

Date of Hearing: March 22<sup>nd</sup>, 2023

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY  
Eduardo Garcia, Chair  
AB 625 (Aguiar-Curry) – As Introduced February 9, 2023

**SUBJECT:** Forest Biomass Waste Utilization Program

**SUMMARY:** Establishes the Forest Biomass Waste Utilization Program to increase the use of forest biomass waste, including—of particular interest to this Committee—requiring the California Energy Commission (CEC) to report to the Legislature on innovative bioenergy technologies, and to indefinitely extend the date of the Bioenergy Market Adjusting Tariff (BioMAT) at the California Public Utilities Commission (CPUC).

Specifically, **this bill:**

- 1) Establishes the Forest Biomass Waste Utilization Program in the California Air Resources Board's (CARB) Joint Institute for Wood Products Innovation, and requires the program to develop an implementation plan, in coordination with the Wildfire and Forest Resilience Task Force, Office of Planning and Research, the Governor's Office of Business and Economic Development, Department of Toxic Substances Control, Department of Conservation, CEC, and the CPUC, to meet the goals and recommendations of the Forest Biomass Waste Utilization Plan and the comprehensive wood utilization strategy and market framework required by the Wildfire and Forest Resilience Action Plan. Requires the implementation plan to identify funding needs, gaps in research and demonstration, necessary regulatory changes, and other needs, and to adopt best practices for biomass feedstock aggregation.
- 2) Requires CARB, in collaboration with governmental, nonprofit, and for-profit entities that have expertise in workforce development, to develop a workforce training program, which shall make recommendations to address barriers that impact the hiring of new workers, including high insurance premiums associated with newly trained drivers.
- 3) Requires CARB to include a methodology for quantifying the greenhouse gas and short-lived climate pollutant emissions, including black carbon, from wildfire, pile burning, and forest management activities, along with a list of the data needed to use the methodology, into the 2025 update of an assessment of greenhouse gas emissions from wildfire and forest management. Additionally requires CARB to consider the results of the assessment when developing the board's Scoping Plan.
- 4) Requires CARB, beginning January 1, 2025, and annually thereafter, to prepare and submit an annual report to the Legislature on the progress made on executing the implementation plan.

- 5) Requires the California Natural Resources Agency (CNRA) to include the recommendations for forest biomass waste utilization in relevant state climate adaptation plans.
- 6) Requires the CEC to consider funding qualifying projects pursuant to the Clean Transportation Program that use forest biomass waste for advanced biofuel technology development including, but not limited to, projects that use noncombustion conversion technologies for electrical vehicle charging or hydrogen vehicle fueling.
- 7) Requires the CEC, by December 31, 2024, to prepare a report, in coordination with CNRA and the Department of Conservation, which evaluates technologies that utilize forest biomass waste, including recommendations for opportunities to maximize environmental performance, grid reliability, and value to electricity ratepayers. The report would also assess the potential for the use of forest biomass waste produced within fire-threat areas to support the integration of biomass power to support rural microgrids, or provide other grid support, or both, including an assessment of reliability and fueling concerns. The report may include a review of, and recommendations for, alternative programming or financing considerations.
- 8) Requires the CEC, as part of the 2025 edition—and biennially thereafter—of the Integrated Energy Policy Report (IEPR), to include an assessment of the potential for forest biomass waste energy to provide firm renewable power.
- 9) Requires the CPUC to continue the BioMAT program until the full target of 250 megawatts, as specified in statute, have been procured.
- 10) Defines a number of terms for the purposes to the bill, including “forest biomass waste,” which means forest biomass that is removed for wildfire mitigation, to reduce the risks to public safety or infrastructure from falling trees, creation of defensible space, or for forest restoration projects.

**EXISTING LAW:**

- 1) Establishes, pursuant to Executive Order No. B-52-18, a Forest Management Task Force, now known as the Wildfire and Forest Resilience Task Force, involving specified state agencies to create the action plan for wildfire and forest resilience. The executive order also established a Joint Institute for Wood Products Innovation.
- 2) Designates, under the California Global Warming Solutions Act of 2006, CARB as the state agency charged with monitoring and regulating sources of emissions of GHGs. Requires CARB to adopt a statewide greenhouse gas (GHG) emissions limit and to adopt

rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. (Health and Safety Code §§ 38500-38510)

- 3) Requires CARB, in consultation with the Department of Forestry and Fire Protection (CalFire), to develop a report on or before December 31, 2020, and every 5 years thereafter that assesses GHGs associated with wildfire and forest management activities. Requires CARB to prepare, adopt, and update an inventory of GHGs from all sources located in the state. (Health and Safety Code § 38535 and § 39607.4)
- 4) Requires electric investor-owned utilities (IOUs) to collectively procure at least 250 megawatts (MW) of generated resources from bioenergy projects, and the CPUC to allocate amongst the electric IOUs shares of the 250 MW from bioenergy derived from organic waste diversion, dairy and agricultural sources, and byproducts of forest management. Requires the CPUC to encourage IOUs to develop programs and services that facilitate development of bioenergy and biogas. This program is known as BioMAT. (Public Utilities Code § 399.20)
- 5) Requires retail sellers and publicly owned utilities to increase purchases of renewable energy such that at least 60% of retail sales are procured from eligible renewable energy resources by December 31, 2030. This is known as the Renewables Portfolio Standard (RPS). Electricity generated from biomass is considered a renewable energy resource under this policy. (Public Utilities Code §§ 399.11-399.33)
- 6) Establishes the policy that all of the state's retail electricity be supplied with a mix of RPS-eligible and zero-carbon resources by December 31, 2045, for a total of 100% clean energy. Requires the CPUC, in consultation with the CEC, CARB, and all California balancing authorities, to issue a joint report to the Legislature by January 1, 2021, reviewing and evaluating the 100% clean energy policy. (Public Utilities Code § 454.53)
- 7) Establishes within the RPS a requirement that electrical corporations, by December 1, 2023, collectively procure, through financial commitments of 5 to 15 years, their proportionate share of 125 MWs of cumulative rated generating capacity from bioenergy projects commencing operation prior to June 1, 2013, that each produces its generation using specified minimum percentages of certain types of forest feedstock, including from Tier 1 and Tier 2 high hazard zones. (Public Utilities Code § 399.20.3)
- 8) Requires an electrical corporation, local electric publicly owned utility, or community choice aggregator with a contract to procure electricity generated from biomass that is operative at any time in 2022, and expires or expired on or before December 31, 2028, to seek to amend the contract to include, or seek approval for a new contract that includes, an expiration date five years later than the expiration date in the contract that was operative in 2022, so long as the contract extension follows the feedstock requirement.

This requirement would be limited to facilities sourcing fuel material in California and would not apply to facilities located in certain air basins. (Public Utilities Code § 8388)

- 9) Requires the CEC to adopt the IEPR every two years, which must contain an overview of major energy trends and issues facing the state, including, but not limited to, supply, demand, pricing, reliability, efficiency, and impacts on public health and safety, the economy, resources, and the environment. (Public Resources Code §§ 25300-25327)
- 10) Requires the CEC to incorporate firm zero-carbon resources into the IPER in a timely fashion. (Public Resources Code § 25305.5)

**FISCAL EFFECT:** Unknown. This bill is keyed fiscal and will be referred to the Committee on Appropriations for its review.

**BACKGROUND:**

*Biomass processes* – Biomass is renewable organic material that can include wood and wood processing wastes, yard and food waste, agricultural crops, animal manure, and human sewage (municipal solid waste). Biomass can be used as feedstock to generate heat and electricity out of what would otherwise be waste material. Biomass is converted to energy through four main processes: direct combustion, and thermochemical, chemical, and biological conversion. Direct combustion, or simply burning the biomass, is the most common method for converting biomass to useful energy. Thermochemical conversion—such as pyrolysis and gasification—breaks down the biomass material with heat, usually with little to no oxygen so there is no burning. Chemical conversion breaks down the biomass material through chemical reactions; whereas biological conversion—including fermentation and bacterial decay—breaks down the biomass material through the use of enzymes, bacteria, or other microbes.

*Biomass electricity* –Today, there are about 87 operating biomass facilities—both direct combustion and alternative processes—in operation with a capacity of 1,259 MW, accounting for about 3% of in-state generation.<sup>1</sup> Electricity generated from biomass is considered a renewable energy resource for the purposes of meeting the state’s RPS requirements. Unlike variable renewable energy resources (such as solar and wind), bioenergy technologies can provide reliable and renewable baseload generation, or firm power, meaning that electricity can be generated during scheduled times and at predetermined power levels.

*Board of Forestry and Fire Protection recommendations* – On November 4, 2020, the Joint Institute for Wood Products Innovation and the Board of Forestry and Fire Protection released a set of recommendations to promote biomass utilization in California, specifically seeking to put forest fuels to its highest value use rather than pile burning or leaving the material to

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<sup>1</sup> CEC website, “California Biomass and Waste-to-Energy Statistics and Data,” [https://ww2.energy.ca.gov/almanac/renewables\\_data/biomass/index cms.php](https://ww2.energy.ca.gov/almanac/renewables_data/biomass/index cms.php), viewed on 04.22.2022

decompose.<sup>2</sup> The report includes a comprehensive list of market and regulatory challenges in bioenergy, and offers a couple dozen recommendations for various state agencies, many of which appear in this bill. Recommendation 2.3.1 urged ensuring microgrid tariffs include forest waste-based energy and forested communities.

*BioMAT* – BioMAT is a feed-in-tariff program established by SB 1112 (Rubio, Chapter 612, Statutes of 2012). Feed-in-tariffs offer long-term contracts with price certainty—usually above-market—for financing renewable energy investments. BioMAT created a 250 MW procurement requirement for small-scale bioenergy projects for California’s three largest IOUs,<sup>3</sup> broken into biogas, agriculture, and sustainable forest management categories. As shown in Table 1, the program has received limited adoption since its implementation in 2014.

**Table 1:** BioMAT Mandated Allocations as of Q2 2022.<sup>4</sup>

Category	MW Allocation	MW Contracted	MW Remaining	Contract Price (\$/MWh)
Biogas	110	12.5	97.5	127.72
Dairy/Agriculture	90	23	67	187.72 (Dairy) 183.72 (Other Agriculture)
Sustainable Forest Management	50	13.88	36.12	199.72
<b>Total</b>	<b>250</b>	<b>49.38</b>	<b>200.62</b>	

The BioMAT program underwent a formal program review in 2018,<sup>5</sup> where CPUC staff recommended programmatic and procedural improvements to the program. The goal of the program review was to simplify the BioMAT procurement process, enable expanded program participation, address program barriers, reduce ratepayer expenditures, and promote statewide goals. In August 2020 a decision was issued directing changes to the BioMAT program rules, contract terms, clarifications in the procurement process, and an extension of the BioMAT program until December 2025<sup>6</sup> (from the previously set end date of February 2021).<sup>7</sup> The extension date was determined by evaluating the benefits of the program alongside its high costs and low participation. The prospect of extending the program indefinitely was suggested to likely increase costs to ratepayers, was unlikely to provide meaningful benefits, and would not address the issues associated with low participation.

<sup>2</sup> CPUC, CAL-FIRE, “Joint Institute Recommendations to Expand Wood and Biomass Utilization in California,” November 4, 2020.

<sup>3</sup> Pacific Gas & Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E)

<sup>4</sup> As reported to this Committee by the CPUC on March 16, 2023.

<sup>5</sup> R. 18-07-003

<sup>6</sup> D. 20-08-043

<sup>7</sup> D. 14-12-081

In October 2022, the CPUC opened a rulemaking to implement AB 843 (Aguiar-Curry, Chapter 234, 2021), which authorized Community Choice Aggregators (CCAs) to participate in the BioMAT program. In this proceeding, the CPUC is considering how to most effectively integrate CCAs into the BioMAT program alongside IOUs, as well as the potential effect of the incorporation of CCAs on the BioMAT program. In their evaluation of potential effects of CCA addition, the CPUC identified specific issues as being within the scope of the proceeding, including the possibility of an additional 5-year extension of the BioMAT program (extending the end date to December 2030).<sup>8</sup> The CPUC is scheduled to issue a preliminary decision in Q3 of 2023 with a Commission Decision to follow, strongly suggesting that the CPUC will weigh in on the possibility of a BioMAT timeline extension well before the current program end date of December 2025.

*Integrated Energy Policy Report (IEPR)* – Existing law requires the CEC to develop the IEPR and establishes requirements for certain reports that must be included in the IEPR. The IEPR is a comprehensive energy policy report covering many aspects of California’s energy market, including energy supply and demand forecasts. In compliance with existing law, the CEC develops a full IEPR report every two years, with an update in the years between those full reports. The CEC develops the IEPR through public workshops, which include stakeholders relevant to the topics covered by the report. A draft version of the report is publicly available for comment and the IEPR is adopted at a CEC business meeting, which is also open to the public. The final IEPR is submitted to the governor, Legislature and other stakeholders in addition to being posted on the CEC’s webpage.

#### COMMENTS:

- 1) *Author’s Statement.* According to the author, “California’s forests cover nearly one-third of the state and provide enormous benefits for the climate, the environment, and the economy. Our forests are, however, increasingly vulnerable to wildfire, invasive species, drought, and other threats. State law requires forest fuel removal on one million acres per year, which will generate millions of tons of forest waste biomass. The Air Board’s 2022 Climate Change Scoping Plan calls for forest management on 2.3 million acres a year to reduce wildfire risks and restore healthier, more resilient forests. Without a productive way to use that biomass, it will be piled and burned, which emits significant climate and air pollution. Converting forest waste biomass to beneficial re-uses can, instead, reduce emissions from pile and burn while creating renewable power and fuels, biochar, cross-laminated timber, and other valuable wood products. Doing so will also boost jobs, economic growth, and energy security in many of California’s poorest and most vulnerable regions. AB 625 will address the need to put California’s forest biomass waste to reduce wildfires and create healthier forests by establishing the Forest Waste Biomass Utilization Program and directing state agencies to help promote the processing of biomass waste into bioenergy and other wood products. This bill also extends the

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<sup>8</sup> R. 22-10-010

existing Bioenergy Feed-in Tariff (BioMAT) Program until it meets its original goal of procuring 250 MW of bioenergy.”

- 2) *Statewide benefits of forest management.* Wildfires have been growing in duration and ferocity over the past 20 years. Their growing risk is due to a number of factors, from accumulating forest fuels to a warming climate to expanding development in the wildland-urban interface. Better management of the fuels that contribute to this wildfire risk is one of the main strategies to help mitigate fires.

According to the Assembly Committee on Natural Resources, the State of California is responsible for fire and resource protection on nearly 13.3 million acres of private and state-owned forested lands. The state owns about 1.1 million acres of these lands, and 12.2 million acres of lands are under private ownership. In the past several years, forest management has significantly expanded on these lands. CalFire has increased its forest thinning and prescribed fire activities from about 30,000 acres in 2016 to more than 50,000 acres in 2020. Partners receiving state-funded grants treated more than 30,000 acres in 2020. Private landowners currently actively manage 250,000-300,000 acres through fuels reduction, mechanical thinning, and timber harvest projects. In addition, SB 901 (Dodd, Chapter 626, Statutes of 2018) requires California to double forest fuel removal. And in August 2020, California and the US Forest Service agreed to scale up vegetation treatment and maintenance to one million acres of federal, state, and private forest and wildlands annually by 2025.<sup>9</sup>

All of these efforts produce forest waste. Sometimes that waste is left in piles, contributing to wildfire risk; whereas at others times the waste is burned on site, contributing to air pollution. This bill seeks recommended and alternative strategies for forest fuel load reduction in the hopes of creating end-use markets for biomass that will encourage and accelerate healthy forest management to prevent wildfire spread while reducing GHG emission.

- 3) *The Best End-Use?* The need to better manage California’s forest waste is apparent. Having a robust biomass market spurring that forest management can help drive down the cost of forest waste removal activities. However, the biomass supply chain is underdeveloped in California. As noted above, government intervention has led the biomass energy sector to be the main end-use for California’s biomass waste. This bill appropriately seeks a more holistic approach by establishing a Forest Biomass Waste

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<sup>9</sup> Memorandum of Understanding, “Agreement for Shared Stewardship of California’s Forest and Rangelands between the State of California and the USDA, Forest Service Pacific Southwest Region,” August 12, 2020.

Utilization Program, with an emphasis on examining innovative new projects to manage the large volume of forest waste anticipated to arise in the coming years.<sup>10</sup>

- 4) *Cost Considerations.* The main end-use of biomass today is as a fuel for California's existing biomass power plants. This has largely been driven by direct mandates to procure biomass electricity. In October 2015, Governor Brown issued an Emergency Order addressing Tree Mortality, and called upon the CPUC to review and update its procurement programs for small bioenergy generators.<sup>11</sup> The Bioenergy Renewable Action Mechanism (BioRAM) program was established in response. Subsequently, SB 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2016) directed additional BioRAM procurement resulting in the requirement on large IOUs to procure 146 MWs of bioenergy from High Hazard Zone fuel. SB 901 (Dodd, Chapter 626, Statutes of 2018) further amended the BioRAM program to add program flexibility and extend certain biomass contracts by five years. Without these efforts, the viability of electricity generation from biomass is unclear. Biomass often experiences high operation and transportation costs, which often make electricity generated from biomass more expensive than other sources.

As shown in Figure 1,<sup>12</sup> RPS contract prices saw a spike in 2016 due to the execution of the BioRAM contracts. Figure 1 does not show contracts of 3 MW or less, so BioMAT contracts are not represented; however, their 2021 average contract price was substantially higher than the cumulative average of BioRAM contract prices.<sup>13</sup> The total contracted capacity and average price of BioMAT contracts in 2021 was 11.3 MW and 17.4 ¢/kWh, respectively, while the total capacity and average contract price of existing BioRAM contracts is 178 MW and 11.4 ¢/kWh, to date. For comparison, the IOUs' weighted average RPS procurement expenditures in 2021 were approximately 8.4 ¢/kWh for geothermal, 14.4 ¢/kWh for small hydro, 11 ¢/kWh for solar PV, and 8.6 ¢/kWh for wind.<sup>14</sup>

**Figure 1-** Historical Trend of All Load Serving Entities' RPS Contract Costs by Technology and Year of Execution

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<sup>10</sup> According to the Board of Forestry, state requirements to remove forest fuels on one million acres per year will lead to 10 to 15 million bone dry tons of forest waste biomass annually. Existing biomass plants use about five million BDT of biomass per year.

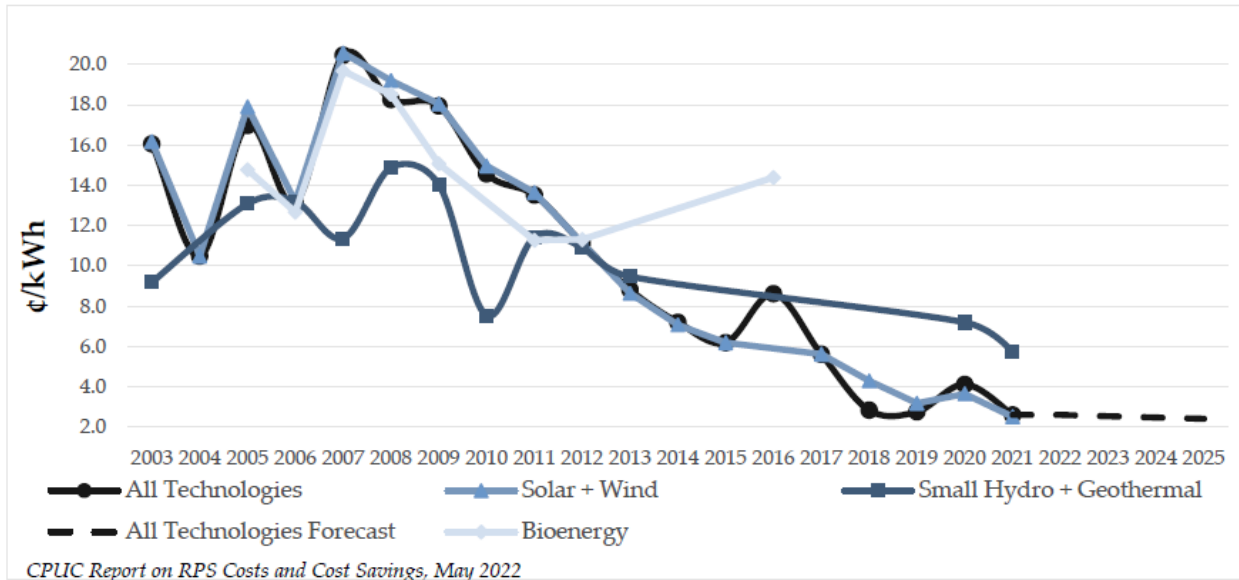
<sup>11</sup> Governor Edmund G. Brown, E.O. B-52-18

<sup>12</sup> Taken from pg. 14 of the CPUC's 2022 Padilla Report, published May 2022.

<sup>13</sup> 12.8 ¢/kWh for biogas; 1848 ¢/kWh for dairy/ag; and 20 ¢/kWh for forest; pg. 15, 2022 Padilla Report.

<sup>14</sup> Pg. 25, 2022 Padilla Report





- 5) *Current CPUC rulemaking on the BioMAT program:* The CPUC has an ongoing rulemaking proceeding (R.22-10-010) which, among other issues, is considering an additional five-year extension to the BioMAT program which, if adopted, would push the end date of the program to December 2030. In considering this potential extension, the CPUC is weighing the history of cost concerns and low utilization of the BioMAT program alongside the potential for recent developments to increase participation in the program, particularly the authorization of CCA participation. In short, the CPUC both set the current BioMAT end date and is currently in the process of considering an additional extension. Therefore it may be premature to indefinitely extend the BioMAT program as this bill seeks to do. However, it is reasonable for new program participants to be concerned with the current CPUC-established deadline of December 2025, as ongoing rulemakings are still underway. *The author and committee may wish to consider amendments to remove the indefinite extension of the BioMAT program, and rather ensure the BioMAT program may continue until CCAs are able to adequately participate in the program.*
  
- 6) *Avoiding strain on IEPR:* Assessing the potential for forest biomass waste energy to provide renewable power is important, but requiring the CEC to re-assess the role of forest biomass waste energy every two years as part of the IEPR process may not yield enough new insights to justify the additional reporting burden. *As such, the author and committee may wish to consider amendments to strike part of Section 25302.3(a), retaining the assessment of forest biomass waste energy in the 2025 edition of the IEPR but not requiring similar assessments in subsequent IEPRs.*
  
- 7) *Related Legislation.*

AB 998 (Connolly), would require the CEC to issue a report on the utility-scale biomass combustion facilities still in operation, options to maximize the environmental benefits of

these facilities, recommendations for strategies to upgrade biomass combustion facilities, and an evaluation of the feasibility of upgrading utility-scale biomass combustion facilities that have recently ceased operation. Status: *referred* to the Assembly Committee on Natural Resources.

8) *Prior Legislation.*

AB 2878 (Aguiar-Curry, 2022) would, among other provisions, establish the Forest Waste Biomass Utilization Program to develop an implementation plan to meet the goals and recommendations of specified statewide forest management plans, require the CEC to report on innovative bioenergy technologies that utilize forest biomass waste and to include an assessment of the potential for forest biomass waste energy to provide firm renewable power in the 2023 edition of the integrated policy report and each report adopted biennially thereafter, and requires CARB to report on a methodology to quantify the greenhouse gas and short-lived climate pollutant emissions from forest management activities as well as consider the results of that report in the next update of its scoping plan. Status: *Died* – Senate Appropriations.

SB 1109 (Caballero) extended the electrical corporations' obligation to collectively procure their proportionate share of 125 megawatts of cumulative rated generating capacity from existing bioenergy projects, require those entities with a contract to procure electricity generated from biomass that expires before December 31, 2028, to seek 5 year extensions on those contracts, and require any new contracts for incremental procurement of electricity from bioenergy resources to be from a resource that meets emission limits equivalent to the best available retrofit control technology. Status: Chapter 364, Statutes of 2022.

AB 843 (Aguiar-Curry) authorizes a CCA to execute contracts for eligible bioenergy projects and submit those contracts for cost recovery pursuant to the BioMAT program, if open capacity exists within the 250-megawatt BioMAT program limit. Status: Chapter 234, Statutes of 2021.

AB 322 (Salas) requires the CEC to consider, in the investment planning process for electric ratepayer-funded Electric Program Investment Charge program, funding for eligible biomass conversion to energy projects. Status: Chapter 229, Statutes of 2021.

AB 3163 (Salas), expands the definition of “biomethane” to include methane that is produced from the non-combustion thermal conversion of eligible biomass feedstock, for purposes of the CPUC's consideration of adopting biomethane procurement targets. Status: Chapter 358, Statutes of 2020.

SB 901 (Dodd), among its many provisions, required an extension by 5 years of the existing biomass procurement contracts authorized under an executive order from Governor J. Brown. Status: Chapter 626, Statutes of 2018.

SB 859 (Committee on Budget and Fiscal Review), among its many provisions, directed 125 MW of bioenergy procurement. Status: Chapter 368, Statutes of 2016.

SB 1122 (Rubio), established a statewide procurement of up to 250 MW of renewable energy from small biomass or biogas technologies that utilize low emission technologies, and requires 50 MW be from small-scale bioenergy from the byproducts of sustainable forestry. This established the BioMAT program. Status: Chapter 612, Statutes of 2012.

- 9) *Double Referral*. This bill is double-referred; upon passage in this Committee, this bill will be referred to the Assembly Committee on Natural Resources.

## **REGISTERED SUPPORT / OPPOSITION:**

### **Support**

Association of California Water Agencies (ACWA)  
Bioenergy Association of California  
California Forestry Association  
Camptonville Community Partnership, INC  
Marin Clean Energy (MCE)  
Pioneer Community Energy (UNREG)  
Placer County Air Pollution Control District  
Rostrum  
Rural County Representatives of California (RCRC)

### **Oppose**

Climate Action California  
Sierra Club

### **Oppose Unless Amended**

Sempra Energy and Its Affiliates: San Diego Gas & Electric Company and Southern California Gas Company

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