Date of Hearing: April 17, 2024

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Cottie Petrie-Norris, Chair
AB 2750 (Gallagher) – As Amended April 4, 2024

SUBJECT: Electricity: procurement: generation from biomass

SUMMARY: Extends requirements on electric investor-owned utilities (IOUs) and community choice aggregators (CCAs) to procure energy from biomass generating electric facilities by two years. Also expands eligibility of the 5-year extensions for procurement contracts from biomass facilities to include facilities located in areas that voluntarily reclassified their air pollutant levels to "severe" or "extreme" but still have documented levels below those more restricted levels.

Specifically, **this bill**:

1) Extends the IOUs' obligations to collectively procure their proportionate share of 125 megawatts (MW) of cumulative rated generating capacity from bioenergy projects to July 1, 2025.

2) Expands eligibility of the 5-year extensions for procurement contracts from biomass facilities to include facilities located in areas that voluntarily opt for federal "severe" or "extreme" nonattainment status but that have measured levels of air pollutants below "severe."

EXISTING LAW:

1) Requires electric IOUs to collectively procure at least 250 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)

2) Establishes within the RPS a requirement that electrical corporations, by December 1, 2023, collectively procure, through financial commitments of five years, their proportionate share of 125 MW 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. This program is known as BioRAM. (Public Utilities Code § 399.20.3)

3) Requires IOUs, local publicly owned electric utilities (POUs), and CCAs with contracts to procure electricity generated from biomass that was operative at any time in 2022, and expires or expired on or before December 31, 2028, to seek to extend the expiration date of those contracts by 5 years so long as the contract extension follows the feedstock requirement. Excludes this requirement from any biomass facilities located in federal severe or extreme nonattainment areas for particulate matter or ozone. (Public Utilities Code § 8388)

4) Requires retail sellers and POUs 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)

5) 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 California Energy Commission (CEC), California Air Resources Board (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)

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

BACKGROUND:

Biomass – 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 – From about 1990 to 1993, California's biomass power generation was at its highest.[1] But by 1996, the energy production from biomass combustion decreased to about 590 MW.[2] As of 2019, there were 23 operating biomass facilities, which represented approximately 3% of the state's electrical generation capacity.[3] 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. Despite the declining number of power plants, the generation capacity of biomass facilities in sum has largely remained unchanged since 2001, per the CEC *Energy Almanac* data.

A number of state policies have required and encouraged the procurement of biomass, in many cases to address other policy issues, such as tree mortality and wildfires.

---

[1] CEC; "Biomass Energy in California; https://www.energy.ca.gov/data-reports/california-power-generation-and-power-sources/biomass/biomass-energy-california.
[2] The expiration of governmental subsidies was a main driver for the reduction in biomass power generation during this time.
[3] University of California Agriculture and Natural Resources; "Woody Biomass Utilization"; https://ucanr.edu/sites/WoodyBiomass/Woody_Biomass_Library/Energy/.

2015 Executive Order – In 2015, then-Governor Brown issued an Emergency Proclamation to protect public safety and property from falling dead and dying trees and wildfire. The proclamation directed the California Department of Forestry and Fire (CalFire), the Natural Resources Agency, the Department of Transportation, and the CEC to identify the state's High Fire Hazard Severity Zones (HHZ) as high priority for tree removal to prevent wildfire and falling trees. The proclamation also directed the CPUC to use its authority to extend contracts for bioenergy facilities receiving feedstock from HHZs.

BioRAM 1 Contracts – On March 17, 2016, the CPUC issued Resolution E-4770 requiring each large electric IOU to enter into contracts to purchase their share of at least 50 MW of collective generating capacity from biomass generation facilities that use HHZ material as feedstock. Specifically, the biomass facilities were required to use a minimum of 40% feedstock from HHZ in 2016 and grow to 80% in 2018 and all subsequent years. The IOUs were required to provide 5-year contracts to facilities, with the right to extend the 5-year contract term for one year at a time, up to a cumulative total of 10 years so long as HHZ fuel is available at the minimum fuel requirement (80%). The CPUC utilized a renewable auction mechanism (RAM) as a streamlined procurement process.

SB 859 (Committee on Budget, Chapter 368, Statutes of 2016) – SB 859 included a new requirement for electric IOUs and POUs to procure their respective share of 125 MW from existing biomass facilities using prescribed amounts of dead and dying trees located in HHZs as feedstock, with the IOU assigned portion at 96 MW. Specifically, the legislation requires that at least 80% of the feedstock of an eligible biomass facility, on an annual basis, must be a byproduct of sustainable forestry management. SB 859 requires that at least 60% of the feedstock come from HHZs. SB 859 requires that the procurement costs be recovered from all customers on a non-bypassable basis.

CPUC Resolution E-4805 – In October 2016, the CPUC issued Resolution E-4805 to implement the electric IOU procurement requirements of SB 859. Resolution E-4805 provided that the IOUs could meet their proportionate shares of the 125 MW goal, detailed in Table 1, using any combination of: (a) the BioRAM ordered by Resolution E-4770; (b) a subsequent RAM (BioRAM 2) authorized in the Resolution; and (c) bilateral procurement. However, in order to allow procurement under option (b), Resolution E-4805 required the IOUs to create an updated BioRAM 2 standard contract rider. Specifically, BioRAM 2 contracts must contain the feedstock requirements established in SB 859, specify that the contract length is 5 years, requires that the contracted facility is an existing bioenergy project that commenced operation prior to June 1, 2013, and update administrative details such as dates, deadlines, and process requirements.

Table 1. IOU BioRAM Procurement Orders (MWs)[4]

IOU BioRAM Procurement Orders			
	PG&E	**SCE**	**SDG&E**
Emergency Order (Res. E-4770)	20	20	10
SB 859 (Res. E-4805)	43	44	9
Total	63	64	19

PG&E = Pacific Gas and Electric; SCE = Southern California Edison; SDG&E = San Diego Gas and Electric

SB 901 (Dodd, Chapter 626, States of 2018) – After a year of catastrophic fires affected the state, including the North Bay Fires, Thomas Fire, and the Carr Fire, the Legislature passed and the governor signed SB 901. This bill requires a number of actions to reduce and prevent the risk of wildfires and to address issues associated with electric IOU cost recovery of wildfire damages. SB 901 also included specific provisions related to biomass facilities, including provisions to loosen the requirements on the facilities, such as: revising the HHZ fuel definitions, require BioRAM contracts to include a monthly compliance option with updated reporting and payment. SB 901 also prohibits biomass facilities from participating in BioRAM if they operate in areas of the state with severe or extreme federal air quality designations, and revise default terms.

CPUC Resolution E-4977 – In its efforts to implement the changes noted in SB 901, the CPUC adopted resolution E-4977 in January 2019. The resolution notes, collectively, the BioRAM program requires the IOUs to procure 146 MW of qualifying biomass electricity. At the time, 153 MW were under contract – 119 MW under BioRAM 1 contracts and 35 MW under BioRAM 2.

SB 1109 (Caballero, Chapter 364, Statutes of 2022) – SB 1109 extends the sunset date of the BioRAM program to December 31, 2023. In other words, this bill extends the electric IOUs obligation to collectively procure their proportionate share of 125 MW of cumulative rated generated capacity from existing bioenergy projects, commencing operation before June 1, 2013, through financial commitments of 5 to 15 years, inclusive. This bill also requires IOUs with a contract to procure electricity generated from biomass that expires or expired on or before December 31, 2028, to provide an extension, at a minimum of five years, on those contracts if the contract was operative in 2022, so long as the contract extension follows the feedstock requirement (80% shall be a byproduct of sustainable forestry management and at least 60% shall be from HHZs) and the facility is located in areas of the state with federal air quality designations below severe or extreme.

CPUC Resolution E-5288 – The CPUC adopted resolution E-5288 in October 2023 to implement the requirements of SB 1109. The resolution notes that, to be consistent with previous CPUC BioRAM orders, IOUs are authorized to procure their allocated MW share included in Table 1. The resolution also determined that the IOUs are to provide 5- to 15-year extensions to all eligible sellers within 60 days of the resolution's publication.

[4] Cumulative 146 MW across the three IOUs. CPUC; "Bioenergy Renewable Auction Mechanism (BioRAM)"; https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/rps/rps-procurement-programs/rps-bioram.

As shown in Table 2, today, the IOUs collectively procure 154 MW of qualifying biomass electricity, above the required cumulative 146 MW.

Table 2. Current IOU BioRAM Contracts[5]

IOU BioRAM Contracts			
IOU	**Facility Name**	**Location**	**Capacity (MW)**
PG&E	Burney	Shasta County, CA	29
PG&E	Wheelabrator Shasta	Shasta County, CA	34
PG&E	Woodland Biomass	Yolo County, CA	25
SCE	Rio Bravo Rocklin	Placer County, CA	24
SCE	Pacific Ultrapower Chinese Station	Tuolumne County, CA	18
SDG&E	Honey Lake Power Company / Greenleaf	Lassen County, CA	24
Total			**154**

Nonattainment areas for air pollutants – In 2015, the U.S. Environmental Protection Agency (EPA) promulgated a new National Ambient Air Quality Standards (NAAQS) for ozone at a maximum daily 8-hour average of 70 parts per billion.[6] Areas of the country where air pollution levels persistently exceed the national ambient air quality standards may be designated as "nonattainment." These nonattainment areas are required under the federal Clean Air Act to develop plans that describe how the areas will attain the 2015 NAAQS by a certain deadline, through strategies that achieve air quality improvements. The EPA classifies ozone nonattainment areas based on ozone concentrations, and these classifications determine the attainment deadline and planning requirements.[7] Areas can voluntarily request reclassification as needed to extend the attainment deadlines.

Sacramento Federal Ozone Nonattainment Area (SFNA) – Effective in 2018, the EPA designated Sacramento Metro as a nonattainment area with a Moderate classification and an August 3, 2024 attainment date.[8] In 2020, CARB submitted a request on behalf of the SFNA – which comprises of the Sacramento Metropolitan Air Quality Management District, El Dorado County Air Quality Management District, Feather River Air Quality management District, Placer County Air Pollution Control District, and Yolo-Solano Air Quality Management District – to voluntarily reclassify Sacramento Metro as a Serious nonattainment area. The EPA approved the request effective November 2021.[9] Pursuant to the reclassification, the SFNA would have until August 3, 2027 to attain the 2015 ozone NAAQS.

Since then, the SFNA air districts have been working with CARB on modeling to simulate future air quality. Their modeling results indicated that it is very unlikely that Sacramento Metro would

---

[5] Per data request from the CPUC on March 21st, 2024.
[6] EPA; "2015 Revision to 2008 Ozone National Ambient Air Quality Standards (NAAQS) Related Documents"; https://www.epa.gov/ground-level-ozone-pollution/2015-revision-2008-ozone-national-ambient-air-quality-standards-naaqs.
[7] EPA; "Ozone NAAQS Timelines"; https://www.epa.gov/ground-level-ozone-pollution/ozone-naaqs-timelines.
[8] 83 FR 25776, EPA
[9] 86 FR 59648, EPA

achieve the NAAQS for ozone by the Serious attainment deadline.[10] For a similar reason of gaining more time to come into compliance with NAAQS, in August 2023 CARB once again submitted a request on behalf of SFNA to voluntarily reclassify as a Severe nonattainment area with an August 2033 attainment deadline. This request is pending approval at the EPA.

COMMENTS:

1) *Author's statement.* According to the author, "Under current law, IOUs and CCAs are exempted from purchasing generating capacity from eligible bioenergy projects if the air district in which the biomass facility is located is in a federal "severe" or "extreme" nonattainment area for particulate matter or ozone. Although not intended to include air districts that voluntarily reclassified themselves to "severe" and "extreme" nonattainment (where actual measured levels of particulate matter are below these classifications), a voluntary reclassification by the Sacramento Federal Ozone Nonattainment Area had the unintended impact of disqualifying a biomass facility in Lincoln, California from a Bioenergy Renewable Auction Mechanism (BioRAM) power purchase agreement (PPA) extension. AB 2750 ensures that biomass plants in air districts that voluntarily reclassify to severe or extreme nonattainment status still qualify under existing law requiring utilities to procure generating capacity from biomass providers. These facilities are crucial to meeting California's renewable energy goals and effectively managing forest waste from high fire hazard severity zones."

2) *Need for biomass energy.* 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.[11]

   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,

[10] CARB; "CARB Review of the Sacramento Regional 2015 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan"; September 2023.
[11] 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 2020.

contributing to air pollution. 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.

3) *Cost of biomass energy.* According to the CPUC, the average price of contracts executed in 2022 that were greater than 3 MW was 6.2 cents per kilowatt-hour (kWh). In comparison, the average contract price of existing BioRAM contracts was 11.3 cents/kWh.[12] The CPUC has cited a number of challenges with accessing fuel for biomass facilities, including insufficient supply chain capacity, long hauling distances, and high transportation costs, as well as the need for retrofits of existing facilities that contribute to BioRAM's high price.[13]

4) *Sacramento is special.* The Rio Bravo Rocklin biomass facility in Lincoln, CA is one of 6 facilities the IOUs are currently contracted with to meet their collective procurement requirements for BioRAM.[5] Of the 6 facilities, Rio Bravo Rocklin is the only facility currently located in a nonattainment area, in the SFNA. The Pacific Ultrapower Chinese Station is located in the Tuolumne County Air Pollution Control District, which met the 2015 ozone NAAQS by the Marginal attainment date of August 2021,[14] while the other 4 facilities are located in areas designated as attained since the adoption of the 2015 NAAQS.

   Rio Bravo Rocklin entered into a 5-year Power Purchase Agreement (PPA) with Southern California Edison (SCE) beginning September 2017 to produce 24 MWs. The sponsor reports that, in 2019, SCE extended this initial contract through September 2027. When CARB requested the EPA to reclassify the SFNA to a Severe nonattainment zone in 2023, the CPUC had not yet finished rulemaking for SB 1109; Resolution E-5288, released in October 2023, directed the IOUs to provide extensions accorded by SB 1109 within 60 days of the resolution's publication.[15] By then, the pending reclassification had disqualified Rio Bravo Rocklin from an extension. This bill seeks to provide Rio Bravo Rocklin that extension by reviving the BioRAM program and qualifying bioenergy facilities located in nonattainment zones that voluntarily reclassified themselves to Severe or Extreme but are not truly Severe or Extreme. This bill would have no effect on any other biomass facility contracted under BioRAM since they have all received an extension from SB 1109.[16,17,18] Further, this bill would not require the IOUs to solicit new contracts beyond the amendment of Rio Bravo Rocklin's contract since the current

---

[12] CPUC; *2023 Padilla Report: Costs and Cost Savings for the RPS Program*; May 2023.
[13] CPUC; *2021 Padilla Report: Costs and Cost Savings for the RPS Program*; May 2021.
[14] 87 FR 63698, EPA
[15] Resolution E-5288; CPUC; October 2023.
[16] PG&E's PPAs with Burney, Wheelabrator Shasta, and Woodland Biomass are expected to end in 2027, 2027, and 2026, respectively. PG&E; "Status of Advice Letter 7178E: 2024 Tree Mortality Non-Bypassable Charge Resource Adequacy – Use of Unsold Capacity"; March 2024.
[17] SCE's PPA with Pacific Ultrapower Chinese Station is expected to end in 2035. SCE; "Status of Advice Letter 5205E: Contract Amendments to the Bioenergy Renewable Auction Mechanism Program in Compliance with Resolution E-5288"; February 2024.
[18] SDG&E's PPA with Honey Lake Power is expected to end in 2027; "Status of Advice Letter 4334E: San Diego Gas & Electric Showing Regarding BioRAM Procurement Pursuant to Ordering Paragraphy 7 of Resolution E-5288"; January 2024.

contracts fulfill the individual and shared procurement obligations for IOUs through 2025.

5) *Adding fuel to the fire.* The main end-use of biomass today is as a fuel for California's existing biomass power plants. As outlined above, this is largely a result of direct legislative mandates to procure biomass electricity. Without these efforts, the viability of electricity generation from biomass is unclear. The California Energy Commission has reported that using forest waste that would have been burned in the field for bioenergy can reduce greenhouse gas emissions across a 10-year period.[19] According to the sponsor, the Lincoln facility processed over 170,000 tons of wood waste in 2023, primarily from High Hazard Zones. Still, compared to other renewable energy resources, bioenergy is a large carbon and ozone polluter.[20,21] Thus, extending the contract for a facility located in an area – in this case the SFNA – which has shown on multiple occasions that it is having difficulty attaining NAAQS, even if it is voluntarily reclassifying itself to higher levels than actually demonstrated, could hamper efforts by encompassed air districts to reduce criteria air pollutants and improve public health, and would increase costs to ratepayers in the SCE territory.

6) *Related legislation.*

   SB 1062 (Dahle) would require the Department of Conservation to develop a grant program to support the conversion of biomass facilities to newer advanced bioenergy technology facilities that result in reduced emissions of air pollutants and greenhouse gases. Would require IOUs and POUs to collectively procure, through financial commitments of 15 years, 125 MW of cumulative rated generation capacity from those facilities that receive applicable air permits, develop business plans, and commit to the conversion of the generation facilities to advanced bioenergy technology facilities, as provided. Status: *set for hearing* in the Senate Committee on Energy, Utilities and Communications on April 16th, 2024.

7) *Prior legislation.*

   SB 1109 (Caballero) extended by 5 years both the requirement in existing law that an IOU or a CCA purchase generating capacity from eligible bioenergy projects, to December 31, 2023, and the expiration date of contracts with biomass projects that were operative in 2022. Status: Chapter 364, Statutes of 2022.

   SB 859 (Senate Budget and Fiscal Review) required retail sellers of electricity to purchase a total of 125 MW of power from biomass facilities that generate electricity from forest materials removed from specific high fire hazard zones, as designated by

---

[19] CEC; *California Biopower Impacts Project*; December 2021.
[20] Partnership for Policy Integrity; "Carbon emissions from burning biomass for energy"; https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.pfpi.net/wp-content/uploads/2011/04/PFPI-biomass-carbon-accounting-overview_April.pdf&ved=2ahUKEwi5pPezqbqFAxUgITQIHdfkC3UQFnoECA4QAw&usg=AOvVaw35WCulglsuIprhdhPUb62I; April 2021.
[21] University of California, San Diego; "Large contribution of biomass burning emissions to ozone throughout the global remote troposphere"; *Proceedings of the National Academy of Sciences*; https://doi.org/10.1073/pnas.2109628118; November 2021.

CalFire in the Governor's Proclamation of a State of Emergency issued October 30, 2015. Status: Chapter 368, Statutes of 2016.

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

REGISTERED SUPPORT / OPPOSITION:

Support

Agra Marketing Group
Apex Enterprises, Inc.
Becerra Ag
California Biomass Energy Alliance
California Farm Bureau Federation
California Forestry Association
Chavarin Trucking
FCC Environmental Service Ca. LLC
IHI Power Services Corp.
KZB Ag
Mahill Agg
Mendocino-Humboldt Redwood Companies
Old Durham Wood Inc.
Placer County Air Pollution Control District
Rio Bravo Rocklin
Sierra Pacific Industries
Sierra Waste Recycling & Transfer Station, Inc.
Tahoe Truckee Sierra Disposal
Terra Novus Ag

Opposition

350 Humboldt: Grass Roots Climate Action
350 Sacramento
Center for Biological Diversity
Climate Action California
Climate Reality Project, California Coalition
Santa Cruz Climate Action Network

Analysis Prepared by: Kathleen Chen / U. & E. / (916) 319-2083