
**SENATE COMMITTEE ON ENERGY, UTILITIES AND
COMMUNICATIONS**
Senator Ben Hueso, Chair
2021 - 2022 Regular

Bill No: AB 322 **Hearing Date:** 7/5/2021
Author: Salas
Version: 6/24/2021 Amended
Urgency: No **Fiscal:** Yes
Consultant: Nidia Bautista

SUBJECT: Energy: Electric Program Investment Charge program: biomass

DIGEST: This bill requires the California Energy Commission (CEC) to consider, in the investment planning process for electric ratepayer-funded Electric Program Investment Charge (EPIC) program, funding for eligible biomass conversion to energy projects.

ANALYSIS:

Existing law:

- 1) Establishes the California Public Utilities Commission (CPUC), with jurisdiction over all public utilities, including electrical corporations. (Article XII of the California Constitution)
- 2) Institutes an EPIC to fund renewable energy and research, development, and demonstration programs. (*CPUC Decision 11-12-035*)
- 3) Creates in the State Treasury the EPIC Fund to be administered by the State Energy Resources Conservation and Development Commission (Energy Commission (CEC)) and requires the CPUC to forward to the CEC, at least quarterly, moneys for those EPIC programs the CPUC has determined should be administered by the CEC for deposit in the fund. (Public Resources Code §§25710-25711)
- 4) Requires the CEC in administering moneys in the fund for research, development, and demonstration programs, to develop and implement the EPIC program for the purpose of awarding funds to projects that may lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory energy goals and that may result in a portfolio of projects that are strategically focused and sufficiently narrow to make advancement on the most significant technological challenges. (Public Resources Code §25711.5)

- 5) Requires the CEC, until January 1, 2023, to expend certain percentages of the moneys appropriated from the fund for technology demonstration and deployment at sites that benefit resident of low-income or disadvantaged communities, as specified. (Public Resources Code §25711.6)
- 6) Defines “biomass conversion” as the production of heat, fuels, or electricity by the controlled combustion of, or the use of other noncombustion thermal conversion technologies on, the following materials: agricultural crop residues; bark, lawn, yard, and garden clippings; leaves, silvicultural residue, and tree and brush pruning; wood, wood chips, and wood waste; and nonrecyclable pulp or nonrecyclable paper materials. (Public Resources Code §40106)
- 7) 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 the Bioenergy Market Adjusting Tariff (BioMAT). (Public Utilities Code §399.20)

This bill:

- 1) Requires the CEC to consider, in the investment planning process for the EPIC program, funding for eligible biomass conversion to energy projects, as specified.
- 2) Requires the CEC, in determining the appropriate amount of EPIC funding for biomass conversion, to consider the recommendations of the State Air Resources Board (ARB) and the State Board of Forestry and Fire Protection, and to coordinate with the Natural Resources Agency, the Department of Resources Recycling and Recovery, and the Department of Food and Agriculture about the need for biomass conversion.
- 3) Requires the CEC to consider opportunities to reduce short-lived climate pollutant emissions, generate carbon negative emissions, reduce wildfire impacts, and increase energy reliability.

Background

EPIC program. The EPIC program was first authorized by the CPUC (in Decision 11-12-035) which instituted a new surcharge on utility bills of electric IOU customers, but essentially maintained that surcharge at the same levels as had been previously authorized for public interest energy innovation. Decision 11-12-035 went on to identify and discuss the expectations for EPIC's potential to advance, for public benefit, research, development, and demonstration (RD&D) programs. The CPUC ordered Pacific, Gas & Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E) (collectively, the electric IOUs) to institute ratepayer surcharges for the year 2012 to pay for EPIC. The EPIC program supports the development of new, emerging, and pre-commercialized clean energy technologies in California. These projects must be designed to produce benefits for electricity ratepayers in the form of increased reliability, improved safety, and/or reduced electricity costs.

The EPIC program consists of three program areas: Applied Research and Development (Applied R&D), Technology Demonstration and Deployment (TD&D), and Market Facilitation.

Applied Research and Development: Activities supporting pre-commercial technologies and approaches designed to solve specific problems in the electricity sector, including research leading to advancements in clean energy technologies, demand-side technologies, and renewable energy. The CEC has historically allocated approximately 40 percent of their EPIC budget to Applied R&D.

Technology Demonstration and Deployment: Installing and operating pre-commercial technologies or employing operational strategies at a scale large enough and in conditions reflective of anticipated operating environments to assess functional and performance characteristics, and financial risks. The CEC has historically allocated approximately 40 percent of their EPIC budget to TD&D.

Market Facilitation: Installing and operating pre-commercial technologies or employing operational strategies at a scale large enough and in conditions reflective of anticipated operating environments to assess functional and performance characteristics, and financial risks. The CEC has historically allocated approximately 15 percent of their EPIC budget to Market Facilitation.

EPIC funding. To date, more than \$1 billion has been allocated to fund EPIC projects. In a recent decision, the CPUC authorized the annual collection of \$148

million for the EPIC surcharge through December 31, 2030. The decision requires the CEC to file investment plan applications for the five-year investment cycle periods 2021-2025 and 2026-2030 on October 1, 2021 (EPIC 4) and October 1, 2025 (EPIC 5) respectively. The collection for the funding of EPIC is required to continue to be allocated to the utilities in the following percentages: PG&E 50.1 percent, SCE 41.1 percent, and SDG&E 8.8 percent.

Biomass processes. Biomass produced by California's commercial, agricultural, industrial, forestry, and urban sectors can be used as feedstock to generate heat and electricity out of what would otherwise be treated as waste materials. Biomass is converted to fuels and other products through one of the three processes: thermochemical, biochemical, and physicochemical. Thermochemical conversion processes, such as combustion or gasification, and biochemical conversion, commonly by anaerobic digestion, are the dominant processes for biomass-to-electricity generation. Combustion technologies include gasification and pyrolysis, which produce gaseous or liquid fuels. Noncombustion technologies include biochemical processes like anaerobic digestion, fermentation, or enzymatic hydrolysis, which produce biogas or hydrogen. Most electricity generated from bioenergy is produced by direct combustion.

Biomass electricity. In California, there are just over 20 operational biomass facilities generating electricity for a total of about 540 MW of generating capacity. Biomass represents roughly two-three percent of the total system power used in the state. Electricity generated from biomass is considered a renewable energy resource for the purposes of meeting the state's Renewable Portfolio Standard (RPS) requirements. Unlike variable renewable energy resources (such as solar and wind), bioenergy technologies can provide reliable and renewable baseload generation, meaning that electricity can be generated during scheduled times and at predetermined power levels. Over the past few decades, the number of biomass plants in California has decreased significantly because of expiring long-term contracts and by high operation and transportation costs, which often make electricity generated from biomass more expensive than other generating sources.

Allocation of EPIC funds for biomass projects. In 2012, the CPUC decided to set aside 20 percent of TD&D funds (~\$26 million) for bioenergy projects in the three-year period of the first EPIC investment plan (2012-2014), citing the varied potential benefits of community-scale biomass conversion (e.g. forestry and fire management, environmental benefits, decreased greenhouse gas (GHG) emissions). The CPUC decision (D. 12-05-037) also stated that the allocation would be re-evaluated for subsequent investment plans, as "it [was] unclear why the CPUC should continue indefinitely to offer electricity ratepayer subsidies to a particular type of facility or fuel that appears to continue to be expensive relative to

other options.” However, due to timing delays between the EPIC plan approval and the program’s beginning, the CEC did not establish the separate minimum for bioenergy, and instead awarded \$18 million to bioenergy projects through the competitive solicitation process for the 2015-2017 investment period. In doing so, the CEC cited other recent sources for bioenergy funding, including the State’s GHG emission allowance program and the Department of Food and Agriculture’s Dairy Digester Research and Development and the Alternative Manure Management Program, totaling approximately \$70 million. The EPIC program funded a total of \$73.3 million over two investment periods (2012-2014, 2015-2017) toward bioenergy technology development, demonstration and deployment. This amount is nearly equally split between woody biomass to energy projects using thermochemical conversion technology such as gasification (\$35.4M), and biogas projects involving biochemical or anaerobic digestion process to convert organic wastes (e.g., dairy manure and food waste) to biogas (\$37.8M).

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 Prevention released a set of recommendations to promote biomass utilization in California, specifically put forest fuels to its highest value use rather than pile burning or leaving it to decompose. The report includes a comprehensive list of market and regulatory challenges in bioenergy, and offers a couple dozen recommendations for various state agencies. Recommendation 2.3.2 in the report urged a 20 percent allocation of EPIC program funding for bioenergy projects. The report referenced the CPUC decision to allocate 20 percent of program funds in the first investment plan, but that in recent years, “EPIC funding has not been allocated to forest biomass projects or issues, despite the importance of these projects to reduce open burning, wildfire hazards, benefits to local energy supplies, grid resilience, and economic development in forested communities.” The report went on to state, “Additional funding is needed to demonstrate the next generation of technologies, including biomass gasification combined with fuel cells, biomass energy with carbon capture and sequestration (CCS), biogas for energy storage, generation of hydrogen from forest biomass, and assessment of lifecycle carbon benefits of biomass gasification or pyrolysis with biochar production and use.”

AB 322. This bill attempts to implement the specific recommendation in the report by the Board of Forestry and Fire Protection to allocate EPIC funds for bioenergy projects. However, this bill, appropriately, does not require a specific funding allocation. While the benefits of bioenergy projects can be many, including displacing fossil fuel emissions, reducing GHG emissions, providing jobs in rural communities, and reducing wildfire severity, these benefits must be balanced against the costs of operating biomass facilities. Additionally, there are a number of federal and state bioenergy programs to help with bioenergy development,

including the BioMAT program at the CPUC which offers contract prices to eligible projects up to 250 MW mandated by SB 1122 (Rubio, Chapter 612, Statutes of 2012). Appropriately, this bill requires the CEC to consider allocating EPIC funds with consideration for the recommendations by the Board of Forestry and Fire Protection, and others. In this regard, this bill will not limit the CEC's ability to adjust allocations to reflect the demands of other projects and priorities for the EPIC program funding. The flexibility afforded in this bill is particularly appropriate given that the CEC, in the most recent EPIC investment plan, has identified cost as a primary obstacle to expanding bioenergy usage, including the cost of controlling air emissions.

Prior/Related Legislation

SB 901 (Dodd, Chapter 626, Statutes of 2018) required California to double forest fuel removal to reduce the risks of catastrophic wildfires.

SB 1122 (Rubio, Chapter 612, Statutes of 2012) established the BioMAT program and required the CPUC to implement a cost recovery process for energy purchased by IOUs from bioenergy renewable generators less than five MW in size.

SB 1383 (Lara, Chapter 395, Statutes of 2016) among its provisions, required the CEC and the CPUC to develop recommendations for the development and use of biomethane and biogas as part of the 2017 Integrated Energy Policy Report, and to adopt policies and incentives to increase the production and use of biomethane and biogas.

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

SUPPORT:

Bioenergy Association of California, Sponsor
Association of California Water Agencies
Bloom Energy
California Association of Sanitation Agencies
California Biomass Energy Alliance
California Forestry Association
Placer County Air Pollution Control District
Resource Recovery Coalition of California
Rural County Representatives of California
San Joaquin Renewables, LLC
Sierra Business Council
Southern California Gas Company

Wisewood Energy

OPPOSITION:

Central Valley Air Quality Coalition

ARGUMENTS IN SUPPORT: According to the author:

Increasing the production of bioenergy is critical to reducing open burning, wildfire hazards, and landfilling of organic waste (as required by SB 1383, Lara, 2016), as well as meeting California's clean energy goals. According to the Board of Forestry, more investment is needed to support new and innovative biomass projects that will create clean electrical generation by turning material like dead trees and agricultural waste, that often would be open burned, into renewable energy. AB 322 will help achieve this goal by directing the California Energy Commission to consider funding new biomass projects under the EPIC program. Investing in California's biomass projects is crucial to meeting our climate goals while reducing waste, pollution, and invigorating the next generation of clean energy production in the state.

ARGUMENTS IN OPPOSITION: The Central Valley Air Quality (CVAQ) Coalition opposes this bill stating their concerns regarding the air pollution impacts from biomass facilities. CVAQ expresses particular concerns regarding potential expansion of biomass facilities in the San Joaquin Valley which is already burdened with air quality that fails to meet federal standards, including the nation's worst particulate matter (PM 2.5 microns) levels. Additionally, CVAQ contends that biomass energy generation is an expensive form of electric generation and alternative more sustainable approaches to dealing with woody waste should be utilized.

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