



March 1, 2018

**TO: The Hon. Gary A. Winfield, Co-Chair, Energy and Technology Committee
The Hon. Lonnie Reed, Co-Chair, Energy and Technology Committee
The Hon. Paul M. Formica, Co-Chair, Energy and Technology, Committee**

**RE: Governor's Bill No. 9
AN ACT CONCERNING CONNECTICUT'S ENERGY FUTURE**

FuelCell Energy, Inc., a Connecticut-based company headquartered in Danbury with manufacturing facilities in Torrington respectfully submits the following comments concerning Governor's Bill No. 9, "AN ACT CONCERNING CONNECTICUT'S ENERGY FUTURE" for consideration by the Energy and Technology Committee (the "Act").

Fuel cells provide unique benefits to Connecticut's energy portfolio, to the environment and to its economy - benefits that no other renewable energy source can provide. Unlike other sources of renewable energy, fuel cells provide power 24 hours a day, 7 days per week, enhancing grid reliability. In terms of contributing to Connecticut's economy, based on recent data from the Connecticut Center for Advanced Technology, the industry provides 2,843 jobs in Connecticut, creates \$601 million annually in revenue and investment, \$286 million annually in labor income, and currently pays \$37 – \$41 million annually in taxes. Had FuelCell Energy's 4 projects been selected in the recent DEEP RFP, those 4 projects alone would have paid \$47 million in state and local taxes, contributed \$7 million to infrastructure development, and supported 322 direct jobs and 106 indirect jobs. Unfortunately, no fuel cell projects were selected by the State DEEP.

Section 1 of the Act provides for a rapid increase in the State's renewable portfolio standard, by approximately 2% per year, culminating in a requirement of 40% of generation coming from Class I renewables by the year 2030. FuelCell Energy is generally supportive of an increase in the renewable portfolio standard. However, FuelCell Energy has concerns about how the State intends to meet that requirement.

Since the inception of the renewable portfolio standard in Connecticut, fuel cells have been statutorily defined as Class I renewable resources. Fuel cells play an important part in Connecticut's economy, and are among the largest contributors to Connecticut's Class I RECs, as noted by the CT DEEP in its recently released Comprehensive Energy Strategy.¹ The 15MW Bridgeport Fuel Cell Park project, designed, manufactured, constructed and operated by FuelCell Energy, contributes approximately 2% of the RECs required by Connecticut's current Class I renewable portfolio standard. Certainly, in order to meet a requirement of 40% Class I renewable resources by 2030 (nearly 12,000 GWh of electricity annually based on 2017 load), fuel cells must play a substantial role.

However, the actions of CT DEEP over the past few years, in conjunction with the recently released Comprehensive Energy Strategy, signal that fuel cells may no longer be considered as a contributor to the State's renewable portfolio. Of the last 4 Class I renewable energy solicitations undertaken by CT DEEP, and the 1,041MW selected in those solicitations, not one single fuel cell project was selected, despite their price competitiveness. For generation assets, only solar and wind projects were selected and remarkably, over 75% of the projects selected were located out-of-state, representing over \$1.5 billion in out-of-state investment by Connecticut ratepayers. The recently released solicitation by DEEP under Public Act 17-144 is heavily weighted toward out-of-state offshore wind projects. In the Comprehensive Energy Strategy, CT DEEP has recommended that fuel cells be removed from Class I eligibility.²

The State of Connecticut cannot achieve 40% Class I renewable resources by 2030 without the valuable participation of fuel cells. According to a recent article in the *MIT Technology Review*³, relying on solar and wind alone "significantly inflates the cost of overhauling energy." The article refers to the growing number of cities and states that are pushing for all or a substantial amount of electricity from renewable resources such as solar and wind. The article posits that doing so is "wastefully expensive and needlessly difficult," citing to intermittency and lack of adequate transmission and storage.

Just getting to 80 percent of demand reliably with only wind and solar would require either a US-wide high-speed transmission system or 12 hours of electricity storage. A storage system of that size across the US would cost more than \$2.5 trillion for a battery system.

¹ "After biomass and landfill gas, fuel cell RECs contribute the next highest percentage of the RPS compliance for Class I RECs." Comprehensive Energy Strategy, February 8, 2018 at 29.

² Comprehensive Energy Strategy, February 8, 2018 at 29.

³ <https://www.technologyreview.com/s/610366/relying-on-renewables-alone-would-significantly-raise-the-cost-of-overhauling-the-energy/>

To meet all the nation's annual electricity needs with 99.97 reliability, utilities would have to build 12 hours of storage plus at least twice the amount of renewable energy generation, the study found.⁴

The committee should also consider the exorbitant amount of land that would need to be consumed in order to meet this proposed RPS goal without fuel cells. In the recent Resource Assessment of Millstone, DEEP discusses potential replacement scenarios for Millstone, relying in large part on grid scale solar. The DEEP determination notes that “[t]he reference cases did not consider the feasibility of siting or constructing the replacement technologies” and recognizes that doing so “would present a challenge.”⁵ In fact, siting the 1,206MW of solar (which would replace only approximately 12.5% of Millstone's output) would require almost 8,500 acres of land, which equates to a solar farm the size of Cromwell, Connecticut (or, put in other terms, equivalent to over 25% of the State's 32,500 acres of State park area). Notably, fuel cells were not considered as a replacement technology in the study, despite their positive economic, environmental and energy benefits, and their Class I renewable status. In contrast to a solar farm as big as a medium-sized Connecticut town, natural gas fuel cells are ultra clean and always on, and the same 1,206MW of generation coming from fuel cells would require only approximately 120 acres of land and produce five times more power, replacing almost 60% of the output of Millstone.

The General Assembly recognized the substantial economic, environmental, and energy benefits of fuel cells almost 20 years ago when it included fuel cells in the Class I renewable portfolio standard. Before setting such an aggressive target for Class I renewable power as proposed by the Act (40% by 2030), this Committee should consider the future of fuel cells in Connecticut's renewable portfolio standard and CT DEEP's intention with respect to future clean energy procurements.

Sections 2 and 3 of the Act propose to reduce the alternative compliance penalty for Class I RECs from 5.5 cents to 4 cents on and after January 1, 2021. FuelCell Energy opposes this proposal. Investors require certainty.

The presence of political risk and policy uncertainty is a destabilizing force for investors. Changes in policies that originally attracted investors will devalue their

⁴ *Id.*

⁵ Connecticut Department of Energy & Environmental Protection and Connecticut Public Utility Regulatory Authority, *Resource Assessment of Millstone Pursuant to Executive Order No. 59 and Public Act 17-3; Determination Pursuant to Public Act 17-3, Executive Summary* at 27-28.

investments. In order for the State to achieve its RPS policy goals, it must be seen as an attractive place to invest.⁶

Reducing the alternative compliance penalty will depress the market for RECs, a valuable revenue stream used to finance renewable energy projects. The current market framework for RECs is working, investors are investing and now is not the appropriate time to make changes to well established programs.

Section 4 of the Act proposes to eliminate the current program for net energy metering for Class I renewable energy installations of up to 2MW after December 31, 2018. Installations completed prior to December 31, 2018 may receive the credit through 2039. The proposed amendment in the Act directs PURA to establish a cents per kwh rate for the purchase of excess generation exported to the grid after December 31, 2039. FuelCell Energy also opposes this proposal. As noted above, renewable energy programs must remain stable and consistent in order to provide investors with the required certainty to make investments in Connecticut projects. According to the National Conference of State Legislatures, as of November, 2017, 38 states, Washington, DC and four territories offer net metering. Only 7 states have statewide distributed generation compensation rules that do not offer full retail rate compensation or some other alternative compensation structure.⁷ Connecticut should not take a step backward in its implementation of net metering.

Section 5 of the Act creates a tariff program to replace the current LREC/ZREC program. While FuelCell Energy is generally supportive of continuation of the program and does not oppose implementation through a tariff versus a utility run auction, FuelCell Energy submits that the program size limitation should be raised to 4MW or 5MW from the current 2MW for fuel cells only.

When the LREC/ZREC program was established, a cap of 2MW per project nameplate was inserted into the legislation. FuelCell Energy manufactures three distinct fuel cell products in Connecticut: a 1.4MW unit, a 2.8MW unit and a 3.7MW unit. The size limitation of 2MW in the LREC/ZREC program and the proposed tariff in the Act effectively disqualifies two out of three of FuelCell Energy's products. Given the economic development benefits of Connecticut manufactured fuel cells to the State, including, but not limited to high tech advanced manufacturing jobs, tax revenues, product exports, clean power, grid resiliency and reliability,

⁶ *Eligibility Issues and Options, Connecticut Class I RPS, A White Paper*, March 18, 2013, prepared by Sustainable Energy Advantage, LLC on behalf of DEEP, available at <http://www.ct.gov/deep/lib/deep/energy/rps/rpswhitepaper2.pdf>.

⁷ See <http://www.ncsl.org/research/energy/net-metering-policy-overview-and-state-legislative-updates.aspx>

and reuse of urban brownfields, statutory changes that are proposed should ensure that the home grown fuel cell industry is completely included, rather than excluded.

FuelCell Energy thanks the Committee for its consideration of these comments on Governor's Bill No. 9, and looks forward to presenting additional facts and information to the Committee and the broader General Assembly concerning the economic, energy and environmental benefits of fuel cells during this legislative session.

Respectfully submitted,

A handwritten signature in black ink, reading "Jennifer D. Arasimowicz". The signature is written in a cursive style with a large, stylized initial "J".

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