

Bioenergy Market Adjusting Tariff (BioMAT) Program Review and Staff Proposal

October 30, 2018

Executive Summary

The Bioenergy Market Adjusting Tariff (BioMAT) is a Feed-in-Tariff program created by Senate Bill (SB) 1122 (Rubio, 2012), which ordered 250 MW of procurement for electricity from bioenergy projects. The BioMAT program uses a standard long-term contract and a market-based mechanism to arrive at offered contract prices for eligible projects.

The goal of this review is to assess program performance to-date and determine program barriers to recommend programmatic and procedural changes to:

- ▶ simplify the BioMAT procurement process;
- ▶ enable expanded program participation;
- ▶ reduce ratepayer expenditures; and
- ▶ help achieve statewide goals.

The program review will result in staff recommendations via a staff proposal for program changes that the Commission can consider in the Renewables Portfolio Standard (RPS) proceeding. Program changes stemming from this program review will seek to better align BioMAT with state goals and enable long-term program success at the lowest cost to ratepayers through a simple procurement process.

This document describes staff's key observations about program performance to-date, sets a timeline for the program review, lays out Energy Division staff's straw proposal for program changes, and seeks comment to inform the scope and content of future workshops and revisions to the straw proposal.

Observations about Program Performance To-Date

Below are staff's key observations about program performance to-date that have informed the straw proposal. More information on each observation is included in the full proposal document.

- ▶ BioMAT's pricing mechanism has resulted in Power Purchase Agreement (PPA) prices that compare favorably in most categories to the Commission's initial cost projections for BioMAT projects.
- ▶ Since BioMAT launched in 2016, program participation has remained low.
- ▶ It is unclear if BioMAT's current program design will facilitate market transformation as initially intended.
- ▶ BioMAT facilities are not the only end use for eligible feedstock, but they are potentially the most stable end use currently because of the availability of long-term contracts.

- ▶ BioMAT is one of several tools that the state is using to address wildfire threats and tree mortality.
- ▶ Several proposed BioMAT facilities are located in Disadvantaged Communities according to the criteria of Senate Bill 535 (De Leon, 2012) (Health and Safety Code section 39711) and these facilities could have impacts on local air quality, water quality, and lifecycle greenhouse gas emissions.
- ▶ Closer coordination between programs and agencies could enable economic efficiencies in meeting the State’s renewable energy and climate goals and ensure that various state and federal programs are complementary.
- ▶ There are existing GHG emissions quantification methodologies that estimate project emissions and could verify BioMAT’s contribution to GHG reductions

Staff Proposal

As a result of staff’s initial program review, we provide recommendations in the following categories to simplify the BioMAT program and better align it with the achievement of state goals. Program options explored in this document are not exhaustive, and other topics may emerge during the program review process.

- ▶ **Pricing Mechanism** – Reduce the market depth requirement from 5 to 3 unaffiliated applicants and revise the pricing mechanism to more easily move up and down.
- ▶ **Program Administration** – Adopt BioMAT queue management procedures for the entire BioMAT program, set a 30-day deadline to execute contracts after the program participant accepts the offered price and provides all necessary information to the investor-owned utility (IOU), Extend the program end date by an additional five years, and extend the Guaranteed Commercial Operation Date in contracts by 12 months due to interconnection delays.
- ▶ **Program Eligibility** – Remove the cap on payments via BioMAT PPAs for facilities larger than 3 MW up to 5 MW, allow incremental generation from existing units if the rated capacity of incremental generation does not exceed 5 MW and if the size of the unit does not exceed 5 MW, and establish a temporary 80% High Hazard Zone (HHZ) fuel requirement for Category 3 for as long as the Emergency Proclamation on Tree Mortality is in effect.
- ▶ **Other** – Allocate future program costs through a non-bypassable charge to all California ratepayers in each IOU’s service territory.

Background

The Bioenergy Market Adjusting Tariff (BioMAT) is a Feed-in-Tariff program created by Senate Bill (SB) 1122 (Rubio, 2012)¹, which ordered 250 MW of procurement for electricity from bioenergy projects. The BioMAT program uses a standard long-term contract and a market-based mechanism to arrive at offered contract prices for eligible projects. The procurement is allocated among three distinct bioenergy technology categories:

- **Category 1:** Biogas from wastewater treatment, municipal organic waste diversion, food processing, and co-digestion - **110 MW**
- **Category 2:** Dairy and other agricultural bioenergy - **90 MW**
- **Category 3:** Bioenergy using byproducts of sustainable forest management (including fuels from high hazard zones) - **50 MW**

Under the program rules established by the Commission, the initial offer price within each category was set at \$127.72/MWh when the program launched in February 2016, and a “soft cap” on the offer price of \$197/MWh was set for each program category.² The offer price for each category has adjusted independently for each two-month program period based on market response and interest.³ The program sunsets in February 2021—five years after the program launched.

Under current program rules, in order for the BioMAT price to adjust, the statewide BioMAT project queue must meet several criteria.⁴ The BioMAT auction process proceeds in this manner:

1. A statewide queue is jointly administered by the investor-owned utilities (IOUs) and contains the cumulative number of unaffiliated applicants waiting to execute contracts within each technology category. Three projects from three unaffiliated applicants must be in the statewide queue for a technology category for the price in that category to initially adjust up or down. After a contract price has been accepted by at least one project, at least five eligible projects from five unaffiliated applicants must be in each respective category queue to trigger price increases or decreases.
2. The price increases or decreases in increments of \$4/MWh, \$8/MWh, or \$12/MWh. The size of the increase or decrease is determined by the number of consecutive program periods that have passed where the conditions for price adjustment have been met. If the adjustment conditions have been met for one consecutive program period, then the price adjusts by +/- \$4. If the adjustment conditions have been met for two consecutive program

¹ SB 1122 modified Public Utilities Code Sec. 399.20.

² D.14-12-081 established the BioMAT program and required Energy Division to initiate a review process “at any time after the price for any technology category reaches \$197/MWh and remains at that price or increases, over two program periods.” The decision also gave Energy Division the authority to temporarily suspend the awarding of contracts in any technology category that is under review because of the soft cap.

³ Decision 16-10-040 temporarily changed the program periods to monthly for Category 3 while Governor Brown’s Emergency Proclamation on Tree Mortality is in effect.

⁴ See D.14-12-081 for a full description of the price adjusting mechanism.

period, then the price adjusts by +/- \$8. If the adjustment conditions have been met for three or more consecutive program period, then the price adjusts by +/- \$12. Increases after a program period in which the conditions for a price increase are not met will reset and begin at \$4/MWh. Similarly, decreases after a program period in which the conditions for a price decrease are not met will reset and begin at -\$4/MWh.

- ▶ **The price increases** if the total capacity of projects accepting the price is less than 20% of the statewide capacity offered.
- ▶ **The price decreases** if the total capacity of projects accepting the price is more than 100% of the statewide capacity offered.
- ▶ **The price remains the same** if the total capacity of projects accepting the price is between 20% and 100% of the statewide capacity offered.

In November 2017, the Category 3 offer price crossed the program's \$197/MWh "soft cap" price trigger for two consecutive program periods. As a result, CPUC's Energy Division Director sent a letter to the IOUs on November 28, 2017 announcing the start of a BioMAT program review and instituting a temporary price cap to prevent the Category 3 offer price from increasing above \$199.72/MWh unless a seller commits to using at least 60% High Hazard Zone (HHZ) fuel.⁵ This program review and temporary price cap do not affect other aspects of the program, and the IOUs must continue to offer their proportionate share of remaining BioMAT capacity within each technology category and execute contracts according to existing program rules.

Program Review

The goal of this program review is to assess program performance to date and recommend programmatic and procedural changes to simplify the BioMAT procurement process, enable expanded program participation, address program barriers, reduce ratepayer expenditures, and help achieve statewide goals. This review results in Staff recommendations for program changes that the Commission can consider in the Renewables Portfolio Standard (RPS) proceeding (R.18-07-003).

This document describes Staff's key observations about program performance to-date, sets a timeline for the program review, lays out Energy Division Staff's straw proposal for program changes, and seeks public comments to inform the scope and content of future workshops and revisions to the straw proposal. Staff notes that program options explored in this document are not exhaustive, and other topics may emerge during the review process.

As stated above, the BioMAT program shall continue to operate during this program review. That is, if an applicant accepts an offer price, the BioMAT PPAs shall continue to be executed according to

⁵ Identified by CAL FIRE's Drought Related Tree Mortality Map, HHZs are areas with elevated tree mortality and high fire threat that are a hazard to public safety, community assets and related infrastructure. Tier 1 HHZs are located in close proximity to communities, roads, and utility lines. They represent a direct threat to public safety. Tier 2 HHZs are defined by watersheds that have significant tree mortality, combined with community and natural resource assets.

program rules and contract terms in place at the time the applicant was accepted into the queue, even if program modifications go into effect after the applicant enters the queue.

Policy Context for Guiding 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 that capture existing methane emissions or use materials from agricultural and sustainable forestry activities. BioMAT's program design was structured so that offered prices would reflect the market prices needed within each technology category, and would be able to adjust as needed as participants entered the market. A competitive market structure was designed to facilitate lower costs to utility customers and encourage market transformation.

Since SB 1122's passage and implementation, complementary and related statewide policies have been enacted that impact the regulatory landscape for small bioenergy facilities. SB 350 (De Leon, 2015) established California's 2030 greenhouse gas (GHG) reduction target of 40% below 1990 levels and established an integrated resource planning (IRP) process to ensure that load serving entities align their electricity portfolios with State GHG reductions goals. Meanwhile, SB 1383 (Lara, 2016) set environmental, air quality, and public health priorities to which BioMAT-eligible facilities can contribute.⁶ Specifically, in March 2017, in implementing SB 1383, CARB adopted a Short-Lived Climate Pollutant Reduction Strategy that explicitly mentions BioMAT as a program that could provide potential revenue streams to support projects to reduce short-lived climate pollutant emissions.⁷

Furthermore, the Governor issued an Emergency Order on Tree Mortality in October 2015⁸ and an Executive Order in May 2018⁹ ordering a number of State agencies, including the CPUC, to take various actions regarding improving forest management and restoration. The 2018 Executive Order requires the CPUC to "review and update its procurement programs for small bioenergy renewable resources to ensure long-term programmatic certainty for investor-owned utilities and project developers, as well as

⁶ SB 1383 requires the California Air Resources Board (CARB) to approve and begin implementing a comprehensive strategy to reduce Short Lived Climate Pollutants (SLCPs) in the state. The bill includes requirements to reduce methane emission 40% below 2013 levels by 2030, reduce methane emissions from livestock and dairy manure management operations by up to 40% below 2013 levels by 2030, and achieve a 50% reduction in the statewide disposal of organic waste in landfills from 2014 levels by 2020 and a 75% reduction by 2025.

⁷ https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf

⁸ The Governor's Emergency Proclamation Order addresses bark beetle and drought-caused tree mortality and the hazards such tree mortality creates for the State of California. The Emergency Proclamation orders the CPUC to evaluate changes to the BioMAT program to facilitate contracts for bioenergy facilities that utilize feedstock from HHZs for wildfire and falling trees. Changes to-date include Resolution E-4770, approved in 2016 directing the IOUs to procure at least 50 MW of biomass capacity using HHZ fuel; Resolution E-4805, approved in 2017, which implemented SB 859 and ordered the IOUs to procure an additional ~100 MW contracts for biomass facilities that use at least 60% HHZ fuel and 80% sustainable forest fuel; and Decision 16-10-025, approved in 2016, which implemented SB 840 and streamlined interconnection requirements for biomass projects and accelerated price adjustments for BioMAT Category 3, and other actions targeting the deployment of HHZ biomass energy generation.

⁹ Executive Order B-52-18. <https://www.gov.ca.gov/wp-content/uploads/2018/05/5.10.18-Forest-EO.pdf>

benefits to ratepayers.” Please see Appendix A for more information on the CPUC’s response to the Governor’s May 2018 Executive Order and other CPUC activities to address tree mortality and wildfire risks.

BioMAT is one of several tools that can help to achieve statewide climate, waste diversion, and public safety goals. Thus, the guiding statewide interest in the success of the BioMAT program is broader than simply meeting capacity targets set by SB 1122.

BioMAT Policy Context, by Category

The BioMAT program creates contracting opportunities for three technology categories. Staff identified the following objectives for each category that cumulatively advance statewide climate, waste diversion, and public safety goals:

Category 1 (Municipal Biogas): Maximize municipal organic waste diversion and methane reductions.

Category 2 (Dairy and Agricultural Bioenergy):¹⁰ Maximize methane reductions from livestock and dairy manure management operations and reduce the use of open burning as an agricultural waste management tool.

Category 3 (Sustainable Forestry): Promote sustainable and resilient forests, reduce the risk of high-intensity wildfires, reduce the use of open pile burning as a forest management tool, and protect public safety and infrastructure.

Program changes stemming from this program review should seek to facilitate the achievement of the above objectives within each category at the lowest cost to ratepayers through a simple procurement process that offers a competitive market price. Over the long term, the program should facilitate sustainable business models within each category so that the bioenergy market can achieve the above objectives cost-effectively without the need for supplemental funding or mandates.

Timeline for Program Review

Staff proposes the following timeline for BioMAT program review.

- **November 2017 – October 2018**: Initial staff program review.
- **October 2018**: Staff’s straw proposal, and questions to parties
- **November/December 2018**: Informal Comments/Replies due.
- **January/February 2019**: Public workshops led by Energy Division to solicit feedback/review options on key topics that may be addressed in staff’s final proposal.
- **2019 Q1**: Ruling with final staff proposal and questions.
- **2019 Q2**: Proposed Decision.

¹⁰ Category 2 is separated into two technology subcategories—Dairy and Other Agriculture— so that the Commission can maximize the opportunities for both types of projects to contribute to the attainment of legislative goals. This structure was established in D.14-12-081

Observations about Program Performance To-Date

Below are staff's key observations about program performance to-date that have informed the straw proposal.

► **BioMAT's pricing mechanism has arrived at PPA prices that compare favorably in most categories to the Commission's initial cost projections for BioMAT projects.**

In the 2014 Black and Veatch study that informed the Commission's market assessment prior to program implementation, levelized cost (low, mid, and high) projections were done for each BioMAT category.¹¹

- The current Category 1 offer price (\$127.72) is (a) higher than the high levelized cost estimate (\$76/MWh) for energy generation at existing facilities producing biogas, and (b) between the low (\$88/MWh) and medium (\$155/MWh) levelized cost estimates for energy generation at new facilities producing biogas. These facilities have executed contracts that are priced higher than initial cost estimates.
 - All but one of the Category 1 projects to-date have been located at wastewater treatment plants, utilizing existing biogas-producing facilities.
- The current Category 2 – Dairy offer price (\$187.72) is lower than the low (\$218/MWh) levelized cost estimate for energy generation from dairy manure digestion.
- The current Category 2 – Other Agriculture offer price (\$187.72) is between the low (\$138/MWh) and medium (\$204/MWh) levelized cost estimates for energy generation from agricultural residues.
- The current Category 3 offer price (\$199.72/MWh) is between the low (\$148/MWh) and medium (\$219/MWh) levelized cost estimates for energy generation from forest management byproducts.

► **It is unclear if BioMAT's current program design will facilitate market transformation.**

We can evaluate BioMAT's market transformation impact through the success of the pricing mechanism to: 1) find offer prices high enough to encourage project development, and then 2) adjust offer prices to test how market prices are transforming within each technology category. The first condition has been met now that price acceptances have occurred in each category. The offer prices have not begun to adjust downward, however, and the price adjustment mechanism is not showing whether or not contracts can be executed at successively lower prices.

► **Since BioMAT launched in 2016, program participation has remained low—undermining the competition needed for offer prices to adjust.**

As shown in table 1, there have been 22 contract executions in the program thus far for 33 MW of capacity, or 13% of the 250 MW procurement goal. In addition, there are other projects that have entered BioMAT technology category queues that have not yet accepted offer prices or executed contracts, for a cumulative capacity of 25 MW. With less than five unaffiliated

¹¹ Black and Veatch. *Small-Scale Bioenergy: Resource Potential, Costs, and Feed-In Tariff Implementation Assessment*. California Public Utilities Commission, Oct. 31 2013. Report begins at page 50. <docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M081/K583/81583311.pdf>

applicants currently in each statewide queue, offered prices at price acceptance levels, and based on the historic pace of projects entering the program, staff anticipates that some categories will struggle to reach the market depth requirements to trigger upward or downward price adjustments. Furthermore, if contract executions were to continue at the current rate, it could take approximately 20 years to reach the BioMAT program procurement goal of 250 MW.

Table 1. Summary of BioMAT Program Activity, as of program period 17.

Category	# of Projects with Executed Contracts	Cumulative Capacity of Projects with Executed Contracts (MW)	Capacity Remaining in Category (MW)	Offer Price Accepted by Projects (\$/MWh)	Current Market Depth (# of projects from unaffiliated applicants in the statewide queue)
1-Biogas	7	13.0	97.0	\$127.72	< 5
2-Dairy	8	8.0	77.9	\$187.72	< 5
2-Other Agriculture	4	4.0		\$187.72	< 5
3-Sustainable Forest	3	7.9	42.1	\$199.72	< 5

► **BioMAT program activity and participation has not proven or disproven initial program concerns related to imperfect market conditions.**

When implementing the program, the Commission found it “reasonable to require potential BioMAT projects to have an ownership structure that minimizes the risks to ratepayers that might come from allowing a small number of related bidders to trigger adjustments to the BioMAT price.”¹² There is no evidence that any developer has intentionally manipulated the offer price. However, 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. Thus, Staff continues to be concerned that the potential exists for developers to influence market depth and the resulting offer price through multiple projects with which they are directly or indirectly affiliated.

► **BioMAT facilities are not the only end use for eligible feedstock, but they are potentially the most economically stable end use currently because of the availability of long-term contracts.**

BioMAT is an electricity procurement program, yet electricity is not always the highest and best economic use for BioMAT feedstock from the perspective of project developers. Projects in Categories 1 and 2 have mostly been anaerobic digestion technologies that produce raw biogas, which is used to produce electricity, but could alternatively be refined into biomethane for pipeline or vehicle fuel use. Due largely to financial incentives offered by California’s Low Carbon Fuel Standard (LCFS) and Renewable Identification Number (RIN) credits through the federal

¹² D.15-09-004 at 15 and 16.

Renewable Fuel Standard, many bioenergy developers choose to pursue more financially lucrative vehicle fuel pathways rather than, or in addition to, electricity generation.¹³

- Electricity generation has stand-alone value in making BioMAT projects economically viable. However, in some instances, electricity sales through BioMAT can help to facilitate financing for riskier but potentially more lucrative vehicle fuel projects that may be co-located with BioMAT projects.¹⁴ The value of LCFS and RIN credits have fluctuated considerably over the last several years, and are only available on short-term contracts.¹⁵ Stable, long-term PPAs offered through BioMAT have helped to secure private finance in the bioenergy market and can help to hedge vehicle fuel projects. 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.
- Staff also notes that as dairy biomethane infrastructure develops across the state, decreasing the cost to join dairy biomethane “clusters,” there may be reduced interest in BioMAT from dairies as biomethane vehicle fuel projects offer potentially higher revenues than electricity.
- BioMAT feedstock also has value in other end-use markets that advance state goals and the objectives identified for each category such as compost, food recovery, mulch, and traditional wood products.

► **BioMAT is one of several tools that the state is using to address wildfire threats and tree mortality and appears to be particularly well-suited for addressing forest management needs in forested areas close to population centers and far from other wood infrastructure.**

A century of fire suppression, combined with historic drought conditions and bark beetle infestation, has resulted in forests that are susceptible to high-severity fires. These conditions prompted Governor Brown’s October 2015 Emergency Order on Tree Mortality and the designation of HHZs for risk from wildfire and falling trees as well as the May 2018 Executive Order and SB 901 (Dodd, 2018).

¹³ Dairy digesters can earn about \$20/MMBtu for biogas-to-electricity projects, and about \$40-\$60/MMBtu for biogas-to-fuel projects due in large part to LCFS and RIN credits. California Bioenergy presentation at “Rethink Methane 2018” conference on February 6, 2018.

<cdn.gladstein.org/pdfs/RethinkMethane2018/Panel2/Ross_Buckenham_CalBio.pdf>

¹⁴ Dairy Cares on December 18, 2017 on the Motion of PG&E to suspend its BioMAT program procurement: “BioMAT facilitates financing for the significant capital investments needed to reduce emissions at dairies (e.g., digester equipment, cleaning and conditioning facilities, generation facilities, interconnection facilities and other related infrastructure). While many projects are also pursuing pipeline biomethane injection and transportation fuel development through the Low Carbon Fuel Standard (“LCFS”) and Federal RINs programs, the transportation fuels markets remain highly volatile and developers are pursuing both transportation fuels and electricity generation. While transportation fuels may be an option for some dairy farm methane reduction projects, BioMAT remains a critical tool for dairies to voluntarily make near-term progress towards the aggressive SLCP emissions reduction targets set by SB 1383.”

¹⁵ The value of LCFS credits has fluctuated from \$20 per metric ton to over \$180 per metric ton since 2013. Similarly, cellulosic RIN prices fluctuated from just above \$0.40/Gallon of ethanol equivalent to more than \$3.00/Gallon of ethanol equivalent since 2012. See: CARB’s SB 1383 Pilot Financial Mechanism Concept Paper May 2018, <<https://www.arb.ca.gov/cc/dairy/dsg2/pilot-financial-mechanism-white-paper.pdf>>

- California’s independent oversight agency, The Little Hoover Commission, identified a range of other forest management activities to restore California’s forests to resiliency, including frequent low-intensity prescribed fires and mechanical thinning combined with both energy and non-energy beneficial end uses.¹⁶
 - Category 3 projects that have entered the BioMAT queue have been located within a mile of Tier 1 HHZs, as identified by CAL FIRE’s Drought Related Tree Mortality Map. HHZ fuel is currently an eligible feedstock, but not a required feedstock under BioMAT Category 3, which contrasts with the BioRAM program where using HHZ feedstock is a program requirement.¹⁷
 - Among the various forest management options, BioMAT Category 3 appears particularly well-suited to forested areas close to population centers where forest treatment is needed, but where prescribed burns and open burning are restricted or face local opposition, larger-scale biomass operations are not nearby or limited by smaller need, or where other more economically lucrative end-uses for the feedstock do not currently exist. In areas such as the Southern and Central Sierras where a lack of infrastructure constrains the ability to move HHZ fuel out of the forest, new BioMAT facilities can potentially offer communities a wood utilization option where forest treatment needs are high and where other post-thinning wood utilization options do not currently exist.
 - Staff notes, however, that it has concerns about the ability of bioenergy facilities to access HHZ fuel over the course of a long-term contract because standing dead trees may become structurally unsound, and therefore impractical or unsafe to remove after about 3-5 years.¹⁸ The Commission should monitor whether bioenergy facilities can consistently generate energy from HHZ feedstock on an annual basis as existing stands of dead trees become inaccessible.
- **Interconnection costs may be high, which limits participation and leads to high contract prices.** Many BioMAT projects are located in rural areas of the state at the “end of the line” of the utility distribution network. When interconnection upgrades are required, the interconnection process can be long due to often extensive upgrades that are needed to safely interconnect the facilities. These interconnection issues create uncertainty around whether a project can meet the operation date in the BioMAT PPA, which may limit participation and increase financing costs for projects that do participate, leading to higher contract prices. In October 2018, the CPUC issued a Proposed Decision to address AB 1923 (Wood, 2016) that would allow BioMAT

¹⁶Little Hoover Commission. *Fire on the Mountain: Rethinking Forest Management in the Sierra Nevada*. Feb. 2018. <www.lhc.ca.gov/sites/lhc.ca.gov/files/Reports/242/Report242.pdf> The Commission’s report identified a number of beneficial end-uses to utilize mechanically thinned dead trees including engineered mass timber and wood-based composite panel products used in building construction, retrofits, and remodeling, wood processed for use in other industries and applications, including wood cellulosic nanotechnology applications and biochar, and bioenergy.

¹⁷ Initiated following the Governor’s October 2015 Emergency Order on Tree Mortality and Senate Bill 859 (2016), the Bioenergy Renewable Auction Mechanism (BioRAM) requires the large IOUs to procure 146 MW of bioenergy from forest fuel in HHZs from dead and dying trees, in order to aid in mitigating the threat of wildfires.

¹⁸ This observation comes from a conversation on 6/20/18 between Energy Division Staff and Kevin Fingerma and Jerome Carman—researchers with the Schatz Energy Research Center at Humboldt State University.

facilities to connect to the existing transmission system, in order to increase developer options, increase system efficiencies, and potentially reduce interconnection costs. The CPUC will continue to consider how to facilitate lower-cost interconnection.

► **Several BioMAT facilities are located in Disadvantaged Communities according to the criteria of Senate Bill 535 (De Leon, 2012) and these facilities could have impacts on local air quality, water quality, and lifecycle GHG emissions.**

BioMAT facilities emit GHG emissions and other criteria air pollutants at the point of combustion, and trigger additional upstream emissions associated with the production and transportation of the fuel to the facilities. While these plants clearly have a higher GHG and other emissions impact than zero-carbon renewable resources, on a lifecycle basis, these projects may reduce net emission by reducing short-lived climate pollutants, reducing the use of biogas flaring, reducing the use of open burning, decreasing wildfire intensity, and increasing net forest carbon sequestration. Whether individual projects reduce net lifecycle emissions depends on project-specific factors related to technology, fuel management, the displacement of other emissions, and the timescale over which emissions reductions are realized. For forest bioenergy in particular, a project's ability to reduce net lifecycle emissions and short-term climate warming from the atmospheric residence of carbon within a timescale relevant to climate policy targets may depend on the extent to which the project prevents the biomass feedstock from combusting alternatively, whether through open-pile burning, wildfires, or prescribed burns.¹⁹

► **Closer coordination between programs and agencies could enable economic efficiencies in meeting the State's renewable energy and climate goals and ensure that various State and Federal programs are complementary.**

Key grant programs funding early stage BioMAT-eligible project developments include:

- The Wood Innovations Program, U.S. Forest Service: supports traditional wood utilization projects, expands wood energy markets, and promotes using wood as a construction material in commercial buildings.
- The Electric Program Investment Charge (EPIC), California Energy Commission: established by the CPUC in Decision 12-05-037, EPIC provides grant funding for applied research and development, technology demonstration and deployment, and market facilitation for clean energy technologies and approaches for the benefit of IOU ratepayers.
- The Dairy Digester Research and Development Program, California Department of Food and Agriculture (CDFA): provides financial assistance for the installation of dairy digesters in California, which will result in reduced greenhouse gas emissions.

¹⁹ Francesco Cherubini, Glen P. Peters, Terje Berntsen, Anders H. Strømman, Edgar Hertwich. "CO₂ emissions from biomass combustion for bioenergy: atmospheric decay and contribution to global warming." *GCB Bioenergy*, 2011; DOI: [10.1111/j.1757-1707.2011.01102.x](https://doi.org/10.1111/j.1757-1707.2011.01102.x)

The authors assert that, despite the long-term carbon neutrality of biomass combustion, carbon dioxide emissions from biomass combustion should be included, to some degree, in life cycle assessment studies due to its short-term induced warming as it relates to climate policy and targets.

- The Organics Grant Program, CalRecycle: competitive grant program to lower overall GHG emissions by expanding existing capacity or establishing new facilities in California to reduce the amount of California-generated green materials, food materials, and/or Alternative Daily Cover being sent to landfills.

There are also other grant programs, such as CAL FIRE’s Forest Health Grant Program, that do not support BioMAT projects directly, but may increase the amount of available BioMAT feedstock by supporting complementary projects like forest restoration.

Table 2 below shows the number of projects that have been awarded grants that have also entered the BioMAT queue. The breadth of agencies involved shows the degree to which BioMAT is connected to the policy efforts of other agencies. Furthermore, each of these programs are expected to solicit grant applications for future rounds of funding, so more grant-funded projects may apply to BioMAT in the future. Due in large part to the availability of grants by other agencies, there is a variety of projects under development across the state that aim to promote the productive use of BioMAT-eligible feedstock, but have not executed BioMAT contracts or entered the program queue to date. The Commission should continue to work with the agencies administering those grants to see if there are programmatic changes that could enable broader program participation and enhance BioMAT’s role in achieving state goals.

Table 2. State and Federal Grant Programs that Complement BioMAT

Grant	Grantor	Category 1	Category 2	Category 3
		# of projects that have received grants and applied to BioMAT queue	# of projects that have received grants and applied to BioMAT queue	# of projects that have received grants and applied to BioMAT queue
Wood Innovations Program	U.S. Forest Service	0	0	3
Electric Program Investment Charge (EPIC)	CA Energy Commission	3	3	2
Dairy Digester Research and Development Program (DDRDP)	CA Department of Food and Agriculture	0	9	0
Organics Grant Program	CalRecycle	1	0	0

- ▶ **There are existing GHG emissions quantification methodologies that estimate project emissions and could verify BioMAT’s contribution to GHG reductions.**

Through California Climate Investments (CCI)—a statewide initiative that invests in GHG reduction initiatives using proceeds from the state’s cap-and-trade program—CARB has developed quantification methodologies and calculator tools to help agencies estimate GHG

emission reductions and co-benefits from a variety of a different types of projects.²⁰ Three quantification tools in particular can estimate GHG emissions from electricity generation projects utilizing BioMAT-eligible feedstock: CalRecycle’s “Waste Diversion, Increased Recycling Manufacturing, Organics Composting, Anaerobic Digestion/Co-Digestion” model, CDFA’s “Dairy Digesters” model, and CAL FIRE’s “Reforestation, Pest Management, Fuels Reduction, Forest Conservation, Biomass Utilization” model. While the CCI quantification tools were developed to help administer other programs, the Commission could potentially use or customize them to estimate GHG emission reductions and co-benefits from BioMAT projects and the BioMAT program.

Staff Proposal

As a result of staff’s initial program review, we provide the following proposal to simplify the BioMAT program and better align it with the achievement of program and state goals. The proposals are detailed below and summarized in Table 3.

BioMAT Program Changes

1. Market Depth Requirement for Price Adjustments

- ▶ **Proposal:** Reduce the market depth requirement from five to three unaffiliated applicants.
- ▶ **Reason for change:** The Commission designed the BioMAT pricing mechanism to use market competition to arrive at PPA prices that encourage project development at the lowest cost to ratepayers. However, since the program launched in 2016, program participation has remained low through 2018, limiting the competition needed for price adjustments. The market depth rules currently require there to be at least five unaffiliated applicants within a category queue to trigger a price adjustment. Market depth has remained below, or barely exceeded, five for each category throughout program history, and recent price acceptances within each category means that the queues are now even smaller. Given the low number of projects entering the queue thus far, and the fact that the current offer prices are now sufficiently high to encourage price acceptance when projects enter the queue, it is possible that a sufficiently high number of projects will not accumulate in the statewide pricing queues to achieve market depth, and that no future price changes may occur under the current program rules. A lower market depth requirement makes it more likely that the market depth conditions will be met to enable adjustment based on program activity. This will allow for price movement that better reflects the market dynamics within each technology category.

²⁰ Quantification methodologies and calculator tools for estimating GHG emissions reductions and co-benefits from project applicants, available at the CCI Quantification, Benefits, and Reporting Materials website: <https://ww2.arb.ca.gov/resources/documents/cqi-quantification-benefits-and-reporting-materials>

2. Price Adjustment Mechanism

- ▶ **Proposal:** Revise the pricing mechanism as follows:
 - i. **The price increases if** there were no price acceptances for two consecutive program periods and market depth was achieved in each program period.
 - ii. **The price decreases if** at least two price acceptances have occurred at a given offer price in any program period (i.e. two or more price acceptances that occurred in the same program period or different program periods would trigger a price decrease).
 - iii. **The price remains the same if** there has been one price acceptance at the offer price in at least one of two consecutive program periods where market depth was achieved (i.e. neither of the conditions for a price increase or decrease described in i and ii above have been met).

For the purpose of calculating market depth for *each category* and to determine a program period's offer price, at the start of each program period the program administrator will count: 1) all market participants in the statewide queue that have not accepted a price and 2) all market participants that accepted a price in the preceding program period.

- ▶ **Reason for change:** An adjusting pricing mechanism works best when project developers believe that there is a credible likelihood that the price will decline or increase in the future. The proposed change is intended to simplify the pricing mechanism so that adjustments are more predictable and better able to respond to market activity. Under this proposal, the price should more easily decrease if it is resulting in market activity, increase if the price is too low to drive acceptances among a sufficient pool of interested developers, and stay the same when participation is low or a price produces just one price acceptance.

Two price acceptances indicate that a price is sufficient for project development, and this threshold will provide more of an incentive to accept prices quickly while providing more periodic price adjustments to reflect market conditions. If the new, lower price is insufficient to cause price acceptances, this proposal combined with the market depth change should enable prices to more readily increase again, which should encourage more competitive behavior within the category queues and provide ratepayer benefits. This change is intended to establish a more responsive market transformation framework to better allow BioMAT technologies to demonstrate cost reductions over time.

- ▶ **Alternate Proposal:** Alternatively, the IOUs could offer a fixed price feed-in-tariff (FiT) within each technology category. Such an approach could produce an even simpler procurement process and reduce the administrative costs of BioMAT. It would also allow project developers to plan around a specific PPA price. In order to consider such

an approach, however, the Commission would have to identify an objective method to set the tariff prices within each category and a mechanism to periodically review and revise those prices over time.

- ▶ **Alternate Proposal:** Another option is that the IOUs could use the Renewable Auction Mechanism (RAM) to procure SB 1122-eligible resources. The RAM is a reverse auction that was designed to streamline the procurement process for distributed generation projects. Under this scenario, the IOUs could issue annual Request for Offers (RFO) for a mix of resources from all three BioMAT categories. Bids could be selected based on price and other criteria established by the Commission such as fuel diversity and the ability to help meet statewide goals, and procurement would be formalized through a standard contract. This approach could simplify the procurement process and reduce program complexity. However, this approach would reduce price certainty and could result in uncompetitive solicitations if there are a low number of bidders. In order to consider such an approach, the Commission would have to determine how much capacity to offer in each RAM solicitation, the criteria to evaluate bids, and how to protect ratepayers from high prices resulting from uncompetitive solicitations.

3. Queue Changes

- ▶ **Proposal:** Apply the modifications that were approved for SCE's BioMAT queue management procedures to the other utilities.²¹ The modifications (1) require Applicants to attest at the start of each program period that they still meet the project's eligibility criteria, (2) clarify how to notify the program administrator in the event of a change in eligibility, and (3) penalize Applicants that no longer meet the eligibility criteria but fail to report that change by rejecting any program participation request associated with the Applicant, the Project, or any Affiliated Company, and prohibiting the Applicant and its Affiliated Companies from reapplying for a new BioMAT program participation request for six months.
- ▶ **Reason for change:** Applying these changes to all program administrators would provide program consistency, assist in accurate price adjustments, and simplify program administration. The Commission already approved these modifications to SCE's BioMAT program queue. Specifically, SCE requested the changes in AL 3621-E because the presence of an ineligible project in the BioMAT queue may trigger incorrect price adjustments if such a project is not identified and removed from the queue at the time that the project becomes ineligible. Such an occurrence would undermine the proper functioning of BioMAT's market-based pricing mechanism and result in overpayments in the case of incorrect price increases, or discourage market participation in the case of incorrect price decreases. Additionally, the presence of any ineligible projects in the first-come, first-served program queues could delay eligible projects from being awarded contracts in a Program Period. These scenarios could apply equally to PG&E's

²¹ SCE's queue management changes were approved in in Advice Letter (AL) 3621-E.

and SDG&E's queues, and so it is reasonable to apply this proposal to their BioMAT queues as well.

4. Contract Execution

- ▶ **Proposal:** Require the execution of BioMAT contracts within 30 days of the IOU receiving all required information from developers that have accepted a BioMAT offered price and maintained BioMAT program eligibility.
- ▶ **Reason for change:** The purpose of the standard contract is to simplify the procurement process and avoid a lengthy negotiation process. However, in practice, several contract executions have been subject to delays—taking four months or longer in some instances. This change will add consistency to the program, encourage the timely execution of contracts, and ensure that projects are moved quickly out of the queue after price acceptance, which would also ensure that the price adjustments properly represent project development within the BioMAT categories.

5. Program Extension

- ▶ **Proposal:** Extend the current program end date for an additional five years, from February 2021 to February 2026.
- ▶ **Reason for Change:** SB 1122 requires 250 MW of procurement from small bioenergy projects. When establishing the program, the Commission thought it was reasonable to set the ending date for BioMAT at five years from the program starting date—February 2021. Setting an ending date is important because, otherwise, the program could go on indefinitely with a minuscule amount of megawatts remaining in technology category queues, as the Commission and utilities continue to incur administrative expenses. While that reasoning for establishing an end date still applies, it does not appear that a minuscule amount of megawatts will remain in February 2021. If price acceptances were to continue at the current rate, Staff estimates that it could take approximately 10 to 15 years to reach the BioMAT program procurement goals in each category. And while Staff expects that price acceptances will occur faster than the current rate because prices are now sufficiently high to result in price acceptances and, potentially, because of the program changes stemming from this review, it is clear that more time is required to achieve the 250 MW of procurement required by SB 1122. Five years should provide more long-term programmatic certainty and allow more time for project development, while maintaining the Commission's direction to establish a clear program end date. The "program end date" should mean that participants may not accept the offered contract price after this date.

6. Extension of Guaranteed Commercial Operation Date Due to Interconnection Upgrade Delays

- ▶ **Proposal:** Revise the BioMAT PPA and tariff so that if the Seller has taken all commercially reasonable actions (including but not limited to Seller's timely filing of required documents and payment of all applicable fees, and completion of all Electric System Upgrades needed, if any) to have the project physically interconnected to the

Transmission/Distribution Owner's distribution system, but fails to secure any necessary commitments from CAISO or the Transmission/Distribution Owner for such interconnection and upgrades due to delays beyond Seller's reasonable control, then the Guaranteed Commercial Operation Date shall be extended 12 months. This proposal goes beyond the current BioMAT PPA and tariff, which authorize a 6-month extension of the Guaranteed Commercial Operation Date under these circumstances.²²

- ▶ **Reason for the change:** Some BioMAT projects require interconnection upgrades that will take substantial time to complete, inhibiting the ability of a facility to begin operation by the two-year deadline from execution required in its PPA, even with a six-month extension to the Guaranteed Commercial Operation Date. Interconnection delays may cause the facility owner/developer to be in breach of the PPA, resulting in PPA termination and substantial monetary losses. This risk may deter participation in BioMAT, and make it difficult and expensive for those who do participate to obtain financing. By extending the extension from six months to twelve months, this proposal seeks to assure facility owners/developers that they will not be penalized for delays beyond their reasonable control.

7. Increase the Generation Limit for BioMAT Deliveries

- ▶ **Proposal:** Remove the cap on generation that is eligible for payment through BioMAT for facilities up to five MW.
- ▶ **Reason for the change:** Removing the current three MW cap on capacity that can sell electricity into BioMAT will enable the utilization of more feedstock at facilities that advance state goals and simplify program rules. It may also bring more entrants into the California bioenergy market and result in lower cost projects due to economies of scale. The proposed change would allow eligible facilities up to five MW to sell their full generation output to the IOUs through a BioMAT contract. By expanding program eligibility and simplifying the procurement process for facilities sized three to five MW, lower program costs could occur while maintaining the program's focus on small renewable generators.

8. Incremental Generation

- ▶ **Proposal:** Revise the eligibility guidelines to allow existing units to participate in BioMAT if they incrementally increase their generation using BioMAT feedstock on or after June 1, 2013 based on the definition of "Incremental Generation" in the California Energy Commission's RPS Eligibility Guidebook. The rated capacity of incremental generation may not exceed five MW and the size of the unit may not exceed five MW. Only incremental generation will be eligible for a BioMAT PPA for generation at existing units.
- ▶ **Reason for change:** Existing units that incrementally increase their generation output using BioMAT-eligible feedstock help the state achieve the goals identified for each

²² See BioMAT PPA section 1.1.2.2 and BioMAT Tariff section 12.1 (PG&E) or L.1 (SCE and SDG&E).

technology category. Although a unit may predate the BioMAT program, the financial incentives of BioMAT can encourage new investment and new business practices resulting in the beneficial use of SB 1122 eligible feedstock that would not occur absent the program. For example, a wastewater treatment plant with excess digestion and generation capacity could enter into a new organic waste diversion agreement to produce more biogas and produce additional generation with the addition of incremental generation capacity.

9. High Hazard Zone Requirement

- ▶ **Proposal:** Set a temporary requirement for new Category 3 projects that 80% of fuel stock must be a product of sustainable forest management and 80% must be from High Hazard Zones (HHZ), specifically for as long as the Emergency Proclamation on Tree Mortality is in effect. The fuel requirements will revert to the existing BioMAT Category 3 criteria when the Emergency Proclamation is no longer in effect.

Reason for the change: The Emergency Proclamation on Tree Mortality directed State agencies to prioritize forest bioenergy projects that utilize HHZ fuel. Given the immediate and increasing tree mortality and wildfire threats in California, a requirement that projects must meet an 80% HHZ threshold is a reasonable way to align BioMAT with the Emergency Proclamation and prioritize areas of the state that are most in need of forest management. Furthermore, because of their relatively small size and ability to be built within or close to areas where fuel treatment is most needed, we anticipate that BioMAT facilities may face fewer barriers in reaching minimum fuel requirements than larger BioRAM facilities.

10. Cost Allocation

- ▶ **Proposal:** Allocate program costs through a non-bypassable charge to all customers in each IOU's service territory.
- ▶ **Reason for change:** As with the other proposed changes, this recommendation is intended to help the BioMAT program meet statewide goals and recognize the program's resulting benefits to the *entire* state for meeting these goals. It is also about ensuring equity among all California customers of electric retail sellers who benefit from a successful BioMAT program. As discussed earlier in the document, BioMAT is one of several policy mechanisms geared toward achieving statewide air quality, climate, waste diversion, and public safety goals – goals that support the health and well-being of all Californians. The achievement of these goals results in societal benefits for bundled and unbundled IOU customers alike.

Staff's BioMAT program recommendations are summarized in Table 3 below.

Table 3. BioMAT Program Recommendations

Recommendation	Current Rule	Proposed Rule
Market Depth Requirement for Price Adjustments	At least five projects from five unaffiliated applicants must be in a category queue to trigger price increases or decreases.	At least three eligible projects from three unaffiliated applicants must be in a category queue to trigger price increases.
Price Adjustment Mechanism	The offer price (i) increases if the total capacity of projects accepting the price was less than 20% of the statewide capacity offered in the previous program period, (ii) decreases if the total capacity of projects accepting the price was more than 100% of the statewide capacity offered, and (iii) remains the same if the total capacity of projects accepting the price was between 20% and 100% of the statewide capacity offered.	The offer price (i) increases if there are no price acceptances for two consecutive program periods and market depth is achieved, (ii) decreases if at least two price acceptances occur at a given offer price in any program period, and (iii) remains the same if there has been one price acceptance at the offer price in at least one of two consecutive program periods when market depth is achieved (i.e. neither of the conditions for a price increase or decrease described above have been met).
Queue Management	The requirements for an Applicant to report to the IOU when a project’s eligibility status changes differ by IOU.	All applicants must attest at the start of each program period that they meet program eligibility criteria, and face a penalty if they fail to report a change in eligibility status.
Contract Execution	No deadline for contract execution after an Applicant accepts an offer price.	30-day deadline to execute BioMAT contracts after the Applicants accepts a price and provides all required information.
Program End Date	The program sunsets in February 2021.	The program sunsets in February 2026.
Guaranteed Commercial Operation Date	A project’s Guaranteed Commercial Operation Date shall be extended by six months if it fails to interconnect by the PPA’s Guaranteed Commercial Operation Date due to delays beyond the Seller’s reasonable control.	A project’s Guaranteed Commercial Operation Date shall be extended 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.
Increase the Generation Limit for BioMAT Deliveries	Project nameplate capacity may be sized five MW or smaller, provided that no more than three MW is delivered to the grid at any time.	Project nameplate capacity may be sized 5 MW or smaller.
Incremental Generation	Eligible projects must commence commercial operation on or after June 1, 2013, using the CEC’s	Existing generation units may participate in BioMAT if they incrementally increase their generation

	definition of "commercial operation date" in the RPS Eligibility Guidebook.	using BioMAT feedstock on or after June 1, 2013 based on the definition of "Incremental Generation" in the CEC's RPS Eligibility Guidebook.
High Hazard Zone (HHZ) Requirement	HHZ fuel is an eligible feedstock, but not a required feedstock under BioMAT Category 3.	New Category 3 projects must temporarily obtain 80% of their fuel from sustainable forest management and 80% from HHZs.
Cost Allocation	Bundled electricity customers and customers who depart bundled service after PPA execution pay for BioMAT .	Allocate BioMAT procurement costs through a non-bypassable charge to all customers in each IOU's service territory.

Questions

Comments in response to the questions below are due by November 29, 2018. Reply Comments are due by December 14, 2018. Comments shall not exceed 35 pages in length. Reply Comments shall not exceed 20 pages in length.

Pricing Mechanism – The following questions pertain to Staff Proposals 1-2, as well as other questions specific to BioMAT's pricing mechanism.

1. Do you support the proposal to reduce the market depth requirement from five to three for unaffiliated applicants? Why or why not?
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?
3. Should the Commission transition to a fixed price feed-in-tariff instead of the price adjusting mechanism? Why or why not?
 - a. If so, how should the market price(s) be determined?
 - b. If so, should the price(s) be periodically reviewed and revised? If yes, how should it be reviewed and how often should it be reviewed?
4. Should the Commission transition to a renewable auction mechanism (RAM) instead of the price adjusting mechanism? Why or why not?
 - a. If so, how much capacity should be offered in each RAM solicitation? Do you think there should be specific capacity targets for each BioMAT category? Please explain.
 - b. If so, do you agree that RAM solicitations should be held annually? If not annually, how often should RAM solicitations be held? Please explain.
 - c. If so, how should bids be evaluated?
 - d. If so, how should ratepayers be protected from high prices that could result from uncompetitive solicitations?

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?
 - a. If so, please explain what the changes should be.
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.
7. Are there any other program *pricing* proposals that the Commission should consider? If so, explain the proposal and how it would be consistent with Public Utilities Code section 399.20.

Program Administration – The following questions pertain to Staff Proposals 3-6

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

Program Eligibility – The following questions pertain to Staff Proposals 7-9, as well as other questions specific to program eligibility and expanding program participation.

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?

13. Do you support the proposal to allow incremental generation from existing units to be eligible for the BioMAT program? Why or why not?
14. Do you support the proposal to temporarily set an 80% HHZ fuel requirement for Category 3? Why or why not?
 - a. If not, how should the Commission ensure that the goals of the Governor's May 2018 Executive Order are met?
 - b. If not, would you support lowering the offer price for projects that do not commit to using at least 80% HHZ fuel? Please explain.
15. Should the Commission also consider a geographic component to the requirement that facilities be "strategically located" to better ensure that BioMAT projects are optimized to meet the state's wildfire and greenhouse gas reduction goals (e.g. require Category 3 projects to be located in areas of the state most in need of hazardous fuels treatment, with the highest levels of tree mortality, or located in areas of state that do not already have other nearby facilities that could utilize the wood)? Please explain.

Other – The following questions pertain to Staff Proposal 10, as well as other general questions about BioMAT.

16. Do you support the proposal to allocate BioMAT procurement costs through a non-bypassable charge to all California ratepayers? Justify your response with statutory or other legal reasoning.
 - a. If yes, how should BioMAT procurement costs be allocated? Provide explanation and justification for your proposal.
 - b. If no, please explain why not.
 - c. If no, do you have an alternative proposal to ensure that all California ratepayers pay for the benefits provided by the BioMAT program?
17. As noted in Staff's observations on pages 11-12, BioMAT is connected to the policy efforts of other State and Federal agencies. How could the Commission coordinate more closely with other agencies to streamline bioenergy development, increase consistency across related programs, and reduce costs for market participants and ratepayers?
 - a. What actions should the Commission take to better coordinate/maximize funding from federal agencies to support BioMAT program goals?
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.
 - 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.
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.
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).

Appendix A:

CPUC Activities to Address Tree Mortality and Wildfire Risks

Governor Brown's May 2018 Executive Order

In May 2018, Governor Brown issued Executive Order B-52-18 to address tree mortality, increase the ability of our forests to capture carbon, and systematically improve forest management. The CPUC is specifically responsible for implementing order 16 in the Governor's Executive Order:

- *Executive Order 16: "The California Public Utilities Commission is requested to review and update its procurement programs for small bioenergy renewable generators to ensure long-term programmatic certainty for investor-owned utilities and project developers, as well as benefits to ratepayers."*

Status: The Bioenergy Market Adjusting Tariff (BioMAT) program review is currently underway and seeks to address the issues raised in the Executive Order. The review will result in recommendations to simplify the BioMAT procurement process, enable expanded program participation, reduce ratepayer expenditures, and help achieve statewide goals. Specifically, to increase long-term programmatic certainty, Staff's straw proposal recommends extending the current program end date for an additional five years, from February 2021 to February 2026.

Forest Management Task Force

The Executive Order also created the Forest Management Task Force, which will implement the Governor's Executive Order and aid in implementing the Forest Carbon Plan. The CPUC will participate as a Task Force Member and as part of the Wood Utilization Working Group.

Wood Utilization Working Group.

The Forest Management Task Force contains ten working groups. The CPUC will participate in the "Wood Utilization" Working Group. The Wood Utilization Working Group is made up of state, local, and federal agencies and non-governmental organizations that play a role in creating and expanding opportunities for innovative wood products to support sustainable forest management. The proposed Working Group goals particular to the CPUC are:

- Review and update CPUC's procurement programs for small bioenergy renewable generators to ensure long-term programmatic certainty for investor-owned utilities and project developers, as well as benefits to ratepayers.
- Support bioenergy facilities utilizing HHZ material through expedited actions for BioMAT facilities, estimating biomass feedstock availability, and identifying potential funds to help offset higher feedstock costs of tree mortality material.

- Coordinate with other state-level initiatives, such as the Forest Climate Action Team and California Forest Biomass Working Group.

The CPUC is already undertaking actions related to the above proposed goals:

- The BioMAT program review.
- The CPUC is participating on the steering committee with CEC, CalFIRE, US Forestry Service, the California Biomass Energy Alliance, and PG&E for a study to assess the availability of HHZ fuel for power generation.
- The CPUC currently participates in the ad hoc Forest Biomass Working Group, intended for networking and education.

Other CPUC Activities to Address Tree Mortality and Wildfire Risks

In order to address the State’s efforts on the wild fire threat in California, in addition to actions related to the May 2018 Executive Order, the CPUC has taken expedited actions in response to Senate Bill 901, the Governor’s October 2015 Tree Mortality Emergency Proclamation, Senate Bill 859, Senate Bill 840, and Assembly Bill 1923 – as described below.

Senate Bill 901 (Dodd, 2016)

In September 2018, Governor Brown signed SB 901. The bill addresses numerous issues concerning wildfire prevention, response and recovery, including funding for mutual aid, fuel reduction and forestry policies, wildfire mitigation plans by electric utilities, and cost recovery by electric corporations of wildfire-related damages. Specifically, the legislation directs the Commission to update its biomass procurement rules through the Bioenergy Renewable Auction Mechanism (BioRAM) program, evaluate annual utility Wildfire Mitigation Plans, and take other actions to enhance the resiliency of utility infrastructure and ensure that wildfire cost recovery is just and reasonable. Implementation of SB 901 will begin in 2018 and continue through 2019.

Governor Brown’s October 2015 Tree Mortality State of Emergency Proclamation

The CPUC is specifically responsible for implementing orders 8, 9, and 10 in the Governor’s Tree Mortality Emergency Proclamation. The actions detailed here were carried out pursuant to those orders and other state directives.

Contracting Opportunities

The CPUC has taken the following actions to approve forest biomass contracts and expedite contracting opportunities within the BioMAT program:

- ▶ In 2016, the CPUC implemented SB 840 via CPUC Decision 16-10-025 to consider a broad scope of issues related to tree mortality / HHZ fuel for the BioMAT program. The resulting modifications included streamlined interconnection requirements for biomass projects and

accelerated price adjustments for forest biomass projects the BioMAT program. These changes took effect at the start of the subsequent BioMAT program period in February 2017.

- ▶ In August 2017, the CPUC implemented AB 1923's direction to improve opportunities for BioMAT by expanding eligibility for the BioMAT program to biomass facilities of up to five MW in capacity (if they deliver no more than three MW), in order to promote market participation.
- ▶ In March 2018, the CPUC adopted [Resolution E-4922](#), which directed the utilities to execute contracts with the developers that had accepted a BioMAT offered price, including three forest bioenergy contracts, for a cumulative capacity of 7.9 MW.

Interconnection

The CPUC has updated its relevant interconnection requirements within the BioMAT program and uses the CPUC's expedited interconnection approval process, as governed by CPUC Rule 21 (the CPUC regulation related to grid interconnection).

In addition, the CPUC has continued to take action to improve opportunities to streamline the interconnection process for all distributed generation, including BioMAT projects that utilize HHZ fuel:

- ▶ In August 2017, the CPUC hired a high-level ombudsman dedicated to Interconnection issues. The CPUC has held workshops to moderate dialogue between developers and the utilities, which has aided in improving communications and, in some cases, streamlined interconnection costs. The CPUC continues to hold regular Interconnection forums.
- ▶ The CPUC has ensured that interconnection cost transparency is clearly addressed in the IOUs' Annual "Unit Cost Guide," option to elect the "Cost Envelope." [CPUC Decision 16-06-052]
- ▶ In October 2018, the CPUC issued a Proposed Decision to implement the remaining portion of AB 1923 (Wood, 2016) that would update BioMAT rules so that biomass facilities can connect to the existing transmission system, in order to increase developer options, increase system efficiencies, and potentially reduce interconnection costs.
- ▶ The CPUC's scope of the latest Interconnection proceeding (Rulemaking (R.) 17-07-007) considers coordination between the Interconnection proceeding and other proceedings that address interconnection issues for forest bioenergy facilities in HHZs, pursuant to the Governor's Emergency Order on Tree Mortality.

Funding Forest Biomass through the Electric Program Investment Charge (EPIC)

CPUC staff is actively engaged with the EPIC program and provides guidance to the CEC in its implementation of the program. The CPUC has approved all EPIC plans to date allowing biomass projects to be awarded EPIC funding.

Statewide Coordination of Fire Safety Policy

The CPUC held a statewide stakeholder meeting on Fire Safety on January 31, 2018, reflecting the Commission's commitment to expand mitigation of wildfire threat related to utility infrastructure. This effort is being led by the CPUC's Safety Enforcement Division. The Commission has a Memorandum of Understanding with CalFIRE to coordinate closely on this initiative. Together, and working with experts, the CPUC and CalFIRE have developed a Fire Map which identifies areas of elevated and extreme fire threat related to utility infrastructure.

The CPUC also continues to collaborate with CalFIRE on a number of other issues, including efforts to better understand, and remove, barriers of getting HHZ fuel to the biomass facilities.