Date of Hearing: June 20, 2018

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY
Chris Holden, Chair
SB 1440 (Hueso) – As Amended June 14, 2018

SENATE VOTE: 27-9

SUBJECT: Energy: biomethane: biomethane procurement program

SUMMARY: This bill requires the California Air Resources Board (CARB), in consultation with the California Public Utilities Commission (CPUC), before January 1, 2020, to establish a biomethane procurement requirement for gas corporations (IOUs), initially, at 32 billion cubic feet (BCF). Specifically, **this bill:**

1) Requires the CARB, in consultation with the CPUC, before January 1, 2020 and until January 1, 2030, to adopt a biomethane procurement requirement for IOUs which serve more than 100,000 customers which must include:

    a. A minimum of 32 BCF;

    b. Targets for specific sectors including allocations for biomethane from livestock waste, diverted organic waste and wastewater treatment, a declining allocation for gas from landfills, prioritization of feedstocks with the highest reductions in methane emissions, while also ensuring a balanced and diverse overall portfolio of resources and an increase in the beneficial use of methane from organic sources, and use codigestion to meet targets for specific sectors;

    c. Procurement contracts of no less than ten years; and

    d. Restricting the IOU from unfairly competing with nonutility enterprises.

2) Requires the CARB and the CPUC to limit the costs impacts of this requirement while encouraging the development of new technologies to generate biomethane.

3) Requires the CARB, in consultation with the CPUC, to update the biomethane procurement program requirements, and report to the Legislature, on the progress toward meeting the program requirements, at least once every five years, with the first review concluding before January 1, 2025.

4) Requires that any costs incurred by the IOU in excess of the resale value of the biomethane procured, to be recovered through nonbypassable, fixed, customer charges and requires all costs to be recoverable in rates and considered a public good to all classes of ratepayers and in the interests of all classes of ratepayers.

5) Requires the CPUC to provide rate recovery for the IOU for the just and reasonable costs required to interconnect biomethane production to the existing pipeline system, including the costs for the point of receipt and any downstream facilities required to facilitate the

receipt of biomethane, with full cost recovery from IOU customers, including both core and noncore customers.

6) Requires an IOU to provide a private energy producer with detailed cost-breakdown of the costs to interconnect to the IOU gas pipelines including labor, materials, and third-party charges.

7) Requires 15 percent of the IOU greenhouse gas (GHG) revenue received by the IOU as a result of direct allocations to be used to offset program costs.

8) Suspends the biomethane procurement mandate if the IOU costs exceed $15 per million British thermal units above the average National Gas Index price, after credits for biomethane gas revenues and other environmental program credits.

9) Terminates the biomethane procurement mandate if costs exceed 5 percent of an IOU's revenue requirement after credits for biomethane gas revenues and other environmental program are taken into account.

10) Defines biomethane as gas generated from organic waste through anaerobic digestion, gasification, pyrolysis, or other conversion technology that converts organic matter to gas. Adds biosolids and removes landfill waste as potential feedstock sources for biomass conversion.

EXISTING LAW:

1) Establishes a $5 million interconnection project cap for dairy cluster biomethane projects, and a $3 million project cap for other biomethane projects, funded by a 2015 CPUC decision through January 1, 2022. (Public Utilities Code § 399.19)

2) Requires the CPUC to adopt policies and programs that promote the in-state production and distribution of biomethane and requires that those policies and programs facilitate the development of a variety of sources of in-state biomethane. (Public Utilities Code § 399.24)

3) Requires the CPUC to consider options, including whether to allow recovery in rates, to facilitate the procurement and installation of utility infrastructure necessary to achieve interconnection between the natural gas transmission and distribution pipeline network and biomethane generation and collection equipment, and of gathering lines for a dairy cluster biomethane project and to achieve interconnection with facilities that generate biomethane. (Public Utilities Code § 784.2)

4) Requires the CPUC to adopt pipeline access rules that ensure that each gas corporation provides nondiscriminatory access to the gas pipeline system to any party for the purposes of physically interconnecting with the gas pipeline system and effectuating the delivery of gas. (Public Utilities Code § 784)

5) Requires the CARB to implement a strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. (Health and Safety Code § 39730.5)

6) Directs CARB to adopt regulations to reduce methane emissions from livestock and dairy manure by up to 40 percent below 2013 levels by 2030 granted the regulations are economically feasible and a market exists for the products generated by these projects. (Health and Safety Code § 39730.7)

7) Requires the CPUC to adopt standards for biomethane that specify the concentrations of constituents of concerns that are reasonably necessary to protect public health, ensure pipeline integrity and safety, and to adopt monitoring, testing, reporting and recordkeeping protocols. (Health and Safety Code § 25421)

8) Requires the California Energy Commission (CEC) to hold public hearings to identify impediments that limit procurement of biomethane in California, including impediments to interconnection, and to offer solutions. (Public Resources Code § 25326)

9) Requests the California Council on Science and Technology (CCST) to undertake and complete a study analyzing the regional and gas corporation specific issues relating to minimum heating value and maximum siloxane specifications adopted by the CPUC for biomethane before it can be injected into common carrier gas pipelines. (Public Utilities Code § 784.1)

FISCAL EFFECT: According to the Senate Appropriations Committee:

- Unknown one-time costs, likely in the hundreds of thousands of dollars to low millions of dollars, to the ARB (Cost of Implementation Account (COI)) to conduct research, draft requirements, and undergo required public comment process.

- Unknown ongoing costs, likely in the low to mid hundreds of thousands of dollars, every five years to perform tasks associated with updating the requirement (COI).

- Approximately $560,000 (Utilities Reimbursement Account) to the CPUC to open, staff, and manage a new proceeding, and to coordinate the ARB and stakeholders.

BACKGROUND:

Biogas and Biomethane – Natural gas by other names. Bioenergy is renewable energy produced from biomass wastes including forest and other wood waste, agriculture and food processing wastes, organic urban waste, waste and emissions from water treatment facilities, landfill gas and other organic waste sources. Biomass waste can be used to generate renewable electricity, liquid fuels and biogas. Current law defines "biogas" as a gas produced from the anaerobic decomposition of organic material. The result is a gaseous mixture composed primarily of carbon dioxide and methane. Depending on where it is produced, biogas can be categorized as landfill gas or digester gas. Landfill gas is produced by decomposition of organic waste in a municipal

solid waste landfill. Digester gas is typically produced from livestock manure, sewage treatment or food waste.

From an environmental perspective, biogas has several advantages over conventional natural gas. Combustion of natural gas, including biogas, releases carbon dioxide (CO2) into the atmosphere. However, the combustion of natural gas destroys methane, a gas that is a much more potent GHG than is CO2. In addition to destroying methane, the combustion of biogas, for CO2 accounting purposes, is considered carbon neutral. This is because the carbon in biogas, unlike the carbon in conventional natural gas, was so recently present in the atmosphere. In addition, biogas can be used to displace the use of fossil fuels, such as conventional natural gas, thereby further decreasing its carbon intensity.

Biogas can be used directly to produce electricity or can be converted to biomethane by removing carbon dioxide and other impurities. Current law defines "biomethane" as biogas that meets the standards, adopted by the CPUC in keeping with statute, for injection into a common carrier pipeline. Biomethane can replace fossil sources of natural gas in homes and factories and compressed or liquefied as natural gas used in vehicles. Biomethane can also be used to produce renewable hydrogen in fuel cells.

CPUC Biomethane Standards and Subsidies – Current law directs the CPUC to adopt policies and programs that promote the in-state production and distribution of biomethane. In response to statutory mandate, the CPUC, in 2014, adopted health and safety standards that limit the amounts of certain constituents determined to be harmful to either human health or pipeline integrity in pipeline injected biomethane. The standards were to address the reluctance of gas corporations to inject biomethane into natural gas pipelines.

The CPUC acknowledged that its biomethane standards would increase the costs of a biomethane producer who seeks to inject biomethane into pipeline system. In response to these concerns and legislative mandates, the CPUC adopted a $40 million ratepayer-funded program to offset a portion of gas producer costs of connecting to utility pipelines. As modified by 2016 legislation, program funding will pay up to 50 percent of a biomethane project's interconnection cost, up to $3 million per project. The CPUC noted that the capped subsidy would "limit the financial exposure of utility ratepayers." To date, the CPUC has not received any applications for the biomethane subsidy program. However, one landfill gas project is reported to be preparing to apply and five daily biomethane projects are also possibilities.

Legislative Action on Short-Lived Climate Pollutants (SLCPs) – In 2016 the Legislature adopted landmark legislation to develop a comprehensive strategy to reduce SLCPs in the state to achieve, from 2013 levels, a 40% reduction in methane, a 40% reduction in hydrofluorocarbon gases, and a 50% reduction in anthropogenic black carbon, by 2030.

The CEC and CPUC were each mandated to take specific actions and have made progress as follows:

The CEC was directed to develop recommendations for the development and use of renewable gas, including biomethane and biogas, as part of its 2017 Integrated Energy Policy Report. Those recommendations were released in April and the CEC identified cost-effective strategies

and considers priority end uses of renewable gas in relation to existing state policies and climate goals. The primary recommendation of the CEC was to:

> Focus on cost-effective strategies to develop markets for renewable gas produced from anaerobic digestion used as a transportation fuel in near-zero emission, heavy-duty vehicles is the most likely near-term solution.

Relative to SB 1440, the CEC recommended:

> *Implement policies to build commercial markets for renewable gas*. The CPUC should continue its efforts to implement dairy renewable gas pilot projects to demonstrate interconnection to the common carrier pipeline system, as outlined in the Order Instituting Rulemaking 17-06-015.630 Following completion of dairy pilot projects, the CPUC should continue to evaluate methods to promote increased use of renewable gas. Under Assembly Bill 2313 [2016] the CPUC should evaluate the current monetary incentive programs for renewable gas production and pipeline interconnection and consider whether it is prudent reasonable to continue those incentives, which are funded through utility rates. Pursuant to SB 1383, CARB should consider additional infrastructure development and procurement policies to encourage dairy renewable gas projects, and state agencies should consider and, as appropriate, adopt policies and incentives to significantly increase the sustainable production and use of renewable gas.

Relative to SB 1440, the CPUC was required by SB 1383 to:

> Direct gas corporations to implement no less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system. The pipeline infrastructure costs for these pilot projects may be rate-based pursuant to SB 1383. CARB, along with CDFA, is consulting with CPUC on the development of CPUC's rulemaking for the selection and implementation of these pilot projects. CPUC adopted a decision in its rulemaking on December 14, 2017, and the solicitation for applications is expected to be released in early spring 2018, with applications due in the summer 2018. The pilot program rules ensure that the projects will not result in an increase of criteria pollutants or toxic air contaminant emissions in the air basins where the projects are located. An interagency selection committee consisting of CARB, CDFA, and CPUC staff will choose the pilot projects. The program's data reporting requirements will generate information that allows the agencies to evaluate these projects.

Under SB 1383 CARB was required to approve and begin implementing a comprehensive strategy to reduce emissions of SLCPs by January 1, 2018. In December the CARB released its "Policies to Encourage Dairy Biomethane Projects and Other Projects to Reduce Methane Emissions" as required by SB 1383. The report is available at https://arb.ca.gov/cc/shortlived/dairy-biomethane-policies.pdf

COMMENTS:

1) Author's Statement. Since 2002, California has worked intentionally on decarbonizing the electric sector through the Renewables Portfolio Standard (RPS). It is time for California to begin work on decarbonizing the gas sector. Biomethane can also help to decarbonize households and commercial buildings, while maintaining reliability, affordability and customer choice. Nearly 90% of homes in the state of California rely on natural gas appliances – that is roughly 13 million homes and buildings that depend on natural gas for heating, drying and cooking. Utilizing biomethane can be especially beneficial in curbing emissions from these sectors in a sustainable manner that supports the state's climate goals. By creating a procurement program for biomethane, we can support California's organic waste diversion and methane reduction goals by developing a market for the products of the diverted organic waste and captured methane. By utilizing renewable resources that would otherwise emit GHG's we can begin to decarbonize the residential and commercial sectors of our economy.

   At the same time, addressing the state's short-lived climate pollutant goals is of utmost importance. In 2015, methane contributed to about 9 percent of California's GHG emissions. A majority of these emissions come from renewable resources such as diverted organic waste, livestock manure, and wastewater. With SB 1440, we have the opportunity to further advance the State's methane emissions' reduction goal, while incentivizing a large number of new biomethane production projects statewide, which would draw billions of dollars in investment to our State, and create tens of thousands of direct and indirect quality jobs.

2) Cart Before the Horse. The Legislature has made biomethane market development a priority. But they also called for the strategies to be cost effective. Significantly, 2016 legislation required the CPUC to pilot "not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system" to demonstrate a cost-effective avenue for biomethane gas development. The significance of the pilots is that the costs of connecting a dairy project to the IOU gas pipelines is very expensive making the use of the gas through this means questionable. SB 1383 specifically provided that strategies to reduce SLCPs be cost-effective.

   Those dairy pilots were authorized in December and have barely begun. It seems premature to launch a statewide procurement mandate before the pilot projects have been concluded and analyzed. The CEC made a similar report in April as part of the IEPR which noted:

   > The CPUC should evaluate the current monetary incentive programs for renewable gas production and pipeline interconnection and consider whether it is prudent reasonable to continue those incentives, which are funded through utility rates.

   The significance of the pilots is the tremendous expense of pipeline interconnection to move the gas. The California Council on Science and Technology recently encouraged the State to consider under what conditions biogas should be upgraded to biomethane and biomethane transported on common-carrier pipelines due to the expense. An alternative

is to use upgraded biogas (not meeting pipeline standards) or biomethane on-site, typically for generating electricity or transported for vehicle use.

3) Cost-Effective Requirement. SB 1383 specifically provided that strategies to reduce SLCPs be cost-effective. Transport of biomethane via pipelines has yet to be proven cost-effective. This is because biogas must be upgraded to biomethane to be transported in pipelines and with significant infrastructure upgrades and additions to interconnect to the utility pipelines.

   Implicit in this bill is the acknowledgement that this pathway is not yet cost-effective. The bill allows the cost paid for the biomethane to go as high as $15/MMBTU. This is five times the market price for natural gas which, according to the author, is at $3/MMBTU. The bill also allows establishes a cost cap of 5% of the IOU's annual revenue requirement. Gas revenues have no relationship to the costs of the program. Gas revenues were $9.4 billion in 2017 which would fund the program at approximately $470 million a year. This is to fund the procurement of 32 BCF of biomethane in a state that uses 2.4 trillion BCF of natural gas a year.

4) Where Are We Going? The gas pipeline system must have sufficient end-use to keep the gas (whether natural or renewable gas) moving through the system to serve that demand. Current natural gas use in California is approximately 2.4 trillion cubic feet per year. But pressures continue to eliminate the use of natural gas in California to achieve greater carbon reduction. Notable efforts to reduce gas use:

   - Aliso Canyon Natural Storage Facility – the use of this storage facility has been severely curtailed and state leaders have called for closing the facility within ten years;

   - AB 3232 (Friedman) – Requires the CEC to develop a plan to ensure that all new residential and nonresidential buildings be zero-emission buildings and a strategy to achieve a 50% reduction in GHG emissions generated by the state's residential and nonresidential building stock by 2030;

   - SB 64 (Wieckowski) – Among other provisions, requires a study with recommendations on how to reduce electrical generation from, and prioritize the retirement of, such facilities;

   - SB 100 (deLeon) – proposes to achieve 60% RPS and 40% carbon-free electricity procurement by 2045; and

   - SB 1477 (Stern) – requires the CEC to develop a statewide market transformation initiative to transform the state's market for low-emission space and water heating equipment for new and existing residential and nonresidential buildings and to develop an incentive program to fund near-zero emission technology for new residential and commercial buildings.

If California intends to continue these efforts, then the volume of gas in the pipelines will be severely curtailed as the end-uses are reduced or eliminated. According to the Union of Concerned Scientists, there is a limited amount of biomethane from waste compared to existing energy and fuel use in California. Biomethane from waste in California could meet just 3 percent of the state's demand for natural gas. This small amount of renewable gas may not be able to move through a pipeline system which currently delivers approximately 2.4 trillion BCF annually as natural gas use declines. The Legislature should consider a long-term gas use policy and its impacts on the ability to deliver gas to end-use customers including gas plants. Injection of the renewable gas into the pipeline system when that pipeline system may not be viable in the coming years to move such a small supply may not be a prudent investment. The trickle of gas in that pipeline won't move by itself and there does not appear to be sufficient renewable gas supply to supplant 2.4 trillion BCF of gas that runs through the system today.

5) Mandated Cost Recovery & Allocation. The treatment of cost recovery and allocation in this bill is not consistent. Although the bill states that costs should be recoverable if they are just and reasonable, the bill also provides that costs "shall be recoverable in rates and considered a public good to all classes of ratepayers and in the interests of all classes of ratepayers." There are some limits on costs but those limits far exceed other gas costs on the market.

   Of concern is also the open-ended mandate for the IOU to cover, and rate-base all costs:

   > to interconnect biomethane production to the existing pipeline system, including the just and reasonable investment for the point of receipt and any downstream facilities required to facilitate the receipt of biomethane, with full cost recovery from the gas corporation's customers, including both core and noncore customers.

   The evaluation of costs of interconnection are part of the five dairy pilots underway and are one of the primary challenges of making these projects cost-effective as required by SB 1383. This bill jumps ahead of the pilots and requires all interconnection with no limits. The requirement that costs be just and reasonable appears to be upended by the later statement that all costs are in the interest of ratepayers and recoverable in rates.

6) Re-Referral. Should this bill be adopted by the committee, it should be re-referred to the Assembly Natural Resources Committee.

7) Related Legislation. AB 3187 (Grayson). Requires the CPUC, no later than July 1, 2019, to open a proceeding to consider options to promote the in-state production and distribution of biomethane. Status: Senate Energy, Utilities & Communications Committee.

8) Prior Legislation.

   AB 1900 (Gatto) directed the CPUC to identify landfill gas constituents, develop testing protocols for landfill gas injected into common carrier pipelines, adopt

standards for biomethane to ensure pipeline safety and integrity, and adopt rules to ensure open access to the gas pipeline system. (Chapter 602, Statutes of 2012)

AB 2196 (Chesbro) ensured that biogas qualifies for RPS credit, provided its production, delivery and use meet certain conditions. (Chapter 605, Statutes of 2012)

AB 2313 (Williams) Increased the monetary incentive amounts available to biomethane projects and directed the CPUC to consider whether to allow recovery in utility rates the costs of utility infrastructure for biomethane interconnection with the natural gas pipeline network. (Chapter 571, Statutes of 2016)

SB 360 (Cannella, 2015) would have authorize the CPUC to consider providing the option to all gas corporations to engage in competitive bidding and direct investment in ratepayer financed biomethane collection equipment in California. The bill died in this committee.

SB 687 (Allen, 2015) would have established a renewable gas standard in California. The bill died in the Senate Committee on Appropriations.

SB 1383 (Lara) required state agencies to consider and, as appropriate, adopt policies and incentives to significantly increase the sustainable production and use of renewable gas, including biomethane to meet the state's climate change, renewable energy, low-carbon fuel, and short-lived climate pollutants goals, including black carbon, landfill diversion, and dairy methane targets. (Chapter 395, Statutes of 2016)

SB 840 (Committee on Budget and Fiscal Review, required the CPUC to reevaluate its requirements and standards for biomethane to be injected into common carrier pipelines. (Chapter 341, Statutes of 2016)

SB 1122 (Rubio, Chapter 612, Statutes of 2012) required IOUs to collectively procure at least 250 MW of generation eligible for the RPS from bioenergy generation project, including biogas projects.

REGISTERED SUPPORT / OPPOSITION:

Support

Coalition For Renewable Natural Gas (Sponsor)
Ameresco
BioCNG
BizFed, Los Angeles County Business Federation
California Association Of Sanitation Agencies
California Nevada Conference Of Operation Engineers
California Refuse Recycling Council
California State Council Of Laborers
Cambrian Energy

County Sanitation Districts Of Los Angeles County
DVO Inc.
Energy Vision
Evensol LLC
Generate Capital
Guild Associates Inc.
Leyline Renewable Energy LLC
Live Oak Banking Company
Montauk Energy
Morrow Renewables
Rogue Waste, Inc.
Scholl Canyon Organics Recovery To Energy
Seahold
Southern California Gas Company
The Climate Trust
Toro Energy
Vilter Manufacturing LLC
Westhoff, Cone & Holmstedt

Support If Amended

African American Farmers Of California
Agricultural Council Of California
Agricultural Energy Consumers Association
American Pistachio Growers
Bioenergy Association Of California
California Citrus Mutual
California Cotton Ginners & Growers Association
California Dairies, Inc.
California Farm Bureau Federation
California League Of Food Producers
California Poultry Federation
California Tomato Growers Association
Far West Equipment Dealers Association
Nisei Farmers League Inc.
Western Agricultural Processors Association

Opposition

California Environmental Justice Alliance
California Municipal Utilities Association
Center for Biological Diversity
Center for Food Safety; The
Center for Race, Poverty & the Environment
Clean Energy
Earthjustice
Food & Water Watch

In Defense of Animals
Leadership Council For Justice And Accountability
Natural Resources Defense Council
Physicians for Social Responsibility, Los Angeles
Sierra Club California
Southern California Public Power Authority (SCPPA)
U.S. Biogas

Oppose Unless Amended

California Hydrogen Business Council

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