



STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES  
AND ENVIRONMENTAL CONTROL  
89 KINGS HIGHWAY  
DOVER, DELAWARE 19901

Office of the  
Secretary

Phone: (302) 739-9000  
Fax: (302) 739-6242

**Secretary's Order No.: 2019-A-0019**

**RE: Permit Applications of Diamond State Generating Partners, LLC/Bloom Energy, pursuant to 7 DE Admin. Code 1102, to upgrade the fuel cell units at both its Brookside and Red Lion facilities, located in Newark, Delaware, and New Castle, Delaware, respectively.**

**Date of Issuance: April 22, 2019**

**Effective Date: April 22, 2019**

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") pursuant to 7 *Del.C.* §§6003, 6004(b), 6006(4), and all other relevant statutory authority, the Department issues this Order, approving construction permits to allow Diamond State Generating Partners, LLC/Bloom Energy ("Bloom," "Applicant") to construct the following: (1) a 2.6 megawatt ("MW") Fuel Cell Electric Generation Plant, consisting of 13 Bloom Energy ES5-BABAAA fuel cells at its Brookside facility, located at 512 E. Chestnut Hill Road, Newark, Delaware; and (2) a 24.9 MW Fuel Cell Electric Generation Plant, consisting of 52 Bloom Energy ES5-BABAAA 200 kilowatt ("kW") fuel cells and 58 ES5-AACAAA 250 kW fuel cells at its Red Lion facility, located at 1593 River Road, New Castle, Delaware ("Applications").

The Applicant's proposal to perform these maintenance upgrades at the aforementioned sites is subject to various state and federal regulatory requirements, including, but not limited to, Delaware's air quality regulations, as set forth in 7 DE Admin. Code 1100, *Air Quality Management Section*.

## **BACKGROUND AND FINDINGS OF FACT**

Bloom Energy is a fuel cell manufacturing company headquartered in Sunnyvale, California. The Bloom fuel cells utilize solid oxide fuel cell technology to chemically convert natural gas to electrical power in a non-combustion process. Bloom is currently permitted by the Department's Division of Air Quality ("DAQ") for three fuel cell sites in Delaware: the Bloom Manufacturing Center (located in Newark, Delaware), and its Brookside and Red Lion sites, as referenced above.

The permit applications submitted to the Department by Bloom seek approval for the following proposed projects at this time:

- (1) Pursuant to 7 DE Admin. Code 1102, Applicant has applied for a construction permit for a 2.6 megawatt ("MW") Fuel Cell Electric Generation Plant, consisting of 13 Bloom Energy ES5-BABAAA fuel cells at its Brookside facility.
- (2) Pursuant to 7 DE Admin. Code 1102, Applicant has applied for a construction permit for a 24.9 MW Fuel Cell Electric Generation Plant, consisting of 52 Bloom Energy ES5-BABAAA 200 kilowatt ("kW") fuel cells and 58 ES5-AACAAA 250 kW fuel cells at its Red Lion facility.

The permit applications submitted by Bloom, as detailed above, request permission to perform maintenance upgrades by replacing the existing fuel cells at each facility with new fuel cells, representing Bloom's latest technology ("Applications"). Bloom contends that, once these maintenance upgrades have been completed, the new cell sites will have a smaller footprint, a lowered energy capacity and lower emissions.

It should be noted that the Applicant's Red Lion facility is geographically located in the Coastal Zone of the State of Delaware. Pursuant to the Department's Coastal Zone Act ("CZA") Regulations, a CZA Permit Application was received by the Department from Bloom on November 17, 2011, seeking permission to operate its business within Delaware's Coastal Zone, specifically, at 1593 River Road, New Castle, Delaware. That location is now known as Bloom's Red Lion facility, as previously described herein. The Department provided public notice of that application, and, accordingly, a public hearing was held regarding this matter at DNREC's Lukens Drive office in New Castle, Delaware, on March 6, 2012. Then-Secretary Collin P. O'Mara subsequently issued Secretary's Order No. 2012-CZ-0013 (April 30, 2012), which ordered that a CZA Permit be issued by the Department to Bloom, effective April 30, 2012. No additional permitting approval is required by the Department's CZA Program for the projects currently proposed by Bloom at this time, as this Applicant has already met all CZA permitting requirements under the CZA Regulations that govern business operations within Delaware's Coastal Zone.

The aforementioned Applications were initially received by the Department on October 24, 2018. Thereafter, the Applications were placed on public notice on November 11, 2018 to open the fifteen day public comment period. During the public notice period, the Department's DAQ received a request for a public hearing regarding this matter. The Department held its public hearing concerning this matter on January 10, 2019, which was attended not only by Department staff and representatives of the Applicant, but also by several members of the public, who offered comment regarding this matter for inclusion into the formal hearing record. Additional written comments were received by the Department from members of the public, both prior to and subsequent to the aforementioned hearing, during the time period in which the hearing record was open to receive such comment. The public comment period closed on Friday, January 25, 2019. Proper notice of the hearing was provided as required by law.

Following the public hearing of January 10, 2019, the technical experts in the Department's Division of Air Quality prepared a Technical Response Memorandum ("TRM") to (1) specifically address the concerns associated with these pending Applications, as set forth in the public comment received by the Department in this matter; (2) provide a formal regulatory review of the Applicant's proposed projects; and (3) offer DAQ's conclusions and recommendations with regard to these pending Applications for the benefit of the hearing record generated in this matter. This TRM was subsequently received from DAQ for inclusion into the hearing record by Hearing Officer Lisa A. Vest.

It should be noted that many of the comments contained in this hearing record were reiterated by more than one commenter. Those repeated concerns were consolidated by the DAQ during its review of the hearing record, and then summarized within its TRM for both clarity and brevity. Additional comments received by the Department voiced concerns about various aspects of the Applicant's business operations, many of which fell outside of the DAQ's permitting authority. Further comments voiced personal opinions regarding the Applicant's business in general, which are also beyond the scope of DAQ's authority in permitting matters such as this.

The TRM provides the DAQ's formal responses to the public comment received by the Department regarding matters specifically associated with the Applications currently pending at this time. It does not, however, address comments that pertain to matters outside the permitting authority of the DAQ, nor is it responsive to any comments that are not specifically related to these pending Applications, which was the subject matter of the public hearing held by the Department on January 10, 2019.

Thereafter, Hearing Officer Vest prepared her Hearing Officer's Report ("Report"), which attached DAQ's TRM referenced above, and expressly incorporated the same therein. Ms. Vest's Report set forth the procedural history, summarized and established the record of information ("Record") relied on in the Report, and provided findings of fact, reasons, and conclusions that recommend that the Department approve these Applications, subject to the conditions set forth in the following draft Permits: (1) APC-2019/0032 - Construction (for the Brookside site); and (2) APC-2019/0031 - Construction (for the Red Lion site). The Report also addressed the public comments received in this matter, and concluded that the same did not warrant the Department's denying these Applications, or delaying these permit decisions to receive additional information.

## **REASONS AND CONCLUSIONS**

The Applications currently pending before the Department at this time are for construction permits to allow the Applicant to perform maintenance upgrades at both the Brookside facility (located at 512 E. Chestnut Hill Road, Newark, Delaware) and the Red Lion facility (located at 1593 River Road, New Castle, Delaware), as set forth above. I find that the replacement of the existing fuel cells at each facility will require the Applicant to obtain the aforementioned DAQ Construction permits. I further find that the Applicant's proposed project is subject to various state and federal regulatory requirements, including, but not limited to, Delaware's air quality regulations as set forth in 7 DE Admin. Code 1100, *Air Quality Management Section*.

In reviewing the applicable statutes and regulations, as well as weighing public benefits of this project against potential detriments, the Department's experts in the DAQ have concluded that the Applicant's aforementioned maintenance upgrades proposed for both Brookside and Red Lion comply with all federal and state air pollution control laws and regulations.

The aforementioned Construction permits, once issued by the Department's DAQ, will be similar to the existing DAQ permits for these Bloom facilities. The new permits would be reflective of the Applications submitted, and would contain requirements that include, but are not limited to, removal of the existing fuel cell units as the upgraded units are installed. The new permits would also contain limits on natural gas consumption and carbon dioxide emissions.

Among the many comments received by the Department in this matter were those that questioned how the emissions associated with the Applicant's project will be monitored, and what actions will be taken by the Department should emissions exceed the permit limits. In response to those concerns, DAQ notes in its TRM that natural gas usage is monitored and used to calculate emissions. Monthly reports are submitted to the Department showing natural gas usage, monthly and rolling 12-month emissions, and maintenance performed. If permitted emissions are exceeded, enforcement actions such as a Notice of Violation (and enforcement fines) may be pursued by the Department at that time.

Comments were also received from the public which questioned the Applicant's need to "decoke" the fuel cell units. Specifically, concerns were raised that, while the process of "decoking" creates air emissions, such emissions are not quantified in these Applications. In response, the Department has verified in its TRM that the decoking process will not be required for the units installed as proposed in these Applications.

The Department also realizes that it will not be possible for the new units to be installed without removing the old units. The TRM also addresses this issue, noting that Construction-to-Operation inspections by the DAQ will be required as the proposed construction proceeds. Furthermore, Bloom will be required to submit supplemental documentation related to any type of process similar to the aforementioned "decoking" process, and disclose any associated emissions related to the same, prior to being permitted to implement such process onsite.

I find and conclude that the Applicant has adequately demonstrated its compliance with all requirements of the statutes and regulations, as noted herein, and that the Record supports approval of the Applications submitted by Diamond State Generation Partners, LLC /Bloom Energy. Accordingly, this Order approves and directs all permits required for the Applicant to perform its proposed maintenance upgrade by the replacement of its existing fuel cell units at both its Brookside facility (located at 512 E. Chestnut Hill Road, Newark, Delaware) and its Red Lion facility (located at 1593 River Road, New Castle, Delaware), consistent with the record developed in this matter, be issued by the Department in the customary form, and with appropriate conditions.

Further, the Department concludes and directs the following:

1. The Department has jurisdiction under 7 *Del. C.* §§6003, 6004, 6006(4), and all other relevant statutory authority, to make a final determination on these Applications, after holding a public hearing and considering the public comments and all information contained in the Record generated in this matter;
2. The Department provided proper public notices of the Applications submitted by this Applicant, and of the public hearing held on January 10, 2019, and held said hearing in a manner required by the law and regulations;
3. The Department considered all timely and relevant public comments in the Record, as established in the Report, prior to issuing this Order as its final decision;
4. The Department has carefully considered the factors required to be weighed in issuing all permits required by the Applicant's proposed maintenance upgrades at both its Brookside and Red Lion facilities, and finds that the Record supports approval of the Application, and the issuance of all required permits associated with same;

5. The Department shall issue all necessary Construction permits to Diamond State Generation Partners, LLC/Bloom Energy, thereby allowing this Applicant to perform its proposed maintenance upgrades by replacement of its existing fuel cell units at both the Brookside facility (located at 512 E. Chestnut Hill Road, Newark, Delaware) and the Red Lion facility (located at 1593 River Road, New Castle, Delaware). Furthermore, said permits shall include all conditions as set forth in the Department's draft permits, to ensure that Delaware's environment and public health will be protected from harm;
6. The Department adopts the Report and its attachments as further support for this decision;
7. The Department has an adequate Record for its decision, and no further public hearing is appropriate or necessary; and
8. The Department shall serve and publish its Order on its internet site, and shall provide legal notice of the Order in the same manner that the Department provided legal notice of the Application.



Shawn M. Garvin  
Secretary