



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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

October 26, 2018

Bruce L. McDermott, Esq.  
Murtha Cullina LLP  
265 Church Street  
New Haven, CT 06510

RE: **PETITION NO. 1350** – EIP Investment LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 19.98-megawatt combined heat and power fuel cell facility and associated equipment to be located within Building 107 on the corner of Curtis Street and the Pan Am Southern, LLC railroad tracks at the Stanley Black & Decker Campus, 480 Myrtle Street, New Britain, Connecticut.

Dear Attorney McDermott:

At a public meeting held on October 25, 2018, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal meets air and water quality standards of 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 minor project changes be delegated to Council staff;
2. The emergency response plan shall be shared with emergency responders and the City of New Britain;
3. A copy of the emergency response plan shall be submitted to the Council prior to commencement of construction;
4. The use of natural gas as a fuel system cleaning medium during fuel cell construction, installation or modification shall be prohibited;
5. 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;
6. Compliance with the following codes and standards during fuel cell construction, installation or modification, as applicable:
    - a. NFPA 54
    - b. NFPA 853; and
    - b. ASME B31;
  7. Submit a copy of an Emergency Response/Safety Plan that includes, but is not limited to the following:
    - a. A description of the results of any simulated emergency response activities with any state and/or local emergency response officials;
    - b. Details of any facility site access system; and
    - c. Establishment of an emergency responder/local community notification system for on-site emergencies and planned construction-related activities that could cause community alarm. The system shall include notification to the following: local emergency responders, city or town officials, state legislators, and local residents that wish to participate.
  8. 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;
  9. 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 Britain;
  10. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
  11. 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;
  12. 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
  13. 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 September 21, 2018, and additional information received on October 17, 2018, October 18, 2018 and October 19, 2018, 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.

Sincerely,

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

Robert Stein  
Chairman

RS/MP/lm

Enclosure: Staff Report dated October 25, 2018

- c: The Honorable Erin Stewart, Mayor, City of New Britain  
Sergio Lupo, Director of License Permit & Inspections, City of New Britain  
Mark Wick



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**Petition No. 1350**

**EIP Investment LLC**

**New Britain, Connecticut**

**Staff Report**

**October 25, 2018**

### Introduction

On September 21, 2018, the Connecticut Siting Council (Council) received a petition (Petition) from EIP Investment LLC (EIP or Petitioner) for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the installation of a 19.98 megawatt (MW) combined heat and power fuel cell facility at Building 107 of the Stanley Black & Decker (SBD) campus at 480 Myrtle Street, New Britain, Connecticut.

EIP plans to construct the New Britain Energy and Innovation Park (NBEIP), which will repurpose the under-utilized historic SBD campus. The development of NBEIP will be comprised of the following four phases as listed below:

- a) Phase 1 – a 19.98 MW grid-connected fuel cell facility (the proposed project that is the subject of this Petition);
- b) Phase 2 – a high performance computing center with a 44 MW load powered by fuel cells utilizing hydrogen as a fuel;
- c) Phase 3 – a behind the meter power plant that will provide power and cooling for a high performance computing center; and
- d) Phase 4 – an innovation and technology center to enable the development of new and improved fuel cell, hydrogen and related technologies.

EIP mailed notification of the proposed project to abutting property owners, City of New Britain officials, and state agencies and officials on or about September 21, 2018. On October 5, 2018, the Council issued interrogatories to EIP. On October 15, 2018, EIP provided notice to Department of Consumer Protection (DCP), Department of Construction Services (DCS) and Department of Labor (DOL). On October 17 and 18, 2018, EIP provided responses to the interrogatories. The Council has not received any written comments to date.

On September 24, 2018, the Council sent correspondence requesting comments on the proposed project by October 24, 2018 from the following state agencies: Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); 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); DCP; DOL; DCS; Department of Transportation (DOT); the Connecticut Airport Authority (CAA); the State Historic Preservation Office (SHPO); and Department of Energy and Environmental Protection (DEEP). No comments from any state agencies were received to date.

### Public Benefit

The project would be a “customer-side distributed resources” facility, as defined in Connecticut General Statutes (CGS) § 16-1(a)(34). 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 2018 Connecticut Comprehensive Energy Strategy notes that Public Act 17-144 requires the electric distribution companies to present a plan to PURA for the deployment of up to 30 MW of grid-enhancing fuel cells, which could include fuel cells within microgrids (including those where critical facilities are located) that would enhance the reliability of the larger grid. The SBD manufacturing plant is a designated “critical commercial facility.” The proposed fuel cell facility could be used to provide reliability for SBD at the 13.8-kilovolt (kV) distribution level.



CONNECTICUT SITING COUNCIL  
Affirmative Action / Equal Opportunity Employer

The proposed facility is distributed generation. Specifically, the proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard as a low emission Class I renewable energy source. In June 2018, the proposed project was selected by the Connecticut Department of Energy and Environmental Protection following a Request for Proposals (RFP) for Class I renewable energy sources pursuant to Section 10 of Public Act 17-144. The DEEP RFP process resulted in a power purchase agreement for 100 percent of the power to be committed to the grid.

### **Project Site**

The SBD Campus (with Burritt Street Substation) site is developed and located in New Britain's General Industry (I-2) District. To the north of the site (on the opposite side of Myrtle Street) are residential properties. To the south of the site are railroad tracks and Eversource property. East of the site is SBD property. West of the site is additional SBD property and other industrial uses.

### **Proposed Project**

EIP would install 45 PureCell Model 400 fuel cell units for this project inside the building, arranged in a rectangular grid pattern. Each fuel cell unit is approximately 28-feet 8-inches long by 11 feet wide by 9-feet 11-inches tall. While 44 units were originally noted in Figure 4 of the Petition, in the response to Council interrogatories, EIP revised the total to 45 units.

The proposed fuel cell facility has an operational life of 20 years, and fuel cell stacks are rebuilt at 10-year intervals. Because there are 45 units, there would be no impact to power output during maintenance and stack rebuilds.

The proposed fuel cell facility uses non-combustion phosphoric acid technology that consumes natural gas as fuel to generate electrical power. The amount of phosphoric acid would comply with applicable state and federal regulations. EIP has had extensive discussions with the natural gas utility and also has a direct connection to natural gas transmission. EIP has confirmed that the natural gas supply system can accommodate the proposed fuel cell facility.

In the event of a power outage, the fuel cells would not shut down, but would "idle" and not provide power until such time as the utility requires it. The proposed fuel cell facility would be capable of providing SBD (as a critical commercial facility) with seamless uninterruptible power in the event of a power outage, subject to consent and approval of the electric utilities.

The proposed project would utilize both low grade (i.e. lower temperature) and high grade (i.e. higher temperature) waste heat from the fuel cells. The high grade heat would run an Organic Rankine Cycle (ORC) engine to generate additional electricity for parasitic load requirements<sup>1</sup>. The low grade heat from the fuel cell units will be combined with the low grade heat exiting from the ORCs to provide energy to a heating and cooling loop at SBD. Utilization of the waste heat would displace gas-fired burners and air conditioning, thereby reducing carbon dioxide emissions. Three outdoor cooling modules would be installed as a back-up to this system. EIP anticipates installing such modules adjacent to the Industrial 107 building.

The buildings would have the fuel cell exhaust consolidated and vented through ridge vents on the roof. These vents would not be higher than any existing building surrounding the project.

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<sup>1</sup> By the ORCs covering the heating loop and parasitic losses, the maximum output of the proposed facility at the point of interconnection would be about 19.8 MW.

Nine transformers would also be installed inside the building to boost the 480-Volt alternating current (AC) fuel cell output to 13.8 kilovolts (kV). There are existing underground conduits that connect to Burritt Street Substation (BSS), a SBD/Farmington River Power Company substation located on the SBD property. The existing cables in those conduits would be removed and replaced with four 13.8-kV feeders, utilizing about 900 feet of new cable. The feeder path would be entirely below grade until it reaches BSS. The entire feeder path would be on SBD property.

At BSS, the 13.8-kV output would be boosted to 69-kV via a new 25 megavolt-ampere (MVA) transformer and then connected to the existing 69-kV busbar so that the power output can enter the transmission grid. It has been confirmed that BSS can accommodate the nearly 20 MW of additional generation. The substation fence line would not have to be modified as sufficient space is available.

Construction would be expected to commence in the first quarter of 2019, with facility commissioning no later than the second quarter of 2020. EIP anticipates that typical work hours would be 7:00 a.m. to 5:00 p.m. Monday through Friday. Critical shut downs would be carried out as necessary and scheduled for off-hours as necessary. EIP anticipates that a limited number of Saturday construction hours would be necessary.

### Environmental Effects and Mitigation

The proposed project would not be located within a DEEP-designated Aquifer Protection Area. The new transformer at BSS would have proper containment measures to protect against leakage of insulating oil. Currently, biodegradable insulating oil is contemplated.

The proposed fuel cell facility would have virtually no water usage or discharge. Water consumption would only occur at system fill and makeup water. Minimal discharge of de-ionized water would occur in rare instances.

The proposed project would be located entirely within the Federal Emergency Management Agency (FEMA) unshaded Zone X, an area outside of both the 100-year and 500-year flood zones.

The fuel cell facility would comply with all applicable Department of Energy and Environmental Protection (DEEP) water quality standards.

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 <sup>2</sup>		
Compound	Fuel Cell Facility (lbs/MWh) <sup>3</sup>	Emissions standards (lbs/MWh)
NO <sub>x</sub>	0.01	0.15
PM <sub>10</sub>	Negligible	0.03
CO <sub>2</sub>	485-815 With waste heat recovery	1,650
CO <sub>2</sub>	998 Without waste heat recovery	1,650

<sup>2</sup> Regulations of Connecticut State Agencies Section 22a-174-42(b)(3)(C); 22a-174-42(d)(2)(B)(ii) & Table 42-2

<sup>3</sup> These emission rates are based on 440-kW operation as noted on the specification sheet. When using a pounds per MWh basis (rather than a tons per year basis), the number of fuel cell units is immaterial.

Section 22a-174-1(49) of the Regulations of Connecticut State Agencies defines the following as greenhouse gases (GHG): carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), any hydrofluorocarbon (HFC) or any perfluorocarbon (PFC). The proposed facility would have no emissions of SF<sub>6</sub>, HFC or PFC. Emissions of CH<sub>4</sub> and N<sub>2</sub>O would be very low and would not contribute significantly to the Global Warming Potential (GWP) of the proposed facility. The projected annual emissions of GHGs and their CO<sub>2</sub> equivalents are noted below. However, there are no defined criteria thresholds for these compounds.

**CO<sub>2</sub>e emission rates from proposed facility**

Emission Type	Projected Emissions	GWP in 40 CFR 98, Table A-1	Projected CO <sub>2</sub> e
CO <sub>2</sub>	84,050 ton/year	1	84,050 ton/year
CH <sub>4</sub>	<2 ton/year	25	<50 ton/year
N <sub>2</sub> O	<1 ton/year	298	<300 ton/year
SF <sub>6</sub>	N/A	22,800	N/A
HFC	N/A	12 to 14,900*	N/A
PFC	N/A	7,390 to 17,340	N/A

Based on the U.S. Environmental Protection Agency (EPA) eGrid 2012 database information and the JEDI model from the National Renewable Energy Laboratory, the proposed project would displace existing fossil-fueled generation resulting in a net reduction in carbon dioxide emissions annually based on both New England data and Connecticut data.

The proposed fuel cells would remove sulfur that is used as an odorant in natural gas and create zinc sulfide. Zinc sulfide removal occurs at the 10-year interval for fuel cell refurbishment. This activity would be carried out by trained personnel and a company specializing in removal of waste zinc sulfide.

Visual impacts from the proposed project would be minimal as the fuel cells and distribution transformers would be located inside the building. The nearest residential structure is located approximately 354 feet to the north. There would be no sightline from such residence because a concrete framed six story building obstructs the sightline. The proposed electrical interconnection route is underground. Views of the changes to BSS would be expected to be largely limited to the subject property.

The facility would meet DEEP noise regulations at the property boundaries.

The proposed project is not located within the shaded area of the DEEP Natural Diversity Database. With the indoor fuel cell construction, feeders in underground conduits, and no physical expansion of the BSS footprint, no tree clearing would be required. A DEEP General Permit would also not be required.

No portion of the project is located on prime farmland or core forest.

**Public Safety**

No changes to magnetic field levels at the subject property lines would be expected to result from the proposed project.

There would be no appreciable increases in height associated with the exhaust vents that would necessitate notice to the Federal Aviation Administration.

National Fire Protection Agency (NFPA) 853 is the national standard for the installation of stationary fuel cell power systems and requires preparation of a written fire prevention and emergency plan for fuel cell installations. The fire prevention and emergency plan is to be prepared in accordance with the requirements of Section 8.2 of the NFPA 853 and is to including descriptions of fire prevention procedures, inspections, housekeeping practices, flammable material storage, control of ignition sources, procedures for fire protection equipment impairment, fire emergency plans and other information.

The PureCell Model 400 fuel cells are designed in accordance with American National Standards Institute and Canadian Standards Association (ANSI/CSA) America FC1-2014 for stationary fuel cell power. EIP's emergency response plan is currently being developed and will be filed with the Council upon its completion. If approved, staff suggests that such plan be provided to the Council prior to commencement of construction.

The nearest railroad line is approximately 55 feet away. However, there are speed restrictions on the carriers on this line, and EIP believes that there is no risk of train derailment affecting fuel cell facility operations. The entire natural gas supply system to the fuel cell facility and to each individual unit would have redundant manual and automatic shut-off features in the event of a pipe breakage.

### **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. The proposed project will not produce air emissions rates in excess of RCSA criteria, will utilize virtually no water to produce electricity, was designed to minimize environmental impacts, 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 DEEP RFP for Class I renewable energy sources pursuant to Section 10 of Public Act 17-144.

The proposed installation would not have any substantial adverse environmental effect. Further, the proposed installation supports the state's renewable energy policy and contributes to the state's grid reliability. Also, it would reduce the emission of air pollutants that contribute to smog and acid rain, and to a lesser extent, global climate change.

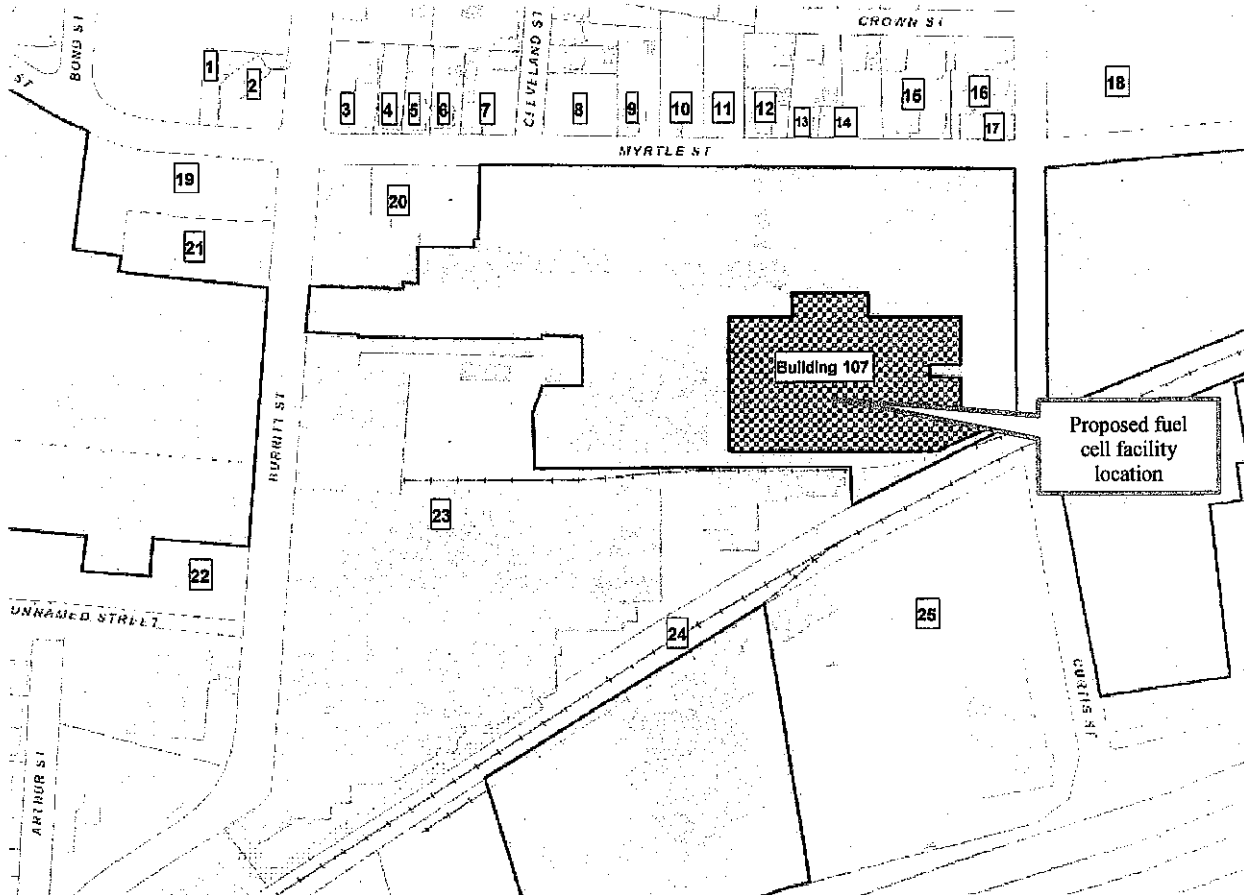
### **Recommended Conditions**

Staff recommends the following conditions:

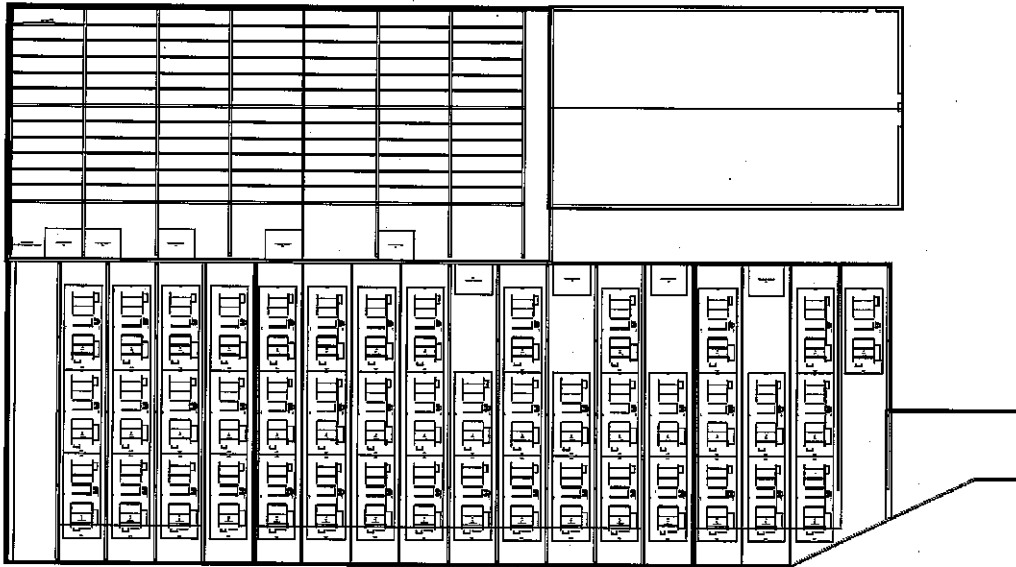
1. Approval of any minor project changes be delegated to Council staff; and
2. A copy of the emergency response plan shall be submitted to the Council prior to commencement of construction.



**Proposed Facility Location**



**Revised Site Plan (for 45 fuel cell units)**



45 UNITS IN BLDG 107

