



November 28, 2017

Customer Choice Project Team
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Submitted electronically to: customerchoice@cpuc.ca.gov

RE: National Fuel Cell Research Center Responses to the California Customer Choice Project Post-Workshop Questions

The National Fuel Cell Research Center appreciates the opportunity to submit responses to the California Customer Choice Project Post-Workshop questions posed by the California Public Utilities Commission.

The NFCRC facilitates and accelerates the development and deployment of fuel cell technology and fuel cell systems; promotes strategic alliances to address the market challenges associated with the installation and integration of fuel cell systems; and educates and develops resources for the various stakeholders in the fuel cell community.

White Paper Scoping Questions

1) *The California Customer Choice project has three principles and eight key questions when considering customer choice (see below) in California and other markets. Are there any additional questions that the project should be considering? Why?*

Principles (in alphabetical order):

- ***Affordability: Design Rates and Charges So That Bills Are Affordable***
- ***Decarbonization: Meet California's Environmental and Climate Goals***
- ***Reliability: Maintain Safety, Reliability, and Resiliency of Electricity Services***

Question 8: How does this choice model impact and benefit local communities?

The NFCRC recommends that all major energy and environmental policy in California be considered, including those policies that affect both air quality and the health impacts of air

pollution. By focusing on decarbonization and air quality in tandem, a more robust customer choice framework will complement the current efforts to integrate environmental justice and improve air quality in local communities. Reduction of criteria air pollutants and short-lived climate pollutants are integral to achieving California's environmental and climate goals, and should be a key component of any choice model to benefit local communities, and provide critically needed near-term impact. Additionally, expanded self-generation from onsite or decentralized clean energy sources will allow local energy systems to be developed that address current emissions from industrial and commercial customers. This results in a direct benefit to local communities and improved air quality, and should therefore be included as a key component of any customer choice framework.

The choice model should also delineate the value of microgrids and a recommendation for their installation. Microgrids will be a cornerstone to creating optimally clean, efficient and resilient systems in local communities. As noted in the Community Choice Workshop by Aaron Daly of Whole Foods Market, distribution system reliability is critical to their business and the communities in which they reside, and Whole Foods distribution centers rely on business continuity and microgrids. As microgrids become prevalent, they will create redundancy against extreme weather events, keep businesses and customers in operation, provide a safety net to the community, and increase competitive advantages. Microgrids also create value on multiple levels as a complete system, rather than the independent incentivization of controls, monitoring, fuel cell generation, and intermittent solar resources. As California moves toward the future, incentives for individual technologies will give rise to a need for the creation of system-wide valuation, and microgrids fill that need.

The NFCRC also recommends that an additional question be considered: ***How does this choice model affect different classes of customers?*** By the very nature of the term "choice" any framework for customer choice will have multiple customer types, e.g., residential, commercial and industrial. A customer choice framework should therefore be flexible enough to allow a range of customer types to interact seamlessly within the framework, and provide for energy choices that suit individual specific goals and needs. For example, commercial and industrial customers with significant loads can employ clean self-generation technologies such as fuel cells, to enable them to meet the regulatory and environmental obligations with which they must comply, while simultaneously decreasing the negative environmental impact associated with the

generation of the electricity they utilize. A residential customer may in turn make a different choice that suits their own energy requirements. Acknowledging the various options available to customers and the benefits provided is an important factor to include as the Customer Choice Project moves forward.

2) The California Customer Choice Project is reviewing several markets as key examples of how customer choice operates under different regulatory frameworks. These markets include:

- **New York**
- **Texas**
- **Illinois**
- **United Kingdom**

Are there other markets, either domestic or international, that you think would be an important model for California to consider as a regulatory framework option? Why?

While New York State is already on the list of states being reviewed by the Public Utilities Commission, the NFCRC would like to call out one element of Reforming the Energy Vision that is especially important to the expansion of distributed energy resources (DER) in customer choice programs. New York is transitioning from net metering to dynamic tariffs based on full valuation of DER to additionally support development of the behind-the-meter market. This transition will take place over several years in multiple phases, and these tariffs may be self-adjusting in the future. The New York Public Service Commission (NYPSC) is currently implementing Phase One of this new tariff structure, and, in the Phase Two proceeding, the NYPSC is further evaluating the elements that define the value “stack” or attributes to be appropriately compensated. In the Benefits Cost Analysis Framework,¹ the New York Public Service Commission has clearly outlined the benefits that DER can provide to the bulk and distribution systems, reliability/resiliency, and the net non-energy benefits associated with the health impacts of SO₂, NO_x, and CO₂, and impacts on land and water. The value of DER compensation will be based on four avoided costs: system energy, generation capacity, delivery and societal damage/mitigation. Utilization of full valuation and compensation can support the development of DER and encourage the development of markets that provide benefits to the overall grid and society.

¹ Case 14-M-0101 - Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016): “Benefits and Costs Included in the Framework.”

In response to **Question 2: How does this choice model support development and incorporation of innovations driven by customer demand?**, the customer choice model supports these innovations by (1) objectively valuing and compensating DER for the benefits they bring to the energy system, (2) allowing market participants to choose the technology and systems that best fit their unique residential, industrial and commercial business requirements, and (3) appropriately compensating for their investment in clean energy.

3) What published resources do you recommend the California Customer Choice team review in addressing key questions for evaluated markets?

The above-referenced State of New York Public Service Commission Order Establishing the Benefits Cost Analysis Framework, which was issued and effective on January 21, 2016 can serve as a starting point to consider which benefits and costs are relevant in California markets, and to ensure that DER is fairly compensated with the expansion of customer choice to support innovations for a cleaner, more resilient and cost-effective grid.

Sincerely,

A handwritten signature in cursive script, appearing to read "Scott Samuelson".

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