SENATE RULES COMMITTEE
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THIRD READING

Bill No: SB 498
Author: Lara (D)
Amended: 1/27/14
Vote: 21

SENATE ENVIRONMENTAL QUALITY COMMITTEE: 5-1, 1/15/14
AYES: Hill, Corbett, Fuller, Jackson, Leno
NOES: Pavley
NO VOTE RECORDED: Gaines, Hancock, Vacancy

SENATE APPROPRIATIONS COMMITTEE: 6-0, 1/23/14
AYES: De León, Gaines, Hill, Lara, Padilla, Steinberg
NO VOTE RECORDED: Walters

SUBJECT: Solid waste: biomass conversion

SOURCE: California State Association of Counties
County of Los Angeles

DIGEST: This bill includes conversion technologies in the definition of "biomass conversion" and defines "biomass conversion" to mean the production of heat, fuels, or electricity by the controlled combustion of, or the use of other noncombustion thermal conversion technologies on specified materials, when separated from other solid waste.

ANALYSIS:

Existing law, under the California Integrated Waste Management Act:

1. Requires each city or county source reduction and recycling element to include an implementation schedule that shows a city or county must divert 50% of

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solid waste from landfill disposal or transformation by January 1, 2000, through source reduction, recycling, and composting activities.

2. Establishes a state policy goal that 75% of solid waste generated be diverted from landfill disposal through source reduction, recycling, or composting by 2020.

3. Defines "transformation" to mean incineration, pyrolysis, distillation, or biological conversion other than composting and specifies that "transformation" does not include composting, gasification, or biomass conversion.

4. Defines "biomass conversion" to mean the controlled combustion, when separated from other solid waste and used for producing electricity or heat of specified biomass, including, agricultural crop residues, bark, lawn, yard, garden clippings, leaves, silvicultural residue, tree and brush pruning, wood, wood chips, and wood waste and nonrecyclable pulp or nonrecyclable paper materials.

5. Specifies that "biomass conversion" does not include the controlled combustion of recyclable pulp or recyclable paper materials, or materials that contain sewage sludge, industrial sludge, medical waste, hazardous waste, or either high-level or low-level radioactive waste.

This bill:

1. Includes conversion technologies in the definition of "biomass conversion."

2. Defines "biomass conversion" to mean the production of heat, fuels, or electricity by the controlled combustion of or the use of, other noncombustion thermal conversion technologies on specified materials, when separated from other solid waste.

Background

Conversion technologies. According to the California Department of Resources, Recycling and Recovery, conversion technologies are processes that can convert organic materials into usable forms of energy including heat, steam, electricity, natural gas, and liquid fuels.

Thermochemical conversion processes are characterized by higher temperatures and faster conversion rates and include combustion, gasification, and pyrolysis.

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Pyrolysis is the thermal decomposition of feedstock at high temperatures (greater than 400°F) in the absence of air, whereas gasification is a process that uses air or oxygen and high heat, (typically above 1300°F) to convert feedstock into a synthetic gas or fuel gas. Gasification uses less air or oxygen than incineration processes. Thermochemical conversion is best suited for lower moisture feedstocks.

Biochemical conversion processes include aerobic conversion (i.e., composting), anaerobic digestion (which occurs in landfills and controlled reactors or digesters), and anaerobic fermentation (for example, the conversion of sugars from cellulose to ethanol). Biochemical conversion proceeds at lower temperatures and lower reaction rates. Higher moisture feedstocks are generally good candidates for biochemical processes.

Physiochemical conversion involves the physical and chemical synthesis of products from feedstocks (for example, biodiesel from waste fats, oils, and grease-known as FOG) and is primarily associated with the transformation of fresh or used vegetable oils, animal fats, greases, tallow, and other suitable feedstocks into liquid fuels or biodiesel.

The definition of transformation in current law captures many thermochemical and biochemical conversion technologies, but some processes that would technically qualify as conversion are specifically excluded by statute, namely composting, gasification and biomass conversion (i.e., combustion of green waste).

Solid waste diversion credit for biomass at conversion facilities. Existing law requires jurisdictions to divert 50% of solid waste from landfill disposal or transformation through source reduction, recycling, and composting activities. Prior to 2008, diversion estimates to determine compliance with the 50% diversion mandate were performed by calculating the quantity of solid waste generation and estimating the amount of diversion. SB 1016 (Wiggins, Chapter 343, Statutes of 2008), changed the diversion calculation by only considering the quantity of disposal, as reported by disposal facilities (transformation facilities and landfills) and the jurisdiction's population, and comparing that value to a baseline rate of disposal.

Biomass conversion, currently defined as the controlled combustion of specified biomass feedstocks when separated from municipal solid waste, is excluded from the definition of transformation, and therefore, biomass that is combusted at a biomass conversion facility is not counted as disposal.

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Biomass in California. According to data from the California Biomass Collective, there are 28 operational facilities in the state using wood or agriculture biomass with a net generation of 565 megawatts (MW). In addition to these larger scale, biomass combustion facilities, there are a handful of small scale, demonstration and/or research projects in the state that use a noncombustion conversion technology, which generate or plan to generate anywhere from a fraction of an MW to several MWs using biomass. Of these facilities, the Dixon Ridge Farms in Dixon, CA uses a gasification technology to generate 0.1 MW of electricity from woody and agricultural biomass, and the Cabin Creek Biomass Facility Project in Placer County is proposing to construct a two-megawatt wood-to-energy biomass facility that would also use gasification technology.

Biomass and Renewable Portfolio Standards (RPS). Existing law identifies electrical generation facilities that use biomass as renewable electrical generation facilities and can be certified, if they meet fuel specific requirements, by the California Energy Commission (CEC) as RPS-eligible, and therefore may be used by retail sellers of electricity, and publicly owned utilities to satisfy their RPS procurement goals.

The CEC defines biomass as any organic material not derived from fossil fuels, including the feedstocks eligible under biomass conversion.

Related legislation

SB 804 (Lara, 2013) included conversion technologies in the definition of biomass conversion and added requirements for those facilities. SB 804 was vetoed by the Governor.

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

SUPPORT: (Verified 1/27/14)

California State Association of Counties (co-source)
County of Los Angeles (co-source)
Los Angeles County Solid Waste Management Committee/Integrated Waste Management Task Force
Rural County Representatives of California

ARGUMENTS IN SUPPORT: According to the author's office, "Existing California law defines "biomass conversion" as the direct combustion of certain listed types of biomass materials such as yard clippings, wood waste, and

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agricultural residues. This definition excludes conversion technologies that can more efficiently generate electricity from those same biomass materials with lower air emissions. SB 498 will help facilitate cleaner and more efficient technologies to develop in California for converting organic waste to electricity and help the state reach its 75% waste reduction goal. Specifically, SB 498 includes conversion technologies (CT) within the definition of biomass conversion. While CT could potentially have positive environmental impacts in California, our ability to use CTs as a potential 'tool in our tool box' of waste diversion technologies is hindered by a lack of inclusion of CT in current conversion definitions."

RM:e 1/27/14 Senate Floor Analyses

SUPPORT/OPPOSITION: SEE ABOVE

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