Public Advocates Office

Public Advocates Office
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102

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CPUC Energy Division
505 Van Ness, Avenue
San Francisco, CA 94102
James.McGarry@cpuc.ca.gov

Subject: Informal Comments of the Public Advocates Office regarding Bioenergy Market Adjusting Tariff Program Review and Staff Proposal

INTRODUCTION

The Public Advocates Office at the Public Utilities Commission (Cal Advocates), formerly the Office of Ratepayer Advocates,[1] respectfully submits these informal comments in response to Energy Division staff's Bioenergy Market Adjusting Tariff (BioMAT) Program Review and Staff Proposal (Staff Proposal), which was sent to the Rulemaking (R.) 18-07-003 service list on October 30, 2018.

DISCUSSION

Pricing Mechanism

Question 1: market depth requirements

The Public Advocates Office agrees with the Staff Proposal recommendation to lower the BioMAT program's market depth requirement for offer price adjustments from five unaffiliated project applicants to three unaffiliated project applicants,[2] because the BioMAT market is not large enough to supply sufficient quantities of project applicants into BioMAT's technology category queues to trigger price changes.

Current BioMAT rules feature a market depth requirement for price adjustments that stipulates that the BioMAT offer price for each bioenergy technology category increases or decreases when

[1] The Office of Ratepayer Advocates was renamed the Public Advocates Office for the Public Utilities Commission pursuant to Senate Bill No. 584, which was signed by the Governor on June 27, 2017 (Chapter 51, Statutes of 2018).

[2] Staff Proposal, p. 13.

there are a certain number of unaffiliated project applicants in each respective category's program queue. Specifically, before the first contract price is accepted by an applicant in a technology category, market depth rules require only the presence of three unaffiliated applicants in that category's queue to trigger price changes.[3] After that first contract price is accepted, market depth rules then require the presence of five unaffiliated applicants in a technology category's queue to trigger price changes.[4] The intent behind these market depth rules is for BioMAT market activity to continuously adjust the BioMAT offer price to a level that is both the lowest cost for ratepayers and that encourages project development.

However, BioMAT offer prices have remained stagnant over the past year because BioMAT technology category queue levels have remained below the market depth levels needed to trigger price changes. As a result of the low project applicant levels in the BioMAT queues, combined with the current market depth for price adjustment rules, all BioMAT technology categories are experiencing offer prices that have remained stagnant for over a year. The last price changes for the Dairy and Other Agricultural bioenergy sub-categories in Category 2 occurred in August and October of 2017.[5] The last price change to occur in Category 3 was also in October 2017.[6] The offer prices for BioMAT Category 2 and 3 technologies are very close to, or have already reached, the BioMAT program "soft cap"[7] of $197 / MWh.[8] Meanwhile, Category 1 offer prices have never experienced a price change.[9] Finally, although BioMAT offer prices steadily rose for Category 2 and 3 until the dates noted, none of the technology categories have ever experienced a price decrease.[10]

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[3] Staff Proposal, p. 3.

[4] Staff Proposal, p. 3.

[5] BioMAT program activity is regularly updated each program period on each investor owned utility's (IOU) respective BioMAT program website through reports detailing pricing history, program capacity, applicant queue levels, and awarded contract status. These websites can be found at: https://pgebiomat.accionpower.com/biomat/documents.asp?Col=DateDown, https://scebiomat.accionpower.com/biomat/documents.asp?Col=DateDown, and https://sdgebiomat.accionpower.com/biomat/documents.asp?Col=DateDown.

[6] IOUs' respective BioMAT websites, see footnote 5.

[7] Director of Energy Division is authorized to initiate a BioMAT program review if the price for any BioMAT technology category reaches $197 / MWh and remains at that price, or increases, over two program periods. Director of Energy Division is also authorized to temporarily suspend the awarding of contracts in any technology category that is under review because the price has reached the review trigger. Decision (D.) 14-12-081, p. 62.

[8] IOUs' respective BioMAT websites, see footnote 5.

[9] IOUs' respective BioMAT websites, see footnote 5.

[10] The Category 2 "Other Agricultural" sub-category price was administratively adjusted downwards in February-March 2017 (program period 7) because of an ineligible project applicant in its technology queue that caused an inappropriate price increase. See Southern California Edison Company's (SCE) Advice Letter 3621-E. BioMAT price history is available at IOUs' respective BioMAT websites, see footnote 5.

Given the present level of activity in the BioMAT market, combined with the current market depth requirement for price adjustments, it is unlikely that there will ever be enough applicants to fill BioMAT queues with the five unaffiliated projects needed to trigger price changes. Quite simply, the BioMAT program is not working as intended. Therefore, the market depth requirement should be lowered in order to enable future price adjustments. As discussed above, BioMAT queues across all technology categories have experienced low applicant levels throughout the program's history. Complicating matters, prices are high enough that there has been offer price acceptance in all technology categories and it is likely that project subscription will continue in the future. Even if the rate of future price acceptance and project uptake is slow, these projects will leave their respective BioMAT queues and will reduce applicant levels in queues that are already experiencing low applicant levels. In addition, various modifications to the BioMAT program that were undertaken to facilitate project development have not resulted in increased participation in the BioMAT queues. For example, Decision (D.) 16-10-025 expanded BioMAT-eligible fuel sources for Category 3 facilities to include fuel obtained from High Hazard Zones (HHZ), accelerated program periods for Category 3 facilities so that they could accept optimal offer prices faster, and adjusted interconnection rules to make interconnection easier. D.17-08-021 increased project size limitations in order to capture a wider pool of potential projects. Despite these modifications, BioMAT queue levels have remained low. Recent BioMAT modifications adopted in D.18-11-004 are intended to further facilitate interconnection processes for BioMAT projects. However, it is too early to determine if these latest modifications will significantly increase project development and increase BioMAT queues. At this point, it is unclear if continually low BioMAT queue levels are either the result of unresolved barriers to project development, or if there are relatively minimal barriers to project development, and the low queue levels are a result of the BioMAT market being too small to begin with, i.e., there is not enough interest and/or activity in the wider bioenergy market to fill BioMAT queues at levels needed to trigger price changes under current rules. Either way, given the ongoing trend of low BioMAT queue levels, lowering the market depth requirement from five unaffiliated applicants to three unaffiliated applicants will make it easier for market activity to result in future price adjustments.

Question 2: price change mechanism

The Public Advocates Office supports the Staff Proposal's recommendation to revise the BioMAT pricing mechanism because the current design of the pricing mechanism is unsuitable for the low level of activity that has been experienced in the BioMAT market. The BioMAT price adjustment mechanism should be revised as outlined in proposal 2 of the Staff Proposal[11] so that is easier for offer prices to adjust given the current rate of BioMAT market activity.

The current BioMAT price adjustment mechanism is flawed in that it is too difficult for project prices to adjust downward under the market conditions that have persisted throughout the life of the BioMAT program. Pricing mechanism rules stipulate that offer prices can only adjust downward if the total capacity of projects accepting an offer price is 100% of the statewide

[11] Staff Proposal, p. 14.

capacity being offered in a program period.[12] To date, BioMAT offer prices across all technology categories have never decreased because their respective statewide capacity allocations have never been subscribed at 100% in program periods where there have been price acceptances. If the statewide allocation of capacity available in each program period is between 9-15 megawatts (MW) for each technology category,[13] and if BioMAT activity continues along its historical trends— i.e., low queue levels and slow offer price acceptance, it is very possible that offer prices will never adjust downward. Further, even if BioMAT market activity increases significantly, it would still be very difficult for offer prices to adjust downward. For example, if 12 MW of Category 2 capacity is available statewide in a program period, and five Category 2 projects of 2 MW capacity each,[14] totaling 10 MW overall, accept offer prices, this will result in a project subscription rate of 83%. For BioMAT to date, an 83% project subscription rate represents significant market activity, but in this example the offer price would not be permitted to adjust. If the design intent of the pricing mechanism is that the market price should lower when there is a substantial level of project development in the market, given the small size of the BioMAT market and the slow pace of project development, the pricing mechanism must be redesigned to reflect the current nature and potential of the market so that prices have an easier time adjusting downward.

The current pricing mechanism also presents an increased risk for gaming of BioMAT prices. Both the Staff Proposal and Pacific Gas and Electric Company (PG&E) have noted that the BioMAT market features a small number of developers who have stakes in a large share of the projects under development.[15] The design of the current pricing mechanism leaves open the possibility that if developers decided to collude, they could slowly add projects into BioMAT queues at a pace below the market depth requirement level or accept contracts at levels below the 100% statewide capacity allocation requirement, and thus prevent offer prices from decreasing while permanently locking in high prices. In addition, since offer prices increase when 20% or less of the statewide capacity is subscribed in a program period,[16] in the case of a 15 or 12 MW statewide capacity allocation for Category 1 and 2 technologies, it is possible to cause price increases by slowly accepting offer prices in a manner where only 2 MW or less of total capacity (20% or less of statewide capacity) in a program period is contracted. The risk of market manipulation in this manner is also significant since BioMAT is a program intended to benefit

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[12] Staff Proposal, p. 4.

[13] In each program period, there are 15 MW of Category 1 capacity, 12 MW of Category 2 capacity, and 9 MW of Category 3 capacity available for contracting. See D.14-12-081 and "Appendix M: Joint IOU Statewide Pooled Pricing Administration", p. 3, accessed at PG&E's BioMAT website: https://pgebiomat.accionpower.com/biomat/documents.asp?Col=DateDown

[14] The average BioMAT contract capacity size is approximately 1.5 MW. Calculation based on awarded contract information accessed on IOUs' BioMAT websites. See footnote 5.

[15] Staff Proposal, p. 8. "Motion of Pacific Gas and Electric Company to Suspend BioMAT Program Procurement", dated Dec. 1, 2017, p. 7.

[16] Staff Proposal, p. 4.

small projects[17] –the average BioMAT contract size so far is approximately 1.5 MW,[18] and 16 of the 22 executed BioMAT contracts feature contract sizes ranging between 0.8 MW and 2 MW.[19] Proposal 2 of the Staff Proposal makes it easier to adjust offer prices when there is substantial market activity and more appropriately reflects the dynamics of the BioMAT market that have been experienced so far. According to the proposed new pricing mechanism in proposal 2, the offer price decreases when market depth requirements are met and at least two price acceptances have occurred at a given offer price in any program period or series of periods.[20] This eliminates the 100% statewide capacity allocation subscription requirement for price decreases that was unlikely to be met given the state of the BioMAT market. The simplification of the price mechanism will allow prices to more easily decrease because only two price acceptances at a given offer price across multiple program periods are necessary to decrease the price, as opposed to achieving enough price acceptances to equal the relatively high statewide capacity allocation targets of a single program period. This new rule will also foster more competitive behavior, because if a first price acceptance occurs at a given offer price, developers will be more compelled to accept the second price offer, if suitable, rather than risk the chance that the offer price decreases to a level that is unacceptable. In addition, the proposed new pricing mechanism eliminates market manipulation situations where slow price acceptance rates of less than 100% of the statewide capacity allocation requirement are executed in order to prevent prices from decreasing.

Under the proposed new pricing mechanism in proposal 2, offer prices increase if market depth requirements are met and there are no price acceptances for two consecutive program periods.[21] Also, the proposed mechanism will maintain the offer price if market depth is not achieved, or if there has been one price acceptance in one of two consecutive program periods at a given offer price.[22] Along with the new rule for price decreases that was discussed in the preceding paragraph, these new rules also provide a balanced approach to price adjustments by enabling offer prices to easily increase if they are too low for project applicants in a BioMAT queue (if market depth is achieved), and allow for prices to stay the same if there is low participation in a queue or slow price acceptance. Finally, by eliminating the rule that allows offer prices to

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[17] D.14-12-081, p. 6, states "[d]uring the legislative consideration of SB 1122, the author's rationale for the new bioenergy mandate was that bioenergy provides resource diversity and environmental benefits, but the FiT as implemented by the Commission at that time did not offer small bioenergy generation resources a fair chance to compete for contracts under the FiT." Under BioMAT rules, project sizes cannot be greater than 3 MW.

[18] Calculation based on awarded contract information accessed on IOUs' BioMAT websites. See footnote 5.

[19] Calculation based on awarded contract information accessed on IOUs' BioMAT websites. See footnote 5.

[20] Staff Proposal, p. 14.

[21] Staff Proposal, p. 14.

[22] Staff Proposal, p. 14.

remain the same if between 20% and 100% of the statewide capacity allocation is subscribed in a program period,[23] the possibility of price manipulation is eliminated.

Question 3: fixed-price feed-in tariff vs. market adjusting feed-in tariff

The Public Advocates Office opposes the Staff Proposal's alternate proposal for a fixed price feed-in tariff[24] instead of a price adjustment mechanism because establishing fixed prices that are administratively determined would run counter to the goal of developing a competitive market for small bioenergy projects and would result in further delay of achieving the goals of Senate Bill (SB) 1122.

Creating a fixed price feed-in tariff would eliminate the competitive market structure of the BioMAT program that is necessary to achieve the program's stated goal of market transformation. The Author's Statement in SB 1122 declares that "the intent of SB 1122 is to unleash a growth spurt in California's biopower market."[25] According to the Staff Proposal, "a competitive market structure was designed [for BioMAT] to facilitate lower costs to utility customers and encourage market transformation."[26] Market transformation cannot take place if the dynamics necessary for the establishment of a healthy market are taken away. These dynamics include competition amongst sellers where market prices are continually adjusted based on market activity. An administratively set fixed price would eliminate these dynamics. Also, fixed prices do not continuously reflect both the lowest cost for ratepayers and prices that encourage project development. If not approached carefully, setting a fixed price that is too high or too low can either place unnecessary cost burdens on ratepayers or discourage project development.

Replacing BioMAT's pricing mechanism with fixed prices would push the BioMAT program more in the direction of a subsidy for expensive electricity that is currently unneeded,[27] rather than in the direction of establishing a standalone bioenergy market with competitive prices where the program's objectives can be achieved "cost effectively without the need for supplemental funding or mandates."[28] Further, the BioMAT program does not require further subsidizing since many BioMAT projects have already taken advantage of grant funding. The Staff Proposal points out that among the 22 BioMAT contracts that have been executed so far, there have also

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[23] Staff Proposal, p. 4.

[24] Staff Proposal, pp. 14-15.

[25] D.14-12-081, p. 7. SB 1122 requires the procurement of small bioenergy projects, which the Commission implemented through adoption of the BioMAT program.

[26] Staff Proposal, p. 5.

[27] According to the draft updated renewables portfolio standard (RPS) procurement plans filed by the IOUs on October 8, 2018, the IOUs are exceeding their RPS targets and, after applying banked renewable energy credits (RECs) to their RPS compliance requirements, do not have need to procure additional renewables until after 2030.

[28] Staff Proposal, p. 6.

been 21 grants for funding distributed among them.[29] These grant programs will also continue to offer grants for projects in the future.

Establishing a fixed price for BioMAT at this point in the program would also be time-consuming and costly. First, a stakeholder review process would be required to ensure that the fixed prices are fair for all affected stakeholders, including consideration of a suitable methodology to establish a fixed price. The time and effort expended to accomplish this task would most likely exceed the Staff Proposal's projected timeline of issuing a final Staff Proposal in Q1 of 2019 and issuing a proposed decision in Q2 of 2019 and would further delay the completion of the BioMAT program review. Second, and complicating matters further, because there are four separate technology categories in BioMAT whose operating characteristics, technology, and costs vary, instead of establishing a single fixed price, the Commission would have to establish four separate fixed prices for the four categories to accurately and fairly value the attributes of each technology. This could prove to be even more time consuming.

Implementing fixed BioMAT prices would also require the regular review and revision of these prices in order to ensure that the prices reflect the bioenergy market. It is unclear if a regular review of fixed prices would be less time consuming and costly than the present time and effort spent to administer the current BioMAT program. The intent of a market adjusting tariff is that it adjusts to reflect the market automatically, rather than requiring frequent expenditure of significant stakeholder time for review and revision of prices. If the Commission adopts the changes supported and recommended in our comments, the BioMAT program should hopefully function as intended.

Question 4: renewable auction mechanism vs. price adjusting mechanism

The Public Advocates Office opposes the Staff Proposal's alternate proposal to transition BioMAT to a renewable auction mechanism (RAM) format[30] because there is no evidence that a RAM format would bring about increased project contracting, result in more competitive prices, or streamline the bioenergy procurement process. If BioMAT participation is low because of barriers to project development, transitioning to a RAM format will not necessarily address these issues. The benefit of the RAM format is that it streamlines the project selection and negotiation process through standardized contracts. It does not necessarily streamline project development. Given the history of low participation in BioMAT queues and the slow rate of project contracting, and the fact that BioMAT offer prices have been accepted in each category, it is likely that RAM solicitations would also result in low project bidder turnouts. It is also unclear if administering a series of RAM solicitations, whether annually or several times throughout the year, would require less time and effort than the time and effort spent administering the current BioMAT program. The current BioMAT procurement format features an automatic mechanism to discover market-based prices and select projects, standardized contracts, and important ratepayer protections. To better address the challenges of the BioMAT program, the

[29] Staff Proposal, p. 8, Table1 and p. 12, Table 2.

[30] Staff Proposal, p. 15.

Commission should reduce the market depth requirement and simplify the price adjustment mechanism, as outlined in the Staff Proposal, in order for prices to change easier, rather than transition to a RAM format.

Question 5: definition of "unaffiliated applicants"

The Public Advocates Office recommends that the Commission revise the BioMAT definition of "unaffiliated applicants" so that projects with a common developer count as "affiliated" for the purposes of determining market depth. Considering common developers as "affiliated" will serve to protect ratepayers from paying unnecessary premiums for any high-priced BioMAT contracts that are the result of the gaming of BioMAT's price adjustment mechanism to artificially increase BioMAT offer prices. In its motion to suspend the BioMAT program, PG&E noted that "three of the four pricing category queues in the BioMAT program include several projects that share family members and/or common developers."[31] Similarly, the Staff Proposal discussed the concern that "with a small number of developers having a stake in a large share of the projects under development across several categories, there is the potential that individual developers could manage market depth and price acceptances to influence the offer price under current program rules."[32] Under the current format of the BioMAT pricing mechanism, there are several ways in which a project developer with multiple projects under development or a group of independent project owners acting in collusion could manipulate BioMAT queues in order to drive up offer prices. First, if one of these entities desired to lock-in an offer price that was favorable or high, it could prevent the offer price from decreasing by slowly adding its projects into a BioMAT queue at a pace that resulted in the market depth requirement for price changes not being met in each program period. Further, such entities could also slowly accept offer prices for their projects at a rate where the 100% statewide allocation subscription rate is unfulfilled, and prices cannot decrease. On the other hand, if these entities entered multiple projects into the BioMAT queue at levels where the market depth requirement for price adjustments is met, they could decide not to accept offer prices for their projects and cause the price to go up. Current BioMAT rules combined with the current nature of BioMAT project ownership and development present a significant risk that ratepayers could be overcharged for electricity from BioMAT contracts that resulted from market manipulation. Therefore, it is reasonable to revise BioMAT's "unaffiliated applicant" rules so that in situations where a single, or common, developer submits multiple projects into a BioMAT queue, all of the developer's projects in that particular queue count as a single project, or application, for market depth requirement purposes.

Question 6: increments of price adjustments

The Public Advocates Office recommends that the Commission simplify the BioMAT price adjustment mechanism so that offer prices increase or decrease by +/- $4 whenever price changes

[31] "Motion of Pacific Gas and Electric Company to Suspend BioMAT Program Procurement", dated Dec. 1, 2017, p. 7.

[32] Staff Proposal, p. 8.

are triggered. Smaller and standardized price increments are better able to reflect current market values of bioenergy projects and will prevent ratepayers from being overcharged for electricity when BioMAT projects receive a windfall as a result of unstandardized and large price increases under the current pricing mechanism. Similarly, establishing smaller, standardized price increments will serve to prevent offer prices from dropping too far below the price level that stimulates project development when prices decrease.

Under the current price adjustment mechanism, prices adjust by an increment of +/- $4 if price adjustment requirements have been met for one consecutive program period, then adjust +/- $8 if price adjustment requirements have been met for two consecutive program periods, and then adjust by +/- $12 if price adjustment requirements have been met for three or more consecutive program periods.[33] These unstandardized price increments could enable projects to receive excessively large windfalls that do not accurately represent the market price for bioenergy. Under the current pricing mechanism, for example, suppose that the BioMAT offer price in a program period is $36 / MWh and suppose that a project can accept an offer price of $41 / MWh. If the conditions for a price increase are met, for the first price adjustment, the price increases by $4 to $40 / MWh, but the project cannot accept the offer price because it is $1 short of its $41 target price. If conditions for a second price increase are met, the price increases by $8 to $48 / MWh, which causes the project to receive a windfall of $7 instead of $3 if the price increased by only $4 and the new offer price were $44 / MWh. At $12 increments, potential windfalls for projects would further increase, and the market value of bioenergy projects would be further distorted, to the continuing detriment of ratepayers who would pay unnecessary premiums for this electricity. Complicating matters in this example, given the history of low participation levels in the BioMAT queues and the slow rate of price acceptances, all subsequent projects that join the queue are likely to also receive this windfall because it will be very difficult to refill queue levels to conditions that trigger price decreases (to date, no BioMAT queue has experienced a price decrease). Finally, using the same example, and imagining price decreases instead, could also cause offer prices to drop too far below the price level that stimulates project development.

It is the varied price change increments of $4, $8 and $12 that caused BioMAT prices to quickly accelerate to match, or be one increment away, from reaching the BioMAT "soft" price cap of $197 / MWh in the first year and half of the program. Low queue participation and slow price acceptances combined with other price adjustment rules then caused offer prices to remain stuck at these levels without any price changes throughout the second year of the program.

Standardized price increments, at no more than $4 per increment, would better reflect market prices for bioenergy and would protect ratepayers from bearing the unnecessary costs of excessive windfalls while protecting project developers from offer prices dropping too far below project development costs.

Question 7: other pricing proposals

[33] Staff Proposal, pp. 3-4.

No response.

Program Administration

Question 8: BioMAT queue management procedures

The Public Advocates Office supports the Staff Proposal's recommendation of applying the modifications that were approved for SCE's BioMAT queue management procedures to the other utilities because the modifications feature important protections against BioMAT market malfunction or manipulation. The modifications outlined in proposal 3 of the Staff Proposal require a process for continuous attestation that a project applicant is eligible for the BioMAT program, in addition to penalties for failure to report eligibility status.[34] These modifications were developed by SCE and approved by the Commission after it was discovered that an ineligible BioMAT project applicant caused an inappropriate price increase because it remained in its respective BioMAT queue after becoming ineligible.[35] The modifications in proposal 3 are necessary because the presence of ineligible projects in BioMAT queues would damage the proper functioning of BioMAT's market-based pricing mechanism. For example, without these modifications the presence of ineligible project applicants in BioMAT queues could result in overpayment for ratepayers in the case of inappropriate price increases or discourage project development in the case of inappropriate price decreases.

Question 9: 30-day contract execution deadline

No response.

Question 10: BioMAT program end date

Since the IOUs are exceeding their RPS requirements and because of the high cost of bioenergy, the Public Advocates Office recommends that the BioMAT program's end date should not be extended unless the Commission determines that BioMAT substantially contributes to the achievement of other statewide climate, waste diversion, and public safety goals. According to the IOUs' recently filed RPS plans, the IOUs are exceeding their long-term RPS goals and do not have a need to procure incremental renewables until after 2030.[36] This surplus of renewables extends past BioMAT's currently established end date of 2021 and past the Staff Proposal's

[34] Staff Proposal, p. 15.

[35] The Category 2 "Other Agricultural" sub-category price was administratively adjusted downwards in February-March 2017 (program period 7) because of an ineligible project applicant in its technology queue that caused an inappropriate price increase. See Southern California Edison Company's Advice Letter 3621-E.

[36] According to the draft updated RPS procurement plans filed by the IOUs on October 8, 2018, the IOUs are exceeding their RPS targets and, after applying banked RECs to their RPS compliance requirements, do not have need to procure additional renewables until after 2030.

proposed 2026 end date for the extension of the BioMAT program.[37] Since ratepayers do not have long-term need for renewable energy for state RPS goals, and since bioenergy is also generally more expensive than other resources such as solar or wind, other justifications for extending BioMAT are required. The Staff Proposal identifies statewide goals that BioMAT "*can*" help to achieve, or "*could*" support such as organic waste diversion, methane reduction, short-lived climate pollutants reduction, and tree mortality and wildfire mitigation.[38] However, no determination has been made thus far on whether BioMAT is having a substantial impact on achieving these goals. Until such a determination is made, the question of whether BioMAT should be extended should be postponed.

If program participation improves and it is determined that BioMAT is making a substantial contribution to these state goals and the program is extended, BioMAT should only be extended by a maximum of three years and not by an additional five years. The BioMAT program has an initial duration of five years. Three years is sufficient time for an extension because BioMAT has already experienced some momentum in its first two and half years of operations; BioMAT has already resulted in price acceptances in all technology categories and will most likely continue to result in more price acceptances in the remaining two and a half years of the program (even while the current review of the BioMAT program is completed). In addition, the proposed modifications to the BioMAT pricing mechanism should make program subscription easier. Finally, three years would minimize the administrative costs incurred by the Commission and IOUs of running the BioMAT program.

Question 11: interconnection delays & commercial operation dates

No response.

Program Eligibility

Question 12: expansion of BioMAT facility capacity

The Public Advocates Office agrees with the Staff Proposal analysis that removing the three MW cap on capacity will simplify the procurement process and enable utilization of more fuel at facilities, because it could result in lower program costs.[39] However, the Public Advocates Office does not consider this a feasible option at this time.

Legislation would be required to enable BioMAT contracts for capacities greater than three MWs. Public Utilities Code Section 399.20 (b) defines eligibility criteria for the Feed-in Tariff (FiT). An electric generation facility must have:

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[37] Staff Proposal, p. 16.

[38] Staff Proposal, pp. 5-6, 9-12.

[39] Staff Proposal, p. 17.

> An effective capacity of not more than three megawatts, with the exception of those facilities participating in a tariff made available pursuant to paragraph (2) of subdivision (f).[40]

The above exception is retained for BioMAT facilities, which allows facilities up to 5 MW to enter the BioMAT queue. Even so, the statute explicitly states that facilities can neither deliver more than 3 MW of energy at one time, nor receive payment for more than 3 MW of energy at one time.[41] Therefore, the Commission does not appear to have the ability to remove the three MW cap on payments via BioMAT without legislative action.

The Commission could allow a BioMAT facility to increase capacity to 5 MWs only if it delivers 3 MWs at a time. However, it is unclear whether this would benefit bioenergy projects or increase BioMAT participation.[42]

Question 13: incremental generation

The Public Advocates Office agrees with market depth concerns noted in the Staff Proposal.[43] However, allowing for incremental generation as proposed is inconsistent with Public Utilities Code Section 399.20.

First, the proposal is inconsistent with Public Utilities Code Section 399.20 because it would expand BioMAT eligibility to projects that commenced operation before June 1, 2013. The Public Utilities Code states that the Commission shall "direct the electrical corporations to collectively procure at least 250 megawatts of cumulative rated generating capacity from developers of bioenergy projects that commence operation on or after June 1, 2013."[44] The intent of BioMAT as outlined in SB 1122 is to encourage new facilities and develop a bioenergy market for small generation facilities.[45] The Staff Proposal would allow facilities that commenced operation before June 1, 2013 to participate, which frustrates the intent of the statute.

Question 14: HHZ fuel requirements for BioMAT projects

Consistent with its prior recommendations concerning HHZ fuel procurement,[46] the Public Advocates Office supports temporarily[47] setting an 80% HHZ fuel requirement for Category 3

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[40] Public Utilities Code Section 399.20.

[41] Public Utilities Code Section 399.20.

[42] Senate Committee on Energy, Utilities, and Communication, AB 1923 Analysis, dated June 21, 2016.

[43] Staff Proposal, pp. 8, 13-15.

[44] Public Utilities Code Section 399.20.

[45] Senate Energy, Utilities, and Communications Committee, SB 1122 Analysis, dated April 24, 2016.

[46] Comments of the Office of Ratepayer Advocates Regarding Staff Proposal on Governor's Emergency Proclamation on Tree Mortality, filed Feb 26, 2016; Comments of the Office of Ratepayer Advocates on

facilities, because it will help achieve the Governor's October 2015 and May 2018 Emergency Proclamations.

On October 30, 2015, the Governor issued an Emergency Proclamation which directed the Commission to undertake efforts to remove dead or dying trees in HHZs and to consider adjustments to the BioMAT program to utilize fuel from HHZs.[48] The Commission subsequently defined HHZ fuel as an eligible fuel source for BioMAT Category 3 facilities. However, it did not require any facility to use HHZ fuel.[49]

In the Governor's May 2018 Emergency Proclamation on Tree Mortality, the Governor ordered the Commission to review and update its bioenergy programs a second time in response to tree mortality.[50] The Public Advocates Office agrees with the Staff Proposal that setting an 80% HHZ fuel requirement is a reasonable way to meet the goals of the Governor's May 2018 Executive Order, and that Category 3 BioMAT facilities are well-suited to utilize HHZ fuel.[51] Additionally, all Category 3 facilities that have executed BioMAT contracts are built within or near high hazard zones.[52]

The Commission currently permits Category 3 BioMAT facilities using 60% or more HHZ fuel to accept contracts priced above the soft cap of $199.72/MWh. If the Commission requires Category 3 facilities to use 80% HHZ fuel, the Commission should remove the price cap incentive that was intended to encourage use of HHZ fuels since the fuels would be mandatory. Maintaining the incentive would provide an unnecessary subsidy at the expense of ratepayers. Instead, the Public Advocates Office recommends the Commission enforce the current price cap of $199.72 / MWh across all contracts.

Question 15: geographic requirements for BioMAT projects

The Public Advocates Office opposes adding a geographic component to strategic location.[53] The Commission already considered issues regarding strategic location, and consistent with that

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D.16-10-025, p. 3, filed Oct 17, 2016; and Reply Comments of the Office of Ratepayer Advocates on D.16-10-025, p. 3, filed Oct 24, 2016.

[47] The Public Advocates Office defines "temporary" as the duration of the Emergency Proclamation.

[48] Emergency Proclamation October 2015.

[49] D.16-10-025, pp. 8-10.

[50] Emergency Proclamation May 2018.

[51] Staff Proposal, p. 18.

[52] PG&E BioMAT Executed PPAs 10-Day Report, https://pgebiomat.accionpower.com/biomat/documents.asp?Col=DateDown&strFolder=d.%20PPAs%20Awarded/2.%20PPAs%20Awarded-10-Day%20Report/&filedown=&HideFiles=.

Tree Mortality Task Force, "Drought Related Tree Mortality High Hazard Zones Tier One and Tier Two, March 2018," published on http://www.fire.ca.gov/treetaskforce/reports#Maps-Data.

[53] Staff Proposal, p. 22.

evaluation, facilities are being located strategically. In D.14-12-081, the Commission noted that the costs of moving fuel long distances will likely deter long-haul trucking, especially considering that BioMAT facilities are small generation facilities with limited capital.[54] It appears that this reasoning was accurate, since most BioMAT facilities are already located near their fuel source. For example, all Category 3 projects that have executed BioMAT contracts are located in areas containing eligible Category 3 biomass resources.[55] Absent any evidence that facilities are not being located strategically, adding criteria which most facilities already meet unnecessarily increases complexity and creates more barriers to entry.

Finally, the Public Advocates Office agrees with the Staff Proposal's assertion that greenhouse (GHG) emissions reductions were an original goal of BioMAT.[56] However, the Public Advocates Office recommends that greenhouse gas reduction should be achieved through targeted requirements, rather than addressed through a secondary approach such as location requirements, as discussed further in response to Question 18.

Other Proposals

Question 16: allocation of BioMAT costs through a non-bypassable charge

The Public Advocates Office supports the Staff Proposal's recommendation to allocate BioMAT costs through a non-bypassable charge (NBC) to all customers in the IOUs' service territories[57] because BioMAT's goals of organic waste diversion, methane reduction, short-lived climate pollutants reduction, and tree mortality and wildfire mitigation will benefit *all* Californians. It is unfair to impose the costs of this expensive form of energy only on IOU bundled ratepayers when *all* customers stand to benefit from the achievement of statewide climate, waste diversion, and public safety goals that BioMAT is intended to achieve. In addition, procurement of BioMAT resources is not based on the IOUs' generation needs, but rather a legislative directive.

An NBC for BioMAT can be similar in design to the NBC that is being implemented for the Tree Mortality Biomass Energy Procurement program, also known as BioRAM.[58] BioMAT and BioRAM feature the same technologies, forest biomass projects, and they also serve to address overlapping state goals: tree mortality and wildfire mitigation. Therefore, an NBC for BioMAT

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[54] D.14-12-081, pp. 45-46.

[55] PG&E BioMAT Executed PPAs 10-Day Report, https://pgebiomat.accionpower.com/biomat/documents.asp?Col=DateDown&strFolder=d.%20PPAs%20Awarded/2.%20PPAs%20Awarded-10-Day%20Report/&filedown=&HideFiles=.

Tree Mortality Task Force, "Drought Related Tree Mortality High Hazard Zones Tier One and Tier Two, March 2018," published on http://www.fire.ca.gov/treetaskforce/reports#Maps-Data.

[56] Staff Proposal, pp. 5, 11.

[57] Staff Proposal, p. 18.

[58] See Application 16-11-005. A proposed decision for the Tree Mortality NBC was issued on November 8, 2018. The decision is scheduled for vote at the Commission meeting on December 13, 2018.

can relatively easily be developed from the work that has already been undertaken for development of the NBC for BioRAM.

Question 17: interagency coordination

The Public Advocates Office recommends coordination between agencies that work on bioenergy programs to the maximum extent feasible. Public Utilities Code Section 399.20 defines the Commission's role in coordinating funding for bioenergy projects:

> coordinate, to the maximum extent feasible, any incentive or subsidy programs for bioenergy with the agencies listed in subparagraph (A) of paragraph (3) in order to provide maximum benefits to ratepayers and ensure that incentives are used to reduce contract prices.[59]

In D.14-12-081, the Commission raised concerns over the feasibility of coordination because of the level of work required on the part of the Commission:

> The large number and disparate responsibilities of the listed agencies suggest that a significant amount of work on the part of Commission staff would be required simply in order to outline the steps that might be needed to set up such consultations. Actually engaging in the process of coordination on incentive and subsidy programs would require additional research and consultation, as well as information about the use of such incentives, if any, in the segment of the bioenergy generation industry that will participate in the FiT.[60]

Based on D.14-12-081, the Commission's coordination responsibilities are limited to what is feasible. Exploring incentive opportunities beyond BioMAT should be the responsibility of the developers.

Question 18: greenhouse gas emissions reduction requirements

The Public Advocates Office supports the Staff Proposal suggestion for creating a BioMAT eligibility requirement of demonstrated net GHG emissions reductions and recommends that such demonstration include an accounting of lifecycle[61] GHG emissions. The Public Advocates Office agrees with the Staff Proposal assertion that GHG emissions reductions were an original goal of BioMAT.[62] Thus, it is reasonable for the Commission to assess the GHG impact of

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[59] The coordinating agencies listed are: the State Energy Resources Conservation and Development Commission, the State Air Resources Board, the Department of Forestry and Fire Protection, the Department of Food and Agriculture, and the Department of Resources Recycling and Recovery. Public Utilities Code Section 399.20.

[60] D.14-12-081, p. 73.

[61] Lifecycle emissions is defined as the emissions from all activity throughout the resource's life, including production of raw materials, transportation, use, and disposal.

[62] Staff Proposal, pp. 5, 11.

BioMAT and determine any appropriate action to ensure GHG emissions reduction goals are being achieved. At a minimum, RPS-eligible projects should be carbon neutral over their life cycle to qualify for BioMAT. Additionally, the legislature states its intent for the Commission to incorporate recently enacted SB 100's goals into long-term planning.[63] SB 100 establishes a goal for 100% renewable and zero carbon resources by 2045.[64] It will be challenging to make progress toward that goal without taking stock of the impact of bioenergy resources on GHG emissions.

The Staff Proposal references three existing quantification tools that have been developed by the California Air Resources Board (CARB), which can estimate GHG emissions from electricity generation projects.[65] CARB is responsible for the development and oversight of statewide emissions reductions programs. Their models rely upon a sound scientific foundation and extensive research and are developed in collaboration with industry experts.[66] Using CARB's tools for GHG accounting will promote consistency across state agencies. The Public Advocates Office recommends that these tools should be used to estimate the net GHG reductions as eligibility requirements for BioMAT projects.

It is appropriate to use multiple models to estimate net GHG reductions for Category 1 BioMAT projects because the models are specific to different types of bioenergy. CARB provides a suitable model for municipal organic waste diversion, food processing, and co-digestion titled "Waste Diversion, Increased Recycling Manufacturing, Organics Composting, Anaerobic Digestion/Co-Digestion."[67] However, this model does not effectively model biogas from wastewater treatment, which can instead be modeled using either of two models. The first model is the U.S. Environmental Protection Agency "GHG Emissions Estimation Methodology for Selected Biogenic Source Categories," which is designed to model of GHG emissions from wastewater treatment. It can also model methane and carbon dioxide emissions from the combustion of biogas.[68] The second suitable model is the Department of Energy Argonne National Laboratory life-cycle assessment model, "Greenhouse Gases, Regulated Emissions, and

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[63] SB 100, Section 1 (c), Sept 10, 2018.

[64] Section 1 (b) of SB 100 states, "The Legislature finds and declares that the Public Utilities Commission, State Energy Resources Conservation and Development Commission, and State Air Resources Board should plan for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045." SB 100, Section 1 (b), Sept 10, 2018.

[65] Staff Proposal, pp. 12-13.

[66] California Air Resources Board, "Climate Change Programs," https://ww2.arb.ca.gov/our-work/programs/climate-change-programs.

[67] California Air Resources Board, "Waste Diversion, Increased Recycling Manufacturing, Organics Composting, Anaerobic Digestion/Co-Digestion." Viewable at https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials.

[68] U.S. Environmental Protection Agency, "GHG Emissions Estimation Methodology for Selected Biogenic Source Categories," Dec 10, 2014. Viewable at https://www3.epa.gov/ttnchie1/efpac/ghg/GHG_Biogenic_Report_draft_Dec1410.pdf.

Energy Use in Transportation," for estimating GHG emissions from wastewater treatment.[69] The Public Advocates Office recommends these models because of the research quality of the agencies that developed them.

With regard to Category 2 of BioMAT projects, the Public Advocates Office recommends the California Department of Food and Agriculture's (CDFA) "Dairy Digesters" model as the most suitable model currently available for estimating GHG reductions and co-benefits from dairy digester projects. A second option is the United States Department of Agriculture's Dairy Gas Emissions Model (DairyGEM) as a possible emission modeling tool for dairy farms that has a similar level of granularity for data inputs.[70] However, DairyGEM is not intended to output emissions reductions to a facility resulting from a new digester project, and as such likely presents a greater challenge for customization for that purpose compared to CDFA's model.

Finally, with regard to Category 3 of BioMAT projects, the Public Advocates Office recommends CARB's "Calculator for the California Department of Forestry & Fire Protection Forest Health Grant Program Quantification Methodology" (FHGP calculator) as a starting point for the Commission to develop its own model.[71] The FHGP calculator, together with the California Climate Investments Quantification Methodology Emission Factor Database,[72] account for many of the emissions associated with biomass. However, while the FHGP calculator presents a good starting point, it also has significant gaps and does not call for a lifecycle assessment. Specifically, the FHGP calculator fails to account for mobile emissions associated with the collection and transportation of biomass, or "disposal" of waste from bioenergy. In order to address these gaps, the Public Advocates Office recommends the Commission coordinate with CARB and the California Department of Forestry and Fire Protection to develop a holistic lifecycle GHG accounting calculator that includes collection, transportation, and waste disposal of forest biomass.

Question 19: additional actions to address program barriers and expand participation

No response.

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[69] Department of Energy Argonne National Laboratory, "Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET)," Dec 6, 2016. Viewable at https://www.anl.gov/es/article/greet-2016-update-released.

[70] United States Department of Agriculture, "Dairy Gas Emissions Model," April 2018. Viewable at https://www.ars.usda.gov/northeast-area/up-pa/pswmru/docs/dairy-gas-emissions-model/.

[71] California Air Resources Board, "Calculator for the California Department of Forestry & Fire Protection Forest Health Grant Program Quantification Methodology." Viewable at https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials.

[72] California Air Resources Board, "California Climate Investments Quantification Methodology Emission Factor Database." Viewable at https://ww2.arb.ca.gov/resources/documents/cci-quantification-benefits-and-reporting-materials.

Question 20: challenges implementing the program changes recommended by the Staff Proposal

No response.

CONCLUSION

The Public Advocates Office requests that the Commission adopt the recommendations made herein.

Please contact Christian Knierim at Christian.Knierim@cpuc.ca.gov or (415) 703-1177 with any questions regarding these comments.

Sincerely,

/s/ Julie Halligan

Julie Halligan
Program Manager
Electricity Planning and Policy Branch

cc: Service List R.18-07-003