



January 10, 2017

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

RE: PETITION NO. 1277 - Bloom Energy Corporation, as an agent for Stanley Black & Decker, 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 250- Kilowatt Fuel Cell Facility to be located at the Stanley Black & Decker World Headquarters, 1000 Stanley Drive, New Britain, Connecticut.

Dear Ms. Bachman,

We are submitting an original and fifteen (15) copies of the interrogatories response for Petition NO. 1277.

Sincerely

Justin Adams
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Petition No. 1277
Bloom Energy Corporation
1000 Stanley Drive, New Britain, Connecticut
Interrogatories

1. The scanned receipts have been provided to the Council via email to reduce the paper usage required to provide 16 copies of the receipts.
2. The operational life is for the life of the contract, Bloom expects 20+ years. The solid oxide media in the fuel cells is exchanged at approximately 5 year intervals.
3. Bloom used a sound model to predict the noise output of the Facility. The nearest property boundary with a Class A noise zone¹ is located approximately 250 feet to the south and across an undeveloped area that is heavily wooded. This boundary was selected because the noise produced from the proposed Facility would be higher than the other locations and the noise criteria set forth in the Connecticut and New Britain regulations would be the most restrictive. The results of the sound model predicting noise levels at this boundary are provided as Exhibit 10. The proposed Facility would be defined as "Scenario 2" in the model. Scenario 2 models noise for a Bloom Energy Server installed with no structures behind it to reflect sound from either side. The results of the Scenario 2 sound model at 250 feet are 40.8dBA, which is in compliance with noise criteria set forth in Connecticut regulations for the Control of Noise² and the City of New Britain Code of Ordinances Noise Standards³.
4. The Energy Server has redundant safety features and in-system checks to ensure personnel safety. While the actual fuel cells operate at high temperatures, these components do not move and are contained within many layers of insulation. It is safe to stand adjacent to the equipment as all moving parts and hot surfaces are protected by the locked outer panels. Additionally, the site requires all person(s) to pass through a security check point before entering onto the campus. The parking area around the proposed location is monitored by security cameras mounted to the light poles. The energy servers cannot be seen from any public roadways or sidewalks. Therefore Bloom does not have safety or security concerns.
5. According to CTDEEP data, inland wetland soils ("Poorly Drained and/or Very Poorly Drained Soils") are located approximately 600 feet to the north of the proposed location. See Exhibit 11.
6. No, according to CTDEEP GIS data, the nearest Aquifer Protection Area is located approximately 1-mile to the southwest of the proposed location.

¹ Sec. 22a-69-2.3. Noise zone standards

² Sec. 22a-69-3.5. Noise zone standards

³ Sec. 16-105. - Noise standards.

7. 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.
8. 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) ⁴	679-833 lbs/MWh	Not Listed

9. The City of New Britain allows noise generated from commercial construction, demolition, excavation and building operations between 7:00 a.m. and 9:00 p.m. Monday through Saturday and the hours between 9:00 a.m. and 9:00 p.m. on Sunday.

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 8-10 weeks of total construction time (2 weeks of site prep, 2 weeks of installation, 2 weeks of commissioning and 2 weeks of mobilization).

10. The options at the conclusion of the 20 year contract between Bloom and Stanley Black and Decker (SBD) includes:
 - i. SBD renews the contract,
 - ii. SBD returns the Facility at no cost, or
 - iii. SBD 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,

⁴ Carbon Dioxide is measured at Bloom’s stated lifetime efficiency level of 53-60%

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- 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.

11. No, 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.
12. No gaseous substances are released or vented at any point during the desulfurization process.



Exhibit 10

Calculation of Yuma Sound Pressure Based On Distance

By Bob Hintz 1/16

All calculations are based on the following formula for sound pressure level (L_p):

$$L_p = L_w - |10 \cdot \log\left(\frac{Q}{4\pi \cdot r^2}\right)|$$

Sound power value (L_w) attained from V1 Yuma linear in DE reported on Feb. 4, 2015 by Mei Wu.

Scenario 1

ES is installed close to a building or tall wall so noise from the ES is reflected off of the structure and added to the noise from the other side of the ES making it sound louder than normal. This is represented by a directivity factor $Q = 4$

$$L_p = 43.8 \text{ dB}$$

Where:

$$L_w = 86.4 \text{ dB}$$

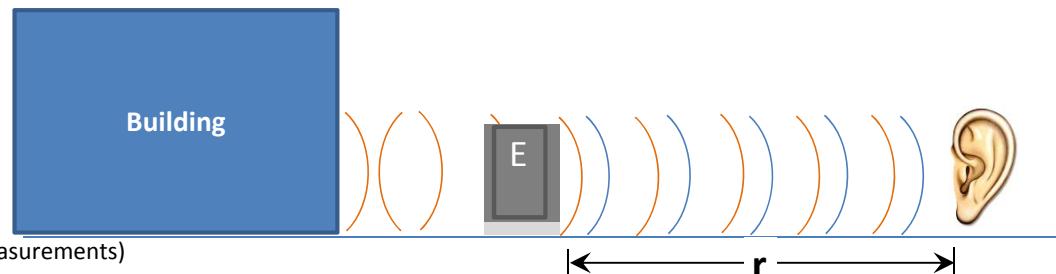
$$Q = 4$$

$$r = 250 \text{ Feet}$$

ES sound power (Calc. from measurements)

Directivity factor

Enter value here for both Scenarios



Input various values for r to approximate the perceived sound pressure at that distance from the ES door

Scenario 2

ES is installed with no structures behind it to reflect sound from either side. This is represented by a directivity factor $Q = 2$

$$L_p = 40.8 \text{ dB}$$

Where:

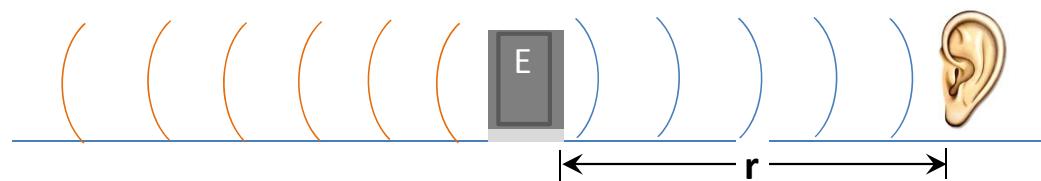
$$L_w = 86.4 \text{ dB}$$

$$Q = 2$$

$$r = 250 \text{ Feet}$$

ES sound power (Calc.)

Directivity factor



Input various values for r to approximate the perceived sound pressure at that distance from the ES door



Exhibit 11

Map



Inland Wetland Soils

- Poorly Drained and Very Poorly Drained Soils
- Alluvial and Floodplain Soils