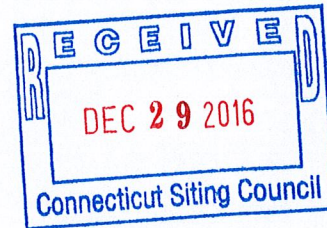




December 28, 2016

Justin Adams  
Bloom Energy Corporation  
1299 Orleans Drive  
Sunnyvale, CA 94089

ORIGINAL



**RE: PETITION NO. 1274** - Bloom Energy Corporation, as an agent for Frontier Communications Corporation, petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, operation and maintenance of a Customer-Side 200-Kilowatt Fuel Cell Facility to be located at the Frontier building, 39 West Street, Danbury, Connecticut.

Dear Ms. Bachman,

We are submitting an original and fifteen (15) copies of the interrogatories response for Petition NO. 1274.

Sincerely

Justin Adams  
Justin.adams@bloomenergy.com  
(860) 839-8373

**Petition No. 1274**  
**Bloom Energy Corporation**  
**39 West Street, Danbury, CT**  
**Interrogatories**

1. Bloom provided notice to the abutting property owners, state agencies, and state and local public officials via US mail. Bloom has subsequently provided notice via certified mail provided, the letter is attached as an amendment to Exhibit 10. A summary report and the receipts have been emailed to the Council to reduce the paper usage required to provide 16 copies.
2. The proposed project is to install a Facility capable of providing 200 kilowatts (kW) to the Frontier building at 39 West Street, Danbury. The header on page 1 is a typo and should read 200kW. The Specifications Sheet provided in Exhibit 5 of the Petition has been updated to reflect the proposed 200kW ES-5 Bloom Energy Server.
3. The Energy Server will have an overall length of approximately 29-feet 3-inches as shown in the plan set provided in Exhibit 2 of the Petition.
4. Yes, the proposed Energy Server is UL Listed as a "Stationary Fuel Cell Power System" to ANSI/CSA FC 1-2014. It is UL Listed under UL Category IRGZ and UL File Number MH45102.
5. The operational life is for the life of the 20 year contract.
6. An inert gas such as Nitrogen will be used as the media for the pipe cleaning procedures.
7. No, the proposed Facility would not be enclosed by a fence. The Facility would be surrounded on three sides by bollards to provide protection from vehicles in the drive aisle and parking lot.
8. The distance to the nearest residence is 80 feet to the west of the proposed Facility.
9. The Still River is located approximately 0.25 miles to the north of the proposed location. According to CTDEEP data, inland wetland soils ("Poorly Drained and/or Very Poorly Drained Soils") are located approximately 0.4 miles to the south of the proposed location. See Exhibit 13.
10. No. According to CTDEEP GIS data, the nearest Aquifer Protection Area is located approximately 2-miles to the west of the proposed location.
11. Bloom has screened the proposed location for the presence of state listed species utilizing CTDEEP's December 2016 GIS data. See Exhibit 14.

12. Danbury Municipal Airport is approximately 16,000 feet to the west of the proposed Facility. Bloom has completed the FAA Form 7460 and submitted to the FAA, the submission confirmation is provided in Exhibit 15.
13. The proposed facility will displace less efficient fossil fueled marginal generation on the NE ISO system. Based upon US EPA "eGrid" data the proposed facility is expected to reduce carbon emissions by more than 25% while essentially eliminating local air pollutants like NOx, SOx, and particulate matter.
14. Please refer to the datasheet, as it provides a range of emissions specific to the type of fuel cell for the proposed Facility. We have revised Table 2 to match the information provided in the datasheet.

**Revised Table 2: Connecticut Thresholds for Greenhouse Gases**

Emission Type	Bloom Output	LERC allowance
Nitrous Oxides (NOx)	<0.01 lbs/MWh	0.07 lbs/MWh
Carbon Monoxide (CO)	<0.05 lbs/MWh	0.10 lbs/MWh
Sulfur Oxides (SOx)	Negligible	Not Listed
Volatile Organic Compounds (VOCs)	<0.02 lbs/MWh	0.02 lbs/MWh
Carbon Dioxide (CO2) <sup>1</sup>	679-833 lbs/MWh	Not Listed

15. Based upon US EPA "eGrid" data the proposed facility is expected to reduce carbon emissions by more than 25%.
16. The City of Danbury allows does not allow noise generated from commercial construction, demolition, excavation and building operations before 7:00 a.m. Monday through Friday, before 8:00 a.m. Saturday, before 10:00 a.m. Sunday, and after 8:00 p.m. any day.  
  
Bloom anticipates work hours to only occur during allowable hours Monday – Friday, but may need to work Saturdays or Sundays if an expedited schedule is required.  
  
Bloom anticipates construction to start in the spring or early summer of 2017 with 6-8 weeks of total construction time (2 weeks of site prep, 2 weeks of installation, and 2 weeks of commissioning).
17. The options at the conclusion of the 20 year contract between Bloom and Frontier includes;
  - i. Frontier renews the contract,
  - ii. Frontier returns the Facility at no cost, or

<sup>1</sup> Carbon Dioxide is measured at Bloom's stated lifetime efficiency level of 53-60%

- iii. Frontier buys the Facility at a fair market value.

If the Facility is to be removed at the end of the contract or if there is a default in the contract;

- i. the Energy Servers, associated equipment and components will be dismantled and removed,
- ii. the concrete pads will remain unless requested to be removed, and
- iii. the site will be restored as nearly as practicable to its effective original condition.

**Revised Exhibit 5**



## Energy Server 5

*Clean, Reliable, Affordable Energy*



### **CLEAN, RELIABLE POWER ON DEMAND**

Bloom Energy's Energy Server 5 delivers clean power that reduces emissions and energy costs. The modular architecture enables the installation to be tailored to the actual electricity demand, with a flexibility to add servers as the load increases. The Energy Server 5 actively communicates with Bloom Energy's network operations centers so system performance can be monitored and maintained 24 hours per day, 365 days per year.

### **INNOVATIVE TECHNOLOGY**

Utilizing patented solid oxide fuel cell (SOFC) technology, the Energy Server 5 produces combustion-free power at unprecedented efficiencies, meaning it consumes less fuel and produces less CO<sub>2</sub> than competing technologies. Additionally, no water is needed under normal operating conditions.

### **ALL-ELECTRIC POWER**

The Energy Server 5, which operates at a very high electrical efficiency, eliminates the need for complicated and costly CHP systems. Combining the standard electrical and fuel connections along with compact footprint and sleek design, the Energy Server 5 is the most deployable fuel cell on the market.

### **CONTROLLED AND PREDICTABLE COST**

By providing efficient on-site power generation, the economic and environmental benefits are central to the Energy Server 5 value proposition. Bloom Energy customers can lock in their long term energy costs and mitigate the risk of electricity rate increases. The Energy Server 5 has been designed in compliance with a variety of safety standards and is backed by a comprehensive warranty.

### **About Bloom Energy**

Bloom Energy is making clean, reliable energy affordable. Our unique on-site power generation systems utilize an innovative fuel cell technology with roots in NASA's Mars program. By leveraging breakthrough advances in materials science, Bloom Energy systems are among the most efficient energy generators, providing for significantly reduced operating costs and dramatically lower greenhouse gas emissions. Bloom Energy Servers are currently producing power for many Fortune 500 companies including Apple, Google, Walmart, AT&T, eBay, Staples, as well as notable non-profit organizations such as Caltech and Kaiser Permanente.

### **Headquarters:**

Sunnyvale, California

### **For More Information:**

[www.bloomenergy.com](http://www.bloomenergy.com)

# Energy Server 5

## Technical Highlights (ES5-BA2AA0)

### Outputs

Nameplate power output (net AC)	210 kW
Base load output (net AC)	200 kW
Electrical connection	480 V, 3-phase, 60 Hz

### Inputs

Fuels	Natural gas, directed biogas
Input fuel pressure	10-18 psig (15 psig nominal)
Water	None during normal operation

### Efficiency

Cumulative electrical efficiency (LHV net AC)*	65-53%
Heat rate (HHV)	5,811-7,127 Btu/kWh

### Emissions

NOx	< 0.01 lbs/MWh
SOx	Negligible
CO	< 0.05 lbs/MWh
VOCs	< 0.02 lbs/MWh
CO <sub>2</sub> @ stated efficiency	679-833 lbs/MWh on natural gas; carbon neutral on directed biogas

### Physical Attributes and Environment

Weight	13.6 tons
Dimensions (variable layouts)	14'9" x 8'8" x 7'0" or 29'4" x 4'5" x 7'5"
Temperature range	-20° to 45° C
Humidity	0% - 100%
Seismic vibration	IBC site class D
Location	Outdoor
Noise	< 70 dBA @ 6 feet

### Codes and Standards

Complies with Rule 21 interconnection and IEEE1547 standards  
 Exempt from CA Air District permitting; meets stringent CARB 2007 emissions standards  
 An Energy Server is a Stationary Fuel Cell Power System. It is Listed by Underwriters Laboratories, Inc. (UL) as a 'Stationary Fuel Cell Power System' to ANSI/CSA FC1-2014 under UL Category IRGZ and UL File Number MH45102.

### Additional Notes

Access to a secure website to monitor system performance & environmental benefits  
 Remotely managed and monitored by Bloom Energy  
 Capable of emergency stop based on input from the site

\* 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test



Bloom Energy Corporation  
 1299 Orleans Drive  
 Sunnyvale CA 94089  
 T 408 543 1500  
[www.bloomenergy.com](http://www.bloomenergy.com)

**Revised Exhibit 10**





VIA CERTIFIED MAIL

RE: Application for Bloom Energy, as Agent for Frontier Communications, for the construction of a new ES-5 Bloom Energy Servers solid oxide fuel cell which would provide 200 kilowatts of Customer-Side Distributed Resource at – 39 West Danbury Street, Danbury, CT

Dear Ladies and Gentlemen:

Pursuant to Section §16-50j-40 of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that Frontier Communications Corp. filed on November 14, 2016, a petition for declaratory ruling with the Council. The petition requested the Council's approval of the location and construction of an approximately 200 kilowatt Bloom Energy Corporation fuel cell facility and associated equipment (the "Facility"), located at the site of the Frontier Communications building at 39 West Danbury Street, Danbury, Connecticut (the "Site"). Electricity generated by the Facility will be consumed primarily at the Site, and any excess electricity will be exported to the electric grid. The Facility will be fueled by natural gas.

The proposed placement of the fuel cells is at the rear of the building where existing mechanical equipment are currently located. The purpose of the proposed Facility is to replace the average baseload of the building with a renewable energy source; and improve reliability of electrical systems and equipment.

Keeping the lines of communication open is an important part of our work in your community. If you have questions about this work, please contact the undersigned or the Council.

Respectfully,  
Bloom Energy

Justin Adams  
[justin.adams@bloomenergy.com](mailto:justin.adams@bloomenergy.com)

**Exhibit 13**

# Wetlands and Watercourse Map



Waterbody Line 7

- Water
- Dam

Waterbody Poly 7



- Water
- Inland Wetland Soils
  - Poorly Drained and Very Poorly Drained Soils
  - Alluvial and Floodplain Soils

**Exhibit 14**

# NDDB Map

CTDEEP December 2016 GIS Data

## Legend

-  39 West St
-  NDDB Area

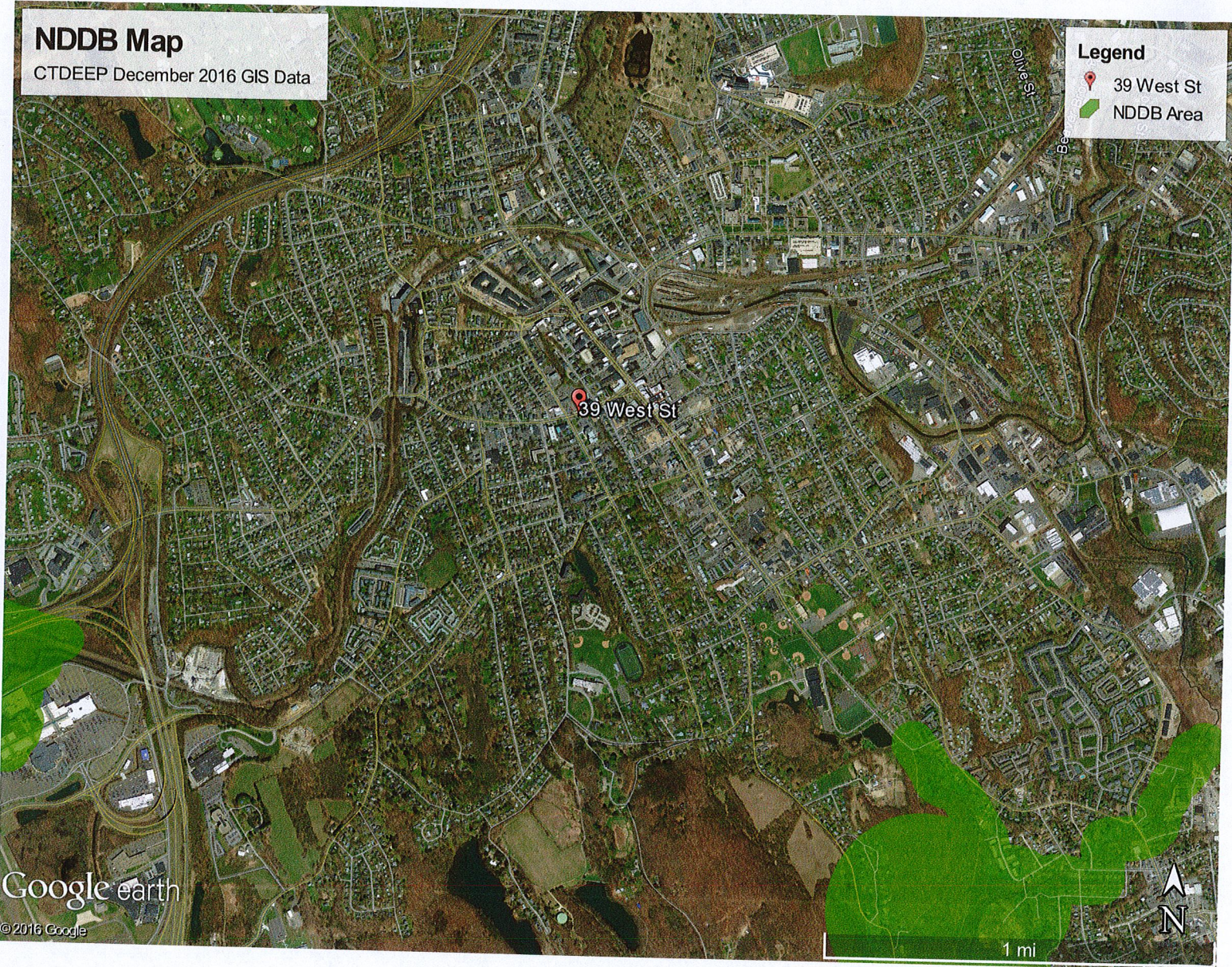
39 West St

Google earth

© 2016 Google



1 mi



**Exhibit 15**



Federal Aviation  
Administration

Note: Effective 10/28/2016, the format of the FAA Determination of No Hazard to Air Navigation for Temporary Structure letter has changed. Please be sure to review all pages of the determination issued for your ASN and adhere to all conditions stated in the letter.

<< OE/AAA

## Project Submission Success

Project Name: BLOOM-000396681-16

Project BLOOM-000396681-16 has been submitted successfully to the FAA.

Your filing is assigned Aeronautical Study Number (ASN):  
**2016-ANE-4896-OE**

Please refer to the assigned ASN on all future inquiries regarding this filing.

Please return to the system at a later date for status updates.

It is the responsibility of each e-filer to exercise due diligence to determine if coordination of the proposed construction or alteration is necessary with their state aviation department. Please use the link below to contact your state aviation department to determine their requirements:

[State Aviation Contacts](#)

*To ensure e-mail notifications are delivered to your inbox please add [noreply@faa.gov](mailto:noreply@faa.gov) to your address book. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or forwarded for review. Each system generated e-mail will contain specific FAA contact information in the text of the message.*

