



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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### **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

June 24, 2016

Adam Mueller, P.E.  
Core States Group  
58 Mount Bethel Road, Suite 301  
Warren, NJ 07059

RE: **PETITION NO. 1229** – Bloom Energy Corporation, as an agent for Ikea, petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, operation and maintenance of a Customer-Side 250-Kilowatt Fuel Cell Facility to be located at the Ikea store, 450 Sargent Drive, New Haven, Connecticut.

Dear Mr. Mueller:

At a public meeting held on June 23, 2016, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal 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. 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;
2. 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 New Haven;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. 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;
5. 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

6. 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 April 27, 2016, and additional information dated May 3, 2016, May 16, 2016 and May 20, 2016, 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.

Very truly yours,

Handwritten signature of Robert Stein in blue ink, with the initials "UAB" written in the upper right corner of the signature.

Robert Stein  
Chairman

RS/MP/lm

Enclosure: Staff Report dated June 23, 2016

- c: The Honorable Toni N. Harp, Mayor, City of New Haven  
Michael Carter, Chief Administrative Officer, City of New Haven  
Karyn Gilvarg, A.I.A., Executive Director, City Plan Department, City of New Haven  
Matthew S. DeWitt, P.E., Core States Group  
Erik Amrine, PMP, Bloom Energy Corporation  
Ikea, Attn: Store Manager, 450 Sargent Drive, New Haven, CT



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### Petition No. 1229

#### Bloom Energy Corporation

#### IKEA

#### 450 Sargent Drive, New Haven

#### Staff Report

June 23, 2016

On April 28, 2016, the Connecticut Siting Council (Council) received a petition (Petition) from Bloom Energy Corporation (Bloom), as an agent for IKEA, for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the installation of a 250-kilowatt (kW) solid oxide fuel cell energy server facility and associated equipment at the IKEA store located at 450 Sargent Avenue, New Haven, Connecticut. Council member Larry Levesque and Council staff member Michael Perrone conducted a field review of the proposed project on May 16, 2016. Justin Adams, Lead Permitting Specialist, Bloom and Michael Sousa, EIT, Core States Group (consultant for Bloom) also attended the field review.

Prior to filing the Petition, Core States Group discussed the proposed facility with Anne Hartjen of the City of New Haven Plan Commission. Bloom provided formal notification of the project to abutting property owners, City of New Haven officials, and required state agencies and officials on or about April 20, 2016. By letter dated May 2, 2016, the Council deemed the Petition incomplete because it did not include notice to two State representatives. By letter dated May 3, 2016, Bloom provided the notice and corrected such deficiency. The Council has not received any written comments on this Petition to date.

IKEA is located on a 19.15-acre parcel in the Planned Development District 100 under the zoning regulations of the City of New Haven. To the east of the site is Sargent Drive and Interstate 95. To the west of the site is a commercial property that is being developed. To the south of the site is commercial and includes a hotel. To the north of the site is also commercial. No homes are in the vicinity of the site.

Bloom and IKEA have entered into an agreement whereby Bloom would install a 250-kilowatt Bloom ES-5 fuel cell unit/energy server at IKEA, and it would be owned and operated by 2015 Project Company, LLC, a wholly owned subsidiary of Bloom. By Decision dated September 12, 2012 in Docket No. 12-02-09, The Connecticut Public Utilities Regulatory Authority found that the Bloom Energy Server would qualify as a Class I renewable energy source.

Bloom's fuel cell facility would be a customer-side, distributed resources project. The proposed fuel cell uses non-combustion solid oxide technology that consumes natural gas as fuel to generate electrical power. It would operate in parallel with the grid to provide power to the IKEA store. Any surplus electricity would feed into The United Illuminating Company's distribution system for use by the grid. The fuel cell would not have an Uninterruptible Power Module and would not provide backup or grid-isolated power. (IKEA already has an on-site backup generator located adjacent to the fuel cell site.) The fuel cell unit would not provide combined heat and power. It is designed to provide electricity only.

The dimensions of the facility would be approximately 30-feet 4 inches long by 4-feet 5 inches wide by 6-feet 9 inches tall. The facility would be located on an elevated platform within an existing concrete sidewalk adjacent to a parking area near the southeastern corner of the IKEA building. Related equipment would be installed on an auxiliary concrete pad with dimensions of 9-feet 4-inches by 3-feet 8-inches. The proposed project is not expected to result in the loss of any parking spots.

The fuel cell would be interconnected to the existing electrical switchgear located inside the building. Natural gas service would be provided via a new meter assembly to be located next to the existing building meter at the rear of the building, immediately to the west.

The hard copies of the Petition filing contain the incorrect Site Plan drawing, which refers to a project in West Hartford. However, Council staff notes that the correct Site Plan drawing was provided by Bloom in the electronic version of the Petition filing. The electronic version of the Petition that is posted on the Council's website contains the correct Site Plan drawing for this proposed project in New Haven.

The fuel cell facility would comply with all applicable Department of Energy and Environmental Protection (DEEP) water quality standards. The proposed fuel cell site is not located within an aquifer protection area per the DEEP Aquifer Protection Areas map dated December 28, 2015. The fuel cell does not consume or discharge water during normal operation. Bloom's design only requires an initial input of roughly 300 gallons of water, after which no additional water is consumed during normal operation.

The existing site ground elevation is approximately 9.5 feet above mean sea level (amsl). The 100-year flood elevation is approximately 11 feet amsl. Bloom plans to elevate the fuel cell/energy server facility to one foot above the 100-year flood zone or to approximately 12 feet amsl.

Air emissions produced during fuel cell operation would be below the DEEP applicable limits, as shown in the table below – thus, no 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	<0.10	1.0
CO <sub>2</sub>	735-832	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 (known as HFCs) or perfluorocarbons (known as PFCs), which are greenhouse gasses defined in Regulations of Connecticut State Agencies Section 22a-174-1(49).

The Bloom fuel cell facility has a desulfurization process to remove the sulfur compounds which were added to the natural gas as an odorant. The desulfurization canister has a filter made for this process. When a desulfurization canister is taken out of service, it is taken by a Bloom contractor to a licensed out of state facility. Its safety as a container for transportation has been certified by the U.S. Department of Transportation.

Bloom utilizes an U.S. Environmental Protection Agency (EPA) exemption that provides for the regulation of the desulfurization canisters up to the point of removal of any waste. The EPA exemption has also been incorporated into Connecticut's Hazardous Waste Management Regulations. Thus, Bloom will dispose of desulfurization canister substances at an EPA-permitted Transportation, Storage and Disposal Facility in Texas.

Visual impact from the proposed project would be minimal due to the aesthetic design of the energy server, existing trees to the south, and the commercial nature of the area. Any noise associated with the construction of this facility would be temporary in nature and exempt per DEEP noise regulations. According to Bloom's acoustical consultant, the operation of this facility would meet DEEP noise regulations at all abutting properties without the need for noise mitigation measures. This includes the hotel to the south which is considered a residential noise receptor under DEEP noise regulations.

The proposed project is located outside of the shaded area of the DEEP Natural Diversity Database. There are no wetlands in the vicinity of the site. The site is developed, and no trees would be removed.

Bloom conducted a Coastal Consistency Review and concluded that the site is located within the DEEP coastal boundary of Connecticut as defined in the Connecticut Coastal Management Act. The project is not expected to adversely impact coastal resources.

With regard to safety, the fuel cell would be surrounded by bollards to protect it from being accidentally struck by a vehicle. The facility would be remotely monitored by Bloom on a 24/7 basis to detect abnormalities in operation. The fuel cell facility is designed in accordance with American National Standards Institute and Canadian Standards Association (ANSI/CSA) America FC 1-2004 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 has been developed by Bloom.

The proposed installation would not have any 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.



