FuelCell Energy
3 Great Pasture Road
Danbury, CT 06810
www.fuelcellenergy.com

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James McGarry
Renewable Energy Analyst
California Public Utilities Commission
James.McGarry@cpuc.ca.gov

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

Dear Mr. McGarry:

FuelCell Energy (FCE) appreciates this opportunity to comment on the BioMAT Program Review and Staff Proposal. As discussed below, FCE supports a number of the program modifications described in the Staff Proposal. While the BioMAT has provided opportunities for the development of some new bioenergy projects that may not otherwise have been possible, there is much more that can be accomplished through this important feed-in tariff program. FCE discusses its recommendations and responds to the Staff's questions below. We look forward to reviewing the comments of other parties, and working together to successfully implement modifications to make the BioMAT program more inclusive and successful.

Introduction and Summary Comments

FCE is in its 50th year of operation as a manufacturer and operator of clean fuel cell technology. Our fuel cells solutions are exported all over the world and we currently have over 300 MW of stationary fuel cells installed or in backlog on 3 continents, including 16 operating plants and 3 more under construction right here in California. In addition to electric-only and combined heat and power operating modes, our fuel cells are capable of cutting edge applications that represent the future of clean energy and the environment, including carbon capture and hydrogen generation applications.

FCE is actively involved in development and operation of BioMAT fuel cell projects. We developed and are in the construction of a BioMAT project at the City of Tulare wastewater treatment plant, which will run on the on-site anaerobic digester gas produced by Tulare. The Tulare project is expected to achieve commercial operation in March, 2019. We are also under contract with Toyota for the development and construction of a BioMAT project at the Port of Long Beach to be fueled by directed biogas that will produce electricity for sale under the BioMAT tariff and hydrogen for the fueling of Toyota's Mirai fuel cell vehicles and trucks offloaded and operated at the port.

FCE fuel cells are capable of operation using a variety of Category 1 and 2 fuel resources, including digester gas from wastewater treatment (such as with the Tulare project), municipal waste diversion, food processing waste, codigestion, dairy and agricultural biogas. Depending on the availability and reliability of on-site fuel supply, FCE fuel cell projects may operate primarily using on-site biofuel, or procure pipeline biogas in compliance with all applicable state statutory and regulatory requirements.

This Program Review and Staff Proposal is timely and necessary. FCE applauds the Staff for its thorough review and thoughtful proposals. In order to address barriers that have prevented development of successful bioenergy projects at the level originally contemplated for the BioMAT program, the Commission needs to look carefully at existing program design, and consider modifications consistent with statutory requirements and program objectives. The Program Review analysis is a very useful starting point, and identifies a number of issues that FCE believes should be discussed further and addressed.

From the perspective of a company trying to support development of renewable fuel cell projects eligible for BioMAT, FCE's primary challenges are the administrative burdens associated with executing on a BioMAT project. By way of example and not limitation, FCE as a small company is dependent on financing to construct its projects. FCE obtained financing for the Tulare project, and submitted the required consent form to SCE to close on its financing. Despite the consent being a form document attached to the PPA, FCE was advised that it would take 60 days to receive approval of the consent from SCE. FCE's lender was willing to close, making the consent a post-closing deliverable, but SCE advised that to do so would constitute a default under the PPA. The delay in obtaining this consent and the necessary financing has caused a delay in the project.

Additionally, and of greater import, FCE has very recently been advised by SCE that it does not consider projects operating on directed biogas to qualify under the BioMAT program because directed biogas is not a BioMAT-eligible fuel source. FCE's Toyota Long Beach project is a directed biogas project that could be delayed or jeopardized by this unsupported position. FCE is confident that this eligibility issue will be resolved, since SCE's position is not consistent with precedent and well-established program requirements. But issues like this can undermine confidence in the program, since developers, site hosts, and financial institutions rely on consistent interpretation and application of program rules. If the program is to be successful, FCE respectfully suggests that an expedited process for resolving these types of administrative issues be developed to ensure that approved projects are able to move forward in a timely manner. We provide more specific suggestions in the course of our comments below.

Response to Questions

FCE responds below to questions presented on the Staff Proposal related to Fuel Category 1 and 2 projects. We do not address every question at this time, but may offer supplementary comments or recommendations in reply comments.

1. Do you support the proposal to reduce the market depth requirement from five to three for unaffiliated applicants? Why or why not?

FCE does not support reducing the market depth requirement at this time, primarily because we see the small number of unaffiliated applicants within program categories as a symptom rather than a cause. The Commission should focus on addressing program design issues and eligibility requirements to expand opportunities for entry by a diversity of market participants and host customers rather than adjusting the market depth requirement. As the Staff points out, price changes that might lead to new projects have been delayed by the market depth trigger mechanism.[1] However, adjusting the market depth requirement does nothing to address more significant barriers to participation that could result in enabling higher participation and expanding participation by a broader range of viable projects. FCE also believes that the Commission should replace the current BioMAT adjusting price mechanism with a fixed price approach rather than trying to tinker with a mechanism that is not working for this market.

2. Do you support proposal 2 to revise when the BioMAT offer price moves up, moves down, and stays the same? Why or why not?

Proposal 2 may result in more responsive price adjustments, but it would not address the foundational issue, which is lack of certainty and the "chicken and egg" problem of trying to develop a bioenergy project without knowing if or when the pricing mechanism will adjust to a level that enables project development and financing. Biofuel projects present unique challenges, involve multiple parties, and often take longer to develop than conventional solar or fossil fuel projects. As discussed below, a fixed price approach would help address this problem.

3. Should the Commission transition to a fixed price feed-in-tariff instead of the price adjusting mechanism? Why or why not?

Yes. FCE strongly encourages the Commission to transition to a fixed price feed-in-tariff instead of the price adjusting mechanism. From our experience a fixed price feed-in tariff is preferable to the price adjusting mechanism because it provides price security over the period during which a biofuel project is engaged in the complex process of project design and financing. To avoid concerns about overpayment, the Commission could create a periodic review or review trigger mechanism and consider subdividing the fuel categories by project type and technology.

4. Should the Commission transition to a renewable auction mechanism instead of the price adjusting mechanism? Why or why not?

No, the Commission should not transition to a renewable auction mechanism. Reversion to a conventional auction would undermine the fundamental purpose of creating a feed-in-tariff for distributed bioenergy projects in the first place. As a developer of 1 – 20 MW fuel cell projects, FCE has learned from first-hand experience in California and elsewhere that renewable auction processes designed for other renewable technologies, and larger-scale projects nearly always exclude fuel cell and emerging technology projects. This is not intentional, but a result of program design elements that do not work well for fuel cells, or for that matter, most bioenergy-fueled projects. FCE further believes that a renewable auction

[1] Staff Proposal p.13.

mechanism would put too much downward pressure on agricultural waste fuel suppliers, which would cause them to abandon the conversion of waste to fuel.

5. Should the Commission consider changes to the BioMAT definition of "unaffiliated applicants" to better ensure that projects with common developers count as affiliated for the purpose of determining market depth? Why or Why not? If so, please explain what the changes should be.

No, the Commission should not change the BioMAT definition of "unaffiliated applicants". As discussed in our response to question #3 above, FCE strongly encourages the transition to a fixed-price tariff and eliminating the price adjusting mechanism. All of the related market depth requirements should remain the same as the current BioMAT definition.

6. As noted in Staff's observations on page 7, BioMAT offer prices are now sufficiently high to encourage price acceptance and project development within each category. This raises a concern that even small price adjustments in the future could lead to ratepayer overpayment for projects willing to execute contracts at lower PPA prices, and offer prices that are too low for other projects that need higher PPA prices. For example, a project developer willing to execute a contract for an additional $4/MWh would receive an $8/MWh windfall if the offer price increases by $12/MWh. Should the Commission consider changes to simplify the price adjustment mechanism and allow for more granular pricing (e.g. revise the price adjustment amount to $4 per MWh, rather than the current system of $4, $8, and $12)? Please explain.

As discussed in our response to question #3 above, to avoid concerns about overpayment, the Commission could create a periodic review or review trigger mechanism and consider subdividing the fuel categories by project type and technology.

8. Do you support proposal 3 to adopt BioMAT queue management procedures for the BioMAT program? Why or why not?

FCE supports the objective of this proposal. It is not in the interest of the program or other project developers to allow ineligible projects to remain in the queue. It is each utility's responsibility to review project applications and exclude projects that do not meet program requirements. Periodic review, or a requirement to submit annual affidavits could help ensure that only eligible, viable, projects remain in the queue. We have a concern, however, about establishing penalties without appropriate safeguards to: 1) ensure that the utilities are applying eligibility criteria consistently; and 2) providing due process in the event a utility finds a project ineligible. FCE has experienced inconsistency between the utilities' interpretation of what we consider straightforward program requirements (see discussion in introduction above and in response to question #19). Therefore, we would urge the Commission to

establish an expedited appeal process if a program administrator is authorized to police the queue and apply penalties to project developers for failure to meet notification requirements or project eligibility.

9. Do you support the proposal to set a 30-day deadline to execute contracts after the program participant accepts the offered price and provides all necessary information to the IOU? Why or why not?

FCE supports a deadline to execute contracts, and believes that 30 days is probably workable. However, similar deadlines should be established for the utilities to execute and return necessary documents as well (see discussion above re consent).

10. Do you support the proposal to extend the current program end date for an additional five years, from February 2021 to February 2026? Why or why not?

Yes, FCE supports program extension. The overall goals of the program have not yet been met, and, as this proceeding reflects, the mechanics of the program are still being worked out. Interested participants should be provided with time to take advantage of the program once all the mechanics are reviewed, finalized and implemented.

11. Do you support the proposal to extend a project's Guaranteed Commercial Operation Date by 12 months if it fails to interconnect by the PPA's Guaranteed Commercial Operation Date due to delays beyond the Seller's reasonable control? Why or why not?

FCE supports this proposal, but recommends that it be revised to further provide that in the event the delay extends beyond 12 months from the project's Guaranteed Commercial Operation Date due to reasons beyond the Seller's reasonable control, the Guaranteed Commercial Operation Date will be further extended on a day-to-day basis until the interconnection delay is resolved. If the Commission wants to encourage and facilitate the financing of BioMAT projects, it needs to provide a reasonable degree of regulatory certainty. While a 12 month extension would be an improvement over the current 6 month allowance, there is no reason the Commission should not also clarify that a viable project will not be terminated simply because an interconnection delay beyond its control has extended beyond a pre-determined 12 month extension allowance. Such a provision makes construction financing extremely difficult.

12. Do you support the proposal to remove the three MW cap on payments via BioMAT PPAs for facilities larger than three MW? Why or why not?

a. Do you believe that the Commission can implement this change under existing statutory authority, or would legislation be required to enable BioMAT PPAs for capacities greater than three MW?

FCE supports removal of the 3 MW cap on payments via BioMAT PPAs in order to take full advantage of available and developing technologies. For example, FCE's newly launched SureSource 4000 high efficiency fuel cell is a 3.7 MW unit that has electric only efficiency of 60%. FCE does acknowledge that, due to the statutory 3 MW limit on project deliveries legislation is probably required to enable this change.

13. Do you support the proposal to allow incremental generation from existing units to be eligible for the BioMAT program? Why or why not?

FCE supports the proposal to allow incremental generation from existing units to be eligible for the BioMAT program.

18. Achieving pollution and GHGs reductions was an original goal of BioMAT. However, whether or not individual projects reduce net lifecycle emissions depends on project-specific factors. Do you think that the Commission should establish a requirement that facilities reduce emissions as a condition for BioMAT eligibility? In your response, please explain how such a program requirement would complement or not complement the work of other state or local agencies that regulate or provide grants to BioMAT-eligible facilities.

a. Would you support a proposal requiring that in order to be eligible for BioMAT, a project must demonstrate that it will result in net GHG emissions reductions based on the GHG quantification methodologies and accompanying calculator tools developed by CARB that are discussed on pages 12-13, or a customized calculator tool developed by the CPUC? Please explain.

FCE supports requiring that all projects result in net GHG emissions reductions, but believes that a customized calculator should be developed by the CPUC. CARB is still in the process of trying to develop a GHG emissions tool to apply to the fuel cell net energy metering tariff and the process has presented some challenges and delays.

b. Are there other established emissions quantification tools or methodologies that the Commission should consider to establish that BioMAT projects will result in net emission reductions? Please explain.

While reducing GHG emissions is an important goal, and a statewide policy priority, the Commission should also seek to maximize reduction of criteria air pollutants. Air pollution has very real impacts on public health. California cities and counties routinely rank as the worst in the nation, contributing to Californian's asthma, respiratory illnesses, heart disease and lost days of work. In order to ensure that BioMAT projects are designed to minimize criteria pollutants, FCE would support establishing a threshold eligibility requirement that projects meet best available technology standards, such as CARB 2007 Distributed Generation standards for NOX, CO, and VOCs.

19. Are there additional actions the Commission should take to address program barriers and expand program participation? Please explain your proposal(s) and provide rationale.

FCE has the following additional recommendations to address program barriers and expand program participation:

- <u>Address program reporting to eliminate unnecessary and burdensome reporting standards</u>.

The following represents an example of what FCE views as unnecessary or burdensome reporting requirements:

- Forecasting penalties of 150% are levied outside a performance tolerance band of +/-3%. These facilities are small capacity, thus the +/- 3% tolerance equals +/- 90 kW for a 3 MW facility.
- As noted in the Staff proposal, "At least eight projects in Category 2 are co-located with renewable compressed natural gas (CNG) projects for vehicle fuel, and many more renewable CNG projects are under development that could potentially be eligible to use a portion of their biogas to pursue electricity generation through Category 1 and Category 2."
- The overly stringent tolerance of less than +/- 90 kW and the 150% penalty prevents a co-located BioMAT project from reasonably powering any cyclical loads typical of renewable CNG projects, battery electric vehicle chargers or renewable hydrogen projects.
- The tolerance band should be increased to +/- 500 kW to enable a greater number of co-located renewable CNG, battery electric vehicle chargers and renewable hydrogen projects.

- <u>Re-affirm that directed biogas is an eligible fuel, provided that it meets applicable program and RPS eligibility requirements.</u>

As briefly noted in the Introduction, one IOU has recently raised questions as to the eligibility of pipeline biogas as a fuel source for BioMAT projects. We will seek a resolution of this issue under the existing program rules. However, for the elimination of ambiguity, it would be useful to include a clarifying statement on the eligibility of pipeline biogas in the forthcoming program revision.

To briefly explain, SCE's suggestion that renewable pipeline biogas that conforms to BioMAT fuel category requirements and other applicable rules is not an eligible fuel is not supportable under current program rules and documents. The pro-forma BioMAT power purchase agreement at Section 4.3.13 explicitly refers to pipeline biogas requirements:

> ("[The Biogas purchased for use at Seller's Facility complies with all applicable pipeline tariff rules, including, if any, quality specifications;] {SCE Comment: This Section 4.3.13 is only applicable to pipeline biomethane Projects.}")

This language was expressly approved in the 2015 decision approving the original BioMAT pro forma power purchase agreement. <u>See</u> D.15-09-004, pp 28-29. In that Decision, the Commission explicitly recognized that there could be a qualifying pipeline BioMAT-eligible project. <u>Id</u>.

Additionally, in the course of project development, FCE has previously confirmed with SCE's BioMAT program manager that all RPS eligible biogas sources, including directed biogas, are allowable under the BioMAT program so long as the biogas is derived from one of the listed BioMAT categories. FCE has received similar confirmations from PG&E. Indeed, PG&E's online Factsheet concerning BioMAT also confirms that projects sourcing biogas via common carrier pipeline (*i.e.*, directed biogas) are eligible. And FCE has confirmed with the CEC that it may obtain pre-

certification of a directed biogas project as a renewable resource using pipeline biogas. This is consistent with the latest CEC Guidebook for RPS Eligibility (Ninth Edition), which includes provisions for biomethane delivered through a common carrier pipeline, further confirming that directed biogas is an eligible fuel for the BioMAT program.

While our request for re-affirmation of the eligibility of directed biogas will help provide regulatory certainty for this program going forward, it is also important from a policy perspective. Concluding that directed biogas is somehow not an eligible renewable fuel could have ramifications beyond the BioMAT program. The administrators of the SGIP program have been providing enhanced capital cost incentives (the Renewable Fuel Adder) to projects using directed biogas for many years, on the assumption that directed biogas is an eligible fuel (as indicated in the SGIP handbook). Also, most of the renewable hydrogen being delivered to fuel cell electric vehicles in California is produced in steam methane reformers using directed biogas. The fuel meets the CEC requirement that a percentage of the State's hydrogen fuel be renewable, and it also qualifies for incentives such as the low carbon fuel standard (LCFS). Also, gas companies in California and around the world are looking at greening their gas grids with renewable biomethane. Determining that directed biogas is not an eligible renewable fuel would make these efforts moot. A conclusion that directed biogas is not an eligible renewable fuel would impact many renewable energy efforts far beyond the BioMAT program.

20. Do you anticipate any challenges transitioning from the existing BioMAT program to a program that incorporates any of the changes under consideration? Explain the challenge(s) and provide a proposal to address the challenge(s).

FCE appreciates the opportunity to submit these opening comments on the Staff Proposal.

Sincerely,

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