



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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www.ct.gov/csc

CERTIFIED MAIL RETURN RECEIPT REQUESTED

July 22, 2016

Josh Abrams
Doosan Fuel Cell America, Inc.
195 Governor's Highway
South Windsor, CT 06074

RE: PETITION NO. 1236 – Doosan Fuel Cell America, Inc. petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of a 440-kilowatt customer-side combined heat and power fuel cell facility to be located at New Britain High School, 110 Mill Street, New Britain, Connecticut.

Dear Mr. Abrams:

At a public meeting held on July 21, 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. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;
3. Installation of an anti-climb security fence;
4. Approval of any minor project changes be delegated to Council staff;
5. 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;
6. 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 the City of New Britain;
7. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;



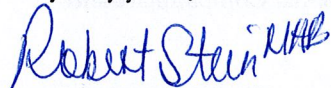
CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer

8. 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;
9. 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
10. 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 June 14, 2016, and additional information received on July 1, 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,



Robert Stein
Chairman

RS/MP/lm

Enclosure: Staff Report dated July 21, 2016

- c: The Honorable Erin Stewart, Mayor, City of New Britain
Sergio Lupo, Director of License Permit & Inspections, City of New Britain
Honorable Mark Kaczynski, Mayor, Town of Berlin
Denise McNair, Town Manager, Town of Berlin
Maureen Giusti, Zoning Enforcement Officer, Town of Berlin
Dawn Mahoney, Esq., General Counsel, Doosan Fuel Cell America, Inc.
New Britain High School, 110 Mill Street, New Britain



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Petition No. 1236

Doosan Fuel Cell America, Inc.

New Britain High School, 110 Mill Street

New Britain, Connecticut

Staff Report

July 21, 2016

On June 16, 2016, the Connecticut Siting Council (Council) received a petition from Doosan Fuel Cell America, Inc. (Doosan or Petitioner) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the installation of an 440-kilowatt (kW) combined heat and power fuel cell facility at New Britain High School, located at 110 Mill Street, New Britain, Connecticut. A field review of the project site was held on July 11, 2016. Council member Phil Ashton; Michael Perrone of the Council staff; Josh Abrams, Installation Manager, Doosan; and Robert Smedley, Energy Manager, CSDNB attended the field review.

Doosan provided formal notification of the project to abutting property owners, local and state officials, and State agencies and officials on or about June 14, 2016. By letter dated June 22, 2016, the Council deemed the Petition incomplete because it did not include a clearly labeled abutters' map and did not include notice to some local and State officials.

On or about June 23, 2016, Doosan corrected these deficiencies and provided notice to the respective local and State officials. The Council has not received any comments to date.

The fuel cell site is located on a grass area adjacent to the maintenance parking area for New Britain High School (NBHS). NBHS is located south of Mill Street. To the north and east is residential. To the west is wooded with residential properties located farther to the west. Located to the south of the site is New Britain Stadium, the Berlin Town Line and Route 571 (in Berlin).

The proposed fuel cell uses non-combustion phosphoric acid technology that consumes natural gas as fuel and uses water for fuel processing to generate electrical power. The fuel cell would provide a portion of the electrical requirements of the school. In the event that internal school electric loads are light, the export of surplus power to the grid is possible. The fuel cell would also provide backup power to designated loads, as determined by the school, when the grid power is down. The waste heat from the fuel cell facility would supplement the building's heating by pre-heating return heating lines for the building's boilers.

The proposed fuel cell unit would be 28-feet 8-inches long by 8-feet 4-inches wide by 9-feet 11-inches high. The fuel cell would be placed on a concrete pad with dimensions of approximately 27-feet 4-inches long by 10-feet 4-inches wide. The fuel cell would have a cooling module with dimensions of approximately 15-feet 11-inches long by 7-feet 10-inches wide by 6 feet high and located on a separate concrete pad east of the fuel cell and within the fenced area. The concrete pad for the cooling module would have dimensions of 14-feet 7-inches long by 8-feet 7-inches wide. The cooling module would reject the waste heat when it is not being used for the school's internal use.

The facility would be surrounded by a 7-foot chain link security fence. Utilities would be run underground to reach the fenced compound and would be aboveground inside the compound.

While a two-inch mesh size is common for chain link fences, Doosan has considered a smaller mesh size as an anti-climbing measure. However, Doosan believes two-inch mesh is adequate for its security needs.

The fuel cell facility would comply with all applicable Department of Energy and Environmental Protection (DEEP) water quality standards. In addition, the project would not be located within a DEEP-designated Aquifer Protection Area. The fuel cell facility does not discharge water under normal operating conditions. The fuel cell facility would only consume water when the ambient temperature exceeds 85 degrees Fahrenheit. Water consumption will be minimal under such conditions and roughly 0.2 to 0.4 gallons per minute.

The proposed site is located outside of the 100-year and 500-year flood zones. Thus, no flood mitigation measures are proposed.

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 _x	0.01	0.15
PM ₁₀	Negligible	0.03
CO ₂	495 With waste heat recovery	1,650
CO ₂	1,049 Without waste heat recovery	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 project would result in a net carbon dioxide reduction for the environment because it would displace the existing generation portfolio which includes traditional fossil-fueled generation. Furthermore, when the waste heat is being used, the fuel cell's CO₂ emissions rate is roughly cut in half, and by supplementing the building's boilers, the net CO₂ emissions for the environment is further cut. In total, the proposed facility would reduce net CO₂ emissions for the environment by roughly 120 metric tons per year.

The proposed facility would emit no methane (CH₄), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), which are greenhouse gasses defined in Regulations of Connecticut State Agencies Section 22a-174-1(49).

The proposed fuel cell would remove sulfur that is used as an odorant in natural gas and create zinc sulfide. The zinc sulfide would collect in a sealed vessel within the fuel cell. The zinc sulfide storage vessel is designed to last for 10 years. At the end of the life of the zinc sulfide storage vessel, it would be removed and shipped to the catalyst vendor for reclaim at their facility or disposal at a licensed vendor. The sealed vessel is deemed safe for transport in accordance with U.S. Department of Transportation requirements.

Visual impact from the proposed project would be minimal because of existing trees to the south and east, the school maintenance parking area and building to the west, and additional trees to north of the parking area.

The facility would meet DEEP noise regulations without the need for sound remediation.

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

With regard to safety, bollards would be used on the west side of the fenced area to protect the fuel cell facility from being accidentally struck by a vehicle. The facility would be remotely monitored by Doosan 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 and submitted by Doosan.

If approved by the Council, construction would commence in early August 2016 in order to complete much of the underground work before major school activities begin. The project would be completed and commissioned by the end of January 2017. The projected work hours would be Monday through Friday 7:00 a.m. to 5:00 p.m., subject to the school's requirements. Noise related to construction would be exempt per DEEP noise regulations.

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.

Staff suggests including the following conditions:

- a) Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
- b) Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;
- c) Installation of an anti-climb security fence; and
- d) Approval of any minor project changes be delegated to Council staff.

