BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.	Rulemaking 10-05-004

PETITION OF BLOOM ENERGY CORP. FOR MODIFICATION OF DECISION 11-09-015

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TABLE OF CONTENTS

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Pursuant to Rule 16.4 of the California Public Utilities Commission's ("Commission") Rules of Practice and Procedure, Bloom Energy Corp. ("Bloom Energy") submits this Petition for Modification of Decision ("D.") 11-09-015, Decision Modifying the Self-Generation Incentive Program and Implementing Senate Bill 412 ("Decision"). This petition is being filed in the above captioned proceeding as it is the successor proceeding to the original Self-Generation Incentive Program ("SGIP") proceeding in which D.11-09-015 was originally issued, which was Rulemaking 10-05-004.

I. About Bloom Energy

Bloom Energy is a manufacturer of solid oxide fuel cells and hydrogen electrolyzers headquartered in San Jose, California. The company manufactures fuel cells in California for resilient, low-emissions onsite generation applications serving commercial and industrial customers, as well as high-efficiency electrolyzers for producing renewable hydrogen. Bloom Energy's solid oxide fuel cells operate on a variety of fuel feedstocks including natural gas, biogas, hydrogen, or a blend thereof. These fuels are used at high efficiencies and without combustion, leading to net greenhouse gas (GHG) reductions and the virtual elimination of Nitrogen Oxides (NOx) and Sulfur Oxides (SOx) emissions. Bloom Energy's fuel cells are modular and can be quickly deployed onsite to fill a given energy requirement. Recently, Bloom Energy has deployed solid oxide fuel cells

operating on renewable biogas that are eligible for the Self Generation Incentive Program (SGIP) and which have achieved some of the lowest carbon intensity (CI) scores ever achieved in the State of California.

II. Summary of Requested Relief

Bloom Energy respectfully requests the Commission modify the export to grid sizing limitation established in D.11-09-015 in order to make biogas projects using modern high-efficiency systems more viable under SGIP and provide additional resiliency and emissions benefits. Modification of this decision will in turn modify several provisions in the SGIP handbook that are informed by this limitation. The specific change sought by this Petition can be found in Appendix A.

III. Justification of Petition

Bloom Energy seeks leave under Rule 16.4(d) of the Commission's Rules of Practice and Procedure to file this Petition more than a year following issuance of D.11-09-015. While Bloom Energy's platform has long been conceptually able to use biogas as a fuel source, increasing efficiencies and evolutions to Bloom Energy's core fuel cell technology has only recently enabled commercially viable biogas installations. The first such project was installed in 2021 and has now proven the potential for additional deployments.[1] Given the limitations and outlook of Bloom Energy's biogas platform at the time, this Petition could not have been filed within a year of D.11-09-015.

IV. Procedural Background

In September 2011, the Commission adopted D.11-09-015 to implement Senate Bill (SB) 412 (Kehoe, 2009) and establish export limitations for eligible projects. Staff's recommendation, based on the New York State Energy Resources Development Agency's (NYSERDA's) CHP program, was ultimately adopted which stipulated this limit be capped at 25% of annual generation while still being able to qualify for incentives.[2] At the time there was discussion that this cap would be insufficient for biogas sites which frequently produce more than this amount and could result in

[1] https://www.bloomenergy.com/news/bloom-energy-delivers-renewable-power-from-dairy-farm-waste/
[2] California Public Utilities Commission. (2010). Self Generation Incentive Program (SGIP) Staff Proposal, at p. 49. https://docs.cpuc.ca.gov/PublishedDocs/EFILE/RULINGS/124214.PDF.

unused fuel. The 25% cap was adopted and has remained unchanged.[3]

On May 23, 2024 Bloom Energy submitted a Program Modification Request to the SGIP Program Administrators requesting the increase to the limitation of allowable export from 25% of annual generation to 50%. On June 13, 2024 the SGIP Program Administrators voiced support leading to Bloom Energy's submission of this Petition.

V. Limitations on High Efficiency Systems

Under current program rules, renewable biogas utilization is largely left unrealized due to the imbalance between the generation potential from high-efficiency systems and the modest on-site load requirements at facilities with substantial biogas production like dairy farms. This limit was originally adopted to ensure the program incentivized self-generation instead of export. As was identified in 2011, biogas projects frequently over-produce energy for a given site, leaving a large amount of fuel unused to be flared or vented. This problem has only become more acute in the case of newer high-efficiency systems such as solid-oxide fuel cells. The cap has the effect of penalizing these technologies to a point of near-unviability while incentivizing less-efficient technologies.

Increasing the export limit from 25% of on-site load to 50% and increasing sizing limitations from 125% of annual energy consumption to 150% for export to grid projects and the feed-in tariff application under SGIP will allow for a greater deployment of high-efficient non-combustion technologies like fuel cells to make use of biogas for reliable and clean power generation. This modification opens a significant opportunity to add another renewable energy source and increased diversion of high-global warming potential (high GWP) methane.

VI. Modest Changes will have an Outsized Impact on Reliability and Emissions Goals

As California's energy transition has accelerated, SGIP has undergone periodic changes since its inception in 2001 to reflect changing circumstances. D.11-09-015 in 2011 reflected a change from peak-load reduction to emphasis on greenhouse gas reductions. Over the previous fourteen years, circumstances have again changed. Variable renewable energy (VRE) sources have continued to penetrate California's grid but have also highlighted new reliability concerns as a result

[3] D.11-09-015, at p. 48.

of extreme weather events, load growth, and the need to replace older generating sources.[4]

A diverse source of technologies is required to meet this challenge. Biogas has a high potential to both abate emissions through the removal of short-lived climate pollutants (SLCP) and provide dispatchable energy to supplement VRE. High efficiency biogas projects can have extremely low net-GHG emissions, often being carbon neutral or negative under some circumstances. As an example, Bloom Energy's first biogas deployment, a 1MW solid-oxide fuel cell deployment, is currently operating at the Bar 20 Dairy Farm in Kerman, CA, where it has achieved the lowest carbon intensity (CI) score in the low carbon fuel standard program (LCFS) to date at -790 gCO2e/MJ.[5] This is not an isolated case and, for reasons explained above, many other potential biogas opportunities are currently unviable. Achieving California's SLCP target of a 40% reduction in methane emissions by 2030 as stipulated in SB 1383 will require that biomethane producers capture biomethane onsite to the greatest extent possible. Currently, methane emissions from manure alone have only been reduced by around 1%.[6] With the proposed modification detailed in this Petition, these emissions and the reliability benefits of on-site power generation would come at no additional incremental cost to the SGIP rate base and would entail no additional funding.

VII. Conclusion

Bloom Energy appreciates the opportunity to submit this Petition for Modification of D.11-09-015 and respectfully urges the Commission to grant the relief requested herein as soon as practicable.

Dated: 08/29/2024

Respectfully submitted,

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[4] Long, J.C.S. et al. (2021). California Needs Clean Firm Power, and So Does the Rest of the World: Three Detailed Models of the Future of California's Power System all show that California needs Carbon-Free Electricity Sources that don't Depend on the Weather. Clean Air Task Force.

[5] https://www.bloomenergy.com/wp-content/uploads/Bar20-Bloom-Energy-Case-Study.pdf

[6] California Air Resources Board. (2021a). Current California GHG Emission Inventory Data. https://ww2.arb.ca.gov/ghg-inventory-data

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Appendix A:

Bloom Energy's Proposed Changes to Attachment A of D.11-09-015

The detailed modifications contemplated under each option are enclosed below (proposed deletions in strikethrough and additions underlined).

Attachment A of D.11-09-015 – Modifications to the Self-Generation Incentive Program (SGIP)

Export to Grid: ~~25%~~ 50% maximum on an annual net basis.