



October 6, 2017

Sam Wade
1001 "I" Street
Sacramento, CA 95814

Filed Online

RE: Comments of Bloom Energy on September 22, 2017 Low Carbon Fuel Standard (LCFS) Workshop

Dear Mr. Wade,

Bloom Energy (Bloom) appreciates the opportunity to provide these comments on the 2018 LCFS Preliminary Draft Regulatory Amendment document presented on September 22.

Non-co-located electricity for electric vehicle charging should be included

Bloom notes inclusion of a draft proposal allowing for indirect accounting for electricity used for electric vehicle charging.¹ We support the ARB's efforts to address the current limitations of the co-location rules in the LCFS as part of the scope of the upcoming rulemaking and the ARB should continue to evaluate enhancements to this language to enable non-co-located electricity generation, such as that from fuel cells generating clean electricity from biogas, to participate in LCFS. As mentioned in comments filed on September 4th, Bloom supports facilitation of co-location alternatives so the market can better signal the need for, and encourage development of, a robust low carbon intensity (CI) charging market to capture more near-term GHG reductions. We remain a willing partner and look forward to continued discussions with you and your team as a proposal to provide this flexibility is developed.

Design-based pathways will encourage innovation

Bloom supports the concept of design-based fuel pathway certification.² The current requirement of certain months of commercial production before being eligible to apply for a CI score is limiting. An avenue for developing and certifying a

¹ Section 95488.7(i)(3), Draft Amendment Text, page 110.

² Section 95488.8(e), Draft Amendment Text, page 115.

pathway with a theoretical CI score *prior* to commercial production through the design-based pathway provision will provide insight into the levels of credit generation that may be expected for a given strategy and a level of comfort to project developers. This, in turn, will encourage development of innovative approaches.

Fuel cells can contribute additional GHG reductions through inclusion in already-existing provisions for crude production and refinery facilities

More GHG reductions can be captured through the LCFS if onsite electricity generation from fuel cells are included in the list of innovative methods that will lead to credit generation under the Producing Crudes using Innovative Methods provision³ and also considered as eligible GHG reduction projects under the Refinery Investment Credit Pilot Program⁴.

Onsite electricity generation from fuel cells can reduce a facility's GHG emissions, and if a given project meets the relevant CI reduction thresholds for credit generation, that project should be eligible to contribute to credit generation within these frameworks. For example, Bloom Energy Servers efficiently convert fuel into electricity through an electrochemical process without combustion. The high efficiency of the conversion process results in fewer GHG emissions per kWh when compared to other fueled onsite generation resources, and Bloom Energy Servers reduce CO₂ emissions compared to the grid. Bloom's CO₂ emissions per MWh are about 20% lower than the California marginal emissions rate when run on natural gas and zero emission on renewable natural gas.

Significant co-benefits can be captured by allowing clean, non-combustion fuel cells to be considered as eligible onsite electricity generation resources. The non-combustion process *virtually eliminates emissions of criteria air pollutants* including NO_x, SO_x, and particulate matter that are associated with combustion resulting in a significantly cleaner air emissions profile as compared to combustion-based distributed or central station power generation. The high power density of Bloom Energy Servers leads to a small footprint required for the local generation of electricity, which provides a cleaner option for facilities with large energy needs but limited space that may otherwise run a significant amount of onsite combustion generation.

³ Section 95489(c)(1)(A), Draft Amendment Text, page 177.

⁴ Section 95489(f), Draft Amendment Text, page 199.

Conclusion

Developing a mechanism for non-co-located renewable electricity to be used for EV charging and generate LCFS credits will increase market participation from companies like Bloom that provide unique renewable electricity generation resources (i.e. electricity from biogas) that achieve critical co-benefits (e.g., addressing Short Lived Climate Pollutants and reduction of criteria air pollutants). Doing so will address multiple state policy goals, and allow for synergy among programs to spur further development of renewable resources.

Further, allowing for expanded participation of clean energy technologies to address onsite energy needs in the Producing Crudes using Innovative Methods and the Refinery Investment Credit Pilot Program provisions will provide opportunities for GHG reductions and air quality benefits at facilities that have traditionally been difficult to address.

Bloom Energy appreciates the opportunity to provide these comments and looks forward to continued engagement as the ARB refines the scope of the upcoming rulemaking.

Respectfully,



Erin Grizard
Senior Director, Regulatory and Government Affairs