

- 3) Establishes and vests the California Public Utilities Commission (CPUC) with regulatory authority over public utilities, including electrical corporations. (Article XII of the California Constitution)
- 4) Establishes the California Renewables Portfolio Standard (RPS) Program, which requires every electrical corporation to file with the CPUC a standard tariff for electricity purchased from an electric generation facility, known as the renewable feed-in tariff. Requires the CPUC, as part of the feed-in-tariff, to direct the electrical corporations, collectively, to procure at least 250 megawatts (MW) of cumulative rated generating capacity from developers of bioenergy projects that commence operation on or after June 1, 2013. The program is known as the BioMAT program. (Public Utilities Code §§399.15 and 399.20)
- 5) Establishes the California Global Warming Solutions Act of 2006 designates the CARB as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases (GHGs). Requires CARB to adopt a statewide GHG limit and to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. Requires CARB to prepare, approve, and update at least once every five years, a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs under the act. (Health and Safety Code §§38510, 38550, 38566, 38561)
- 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 percent 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 percent clean energy policy. (Public Utilities Code § 454.53)
- 7) Establishes within the RPS a requirement that electrical corporations, by December 1, 2016, 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. (Public Utilities Code §399.20.3)
- 8) Requires an electrical corporation (IOU), local electric publicly owned utility (POU), or community choice aggregator (CCA) with a contract to procure electricity generated from biomass that is operative at any time in 2018, and

expires or expired on or before December 31, 2023, 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 2018, 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) Establishes the Warren-Alquist State Energy Resources Conservation and Development Act establishes the State Energy Resources Conservation and Development Commission (also known as the California Energy Commission (CEC)). Requires the CEC, in consultation with specified entities, to adopt a biennial integrated energy policy report (IEPR) containing certain information. (Public Resources Code §§25200, et seq. and 25302)
- 10) Requires the CEC to timely incorporate firm zero-carbon resources into the IPER. (Public Resources Code §25305.5)
- 11) Establishes, via Executive Order, the Forest Management Task Force, now known, pursuant to SB 456 (Laird, Chapter 387, Statutes of 2021) as the Wildfire and Forest Resilience Task Force (Task Force). (Executive Order B-52-18)
- 12) Establishes, via Executive Order, the Joint Institute for Wood Products Innovation (Joint Institute) under BOF to perform wood products research, development, and testing; and to accelerate research, development, and adoption of advanced forest management and wood products manufacturing. (Executive Order B-52-18)

This bill:

- 1) Establish the Forest Waste Biomass Utilization Program to be administered by the BOF's Joint Institute for Wood Products Innovation to develop an implementation plan to meet the goals and recommendations of specified statewide forest management plans and to develop a workforce-training program to complement workforce needs associated with the implementation plan. Requires the BOF, in coordination with the Wildfire and Forest Resilience Task Force, to submit an annual report to the Legislature, beginning January 1, 2024, on the progress made on implementing the implementation plan.

- 2) Requires CNRA, in furtherance of the program, to facilitate the inclusion of recommendations for forest biomass waste utilization in relevant, state climate adaptation plans.
- 3) Requires CNRA, coordination with the California Environmental Protection Agency (CalEPA) and the Wildfire and Forest Resilience Task Force, to prepare and publish, on or before July 1, 2024, and at least once every five years thereafter, updates to the California Forest Carbon Plan, as provided.
- 4) Requires CARB to consider the recommendations from a specified plan relating to forests into the next update of the scoping plan.
- 5) Requires the CEC to:
 - a) Consider funding qualifying projects pursuant to the Clean Transportation Program that use forest biomass waste for advanced biofuel technology development, as specified.
 - b) Include, as part of the 2023 edition of the IEPR, and each report adopted biennially thereafter, an assessment of the potential for forest biomass waste energy to provide firm renewable power.
- 6) Requires the CPUC to prepare and submit a report to the Legislature, on or before December 31, 2023, that evaluates innovative bioenergy technologies that utilize forest biomass waste, as specified.
- 7) Make a series of findings and declarations.

Background

Per the Senate Committee on Natural Resources:

Biomass. California covers about 100 million acres and approximately 40 percent of the state is forest. In the past several years, forest management has significantly expanded on forested 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.

Forest operations such as logging, thinning, fuels reduction programs, and ecosystem restoration create a huge amount of woody biomass. Some of this is

brought out of the forest for use, but as much as half is left in the forest. When residues from mastication and slash from timber harvests are left scattered throughout the forest, they act as additional dry surface fuel and serve to increase the intensity and severity of a wildfire if it burns through the area. Often woody biomass materials are piled and burned, creating air pollution, such as black carbon, or left to decay, creating methane.

In August 2020, the Newsom Administration signed a Memorandum of Understanding (MOU) with the US Forest Service to establish a joint framework to enhance science-based forest and rangeland stewardship in California. The parties committed to sustainably treating one million acres annually (half each). While some of this will be accomplished with prescribed fire, much of it will require mechanical thinning that will generate millions of tons of forest waste per year. According to the BOF, this target will lead to 10 to 15 million bone dry tons of forest waste biomass annually.

Biomass markets and challenges. Biomass piles reflect the severely underdeveloped forest biomass supply chain in California. According to the Task Force, several studies have concluded that expanding confidence in feedstock availability is the single most crucial factor in developing a thriving wood utilization sector. A key obstacle is the cost of conversion, loading, and transportation, since forested areas tend to be mountainous and remote. Another challenge is the lack of economically sustainable demand for smaller diameter trees, dead trees, and other woody biomass that may be removed during restoration. Other barriers include limited access to private capital and limited capacity in forested communities to engage in forest product market development. Implementing biomass utilization strategies also could accelerate healthy forest management to prevent wildfire spread while reducing GHG emissions.

SB 859 Report. This 2017 report, entitled *Recommendations to Expand Wood Products Markets in California*, and required by SB 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2016) outlined actions, policies, and pilot programs to increase demand for California forest products and expand knowledge and skills needed to develop and manufacture them. The recommended actions seek to reduce barriers to entry and facilitate in-state investment to encourage the forest products industry and rural forested communities to pursue value-added production that can support forest health objectives on both public and private lands.

Relevant plans and reports related to forests and related items:

- *California Forest Carbon Plan.* This plan, prepared by CalFire, CNRA, and CalEPA, with input from other state, federal, and local agencies, considers opportunities to establish California's forests as a more resilient and reliable long-term carbon sink, rather than a source GHG and black carbon emissions. The plan provides multiple strategies to promote healthy and resilient wildland and urban forests that protect and enhance forest carbon and the broader range of public benefits from all forests in California.
- *Recommendations to Expand Wood and Biomass Utilization in California.* The Institute and BOF released this 2020 report, which provides recommendations to expand innovative wood and biomass products markets in California to help meet the state's forest health and carbon neutrality goals.
- *California's Wildfire and Forest Resilience Action Plan (Action Plan).* This 2021 Action Plan from the Task Force incorporates elements of the state's MOU with the US Forest Service and seeks to strategically accelerate efforts to restore the health and resilience of the state's forests, grasslands, and natural places; improve the fire safety of communities; and sustain the economic vitality of rural forested areas. The Action Plan includes a goal to create a sustainable wood products market in California.

Relevant to this committee:

Biomass generated electricity. Biomass power plant is the general term for waste-to-energy power plants that burn organic material, including wood waste. According to the CEC website, in 2020, biomass electric facilities produced 5,628 gigawatt-hours (GWh) or roughly three percent of the state's in-state electricity generation portfolio. The CEC notes there are just under 90 operating biomass power plants in California, with installed capacity of about 1,259 MW. The number of power plants and generation capacity has largely remained unchanged since 2001, per the CEC's *Energy Almanac* data. 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

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 CalFire, CNRA, the Department of Transportation, and the CEC to identify the state's high hazard zones (HHZ) as

a 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. In March 2016, the CPUC issued Resolution E-4770 requiring each of the electric IOUs to enter into contracts to purchase their share of at least 50 MW of collective generating capacity from biomass generation facilities that use progressively higher annual minimum prescribed levels of HHZ material as feedstock. Specifically, the biomass facilities were required to use a minimum of 40 percent feedstock from the HHZ in 2016 and grow to 80 percent in 2018 and all subsequent years. The electric IOUs were required to provide five-year contracts to facilities, with the right to extend the five-year contract term for one year at a time, up to a cumulative total of ten years so long as HHZ fuel is available at the minimum fuel requirement (80 percent). 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 percent 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 percent of the feedstock must come from HHZs. SB 859 requires that the procurement costs would 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 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, BioRAM2 contracts must contain the feedstock requirements established in SB 859, specify that the contract length is five 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.

SB 901 (Dodd, Chapter 626, Statutes of 2018). SB 901 required 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 for the BioRAM program to 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 and that 153 MW is currently under contract – 119 MW under BioRAM 1 contracts and 34 MW under BioRAM2.

BioMAT. The table below shows the BioMAT targets and current capacity (MW) procured over the life of the program by the three IOUs, as of Q2 2022.

(Source: CPUC)

BioMAT Mandated Allocation Summary				
BioMAT Category	BioMAT MW Allocation	MW Contracted	MW Remaining	Contract Price (\$/MWh)
Category 1: Biogas	110	12.5	97.5	127.72
Category 2: Dairy/Agriculture	90	23	67	187.72 (Dairy) 183.72 (Other Agriculture)
Category 3: Sustainable Forest Management	50	13.88	36.12	199.72
Total	250	49.38	200.62	

The BioMAT program underwent a formal program review in 2018, 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 September 2020, a decision was issued directing changes to the BioMAT program rules, contract terms, as well as clarifications to the procurement process. As part of that decision, the CPUC established a technical working group to develop a project specific lifecycle GHG emissions reduction model—a Lifecycle Assessment (LCA) approach—to quantify the net emissions of the BioMAT program’s project operations. The final BioMAT LCA tool is expected to be available for public comment in late 2022.

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. Without the above noted 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. To date, according to the May 2021 CPUC cost report, the total contracted capacity and average contract price of existing BioMAT contracts is 46 MW and 17.4¢/kWh, and for BioRAM it is 178 MW and 12.0¢/kWh, respectively. For comparison, the electric IOUs' weighted average RPS procurement expenditures were approximately 8¢/kWh for geothermal, 10¢/kWh for small hydro, 11¢/kWh for solar photovoltaic (PV), and 8¢/kWh for wind.

Governor Newsom proposes \$10 million for biomass transportation subsidy in 2022-23 Budget. Transporting fuel and feedstocks to biomass electric generating facilities is one of the main cost drivers that contributes to biomass much higher costs as compared to other generating resources. To help address transportation fuel costs, the Governor's proposed budget includes \$10 million for a Biomass Transportation Subsidy targeted at post-fire cleanup and new processing capacity. The budget proposal stipulates \$10 million divided over next two budget years.

Comments

Report on innovative bioenergy technologies. AB 2878 requires the CPUC to submit a report on innovative bioenergy technologies that utilize forest biomass waste. However, a requirement for a report concerning energy technologies is better required of the CEC, which is the state's primary energy policy and planning agency. This report should incorporate the use of biomass energy for microgrids, including addressing technical challenges, costs, fuels sources, reliability, etc. Additionally, the proposal in this bill to require the CPUC to make recommendations for alternative programming or financing considerations is better suited at the CEC or GoBIZ, or outside entity. *As such, the author and committee may wish to strike reference to the CPUC and instead direct the CEC to provide this report to the Legislature with elements addressing microgrids, financing, and technology.* With regards to reviewing tariffs, the BioMAT program review noted above, and conducted in 2018-2020, already reviewed many of these topics for the BioMAT tariff and resulted in program modifications, including establishing a non-bypassable charge. *As such, the author and committee may wish to strike reference to this requirement of the report.*

Senate Committee on Environmental Quality comments. AB 2878 would require CalEPA and the Task Force to prepare and publish an update by July 1, 2024, and at least once every five years thereafter, of the California Forest Carbon Plan. It would require the update to include an inventory of black carbon and other climate pollutants emitted by wildfires, controlled burns, and pile and burn of forest waste.

However, it would be largely duplicative of existing law to require five-year updates to the California Forest Carbon Plan. Also, based on conversations with the author's office and sponsors, it does not appear to be the intent to require a full update of that plan. Instead, the committee staff recommends an amendment to expand CARB's existing wildfire and forest management emissions report to include the information sought by this bill relative to quantifying GHG emissions, including from black carbon released by wildfire, pile burning, and forest management activities. This would also include other technical and conforming amendments. *The author and committee may wish to amend this bill to reflect the proposed Senate Committee on Environmental Quality amendments as noted above.*

Incoming. This bill was double referred and heard by the Senate Committee on Natural Resources and Water on June 20, 2022 and passed 7-0. However, due to time constraints, the committees' proposed technical and clarifying amendments are to be adopted in this committee.

Prior/Related Legislation

AB 2587 (E. Garcia, 2022) among its provisions, expands the type of firm resources to be considered in an upcoming CEC assessment to include bioenergy and biomass. The bill is pending in the Senate Committee on Appropriations.

SB 1119 (Caballero, 2022) extends requirements on electric utilities and CCAs to procure energy from biomass generating electric facilities by five years and requires extension of existing contracts by five years. The bill is pending in the Assembly Committee on Utilities and Energy.

AB 322 (Salas, Chapter 229, Statutes of 2021) required the CEC to consider allocating Electricity Program Investment Charge (EPIC) funding for eligible biomass conversion to energy projects.

AB 3163 (Salas, Chapter 358, Statutes of 2020) expanded the definition of "biomethane," for the purposes of SB 1440 biomethane procurement targets, to include biomass.

SB 901 (Dodd, Chapter 626, Statutes of 2019) among its many provisions related to wildfires, requires a doubling of forest fuel removal for wildfire mitigation.

SB 1122 (Rubio, Chapter 612, Statutes of 2012) required electrical corporations to procure 50 MW of small-scale bioenergy from the byproducts of sustainable forestry.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

SUPPORT:

Placer County Air Pollution Control District, Co-sponsor
Rural Counties Representatives of California, Co-sponsor
Association of California Water Agencies
Bioenergy Association of California
California Biomass Energy Alliance
California Forestry Association
County of Butte
Golden State Natural Gas Systems
H Cycle
Madera County Board of Supervisors
Microgrid Resources Coalition
Mote Hydrogen
Placer County Water Agency
The Watershed Research and Training Center
Wisewood Energy
Yosemite Clean Energy

OPPOSITION:

None received

ARGUMENTS IN SUPPORT: 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. Pile and burn of that waste biomass 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 2878 will address the need to remove forest biomass waste to reduce wildfires and create healthier forests by prioritizing state agency use of and focus on the processing of biomass waste into bioenergy and other wood products.

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