was contemplated for the new building; however, upon further review, Medtronic does not intend to install a backup power source.

The contract with Bloom is for 10 years. 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 Fall 2025, with completion in four months. Construction days/hours would be Monday-Friday, 7 AM – 5 PM.

Site construction would disturb approximately 3,230 square feet (0.07 acres). Minor filling would be required to create a level surface in the proposed construction area which was recently disturbed and excavated for construction of the new building. A shipping container used for construction supplies for the new building would be relocated to another area of the Medtronic campus.

Construction and operation of the facility is not expected to interfere with existing utilities or infrastructure in the surrounding area. Trenching for underground utilities is not expected to impact existing footings or foundations of adjacent buildings due to the distances from site disturbance. If field inspections determine there is a potential for impacts to concrete substructures Bloom would re-route the trenching to increase separation distances.

The estimated cost of the facility is $1,182,000.

Environmental Effects and Mitigation Measures

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 proposed 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
SOx	negligible
Volatile Organic Compounds	0.02
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 RCSA §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. The empty desulf units are then refurbished for reuse at other Bloom fuel cell locations.

The site is in a previously disturbed area of the Medtronic campus. No wetlands, forest or prime farmland soils would be disturbed to construct the proposed facility. Erosion and sedimentation controls for the proposed facility would comply with the *Connecticut Guidelines for Soil Erosion and Sediment Control*.

The site is not within a Federal Emergency Management Agency-designated flood zone nor within a DEEP-designated Aquifer Protection Area. The proposed facility is not expected to impact historic or cultural resources. There would be no visibility of the proposed facility outside of the Medtronic campus.

The site is located within a DEEP Natural Diversity Database buffered area for the eastern box turtle, a state species of special concern. Bloom would implement a box turtle protection plan during construction.

Public Health and Safety

Before commissioning the proposed facility, Bloom would use nitrogen as pipe cleaning media, in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission.

An emergency response plan for the facility would be submitted to the Town Fire Department. Bloom would provide training to emergency responders related to fire safety at the site. Bloom provided emergency response training related to the other Council-approved Bloom fuel cells at the Medtronic campus.

The fuel cell facility has internal and remote 24/7 operational monitoring. Abnormal operation would cause the facility to automatically shut down. If safety circuits detect a condition outside normal operating parameters, the fuel supply is stopped, and individual system components are automatically shut down. In addition, manual emergency shut down push buttons would be located at the site.

No lighting would be installed at the site.

The proposed facility would meet state standards. A noise analysis concluded that the operation of the proposed facility is expected to produce noise emissions no greater than 33 dBA at the nearest off-campus property line, a commercial property located approximately 480 feet south of the site at 50 Middletown Avenue, North Haven.

Noise associated with the construction of this Project would be temporary and exempt from DEEP Noise Control Regulations.

Tweed-New Haven Airport is located approximately 5 miles south of the site. Bloom anticipates the use of a temporary crane during construction that could extend up to 110 feet above ground level. Bloom has filed a notification to the Federal Aviation Administration (FAA) for use of a crane at the site. A response from the FAA is pending.

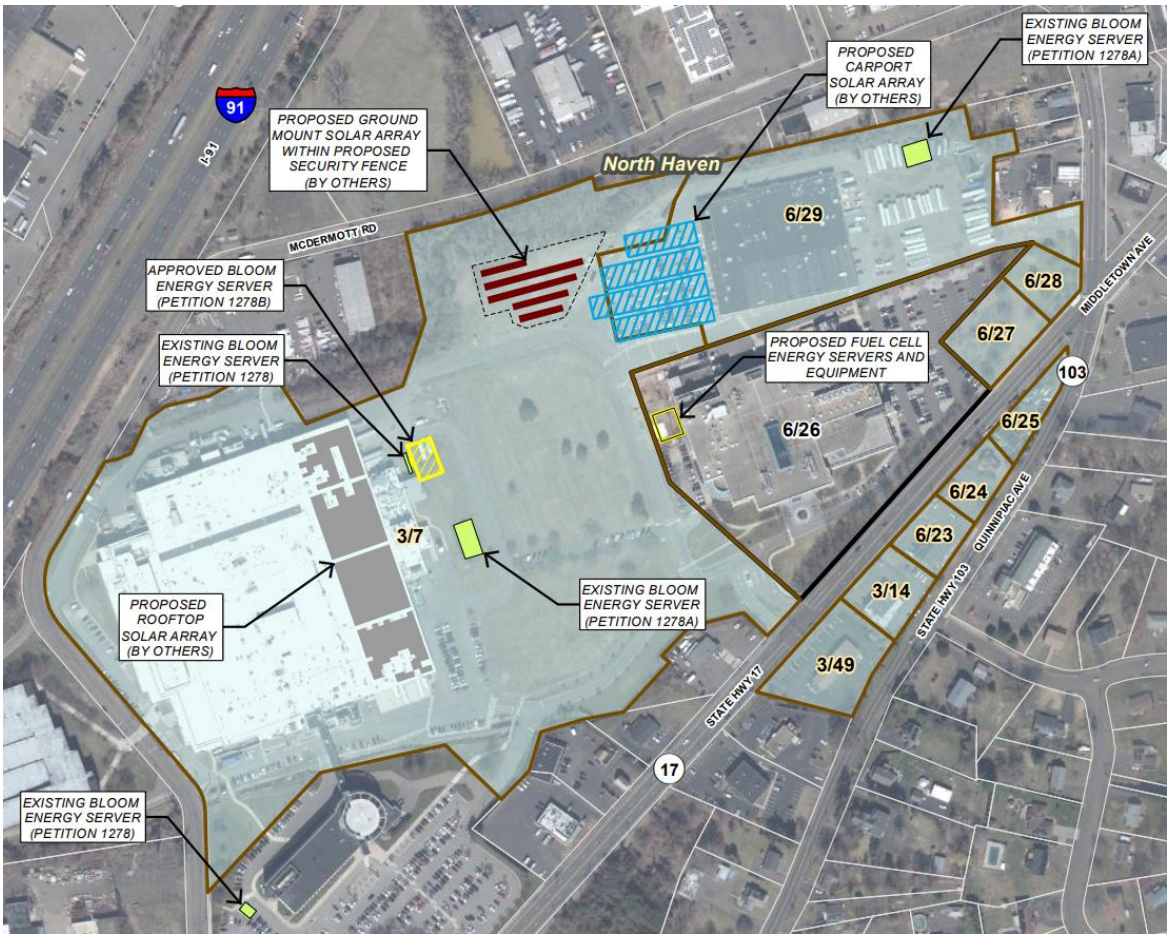
Conclusion

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.

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 final Emergency Response Plan that includes an itemized list of necessary fire suppression equipment to the Council and local emergency responders prior to facility operation, and provide emergency response training.

Fuel Cell Site Location



Fuel Cell Site Plan