Petition No. 1450
ClearCell Power, Inc

Best Western Hotel,
490 Saw Mill Road, West Haven, Connecticut

DRAFT Staff Report
May 28, 2021

Introduction

On March 30, 2021, the Connecticut Siting Council (Council) received a petition from ClearCell Power Inc. (ClearCell) for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the installation of a 460-kilowatt fuel cell facility and associated equipment to be located at the Best Western Hotel at 490 Saw Mill Road in West Haven, Connecticut.

The proposed facility would be collocated with a Data Server that was approved by the City of West Haven (City) Zoning Board of Appeals and Planning and Zoning Commission on February 24, and March 4, 2021, respectively.

On March 27, 2021, ClearCell provided notice of the project to abutting property owners, City officials, and required state agencies and officials.

On March 31, 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 April 29, 2021. The Council has not received any comments to date.

Also on March 31, 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 April 29, 2021. The Connecticut Department of Transportation (DOT) submitted comments on April 19, 2021 regarding site drainage and adjacent DOT non-access area/right-of-way associated with I-95. ClearCell provided a response to these comments on May 3, 2021. No other 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 ClearCell on May 6, 2021. ClearCell provided responses to the Council's interrogatories on May 7, 2021.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt, and therefore, May 29, 2021 was the deadline for action on this Petition. In response to the Coronavirus pandemic, Governor Lamont issued Executive Order No. 7, as subsequently extended, that provides for a 90-day extension of statutory and regulatory deadlines for administrative agencies. Thus, the deadline under CGS §4-176(e) is extended to August 29, 2021.

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

Public Benefit

The project would be a "customer-side distributed resources" facility, as defined in Connecticut General Statutes (CGS) § 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. The project would provide electricity to the Best Western Hotel and the Data Server that would be constructed adjacent to the fuel cell. The project was selected as part of the Low and Zero Emissions Renewable Energy Credit (LREC/ZREC) program and has a contract to sell LRECs to United Illuminating.

Project Site

The proposed site is located in the southwest corner of Best Western Hotel parking lot. The 1.42 acre property is within the City's Commercial Design zoning district and abuts other developed commercial properties. Interstate 95 (I-95) abuts the host property to the southeast. The project site would occupy 6 parking spaces. The nearest residential properties are approximately 1,100 feet east and south of the site, across I-95 and a railroad corridor.

Proposed Project

The facility would consist of one Doosan PureCell Model 400 fuel cell and associated equipment located within an approximate 1,185 square foot compound area. The L-shaped compound would be enclosed by a six-foot high chain link fence and would be shared with the preassembled data server. The compound would be accessed via the existing parking lot and fenced security gates. Bollards would be installed to protect both the fuel cell and data server.

The fuel cell unit, without appurtenances, would be approximately 27.3 feet long by 8.3 feet wide by 10 feet tall. A 7.5-foot tall air cooling unit, including a mounting frame, would be installed on top of the fuel cell. The data server is approximately 7 feet tall and would have an 8-foot tall cooling tower attached to the roof.

A concrete pad to support the fuel cell facility and data server would cover a majority of the enclosed compound area. A catch basin on the north side of the compound would collect stormwater from the parking lot, and convey it under the fuel cell pad to an existing parking lot leak-off area. The catch basin would not tie into any other drainage systems that may exist on the host parcel. The proposed catch basin any drainage pipe would not affect any DOT property or right-of-way.

The electrical, water and natural gas interconnections would be installed within a utility trench in the parking lot that extends to the west side of the hotel building. A transformer would be installed on a new pad adjacent to existing hotel utility equipment. A second pad for a switchboard would be installed on the north side of the hotel, screened by a decorative wood fence. A natural gas serve pad, protected by bollards, would be located outside the fuel cell compound, adjacent to the southeast fence line.

The fuel cell facility has an operational service life of 20 years; however, a component overhaul of the fuel cell stack assemblies and fuel cell processing system would be required after 10 years. At the end of the operational service life, the fuel cell facility would be disconnected and dismantled. The concrete pads would remain in place.

ClearCell anticipates construction to start by August 2021. Construction would take approximately 15 weeks followed by 4 weeks of facility testing and start up. Construction hours are anticipated to be Monday through Friday from 8 AM to 5 PM.

Environmental Effects and Mitigation

The fuel cell facility would comply with all applicable Department of Energy and Environmental Protection (DEEP) water quality standards as no water would be consumed or discharged once the facility is operational under normal operational conditions. Approximately 350 gallons of water is required at system fill/initial operation. Makeup water would be required when temperatures increase beyond 86 degrees F.

Air emissions produced during fuel cell operation would not trigger any regulatory thresholds and are shown below.

Fuel Cell Facility	
Compound	lbs/MWh
CO	0.02
NOx	0.01
CO_2*	1650

* DEEP amended its regulations in 2016 to eliminate the CO2 permit requirements from the New Source Review and Title V Programs as a result of a United States Supreme Court decision that overturned states' regulatory CO2 permit requirements (Utility Air Regulatory Group v. U.S. Environmental Protection Agency, 573 U.S. 302 (2014))

The proposed facility would emit no sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), which are greenhouse gases defined in RCSA §22a-174-1(49), and would emit negligible amounts of methane and nitrous oxide.

The site is not located within a DEEP-designated Aquifer Protection Area or a Federal Emergency Management Agency designated flood-zone. The site is in a parking lot and would not impact wetlands or require tree clearing. The site is not located within a DEEP Natural Diversity Database (NDDB) buffered area and thus, no NDDB review was performed. The site is not located within the DEEP designated Coastal Zone. The site is previously disturbed and not expected to impact cultural resources.

The fuel cell desulfurization system would remove sulfur that is used as an odorant in natural gas because it is a fuel cell system contaminant. Desulfurization creates zinc sulfide a non-hazardous waste that would be contained within the fuel cell unit until facility refurbishment is required, usually at a 10 year interval. The waste zinc sulfide would be removed by trained personnel and sent to a reclamation facility for reuse.

The operation of the fuel cell would not produce any hazardous waste. Phosphoric acid used for fuel cell chemical reactions is contained within the porous structure of the fuel cell stack material by capillary action. A phosphoric acid leak is not possible since it is not in liquid form and there is no liquid reservoir.

Visual impact from the proposed project would be minimal as it is located behind the hotel at the edge of the parking lot. The compound fence would feature green screening material to shield views from the parking lot. Adjacent properties are commercial in nature and I-95 abut the site to the south.

Public Safety

Before commissioning the proposed facility, ClearCell would use atmospheric air under pressure as pipe cleaning media, in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission. Ten tanks of nitrogen, an inert non-toxic gas, would be stored within the compound to purge the fuel cell stacks when maintenance is required.

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.

The fuel cell facility has internal and remote 24/7 operational monitoring. 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.

An emergency response plan for the facility is included within the Petition. ClearCell would meet with local emergency responders to review site plans as well as and provide fuel cell emergency response training

Noise associated with the construction of this project would be temporary in nature and exempt per DEEP Noise Control Regulations. Once operational, noise from the facility would comply with DEEP's Noise Control Regulations. Noise from facility operation is primarily from the fuel cell cooling units which generate a noise level of 65 dBA at distance of 33 feet. DEEP's Noise Control Regulations thresholds for a Class B (commercial) emitter to a Class B receptor is 62 dBA day/night. The adjacent building to the south is 160 feet from the proposed facility, at the top of an embankment supported by a 17-foot retaining wall. There are no residences proximate to the site.

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. 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.

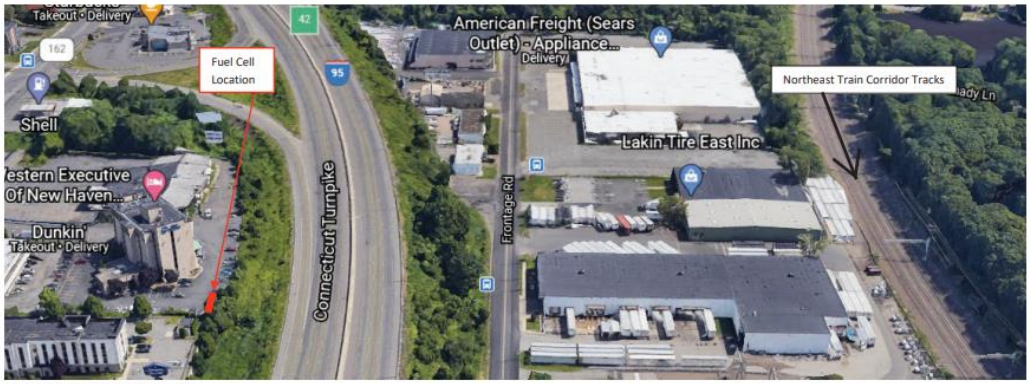
Recommendation

If approved, staff recommends the following conditions:

1. Approval of any project changes be delegated to Council staff; and
2. Provide a copy of the Fuel Cell Emergency Response Plan to local emergency responders prior to facility operation, and provide emergency response training, if requested.

Fuel Cell Location

Best Western Hotel property

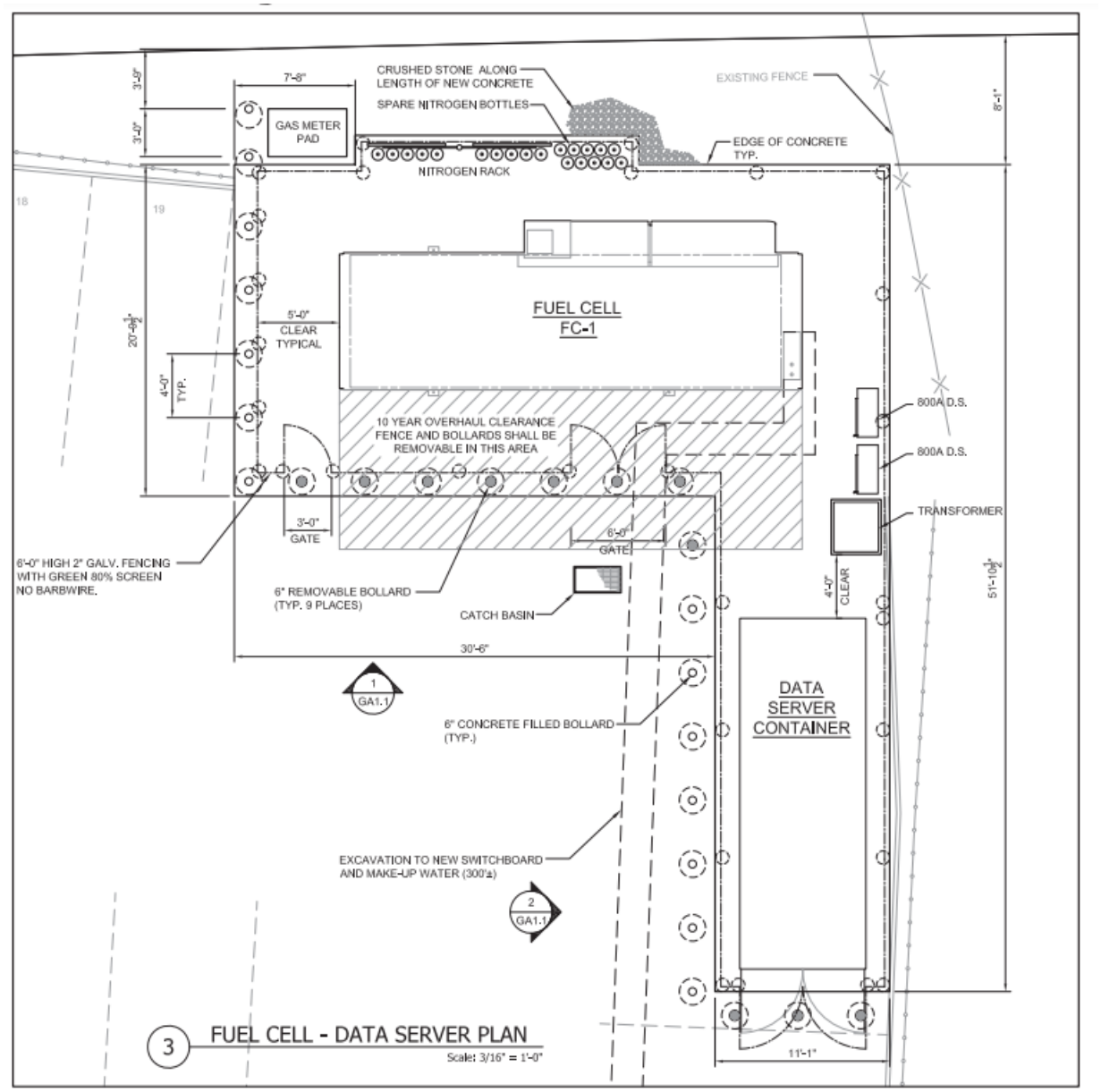


North View of Fuel Cell site

East View of Fuel Cell Site

Best Western Hotel Parking Lot

Site Plan


CRUSHED STONE ALONG LENGTH OF NEW CONCRETE
SPARE NITROGEN BOTTLES
EXISTING FENCE
EDGE OF CONCRETE TYP.
GAS METER PAD
NITROGEN RACK
FUEL CELL FC-1
5'-0" CLEAR TYPICAL
4'-0" TYP.
10 YEAR OVERHAUL CLEARANCE FENCE AND BOLLARDS SHALL BE REMOVABLE IN THIS AREA
800A D.S.
800A D.S.
TRANSFORMER
3'-0" GATE
6'-0" GATE
6'-0" HIGH 2" GALV. FENCING WITH GREEN 80% SCREEN NO BARBWIRE.
6" REMOVABLE BOLLARD (TYP. 9 PLACES)
CATCH BASIN
4'-0" CLEAR
30'-6"
1 GA1.1
6" CONCRETE FILLED BOLLARD (TYP.)
DATA SERVER CONTAINER
EXCAVATION TO NEW SWITCHBOARD AND MAKE-UP WATER (300'±)
2 GA1.1
11'-1"
3 FUEL CELL - DATA SERVER PLAN
Scale: 3/16" = 1'-0"