



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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**VIA ELECTRONIC & CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

May 26, 2023

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

RE: **PETITION NO. 1561** - 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 350-kilowatt fuel cell facility and associated equipment to be located at Naugatuck Valley Community College, 750 Chase Parkway, Waterbury, Connecticut.

Dear Kristen Grillo:

At a public meeting held on May 25, 2023, 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 that includes an itemized list of necessary fire suppression equipment;
2. The use of natural gas as a fuel system cleaning medium during fuel cell construction, installation or modification shall be prohibited;
3. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities;
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 City of Waterbury;
 8. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed **along with a representative photograph of the facility**;
 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; and
 10. This Declaratory Ruling may be transferred or partially transferred, provided both the facility owner/operator/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. 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. Both the facility owner/operator/transferor and the transferee shall provide the Council with a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility, including contact information for the individual acting on behalf of the transferee.

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 March 17, 2023, and additional information dated April 27, 2023, 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,

A handwritten signature in black ink, appearing to read "Melanie A. Bachman". The signature is fluid and cursive, written in a professional style.

Melanie A. Bachman
Executive Director

MAB/IN/laf

Enclosure: Staff Report dated May 25, 2023

- c: The Honorable Neil M. O'Leary, Mayor, City of Waterbury (noleary@waterburyct.org)
- Tom Fitzgerald, Fire Marshall, City of Waterbury (tfitzgerald@waterburyct.org)
- The Honorable Edward B. St. John, First Selectperson, Town of Middlebury (firstselectman@middlebury-ct.org)



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Petition No. 1561
Bloom Energy Corporation
Naugatuck Valley Community College
750 Chase Parkway
Waterbury, Connecticut
Staff Report
May 25, 2023

Introduction

On March 21, 2023, 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 installation of a 350 kilowatt (kW) fuel cell facility and associated equipment to be located at Naugatuck Valley Community College (NVCC), 750 Chase Parkway, Waterbury, Connecticut (Petition or Project).

Bloom provided Project plans to the City of Waterbury's (City) Planning Department on February 27, 2023. The City commented that the host parcel is owned by the State of Connecticut (State) and thus exempt from local zoning/jurisdiction.

On March 8, 2023, Bloom provided notice of the Project to abutting property owners, City and Town of Middlebury¹ (Town) officials and required state agencies and officials. On March 13, 2023, Bloom received a request for more information on the proposed Project location from an abutting property owner. On March 14, 2023, Bloom provided site plans and photos of the proposed Project location. No other comments were received.

On March 21, 2023, the Council sent correspondence to the City and Town stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by April 20, 2023. No comments were received.

Also, on March 21, 2023, 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 April 20, 2023. No comments were received.

The Council issued interrogatories to Bloom on April 24, 2023. Bloom provided responses to the Council's interrogatories on April 27, 2023.

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 April 27, 2023, 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 September 17, 2023, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

¹ The Town of Middlebury is located within 2,500 feet of the proposed facility.

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 Non-Residential Renewable Energy Solutions (NRES) Program, the successor to the low and zero emissions (LREC/ZREC) renewable energy credit program. The facility would be installed, maintained and operated by Bloom under a 20-year power purchase agreement with Connecticut State Colleges and Universities (CSCU).

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 is to be located within an approximately 1,630-square foot site on a 110-acre host parcel owned by the State. The site is located in the City’s commercial office zone (CO) and is developed with multiple buildings, roadways and parking lots associated with NVCC. The facility would be located in the eastern portion of the host parcel within a paved area 85-feet southwest of the Max R. Traurig Library adjacent to the Public Safety and Facilities Offices parking lot to the north and some utility and mechanical infrastructure to the west.

The surrounding area consists of undeveloped properties to the north, mostly residential development to the northeast, west and south and some commercial development to the south and southeast. The nearest off-campus residential property line from the proposed facility is approximately 325 feet to the south at 714 Chase Parkway.

Proposed Facility

The facility would consist of one Bloom Energy 150-kW ES-5 solid oxide fuel cell Energy Server, one Bloom Energy 200-kW ES-5 solid oxide fuel cell Energy Server and associated equipment, including water deionizers, telemetry cabinets, disconnect switches, a transformer and utility cabinets. The fuel facility would consist of two energy servers installed on concrete pads. See Attached Site Plan for detail.

The fuel cell facility would be installed within a proposed 1,630-square foot paved equipment area. The fuel cells are tamper proof and can only be accessed by essential personnel with a unique access key. The fuel cell facility would be located outside of a designated vehicle travel path in accordance with applicable safety codes.

The natural gas interconnection would run underground to nearby existing gas utility infrastructure located 20-feet to the east of the facility. Other utilities (electric and data) would extend underground west to an existing electrical room located in the west wing of the Student Center building. New meters and other electrical equipment would be installed adjacent to the proposed facility. A water connection would also extend underground northwest to a water main in front of the Student Center 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 a portion of the electrical needs of the Student Center building. The proposed facility is sized to provide at least 39% of the average annual baseload of the building. Any excess electricity created during periods of low energy usage would be exported to the grid under the net metering tariff. The interconnection application has been submitted to Eversource and is under review.

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 facilities is used internally to increase the electrical efficiency of the fuel cells, and consequently there is no useful waste heat generated.

The fuel cell facility has an operational life of 20 years. The solid oxide fuel cell media would be changed at five-year intervals. At the end of the 20-year contract, CSCU 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 2024 with approximately 12 - 18 weeks of total construction time, i.e. 4 to 6 weeks for site prep, 4 to 6 weeks for installation and 4 to 6 weeks for commissioning. Construction days/hours would be Monday-Friday, 7AM – 5 PM.

The estimated cost of the facility is \$1,277,600.

Environmental Effects and Mitigation Measures

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 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 and would require about 192 gallons of water.

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

Fuel Cell Facility	
Compound	lbs/MWh
NO _x	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 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.

Two existing landscape trees would be trimmed to provide the required minimum clearance for the fuel cell. Visual impact from the proposed Project would be minimal as it is located on the NVCC campus among existing utility infrastructure, vegetation, buildings, and parking lots. The Student Center building and adjacent academic building would block views from the north and east. Views of the facility from the south and west would be limited by the existing landscape trees. The facility would be visible within the immediate vicinity from nearby campus roads and pedestrian walkways to the south.

No wetlands, forest or prime farmland soils would be disturbed by the proposed Project as it is located entirely within paved/previously disturbed areas on a developed commercial property. The nearest wetland is located 975 feet north of the proposed facility site. A Federal Emergency Management Agency-designated 100-year flood zone and Welton Brook are located immediately south and west, respectively, of the proposed facility site. 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 an Aquifer Protection Area (APA). The nearest APA is 3.6 miles to the southeast. The site is not located within a DEEP Natural Diversity Database buffered area.

The site is previously disturbed and would not impact historic or cultural resources.

Public 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.

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 current 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 Waterbury Fire Marshal and would provide training and useful information to emergency responders related to fire safety at the site.

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. In addition, manual emergency shut down push buttons would be located at the site.

Noise associated with the construction of this Project would be temporary and exempt from DEEP Noise Control Regulations. Operation of the facility is expected to produce noise emissions no greater than 34 dBA at the nearest residential receptor located approximately 325 feet to the south of the site and would comply with DEEP Noise Control Regulations. The fuel cell would have a noise dampening foam material at the doors and exhaust of the fuel cell to lower its noise emissions by up to 5 dBA.

The proposed facility site would not be enclosed by a fence or bollards because it would operate below 1000 volts and it is not located proximate to vehicular use areas.² Lighting would not be installed at the proposed facility site due to existing campus lighting.

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. Furthermore, the Project was selected under the State's NRES Program.

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 that includes an itemized list of necessary fire suppression equipment.

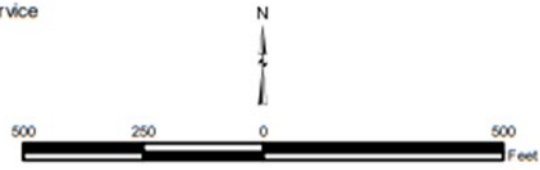
² Section 110.31 of the 2023 National Electrical Code notes that for facilities that operate over 1,000 Volts, "...a wall, screen, or fence shall be used..." and "...where exposed to physical damage from vehicular traffic, suitable guards shall be provided..."

Fuel Cell Site Location

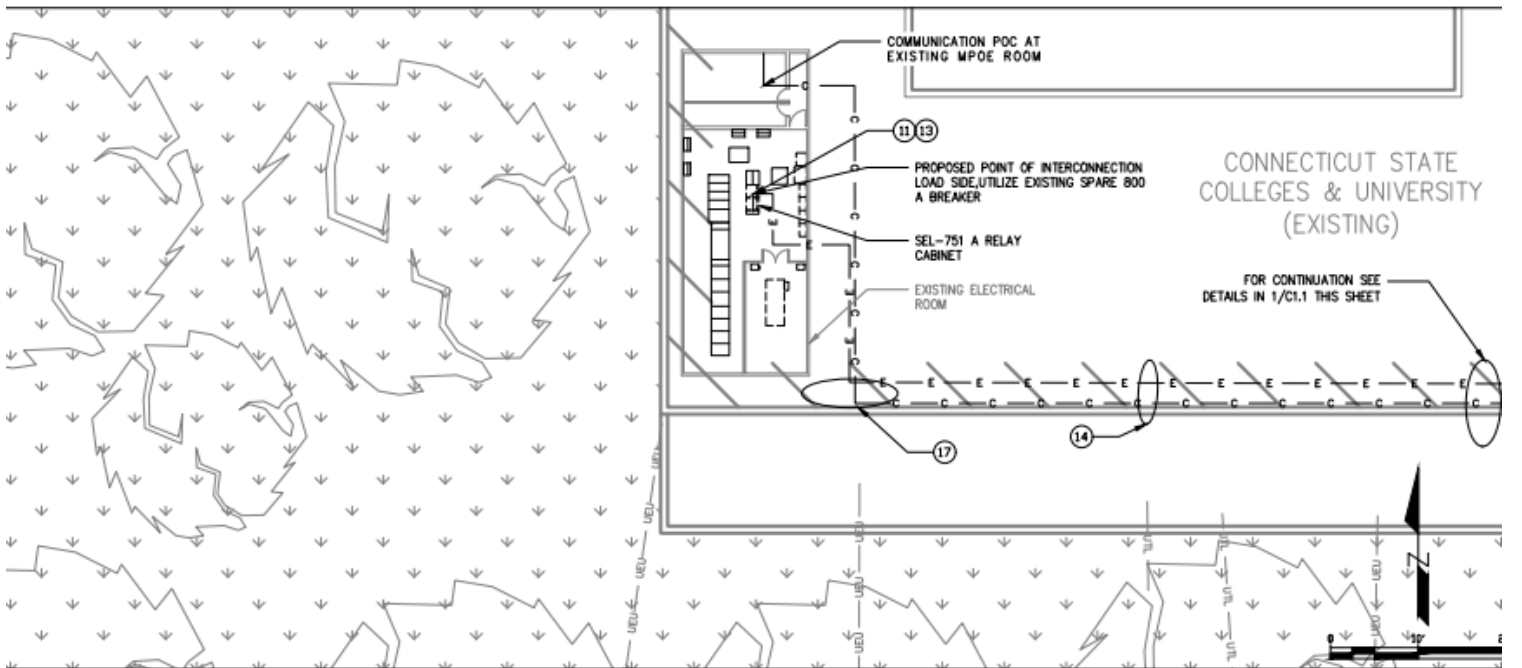
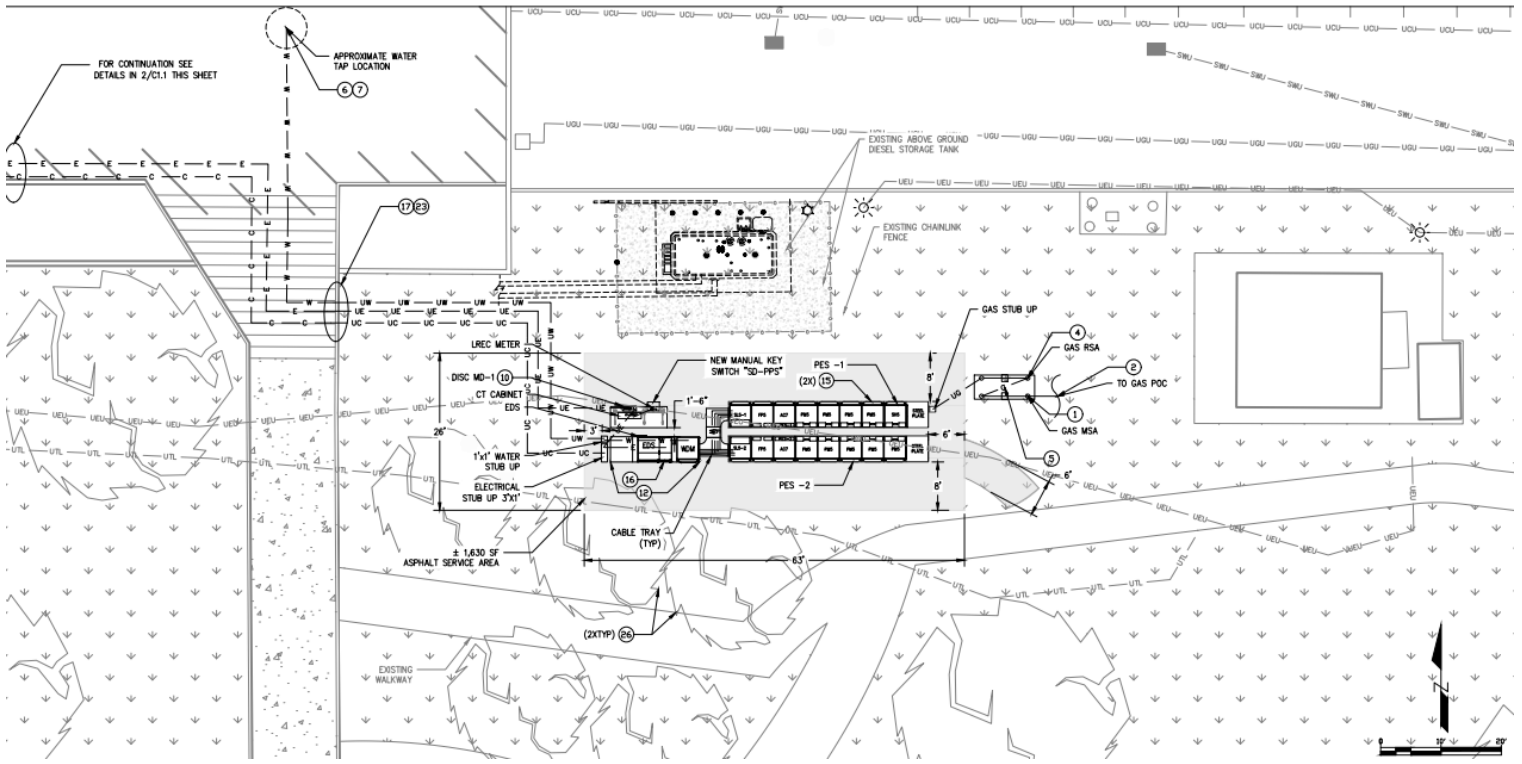


- Proposed Bloom Energy Equipment
- Proposed Electrical Service
- Approximate Parcel Boundary
- Proposed Service area
- Proposed Gas Service
- Existing MPOE Room
- Proposed Water Service
- Site
- Proposed Data Service
- Abutting Property

Map Notes:
 Base Map Source: 2019 CTECO Aerial Imagery
 Map Scale: 1 inch = 500 feet
 Map Date: March 2023



Site Plan



Site Location Photograph 1



**Public Safety and Facilities driveway and parking area;
Facility location at left behind existing infrastructure**

Site Location Photographs 2 and 3



Looking toward Facility area



Looking toward Facility area

STATE OF CONNECTICUT)

: ss. Southington, Connecticut May 26, 2023

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Decision and Staff Report in Petition No. 1561 issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



Melanie A. Bachman
Executive Director
Connecticut Siting Council

STATE OF CONNECTICUT)

: ss. New Britain, Connecticut May 26, 2023

COUNTY OF HARTFORD)

I certify that a copy of the Connecticut Siting Council Decision and Staff Report in Petition No. 1561 has been forwarded by Certified First Class Return Receipt Requested mail, on May 26, 2023, to each party and intervenor, or its authorized representative, as listed on the attached service list, dated March 21, 2023.

ATTEST:



Lisa A. Mathews
Office Assistant
Connecticut Siting Council

Date: March 21, 2023

Petition No. 1561

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Petitioner	<input checked="" type="checkbox"/> E-mail	Bloom Energy Corporation	Kristen Grillo Bloom Energy Corporation 4353 North First Street San Jose, CA 95134 Phone (917) 803-4511 Kristen.Grillo@bloomenergy.com George Gaydos Bloom Energy Corporation 4353 North First Street San Jose, CA 95134 Phone (610) 742-8792 George.Gaydos@bloomenergy.com