

September 8, 2016

**VIA EMAIL AND U.S. MAIL**

Ms. Melanie A. Bachman  
Acting Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

Re: Docket No. F-2016/2017 Connecticut Siting Council Review of the Ten-Year Forecast of Electric Loads and Resources.

Dear Ms. Bachman:

FuelCell Energy, Inc. (FCE) appreciates this opportunity to provide post-hearing comments into the 2016/2017 Ten-Year Forecast of Connecticut Electric Loads and Resources (FOLR).

Pursuant to Connecticut General Statutes § 16-50r (a), The Connecticut Siting Council undertakes an annual review and examination of the resource adequacy and reliability of electric generation and transmission in the state while considering the cost to consumers and protecting the environment. In connection with this proceeding, the Council held a publicly-noticed public comment session on Wednesday, August 10, 2016. At that session it was stated that persons who wish to make their views known in connection with these matters may file a written statement with the Council by September 9, 2016.

FCE wishes to take the opportunity, described above, to submit post-hearing comments. In doing so FCE recognizes, as explained in its 2014/2015 FOLR released on December 30, 2015, the Council is not itself a resource planning agency. However, FCE also notes the Council's role in accumulating data and records on the physical characteristics, construction costs, and adequacy and reliability of power facilities in the state. Among other things, this data contributes significantly to the energy resource planning performed by other agencies and various policy decisions. Finally, FCE understands that while the Council is not authorized to set policy it has stated, including in last year's FOLR, that it may make recommendations to such other agencies depending upon patterns observed in data, records, and reports. It is in recognition and respect for these points that FCE submits the following post-hearing comments for the Council's review and consideration.

FCE is an integrated fuel cell company that designs, manufactures, installs, operates and services stationary fuel cell power plants. Headquartered in Danbury, Connecticut, FCE is a leading global fuel cell company that provides ultra-clean, efficient, generation for electric utilities,

commercial and industrial companies, universities, municipalities, government entities, and other customers around the world. As both an in-state manufacturer with over 500 employees at two Connecticut locations and a provider of Class I power resources, FCE wishes to call attention to our company's role in providing ultra-clean, efficient, and reliable generation resources that have the potential to significantly strengthen Connecticut's electricity grid with preferred-resource, dispatchable generating capacity.

As is well explained by the Council in previous publications of the Council's FOLR, no single power resource can meet all of the state's power generation needs. However, as a proven form of clean distributed generation, fuel cell technology provides many benefits of other "preferred" resources without compromising the reliability or predictability of conventional resources. For example, unlike many options, fuel cells can be set to a predictable and variable output capacity without loss of efficiency.

FCE distributed generation resources reinforce the reliability and security of the electric grid by dispersing power generation assets throughout a service area. Fuel cell power plants and fuel cell parks can be located at existing utility substations, avoiding the need to invest in costly and difficult to site transmission lines. Distributed generation also reduces congestion of the transmission lines because the fuel cell power plants are located close to where the power is used, allowing the existing transmission network to service other areas.

The combination of near-zero pollutants, modest land-use needs, and quiet operating characteristics of DFC power plants facilitates their siting in urban locations, especially at locations where reuse of industrial or brownfield property is an economic priority. For example, four DFC3000 power plants that total 11.2 megawatts (MW) occupy only about one acre of land, which is a distinct advantage for providing environmentally friendly power in urban locations. By comparison, a concentrating solar power plant of similar capacity would occupy about 55 acres, according to the U.S. Department of Energy.

Indeed, FCE's fuel cell technology and its power stations serve to advance several important public policy goals.

**Distributed Generation** FCE distributed generation resources reinforce the reliability and security of the electric grid by dispersing power generation assets throughout a service area. Fuel cell power plants and fuel cell parks can be located at existing utility substations, avoiding the need to invest in costly and difficult to site transmission lines. Distributed generation also reduces congestion of the transmission lines because the fuel cell power plants are located close to where the power is used, allowing the existing transmission network to service other areas.

**RPS** Ultra-clean and efficient fuel cell power plants support renewable portfolio standards (RPS) and sustainability initiatives that electric utilities may need or choose to comply with. The favorable emission profile of fuel cell power plants, including their low carbon profile, make the plants eligible for renewable energy credits (RECs) in regions that support REC programs.

**Siting** Because DFC power plants produce high quality heat, they are ideal for efficient combined (CHP) applications. The heat produced by distributed generated fuel cell parks can be used for local heating and cooling purposes, further enhancing project economics for power producers and investors.

**Scalable** DFC power plants are scalable, providing a cost-effective approach to adding power generation incrementally as power demand grows within electric utility service areas.

**Reliable Power** Fuel cells provide continuous high-quality power as long as they are supplied with fuel, such as clean natural gas. Reliable power from fuel cells helps to complement and stabilize electric grids that utilize intermittent sources of power such as solar and wind.

What's more, FCE's preferred-resource power from fuel cell power generating facilities provides several superior environmental, development and operational features, including the following:

- **Efficient** – generate electricity at a distribution level with an unparalleled electrical power generation efficiency approaching 60%.
- **Ultra-clean** – emit CO<sub>2</sub> at levels below the CT average grid with near-zero emissions of NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub>.
- **Low Permitting and Community Risk** –CT exempts fuel cells from a written air permit, including those fueled by natural gas. This allows for the installation of power quickly and without potential community opposition of conventional natural gas plants.
- **Voltage Support** – fuel cells can provide reactive power (20 MVAR @ 25 MW) and offer a real and reactive alternative to synchronous condensers. Additional MVAR are available at lower real power (MW) outputs (i.e. 34 MVAR @ 10 MW).
- **Quiet** - fuel cells have a significantly reduced acoustic profile compared to other generation technologies, making them suitable for almost any location.
- **Reliable** – the FCE fleet of Direct FuelCell® (“DFC”) 3000 power plants are meeting or exceeding production and capacity commitments to utility customers and investors.
- **Controllable** – can be set to vary output over a scheduled period of time, be disconnected island and return to full power, and can operate at low capacity factor without degradation in heat rate.
- **Financeable** – can be financed by one or a combination of FCE's financial partners and investors. FCE and its affiliates have put in service over \$1 billion worth of fuel cell plant transactions that have involved securing both construction and term financing.

Finally, FCE wishes to point out that the generation technology proposed under Council Petition 1184, a 63.3 Megawatt fuel cell project in Beacon Falls, Connecticut involves carbonate fuel cells manufactured by FCE. That project, approved by the Council On January 7, 2016, includes, in part, several HEFC™ High Efficiency Fuel Cell (“HEFC”) systems, which are based

on the FCE Direct FuelCell® (“DFC”) 3000. Similarly, the generation resource in Danbury recently approved under Council Petition 1248 on September 1, 2016 involves a 3.7 MW HEFC facility. These two projects offer examples of the size range that can be deployed as the CSC considers resources options available to Connecticut.

Thank you again for this opportunity to comment.

Very truly yours,

A handwritten signature in black ink on a light yellow background. The signature is cursive and appears to read "S. Derek Phelps".

S. Derek Phelps  
Director, Market & Project Development