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Re: FuelCell Energy Reply Comments on the Bioenergy Market Adjusting Tariff (BioMAT) Program Review and Staff Proposal

Dear Mr. McGarry:

FuelCell Energy, Inc. (FCE) appreciates the opportunity to provide these informal reply comments on issues discussed in opening comments on the October 30, 2018 BioMAT Program Review and Staff Proposal. We look forward to working with other parties to implement program adjustments that will help the BioMAT program address current barriers to participation, increase program activity, and achieve the goals of Senate Bill 1122.

I. Introduction

Opening comments show a strong consensus on many of the foundational questions presented in the Staff Proposal. For example, almost all commenting parties agree that the term of the program should be extended to 2026, and many suggest a more lengthy extension, e.g. to 2030. There is also strong support for adjusting the program to ensure timely contract execution, adjust the commercial operation date for interconnection delays, and increase the generation limit through administrative or legislative action. This broad agreement on many issues will enable parties to focus primarily on the more complex questions, such as how to create a more simple and workable feed-in tariff pricing structure.

A number of parties' opening comments emphasized the importance of putting this program review process in perspective before discussing specific recommendations.[1] FCE agrees that this is critical. SB 1122 was enacted to encourage and support bioenergy project development. Subsequent statutory changes have likewise focused on improving the BioMAT program and eliminating barriers to participation. The Program Review has determined that participation in the BioMAT program has remained low, which means the program may not achieve the Legislature's goal of bioenergy market transformation and expansion. For these

[1] See, e.g. BioEnergy Association of California (BAC) Opening Comments pp.1-7; Green Power Institute (GPI) Opening Comments p.8.

reasons, FCE agrees with BAC and others that the primary focus of this process should be on removing barriers and facilitating program implementation.[2]

It will also be important to keep in mind throughout this process that the BioMAT program supports a wide range of fuel sources and technologies. This diversity is a strength, but it also necessitates careful consideration of how the program can enable successful project development across all eligible fuel categories and technologies.

II. Reply Comments

A. Directed biogas

In response to Question 19, inviting parties to identify "additional actions the Commission should take to address program barriers and expand program participation" the Joint Utilities inexplicably include a proposal to create a new barrier and narrow program participation by excluding projects using directed biogas.[3] FCE addresses this "proposal" separately because it has immediate relevance for fuel cell BioMAT project development.

The Commission should reject the Joint Utilities' proposal to exclude directed biogas projects from BioMAT. First, to be clear, the Joint Utilities are requesting a program change, notwithstanding the wording, which asks that directed biogas "remain ineligible."[4] Pipeline biomethane projects are explicitly referenced in the pro forma PPA, along with a clarifying instruction that such projects must comply with all pipeline tariff rules, including quality specifications.[5] This provision was discussed and explicitly endorsed by the Commission in 2015.[6] The utilities' instructional and interpretive materials are similarly unambiguous. For example, from "Frequently Asked Questions PG&E BioMAT Feed-in Tariff Program":

> **Are electric generation projects that source biogas via common carrier pipeline (i.e. directed biogas) eligible for BioMAT?**
> Yes. Keep in mind that the California Energy Commission has additional annual reporting requirements for Renewable Portfolio Standard (RPS) eligibility and that continuous RPS eligibility is required for payment under the BioMAT PPA.[7]

In short, the Joint Utilities' statement suggesting that projects using directed biogas are currently "ineligible" for the BioMAT program is simply incorrect and

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[2] BAC Opening Comments p.3.
[3] Joint Utilities Opening Comments pp.12-13.
[4] Joint Utilities Opening Comments p.13.
[5] See BioMAT PPA §4.3.13.
[6] Decision 15-09-004, pp.28-29.
[7] See, https://www.pge.com/includes/docs/pdfs/b2b/wholesaleelectricsuppliersolicitation/BioMAT/BioMAT_Webpage_FAQs.pdf (p.6)

unsupported by their own pro forma contracts and FAQs. Other assertions offered as support for the proposal to exclude projects using directed biogas are similarly flawed.

First, the Joint Utilities state that "[d]irected biogas is not a renewable fuel."[8] This statement is factually incorrect and inconsistent with California law. The California Energy Commission's RPS guidelines identify directed biogas as a renewable fuel.[9] This Commission's program requirements for BioMAT and other programs, including the Self-Generation Incentive Program, identify directed biogas as a renewable fuel.[10] Legislators and regulators in California have determined that directed biogas keeps its renewable characteristic and RPS eligibility if it meets the state's strict regulatory requirements.[11] The Joint Utilities' statement to the contrary is simply incorrect. The Joint Utilities' additional claim that directed biogas projects are "burning natural gas" is both factually incorrect for the reasons above, and also a misrepresentation of an entire sector of BioMAT projects. Fuel cells do not "burn" natural gas, and they do not "burn" biogas. They are a clean, non-combustion technology with environmental benefits that are enhanced by the ability to use pipeline biogas.

The Joint Utilities next state that "directed biogas is not consistent with BioMAT program goals."[12] That is not the case. As discussed in BAC's opening comments, the record shows that the BioMAT program was established in order to grow the bioenergy market by offering a streamlined feed-in tariff mechanism with a price sufficient to incentivize new bioenergy development.[13] Not all bioenergy generating and fuel cell plants can be located on the site at which the biofuel is produced. Some sites that are ideal for biogas fuel cells are not proximate to the fuel source, or have project specifications that require partial use of directed biogas. Similarly, not all sites that are ideal for biogas production are adequate site hosts for an energy generation project. And directed biogas permits smaller digesters to aggregate together to support a single energy generation project. Thus, excluding these directed biogas projects from the program would be contrary to the intent of the program.

Finally, the Joint Utilities argue that the "added complexity" of verification of directed biogas fuel sources and nominations runs counter to the program objective to

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[8] Joint Utilities Opening Comments p.12.
[9] California Energy Commission (CEC), Renewable Portfolio Standard (RPS) Eligibility Guidebook, Ninth Edition (Revised), Chapter 2, p.5.
[10] See, e.g., California Public Utilities Commission, Self-Generation Incentive Program Handbook, Section 6.5.
[11] See, CEC, RPS Handbook, pp.7-13. The utilities offer no citation or authority supporting their suggestion that biogas transported through a dedicated pipeline is "permitted" under BioMAT, and that biogas transported through a common carrier pipeline is not. In fact, such a distinction would be facially inconsistent with CEC guidelines, which explicitly recognize both as eligible renewable resources (along with biogas produced onsite, and biogas carried to the site in containers). The CEC has established detailed requirements to ensure that the provenance and environmental attributes of pipeline biogas are accounted for and verified.
[12] Joint Utilities Opening Comments p.12.
[13] See BAC Opening Comments pp.2-3.

"keep it simple."[14] This concern is misplaced. The directed biogas requirements already exist and are applied and enforced by state regulators. The responsibility for compliance with those requirements and documenting the fuel source is on the project sponsor. All that a BioMAT program administrator needs to do is to ensure that the project is RPS certified and has demonstrated that it meets all program requirements.

For all of the above reasons, the Commission should reject the utilities' proposal to exclude directed biogas projects from BioMAT, and should reaffirm that directed biogas programs are eligible and welcome to participate in the program.

B. Pricing issues (Questions 1-7)

Several parties comment that the simplest and best pricing mechanism is a simple fixed price feed-in tariff agreement.[15] FCE agrees. Appropriate pricing for different fuel categories can be determined through a collaborative process and updated through an administratively established process. As some parties note, a fixed price approach would be entirely consistent with SB 1122 and with the definition of a feed-in tariff, which is designed to provide a simple pro-forma contract and a predictable price to facilitate project financing. FCE agrees with AECA's recommendation that the specifics of the fixed price approach be addressed through a workshop process.[16] This will enable a detailed discussion of pricing levels, adjustment assumptions (e.g. inflation adder), and the mechanism for review and updating of fixed prices as necessary.

The utilities advocating for replacing the feed-in tariff with a renewable auction mechanism (RAM) approach primarily do so on the assertion that it would lower prices.[17] This argument overlooks the Program Review's determination that the program is not yet at a point where price competition between comparable projects and market transformation is possible.[18] The immediate challenge is eliminating barriers to participation so that potential project sponsors see the BioMAT as a viable, <u>financeable</u> option for project development. Direct comparison to the markets for solar photovoltaic and wind projects is not helpful. These are more advanced and homogeneous markets that have already reaped the benefits of targeted programs and incentives. The BioMAT program was intentionally created as a stand-alone alternative because the existing renewable solicitation programs were not enabling bioenergy project development at the scale desired in order to meet state policy goals. As noted in the Program Review, the intent of SB 1122 was to create a program that "differentiated small renewable biomass and biogas projects from other renewable distributed generation technologies to ensure that there are contracting opportunities for these facilities…."[19] In order to achieve success in bioenergy market expansion that is

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[14] Joint Utilities Opening Comments p.13.
[15] See e.g. Dairy Cares Opening Comments p.4; Agricultural Energy Consumers Association (AECA) Opening Comments p.3; BAC Opening Comments pp.8-9; Small Business Utility Advocates (SBUA) Opening Comments p.2.
[16] AECA Opening Comments p.3.
[17] Joint Utilities Opening Comments pp.2-3.
[18] Bioenergy Market Adjusting Tariff (BioMAT) Program Review and Staff Proposal, pp.7-8.
[19] Id. p.5.

comparable to that achieved in solar and wind markets, the Commission needs to look at the particular characteristics of eligible BioMAT fuels and technologies, and establish program parameters that will address barriers and facilitate project development, including financing, in this market sector.

One commenting party (the Environmental Groups) appears to oppose efforts to expand participation in the BioMAT program on principle. Environmental Groups offer broad criticisms of bioenergy and biomethane project development generally, and attack the foundational intent of the BioMAT program specifically.[20] This separates the Environmental Groups from other parties focused on how best to bring new participants from all three fuel categories into the program, and also helps contextualize their proposal to replace a fixed feed-in tariff pricing mechanism with the RAM. If the overall intent is to narrow and limit participation in the BioMAT program, switching to a RAM pricing mechanism would almost certainly serve that objective.[21]

C. Program administration (Questions 8-11)

Most parties agree with the staff's proposal to establish a deadline for contract execution.[22] FCE supports either a 30- or 60-day requirement.

As noted above, virtually all parties agree that the BioMAT program should be extended at least to 2026. Some parties note that there is not a statutory sunset date, and so recommend either extending the program to 2030 or eliminating the end date altogether.[23] FCE supports any of the above. Extending the program sunset date will increase regulatory stability and predictability, which are essential for planning and financing most bioenergy projects. Ideally the modifications adopted in this process will have the desired effect of expanding participation so that the program is fully subscribed well before 2026 with a diversity of viable projects in all three fuel categories. In the meantime, extending the program end date to at least 2026 would clearly serve the goals of the BioMAT program.

FCE likewise agrees with the numerous parties supporting extension of the guaranteed operation date for interconnection delays.[24] Interconnection issues have clearly become a barrier to program participation, so this modest but important program

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[20] See e.g. Environmental Parties Opening Comments p.1 (Bioenergy is a "dirty fuel," classifying bioenergy as a renewable resource is a "fiction of policy.")

[21] FCE notes that Environmental Groups opening comments rely on broad assertions regarding the environmental impacts of BioMAT Category 1 projects that do not apply to fuel cells. See e.g. discussion of criteria pollutant emissions from "burning" biogas. (p.3) As previously stated, fuel cells are a non-combustion technology and actually avoid criteria pollutant emissions by consuming digester gas that may otherwise be flared.

[22] Dairy Cares Opening Comments p.6; AECA Opening Comments p.4; Generate Capital Opening Comments p.1; BAC Opening Comments p.12; Bloom Opening Comments p.7.

[23] Dairy Cares Opening Comments pp.6-7; Maas Energy Works Opening Comments p.6; AECA Opening Comments p.4; Placer Air Pollution Control District Opening Comments p.3.

[24] GPI Opening Comments p.2; Dairy Cares Opening Comments p.7; Bloom Opening Comments p.8.

reform should be adopted. We encourage the Commission to also consider adopting FCE's recommendation to allow a further day-for-day extension under circumstances beyond the reasonable control of the project developer.

D. Program eligibility (Questions 12-15)

Most parties support staff's proposal to remove the cap on generation that is eligible for payment through BioMAT for facilities up to five MW.[25] Opposition to this proposal seems to be focused on concerns specific to some Category 3 projects, and assumptions regarding environmental impacts that are not relevant to Category 1 and 2 fuels or projects using fuel cell technologies.[26] As discussed in the staff proposal, removing the current three MW cap will enable the use of more bioenergy feedstock, and could potentially bring more entrants into the market and lower project costs.

There is a diversity of opinion on whether or not implementation of the proposal to remove the 3 MW cap will require statutory change. In the event the Commission determines that a statutory change is necessary, FCE encourages the Commission to seek or support an appropriate amendment. If this occurs, FCE would encourage the Commission to also recommend raising the project size limit from 5 to 6 MW. This modest adjustment would enable more appropriate project sizing at some sites without altering the program's focus on small renewable generators and fuel cell technologies.

It appears that a majority of parties responding to the staff's question about adding a geographic component to the BioMAT eligibility requirements oppose this concept. To the extent that this question is focused on woodland biomass projects, FCE takes no position. However, some parties' comments appear to read the question as relating to the siting of all BioMAT projects. If that is the case, FCE would strongly oppose creation of a new geographical factor to the requirement that projects be "strategically located." As many parties point out, this component is not needed.[27] It would complicate rather than simplify program eligibility requirements, and could lead to unforeseen consequences if otherwise viable projects are discouraged from applying. Siting is already a challenge for many bioenergy facilities. The Commission should avoid rules that could make siting more difficult.

Some comments supporting a geographical component point to potential air quality benefits for affected neighbors, particularly in disadvantaged communities.[28] Again, if the Commission considers acting on these concerns it will be important to recognize differences in fuel categories and technologies. Fuel cells, which emit negligible NOx, SOx or particulate pollutants, are a solution rather than a problem from the perspective of siting within or near disadvantaged communities or populous areas.

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[25] SBUA Opening Comments p.3; National Fuel Cell Research Center (NFCRC) Opening Comments pp.4-5; GPI Opening Comments p.2; Dairy Cares Opening Comments p.7; Bloom Opening Comments p.8.
[26] Environmental Groups Opening Comments pp.9-10.
[27] See Public Advocates Opening Comments pp.13-14.
[28] See SERC Opening Comments p.2.

E. Other (Questions 16-20)

In response to Question 18, many parties observe that while staff is correct in pointing out that avoided carbon emissions vary from project to project, findings from other programs show that BioMAT projects will categorically provide a net benefit in avoided GHGs.[29] This is clearly the case for fuel cell bioenergy projects. In light of this, FCE supports parties' recommendation that the Commission not establish a BioMAT program GHG emissions reduction standard. While fuel cell projects would presumably meet such a requirement, limiting unnecessary program requirements is a benefit to the objective of administrative simplicity.

With respect to criteria pollutant reduction, some parties comment that reducing criteria pollutants should be accounted for if possible. Some options raised in comments would include a preference or payment bonus for projects providing net criteria emissions reductions.[30] FCE supports these concepts, with the caveat that it will be important to administer them in a manner that is consistent with the goal of keeping program administration simple.

In response to Question 19's invitation for proposals to address program barriers and expand program participation, some parties recommend allowing flexibility to periodically adjust the PPA's guaranteed energy production.[31] FCE supports this recommendation. It is difficult to forecast fuel supply over the life of a project. Factors beyond the control of a small project developer can affect the initial projections for project output, and it makes sense to pragmatically account for this with a reasonable rule allowing adjustment. This will eliminate risk that could be a barrier for project development and financing.

Some parties recommend adopting a rule that would provide flexibility for fuel producers to structure projects to enable multiple uses of the biomethane fuel stream.[32] They point out that this would allow for optimization of the resource, and facilitate project development. FCE supports this recommendation.

III. Conclusion

FuelCell Energy appreciates the time and effort invested by staff in the program review and development of program modification concepts. As discussed above and in FCE's opening comments, a number of those proposals could address significant barriers that currently inhibit broader program participation. Bioenergy projects present unique challenges that need to be addressed in order for this promising renewable resource to grow and become sustainable at scale. Bioenergy projects also offer unique benefits and should be viewed as a separate, important part of the state's

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[29] AECA Opening Comments p.5; BAC Opening Comments pp.16-18; Bloom Opening Comments pp.10-11; Dairy Cares Opening Comments p.10; NFCRC Opening Comments pp.3-4.
[30] NFCRC Opening Comments p.5; Bloom Energy Opening Comments p.6-7.
[31] AECA Opening Comments p.5; Dairy Cares Opening Comments p.9.
[32] Dairy Cares Opening Comments p.9; AECA Opening Comments p.5-6.

portfolio of renewable resources. We look forward to working with staff and other parties to make the BioMAT program a success in coming years.

Sincerely,

Jennifer D. Arasimowicz
Senior Vice President, General Counsel and Corporate Secretary