Petition No. 1109
UB Fuel Cell, LLC
446 University Avenue, Bridgeport
Staff Report
August 21, 2014

On July 1, 2014, the Connecticut Siting Council (Council) received a Petition (Petition) from UB Fuel Cell, LLC (UBFC) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required to install a 1.4 megawatt (MW) Fuel Cell Energy, Inc. (FCE) fuel cell combined heat and power facility (Project) on the campus of University of Bridgeport (UB) at 446 University Avenue, Bridgeport, Connecticut. The petition was field reviewed by Council Chairman Robin Stein and Michael Perrone of the Council staff on July 28, 2014. Jennifer Arasimowicz, Vice-president, Commercial Counsel, FCE; George Bentser, Engineering, FCE; Kirk Arneson, Senior Manager, FCE; Dmitriy Kamenetrskiy, Project Manager, FCE; Tim Rzerutek, Project Manager, Elm Electrical Inc.; David Cote, Executive Director, UB; and Joe Marolda, Project Manager, UB also attended the field review.

UBFC is a wholly-owned special purpose entity of FCE, which was selected by the United Illuminating Company as a winning bidder in UI's second round of request for proposals for the Low and Zero Emission Renewable Energy Credit Program established under the provisions of Public Act 11-80, "An Act Concerning the Establishment of the Department of Energy and Environmental Protection and Planning of Connecticut's Energy Future." As result of the project selection, FCE entered in a Standard Contract for the purchase and sale of Connecticut Class I Renewable Energy Credits with UI (Standard Contract), and such contract will be assigned to UBFC. The project selection and the Standard Contract were approved by the Public Utility Regulatory Authority in Docket No. 11-12-06.

Specifically, UBFC would install a natural gas-fueled DFC1500 Direct Fuel Cell power plant provided by FCE. The project would generate 1.4 MW of electricity and 2.1 million BTUs per hour of hot water for the UB campus. Specifically, the waste heat from the fuel cell would heat water for a swimming pool and provide domestic hot water for at least one dormitory, possibly two. The Project would also result in economic savings for UB as compared to purchasing grid power and traditional water heating.

The fuel cell facility and its related equipment would be located within a 62-foot by 80-foot area surrounded by an 8-foot high wall. Natural gas connections would be underground. The fuel cell would generate 480 Volts which would be increased to 13.2 kilovolts via a transformer and would connect underground to the existing distribution system. The fuel cell project would also include a 200-kW natural gas-fueled generator that would only be used temporarily during power outages to allow the fuel cell to "black start" or restart without outside commercial power in the event of an outage. Once the fuel cell restarts, the backup generator would soon shut down. The backup generator would also run briefly about once every two weeks as an exerciser to maintain it in proper running condition.

UBFC is also seeking a micro grid grant for increased reliability. The microgrid would supply roughly 10 buildings on the UB campus. However, UBFC would still go forward with the fuel cell project regardless of whether or not it is a winning recipient of the grant.

The fuel cell facility would be located on an existing cleared site next to and slightly southwest of the UB Wheeler Recreation Center. Directly to the northwest are UB apartments. To the southeast are the Greater Bridgeport Symphony office and the Chief Financial Officer residence. However, the eight-foot high wall would greatly reduce the visual impact of the project from these adjacent structures. The tallest object is the exhaust stack, approximately 20 feet tall. The wall would also ensure compliance with applicable noise standards both under normal operation and also when the backup generator (while exempt from State noise standards) is operating.

The site is already largely cleared. No trees six inches or greater in diameter would be removed at the site. The site would be improved with stone and curbing. The Project would utilize the existing paved access from University Avenue. Such access would be extended and improved.

By letter dated June 4, 2014, the Connecticut Department of Energy and Environmental Protection determined that negative impacts to State-listed species are not anticipated. By letter dated May 22, 2014, the State Historic Preservation Office has determined that no historic properties would be affected by this proposed project. The site is not located within the 100-year or 500-year flood zone or the coastal zone. The project occupies less than one acre and, as such, a DEEP general permit construction stormwater prevention plan is not required. The fuel cell would require approximately 6,500 gallons of city water from the existing UB water system and would discharge approximately 3,200 gallons of wastewater per day to the existing UB wastewater system. Total emissions from the project, including the blackstart backup generator, would be below levels that would render the Project a "major stationary source." The Project would be a minor source and is not subject to Federal Non-Attainment New Source Review. The fuel cell plant would result in a net reduction in carbon dioxide emissions of approximately 2262 tons per year versus using a boiler for water heating and traditional electric grid generation for electricity.

The fuel cell facility's control system is designed for the system to "fail safe" in the event of an unusual or unsafe condition. For any event that has a potential safety consequence, the plant's control system initiates an emergency shutdown (ESD) sequence that would isolate the external natural gas fuel source from the plant and electrically disconnect the fuel cell inverters from the grid. An ESD also triggers an automatic isolation of the fuel desulfurizer vessels and initiates purging of the downstream fuel train components through the module using an onsite supply of inert nitrogen gas. FCE would be notified immediately in the event of any such ESD. In addition, in the Petition, UBFC included an Emergency Response/Safety Plan pursuant to Docket No. NT-2010. The Project would also include two gates on the wall that would be normally locked for security purposes.

On June 19, 2014, representatives of UBFC contacted David Kooris, Director of the Office of Planning and Economic Development for the City of Bridgeport, to discuss the project and provide him with a draft copy of the petition. The City of Bridgeport had no concerns regarding the Project. UBFC provided formal notice of the petition to abutting property owners, the City of Bridgeport, and others as required on June 30, 2014. On July 2, 2014, the Council initially deemed the Petition incomplete due to concerns that not all the abutting property owners were notified. However, on July 3, 2014, UBFC subsequently resolved the notice issue and ensured that all abutters were properly noticed. No comments have been received to date.

Existing Site

Existing Access from Site to University Avenue