

DRAFT
Petition No. 1350A
EIP Investment LLC
Stanley Black & Decker Campus
480 Myrtle Street, New Britain, Connecticut

Staff Report
December 10, 2021

Introduction

Petition 1350

On September 21, 2018, the Connecticut Siting Council (Council) received a petition (Petition No. 1350) 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.

On October 26, 2018, the Council issued a declaratory ruling for the Petition 1350 project for 45 Doosan PureCell Model 400 fuel cells (totaling 19.98 MW) to be installed inside Building 107 on the SBD campus (Declaratory Ruling). Pursuant to Condition 8 of the Declaratory Ruling, the deadline for construction of the fuel cell facility was October 26, 2021 unless a written request for an extension is granted.

Petition 1350A

On August 20, 2021, pursuant to CGS §4-181a(b), EIP submitted a Motion to Reopen and Modify (Motion to Reopen), with supporting documentation, the Council's Declaratory Ruling based on changed conditions and a request for an extension of the construction deadline. Specifically, due to the inability to secure financing for the purchasing and ongoing maintenance of the PureCell Model 400 fuel cells, EIP opted to replace these units with a different make and model: Bloom Energy Server 5. Although more energy efficient, given the differences in design specifications, 73 Bloom fuel cells would be needed to achieve a capacity of about 19.8 MW. Additionally, an arrangement of 73 Bloom fuel cell units requires adequate ventilation for cooling purposes. Thus, an indoor configuration is not compatible with the general arrangement plans of Buildings 107 and 110. Thus, it was also decided that Buildings 107 and 110 would be demolished to accommodate an outdoor fuel cell facility.

During a regular meeting held on September 9, 2021, the Council voted to grant EIP's Motion to Reopen.

C.G.S. §22a-20a requires applicants seeking a permit from DEEP or the Council for a new or expanded facility defined as an "affecting facility" that is proposed to be located in an environmental justice community to file an Environmental Justice Public Participation Plan (EJPPP). The City of New Britain (City) is an environmental justice community. However, the proposed facility is not an "affecting facility" under C.G.S. §22a-20a because it is a Class I renewable resource. Thus, C.G.S. §22a-20a does not apply to the facility, and an EJPPP is not required.

On September 13, 2021, the Council sent correspondence to the City stating that the Council has received the Petition and invited the City to contact the Council with any questions or comments by October 9, 2021. The Council has not received any comments to date.

Also on September 13, 2021, 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 October 9, 2021. No state agency comments were received.

While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies.¹

The Council issued interrogatories to EIP on September 23, 2021. EIP provided responses to the Council's interrogatories on October 7, 2021.

On October 21, 2021, pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act which requires an administrative agency to take action on a petition within 60 days of receipt, the Council voted to set the date by which to render a decision on the petition as March 8, 2022. This date is the statutorily mandated 180-day decision deadline for this reopened petition.

Public Benefit

The project would be a “customer-side distributed resources” facility, as defined in C.G.S. § 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. In June 2018, the project was selected as part of the Connecticut Department of Energy and Environmental Protection's (DEEP) Request for Proposals (RFP) under Public Act 17-144 – An Act Promoting the Use of Fuel Cells for Electric Distribution Benefits and Reliability.

In accordance with a power purchase agreement (PPA) that was executed in September 2018, approximately 80 percent of the renewable energy certificates (RECs) and energy would be sold to The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource), and approximately 20 percent of the RECs and energy would be sold to The United Illuminating Company (UI). The PPA is being amended to change the equipment from Doosan to Bloom. The term of the PPA is 20 years, and there is not a provision for extension or renewal.

The facility would include the utilization of waste heat for an absorption chiller (for cooling or refrigeration) to be installed at the Stanley manufacturing facility.

EIP is participating in the ISO New England, Inc. (ISO-NE) forward capacity auction, but, as of October 12, 2021, the project has not yet been accepted.

The estimated total cost of the project is \$75 - \$80 million.

Project Site

The SBD Campus (including Burritt Street Substation) site² is developed and located in the City'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.

¹ Corcoran v. Connecticut Siting Council, 284 Conn. 455 (2007)

² 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 nearest residential structure is located approximately 354 feet from the proposed site. The railroad tracks are approximately 55 feet from the proposed site. There are speed restrictions on the carriers on this line.

Proposed Project

The proposed facility would consist of 42ea. 250-kilowatt (kW) Bloom Energy Servers and 31ea. 300-kW Bloom Energy Servers to be arranged in a grid pattern on top of an existing concrete foundation (base) that would remain after Building 107 is demolished. The 250-kW energy servers (or fuel cells) would each have dimensions of approximately 28-feet 8-inches long by 4-feet 4-inches wide by 7 feet tall. The 300-kW energy servers (or fuel cells) would each have dimensions of approximately 32-feet 11-inches long by 4-feet 4-inches wide by approximately 7 feet tall. EIP would also install 7 equipment locations on the concrete foundation which would include, but not be limited to, 480-V/13.8-kV transformers, marshalling switchgear, water distribution modules, and telemetry modules. The tallest equipment would be the fuel cell units which would reach a maximum height of about 7.5 feet above the top of concrete.

The fuel cell facility would utilize non-combustion solid oxide technology which utilizes natural gas as fuel to generate electrical power. The fuel is supplied to the cell stacks within the fuel cell units, and the resulting electrochemical reaction produces direct current (DC) power which is then converted to alternating current (AC) power via inverters.

The seven transformers would boost the 480 Volt AC output from the fuel cell units to 13.8 kilovolts (kV). The 13.8-kV output would be supplied to the on-site Burritt Street Substation (BSS), and a new 25 megavolt-ampere transformer at BSS would raise the voltage to 69-kV. The 69-kV output would enter the grid and utilize existing transmission owned by both The Farmington River Power Company and Eversource.

An ISO-NE Material Modification Determination would be performed based on the equipment change from Doosan to Bloom.

The concrete pad that would host this facility has an irregular shape and an area of approximately 48,000 square feet. A 7-foot tall chain link fence would be installed around the concrete pad (about one foot in from the edges of the concrete). The enclosed fenced area would be approximately 47,000 square feet.

The proposed facility would not provide power to the grid in the event of a commercial power outage. The fuel cell units would “idle” during the power outage. The project could provide backup power to SBD campus subject to the consent and approval of the utilities and the installation of the required equipment.

The proposed Bloom fuel cell units would utilize a waste heat recovery system. The waste heat would be utilized in an absorption chiller³ to be installed at the SBD manufacturing facility.

EIP anticipates construction would commence in the second quarter of 2022. The project would be commissioned and powered no later than the end of June 2023. Construction hours are anticipated to be Monday through Saturday from 7 AM to 5 PM.

At the end of the 20-year facility life span, all fuel cell components would be removed and the utility connections properly isolated. The on-site foundation, retaining walls and concrete pads would remain in place.

³ An absorption chiller uses heat as an energy source to operate a cooling/refrigeration system.

Environmental Effects and Mitigation

Air Emissions

Air emissions produced during the operation of the facility would not trigger any regulatory thresholds and would not require a DEEP Air Permit. The proposed facility would emit 72,971 tons/yr of CO₂.

The proposed facility would emit a negligible amount of CO₂e of methane (CH₄), nitrous oxide (N₂O), and no sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), which are greenhouse gases defined in RCSA Section 22a-174-1(49).

Water Resources

The facility would require about 4,380 gallons of water during initial system fill and re-start operations. No discharge of water is expected during operations. The facility would connect to an existing six-inch diameter water line near the northwestern portion of the facility.

The DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) requires implementation of a Stormwater Pollution control Plan to prevent the movement of sediments off construction sites into nearby bodies of water and to address the impacts of stormwater discharges from a project after construction is completed. The General Permit authorizes the discharge of stormwater at a site with a total disturbance of one acre or more of land area.

The project would not require a DEEP Stormwater Permit. Although the development area is approximately 1.1 acres, there is no ground disturbance because the entire proposed facility would be located on top of an existing impervious concrete surface. The facility is designed to funnel stormwater drainage into the existing roof drainage system, which would not be affected by the demolition of Buildings 107 and 110. As a result, there is a no net increase in drainage volume and discharge from existing conditions to proposed conditions.

The site is not within a Federal Emergency Management Agency-designated flood zone. There are no wetlands or watercourses near the site. The site is not within a DEEP-designated Aquifer Protection Area. There are no wetlands on the subject property. The proposed project would be constructed consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*.

Soils

The site is developed. It is not located on any prime farmland soils. The facility would be installed on top of an existing concrete building foundation.

Wildlife

The project area is not located within a DEEP Natural Diversity Database (NDDDB) buffered area. With the indoor fuel cell construction, feeders in underground conduits, and no physical expansion of the BSS footprint, no tree clearing would be required.

Historic and Recreational Resources

The originally proposed project was not expected to impact historic resources because the project was internal to a building. The proposed fuel cell facility, while outdoor, would be substantially shorter in height than the building to be removed.

The site is not proximate to any recreational resources.

Visibility

In general, the facility would be visible from locations along Myrtle Street and Curtis Street where the existing buildings may be seen, but the lower profile and neutral color would be expected to minimize visibility as compared to the existing views. Year-round visibility is expected to the northeast along Myrtle Street near Celebration Way and Grove Street, and along portions of Orange Street where existing structures intervene. Limited visibility would be expected from the north, west, south, and east due to intervening structures. In general, the visual impact from the proposed project would be minimal as the project site is compatible with the surrounding industrial development.

Public Safety

Natural Gas Safety

Before commissioning the proposed facility, EIP would use inert nitrogen as pipe cleaning media, in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission.

Natural gas would not be stored at the site. Natural gas service would be provided underground and would be delivered to a fuel gas meter located on the southwestern portion of the facility.

The natural gas supply contains sulfur which is a fuel cell system catalyst contaminant. The proposed fuel cells would remove the sulfur and create zinc sulfide. Zinc sulfide removal would occur approximately once every 10 years. The zinc sulfide waste would be removed by trained personnel and disposed of in accordance with applicable regulatory criteria.

In the event of a fire, system malfunction or emergency the plant control system would initiate an emergency shut down sequence which isolates the fuel cells from the external fuel source and disconnects the fuel cells from the grid.

Noise

Sound modeling techniques were used to estimate the potential noise impacts associated with facility operation to residential, commercial and industrial receptors in the project area.

The subject property is considered a Class C (industrial) emitter. Under such scenario, and with residential, commercial and industrial land uses (i.e. Class A, B and C receptors, respectively) surrounding the facility, the most stringent DEEP noise limits at the property boundaries would be 70 dBA for industrial receptors, 66 dBA for commercial receptors and 51 dBA at night for residential receptors. Please see Table 1 below.

Emitter Class	RECEPTOR ZONE		
	<i>Industrial</i>	<i>Commercial</i>	<i>Residential (day/night)</i>
<i>Industrial</i>	70	66	61/51
<i>Commercial</i>	62	62	55/45
<i>Residential</i>	62	55	55/45

Table 1. DEEP Noise Control Regulations.

Results indicate that projected sound impacts are not expected to exceed 47 dBA at residential property boundaries, 42 dBA at commercial property boundaries and 52 dBA at industrial property boundaries. Thus, the operation of the proposed fuel cell facility would comply with DEEP Noise Control Regulations.

Any noise associated with the construction of this project would be temporary in nature and exempt per DEEP Noise Control Regulations.

Security

The fuel cell facility has internal and remote 24/7 operational monitoring. The fuel cell facility is designed in accordance with 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. 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 natural gas line and the electrical connections have manual disconnects and shut offs.

A 7-foot tall chain link fence would be installed around the concrete pad/foundation area. All proposed fencing would be compliant with the National Electric Safety Code and National Electric Code.⁴ The site would have a locked gate to limited access for authorized personnel only.

No lighting would be installed for security and/or maintenance purposes at the facility.

Fire Protection

In accordance with the National Fire Protection Association, Standard for the Installation of Stationary Fuel Power Systems (NFPA 853), EIP provided an Emergency Response Plan (ERP) for this fuel cell installation. FCE's Fire Prevention and Emergency Plan provides guidance on 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.

If safety circuits detect an abnormal condition, the fuel supply is automatically shut off, and individual system components are automatically shut down. The facility would also include (for manual use) emergency power off (EPO) buttons, and electrical disconnect switch and a natural gas shut-off valve.

The nearest railroad line is located approximately 55 feet from the project location. However, there are speed restrictions on this railroad line, and EIP believes that there is no risk of derailment affecting fuel cell facility operations. Furthermore, in the event of a train collision, the proposed Bloom fuel cell safety shutdown features would be initiated. A natural gas pipe rupture would also trigger a natural gas supply shutdown.

As part of the building permit application process, the City Fire Marshal would review the project. During this review, Bloom would offer on-site training to local officials. An ERP for the facility is included within the Motion to Reopen and Modify. A copy of the ERP would be provided to the City Fire Department.

⁴ Section 110.31 of the National Electrical Code (NEC), 2020 Edition notes that for over 1,000 Volts, "...a wall, screen, or fence shall be used...A fence shall not be less than 7 feet in height or a combination of 6 feet or more of fence fabric and a 1 foot or more...utilizing barbed wire or equivalent."

Aviation Safety

Consistent with Petition 1350, there would be no appreciable increases in height associated with the exhaust vents that would necessitate notice to the Federal Aviation Administration.

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. As a Class I renewable energy source, 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.

The project was selected in a competitive RFP process and would not cause unreasonable pollution, impairment or destruction of the public trust in the air, water or other natural resources of the state.

Recommendation

If approved, staff recommends the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Provide a copy of a spill prevention control and countermeasures plan prior to commencement of construction;
3. Provide contact information for the spill response contractor; and
4. Provide a copy of the Emergency Response Plan to local emergency responders prior to facility operation, and provide emergency response training.

Figure 1. Aerial view of the project area w/ surrounding development and projected noise levels

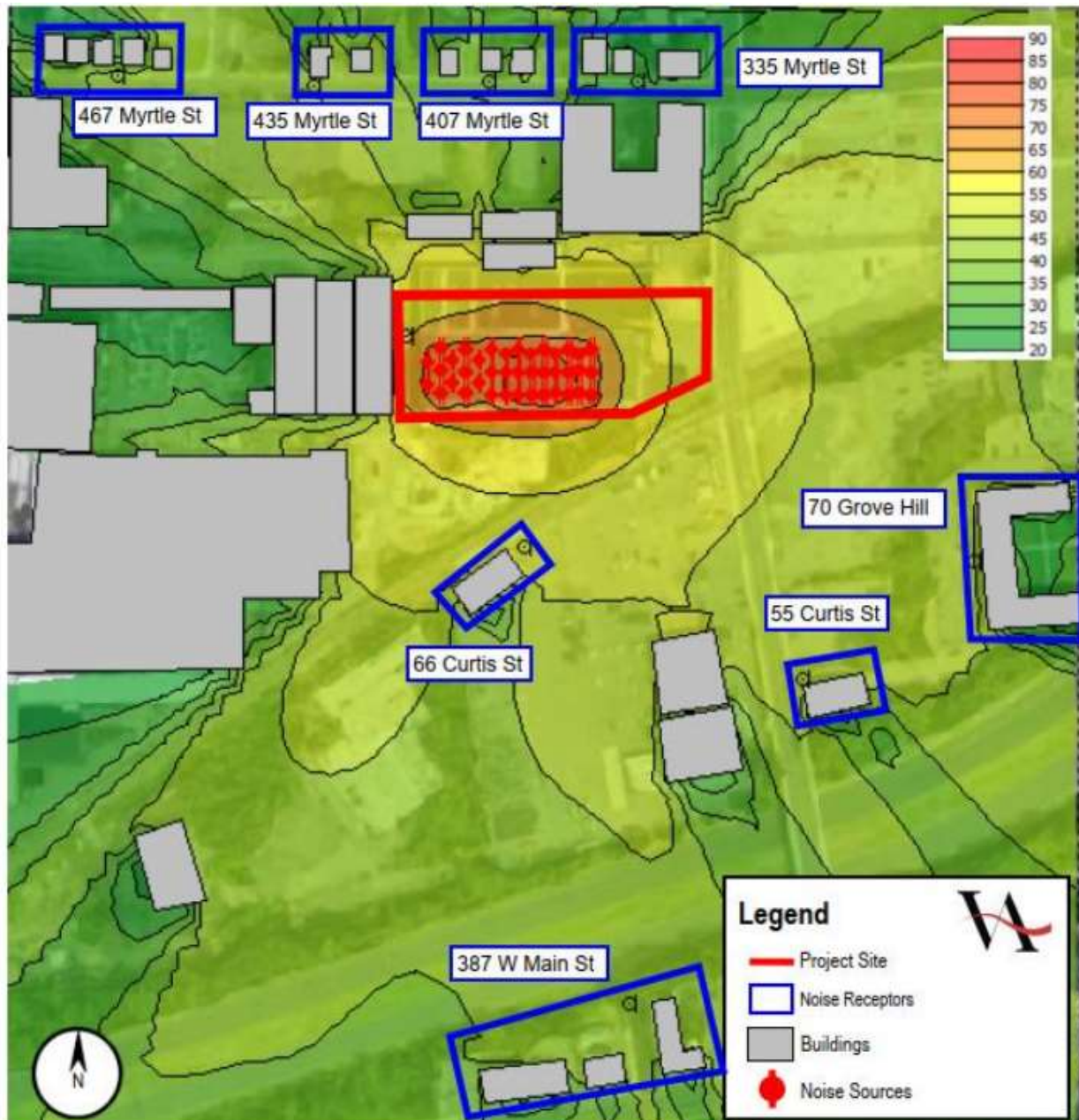


Figure 2. Site Plan

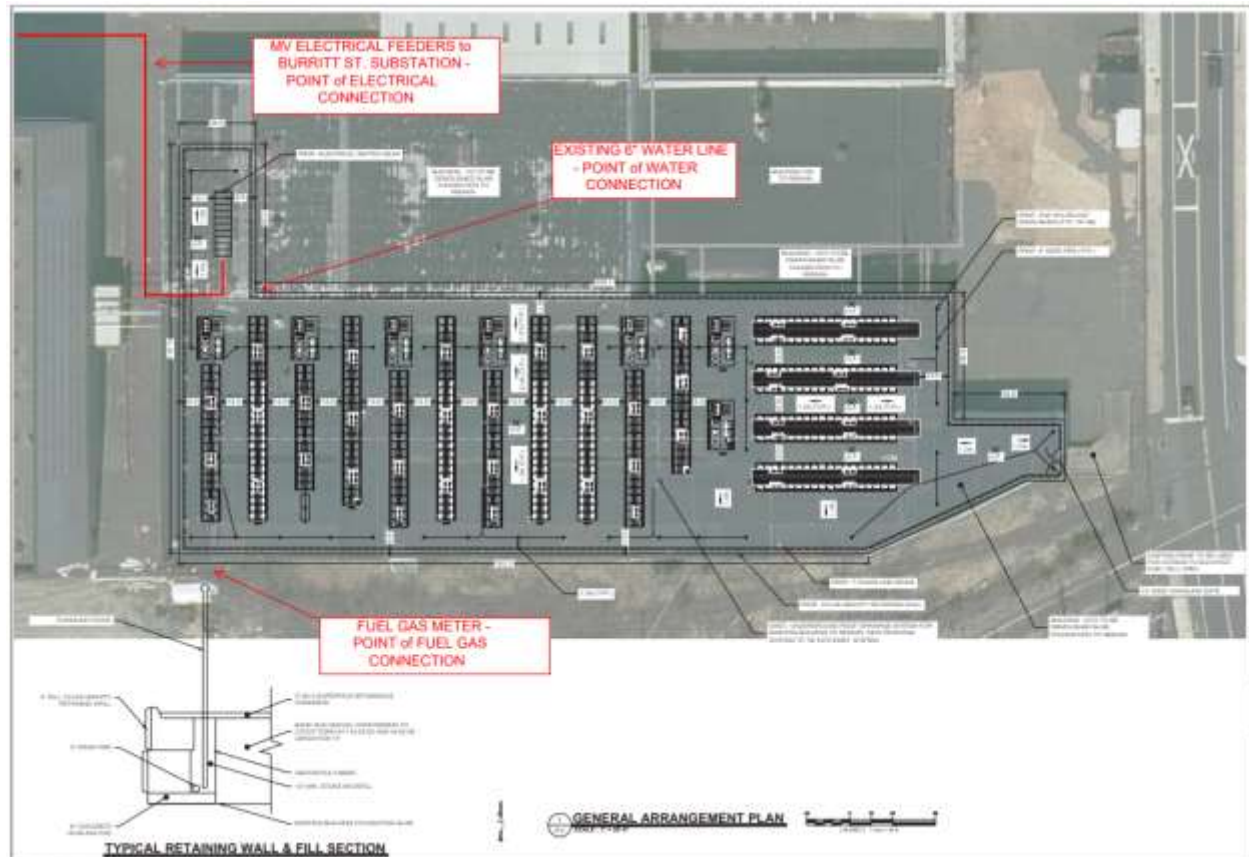


Figure 3. Existing Site conditions



Figure 4. Simulation of proposed facility

