

<b>DOCKETED</b>	
<b>Docket Number:</b>	18-IEPR-05
<b>Project Title:</b>	Climate Adaptation and Resiliency
<b>TN #:</b>	224504
<b>Document Title:</b>	Bloom Energy Comments on Aug 2, 2018 Joint Agency Workshop on Climate Adaptation and Resiliency
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Bloom Energy/Sam Schabacker
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	8/16/2018 3:27:42 PM
<b>Docketed Date:</b>	8/16/2018

*Comment Received From: Sam Schabacker*  
*Submitted On: 8/16/2018*  
*Docket Number: 18-IEPR-05*

**Bloom Energy Comments on Aug 2, 2018 Joint Agency Workshop on  
Climate Adaptation and Resiliency**

*Additional submitted attachment is included below.*



August 16, 2018

Chair Robert Weisenmiller  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814

**Re: Joint Agency Workshop on Climate Adaptation and Resiliency**

Dear Chair Weisenmiller,

Bloom Energy (Bloom) appreciates the opportunity to provide these comments on the August 2, 2018 Joint Agency Workshop on Climate Adaptation and Resiliency. We extend our sympathy to wildfire victims and are grateful for the tireless efforts of all the individuals and organizations engaged in both mitigation and recovery efforts.

Bloom strongly supports the State's efforts to deploy microgrids as part of a larger strategy to increase grid resiliency, electrical reliability, and climate adaptation. While this fire season is unprecedented in terms of lives lost, acres burned and structures destroyed, many believe this to be emblematic of a "new normal" for the foreseeable future. Given the State's immense challenge to address resiliency, reliability and climate adaptation, it behooves California to support the inclusion of the most efficient, most reliable fuel cell technologies as an essential component of microgrid or other resilient infrastructure designs.

Bloom agrees with Blue Lake Rancheria's<sup>1</sup> presentation to the CEC that microgrids and "other Distributed Energy Resources (DERs) successfully supply electricity in wildfire and other disasters" to "support critical infrastructure, lifeline sectors, and vulnerable populations." Bloom has already successfully installed 60 microgrids which total 38.8 MW in generating capacity. During the four Nor'easters that buffeted the East Coast from March 2-22 in 2018, millions of customers lost power, including those served by the electric grid surrounding 9 Bloom microgrid sites. Despite the combined 26 electric utility outages, all 9 Bloom microgrids (totaling 3.4 MW) maintained power. And during the recent triple-digit temperatures that triggered outages for 57,000 customers in Southern California, all of Bloom's microgrid deployments in LA County maintained power.

Fuel cells can serve as the backbone for microgrids that integrate numerous distributed energy resources such as solar, wind, and batteries at large scale. With fuel cells, these microgrids are flexible: functioning as a standalone electrical grid that connects and interacts with the utility grid. This enables a customer to respond to Independent System Operator (ISO) price signals and participate in the energy and ancillary services market.

---

<sup>1</sup> TN#224359 presentation by Jana Ganion, page 2: "Actions to Address Wildfire Risks for Vulnerable Populations and Critical Facilities: Electricity".

Finally, fuel cells provide substantial air quality benefits while providing reliable, always-on power. For example, by virtue of their non-combustion process, Bloom Energy Servers virtually eliminate emissions of criteria air pollutants including NO<sub>x</sub>, SO<sub>x</sub>, CO, VOCs, and particulate matter that are associated with traditional combustion and diesel back up power configurations while providing onsite power 24x7x365. The result is a significantly lower air emissions profile as compared to combustion-based distributed or central station power generation—reducing localized impacts in disadvantaged and vulnerable communities. Importantly, on any fuel source, Bloom Energy Servers reduce CO<sub>2</sub> emissions compared to the grid. Bloom's CO<sub>2</sub> emissions per MWh are about 20% lower than the California marginal emissions rate when running on natural gas and are zero emissions on RNG.

These fuel cell benefits align perfectly with the joint efforts of CEC, the CPUC, and CAISO to develop a microgrid roadmap:

*"To make California's electric grid more resilient and adaptable to the state's anticipated future needs. Microgrids are able to manage customer critical resources, provide services for the utility grid operator, disconnect from the grid when the need arises, and provide the customer and the utility different levels of critical support when the need exists. Microgrids can incorporate clean, low-carbon energy resources with increased energy efficiency, distributed energy resources such as energy storage, distributed renewables ... and other advanced generation and advanced distributed energy systems."*<sup>2</sup>

We thank the Commission for the opportunity to provide feedback and reiterate that fuel cells should be an integral component of the Commission's continuing efforts to increase climate adaptation and resiliency through microgrid development.

Respectfully,



Erin Grizard  
Senior Director, Regulatory and Government Affairs



Sam Schabacker  
Policy Manager

---

<sup>2</sup> "Notice of Staff Workshop: California Microgrid Roadmap Scoping Workshop," Page 2, July 26, 2017.