

September 6, 2023

Via publicaccess.bpu.state.nj.us

Sherri L. Golden
Secretary of the Board
44 South Clinton Ave, 1st Floor
PO Box 350
Trenton, NJ 08625-0350

Re: Docket No. GO23020099

Dear Secretary Golden,

FuelCell Energy, Inc. submits these comments in response to the Notice published by the Board In the Matter of the Implementation of Executive Order 317 Requiring the Development of Natural Gas Utility Emission Reduction Plans. FuelCell Energy thanks the Board for this opportunity to provide these comments.

FuelCell Energy Overview

FuelCell Energy is proud to be among the companies that have been dedicated to clean energy innovations since our inception five decades ago. The company was founded in the United States in 1969, by two scientists devoted to pursuing technological innovations that address a wide variety of energy priorities through patent-protected U.S. innovation, compound combinations that produce and use energy in ways that are smarter and cleaner.

Our current product portfolio includes two dynamic electrochemical platforms: molten carbonate and solid oxide. Both platforms can support power generation and combined heat and power applications, CO₂ capture, and hydrogen generation from a variety of fuels, including natural gas, renewable biogas, or hydrogen. These fuel cells react with fuel electrochemically, without combusting the fuel, which avoids emissions produced by fuel combustion such as oxides of nitrogen, oxides of sulfur, and particulate emissions. In the electrochemical process, fuel and air are reacted in separate chambers in the fuel cell stack. As a result, the reactions producing CO₂ occur without mixing fuel and air. Thus, CO₂ remains concentrated and easy to remove. Both molten carbonate and solid oxide fuel cell systems can benefit from this unique feature, with modifications enabling the capture of their own CO₂ for use or sequestration before it is emitted into the air.

FuelCell Energy's molten carbonate fuel cell is unique in its ability to also capture CO₂ from an external source, such as a power plant or an industrial boiler. Our solid oxide fuel cell can operate on pure hydrogen as a feedstock, emitting zero CO₂, which will become increasingly important as the uses of hydrogen for fuel become more widely adopted, and which complements the nation's current emphasis on deploying technology that enables hydrogen-based energy storage. We are also currently commercializing a solid oxide electrolyzer that will produce hydrogen from power and water, which will be well suited to partner with renewable energy projects and/or hydrogen storage infrastructure.

Simply put, our multi-featured platforms can be configured to provide multiple value streams, including electricity, hydrogen, high grade heat including steam, water, and CO₂ for sequestration and or utilization. The graphic below illustrates some of our key successes to date.

FuelCell Energy overview

Demand for clean, reliable electricity driving adoption of fuel cell technology



Headquarters Danbury, CT

- Corporate Headquarters
- Research labs
- Engineering design
- Global Service center



Manufacturing Torrington, CT

- Module assembly & stacking
- 167,000 sq. ft.

Other facilities Taufkirchen, Germany

- Final assembly for SubMW carbonate stack modules
- Carbonate SubMW power plant sales and service
- Sales and service for carbonate MW scale platforms made in US

Calgary, Canada

- Solid oxide R&D for power generation, electrolysis, and energy storage
- Solid oxide cell and stack manufacturing

Global customers



Company Highlights¹

HQ Danbury, Connecticut	>500 Employees	95 Platforms in commercial operation ²	3 Continents
FCEL Listing: NASDAQ	>220 MW Capacity in field	>13 Million MWh's generated with patented technology	



¹As of the year ended October 31, 2022.

²Note that certain sites have multiple platforms. As an example, our 14.9 MW Bridgeport project site has five 2.8MW platforms. As of 10/31/22, there were 33 sites with the Company's carbonate fuel cell platforms.

© 2023 FuelCell Energy

Comments

As Executive Order 317 (“EO 317”) recognizes in identifying criteria for the Board to consider, determining how the natural gas industry can best meet the State’s 50 percent reduction in greenhouse gas emissions below 2006 levels by 2030 is a complex endeavor. While successful implementation of any plan will inevitably require a multi-faceted approach, fuel cells are one way that New Jersey can answer many of the questions posed by this endeavor simultaneously. As the Fuel Cell Task Force Report¹ highlights, fuel cell systems feature reduced carbon emissions (zero point-source emissions when operating on hydrogen) compared to combustion systems and have virtually no criteria pollutant emissions, especially when using renewable energy sources as feedstock. Not only are fuel cells more energy efficient than internal combustion engines and can operate at efficiencies exceeding 60%, but fuel cells also produce heat and water in addition to power, all while working efficiently independently from the grid even in harsh weather conditions. Most importantly, fuel cell technology is flexible: it

¹ *Hydrogen and Fuel Cell Technology Towards Clean Energy Goals*, NEW JERSEY FUEL CELL TASK FORCE, available at <https://www.nj.gov/bpu/pdf/reports/Fuel%20Cell%20Task%20Force-Final.pdf>, pp. 7-8.

can be combined with other energy generation sources, and it can serve as either baseload power source or as energy storage.

These benefits correspond directly to the considerations identified by EO 317. In addition to providing substantial emissions reductions, the versatility of fuel cells is what uniquely positions them to solve multiple problems at once. Fuel cells can use natural gas as feedstock, making fuel cell systems the perfect solution to reduce greenhouse gas emissions in both the short- and long- term. As a short-term solution, fuel cell systems can convert existing natural gas to clean electricity and substantially reduce emissions without negatively impacting the viability of natural gas public utilities, as directed by EO 317. In the long-term, and as New Jersey transitions away from reliance on natural gas towards renewable energy sources, fuel cell systems can continue to provide resiliency and reliability to the grid while increasing the efficiency of lower capacity renewable generation like solar and wind. Beyond the benefits they provide to the grid, by reducing emissions, fuel cells ameliorate the significant negative health effects of greenhouse gas emissions on the public in the short- and long-term. As New Jersey's renewable energy supply continues to grow, fuel cells are one tool that will allow New Jersey to begin realizing the exact benefits it seeks now, while still investing in New Jersey's clean energy future.

The seventh “catch-all” criterion identified by EO 317 directs the Board to consider “any other issues it deems relevant to the central purpose of the proceeding.” In light of the benefits of fuel cells outlined above, FuelCell Energy hopes the Board will consider relevant to this proceeding the recommendations from the Fuel Cell Task Force Report, particularly Recommendation 2.11. Including fuel cells within the scope of net metering will further drive down cost and create a pathway for market adoption at scale. Because the existing rules limit net metering to fuel cells using renewable natural gas as feedstock, the cost-effectiveness of fuel cell systems in applications such as this one cannot be realized as fully. FuelCell Energy respectfully requests that the Board continue to explore ways that the benefits of fuel cells can be better realized within New Jersey's clean energy transition.

In addition to evaluating the net metering rules, other ways the Board can further allow realization of fuel cell's benefits within New Jersey include considering bid preferences for fuel cell systems within new or existing programs and continuing to create or modify programs to embrace technology-neutral approaches. Because fuel cell systems provide more than just power – and simultaneously create heat and water while reducing or eliminating emissions – any incentive structure involving fuel cells should account for these additional benefits which exceed the capabilities of other technologies. Tailoring incentive structures will catalyze investment, increase competition in the market, and allow the “lowest cost methods for reducing total greenhouse gas emissions” to reveal themselves, as directed by EO 317. In addition, technology-neutral programs and programs with inclusive definitions will allow fuel cell systems to demonstrate their capabilities and provide New Jersey an opportunity to solidify its role as one of the nation's leading states in the clean energy transition. Where fuel cell systems meet or exceed all the goals of a given program or can be configured in a way that complements other technologies and improves their efficiency, there should be a mechanism through which they can be

considered.

Conclusion

At FuelCell Energy, we are particularly proud of our history as an energy technology innovator and we celebrate the men and women on our team who have, for decades, been driven to create and share new technologies that produce multiple value streams for our customers worldwide. We are proud to source the vast majority of our technical manufacturing equipment (i.e., the equipment we use daily that we have not invented) almost exclusively from U.S. based manufacturers across the country. We are also proud that we have an opportunity to demonstrate our commitment to empower a world with clean energy by partnering with the Department of State to deliver our differentiated highly efficient electrolysis platform to Ukraine for the production of hydrogen and ammonia, demonstrating America's energy technology leadership around the world.

We thank you for the opportunity to submit these comments and appreciate your willingness to consider our recommendations. Should you need any additional information, please contact the undersigned.

Sincerely,

Alexandrea L. Isaac

Alexandrea L. Isaac
Assistant General Counsel
aisaac@fce.com