



February 18, 2014

The Honorable David Hochschild, Commissioner
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Definition of Repowering for Biogas Projects (Docket 11-RPS-01)

Dear Commissioner Hochschild:

The Bioenergy Association of California (BAC) submits these comments regarding the appropriate definition of repowering for biogas powered projects under the state's Renewable Portfolio Standard. BAC is grateful to the Commission for its consideration of this issue, which is important to maximize renewable energy production and minimize greenhouse gas emissions from the wastewater sector and other organic waste sources. As explained below, BAC urges the Commission to adopt a definition of repowering for biogas that is consistent with its other definitions of repowering by focusing on replacement of the power generating equipment.

I. The Bioenergy Association of California

The Bioenergy Association of California is an association of private companies, public agencies and local governments working to promote sustainable bioenergy development. BAC's industry members include energy and waste management companies, technology providers, investors, consultants, and others. BAC's public agency members include wastewater, solid waste, air and water quality, and other environmental protection agencies. BAC also represents numerous local governments across the state.

BAC's interest and expertise in the biogas field is extensive. Many of BAC's members currently own and operate biogas powered projects in the wastewater, solid waste, diverted (from landfills) organic waste and dairy sectors. In addition, BAC members were instrumental in passing SB 1122, which requires the investor owned utilities to procure 250 MW of bioenergy from 3 MW and smaller projects. Several BAC members are in the process of developing projects that may be eligible for SB 1122 and many more could develop SB 1122-eligible projects if the Commission revises the definition of repowering for biogas projects.

II. The Importance of Biogas for Renewable Electricity Generation and Greenhouse Gas Reduction

Bioenergy currently provides a substantial part of California's renewable electricity and will play an increasingly important role as the state continues to increase the percentage of electricity from renewable sources. According to the *2012 Bioenergy Action Plan*, bioenergy (biogas and biomass) can provide 10 percent of the state's total electricity demand. Biogas alone can provide 1,000 to 1,500 MW¹ of baseload, renewable electricity to complement intermittent renewables. Biogas can also provide short-term energy storage, helping to balance supply with load.

Converting biogas to energy also provides enormous greenhouse gas reductions by destroying methane -- 21 times more potent a greenhouse gas than carbon dioxide -- reducing fossil fuel use and producing organic byproducts that can replace fossil fuel based fertilizers. By capturing and converting methane to generate electricity, bioenergy significantly reduces greenhouse gas emissions. It can also help to reduce air and water pollution, odors and other impacts.

Bioenergy from diverted organic waste also helps California to meet its goal to reduce landfilling by 75 percent.² Organic waste constitutes nearly half of all material that is landfilled in California each year (16 million tons out of a total of 37 million tons per year). According to CalRecycle, diverting 10 million tons of organic waste would reduce greenhouse gas emissions by 5 to 10 MMTCO₂e per year, not including the greenhouse gas reductions from fossil fuel displacement.³

III. The Current Definition of Repowering for Biogas Goes Beyond Power Generating Equipment

The RPS Eligibility Guidebook defines repowering for most sources of renewable energy as replacing the "prime generating equipment"⁴ which makes sense since *repowering* is about power generating equipment, not the production of the underlying fuel. Yet the Guidebook defines repowering for biogas energy to require the replacement of "the entire digester unit and internal combustion engine or combustion turbine as appropriate"⁵ even though the digester may serve multiple purposes besides power generation.

Converting organic waste to electricity requires four steps, the first three of which may occur for entirely different purposes than power generation. The steps are:

¹ This figure is based on the methane emissions in the Air Resources Board's AB 32 Scoping Plan Update and CalRecycle's technical paper on *Composting and Anaerobic Digestion*, released September 17, 2013. The figure includes 450 MW from diverted organic waste, 330 MW from landfill gas, 250-500 MW from dairy waste and 100-450 MW from wastewater treatment gas and co-digestion.

² Assembly Bill 341 (2011) and AB 32 Scoping Plan Update.

³ CalRecycle paper on *Composting and Anaerobic Digestion*, released September 17, 2013, at page 5, Table 2.

⁴ *RPS Eligibility Guidebook, May 2013 Edition*, Adopted by the California Energy Commission, page 58.

⁵ Id at page 58, section 1 (g).

(1) anaerobic digestion (decomposition of organic waste in the absence of oxygen) to reduce solids and produce biomethane; (2) cleaning of the biomethane to remove other gases and impurities; (3) transfer to a pipeline, vehicle fueling station, storage facility or power generator; and, if being used to generate electricity, (4) use in a fuel cell, turbine or engine to generate electricity or process heat.

Most wastewater treatment facilities in California have anaerobic digesters onsite as a necessary part of the water treatment process, not necessarily for the production of energy. In fact, California has 42 wastewater treatment plants with anaerobic digestion onsite that do not produce power or transportation fuels at all. The digesters are solely for the purpose of wastewater treatment. In other sectors, such as diverted organic waste, digesters may be used to produce biogas for vehicle fuels and/or heating as well as electricity generation.

In the electricity context, repowering should be about the equipment used to produce electricity, not the digester, which may be used to produce pipeline biogas, onsite heating, energy storage, transportation fuels, or wastewater treatment purposes. Requiring replacement of the digester as well as the power generating equipment is equivalent to saying that hydropower repowering requires replacing the whole reservoir in addition to power generating equipment or that biomass repowering requires replacing the fuel collection facility, which could be a hundred miles away and serve multiple purposes (such as a waste transfer facility or forest fuel collection site), not just to produce fuel for that particular electricity generating facility.

The current definition also makes no sense where biogas may be produced in one location and used offsite or in multiple offsite locations to generate power. For example, if a large wastewater treatment facility or dairy has anaerobic digestion onsite and then injects the biomethane into pipelines to be used by multiple generating facilities, the current definition of repowering would require the generating facility and the anaerobic digester to be replaced whether or not the digester needs to be replaced.

IV. The Overly Broad Definition of Repowering for Biogas Effectively Excludes Many Otherwise Eligible Projects

The current definition of repowering will exclude or significantly increase the costs of many bioenergy projects eligible for SB 1122. In particular, the current definition will increase the cost of bioenergy from wastewater treatment facilities, and potentially from dairies and other biogas facilities as well. A report by Black & Veatch prepared for the Public Utilities Commission in the SB 1122 proceeding (R.11-05-005) lays out the cost impact of the current definition quite starkly. Since most wastewater treatment facilities already have some anaerobic digestion onsite – sometimes for water treatment purposes, not electricity production – requiring replacement of the digester in addition to the electricity generating equipment would triple the costs of repowering for bioenergy projects. According to the report, the cost of electricity from wastewater treatment facilities

that only have to replace the power generating equipment or add incremental power production would cost 14 to 23 cents per kilowatt hour. The cost of electricity from wastewater treatment facilities that have to replace both the digester and the generating equipment would cost 44 to 71 cents per kilowatt hour.⁶ This would make it cost-prohibitive for a wastewater entity to repower under the current definition in the RPS Eligibility Guidebook and essentially exclude a significant source of potential bioenergy production from participation in the SB 1122 program or the RPS.

In addition to increasing the costs of bioenergy, the current definition of repowering contradicts the state's policy of encouraging renewable energy at wastewater facilities and more generally. Wastewater treatment facilities were the focus of California's first feed-in tariff statute, AB 1969, which declared that "[i]t is the policy of this state and the intent of the Legislature to encourage energy production from renewable resources at public water and wastewater facilities."⁷ Yet the current definition of repowering excludes most – and the most cost effective – wastewater treatment projects from participating in SB 1122.

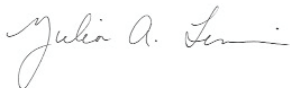
V. Recommendation

BAC urges the Commission to revise the definition of repowering for biogas projects to be consistent with the definition of repowering for other renewables, focused on the power generating equipment.

In addition, BAC urges the Commission not to make distinctions based on 1) whether a facility receives biogas from a dedicated or common carrier pipeline, or 2) whether the gas collection and processing equipment are owned by the same owner as the power generating facility. Both of these issues go well beyond the appropriate focus of repowering, which is on whether the power generating equipment is new or not. Pipeline and ownership issues, while important, should not be addressed in the definition of repowering.

Thank you very much for the opportunity to comment on this important issue. We look forward to working with the Commission and other stakeholders to ensure that the definition of repowering for biogas projects meets the purposes of the RPS and SB 1122 without unnecessarily limiting otherwise eligible projects.

Sincerely,



Julia A. Levin
Executive Director

⁶ *Small-Scale Bioenergy: Resource Potential, Costs, and Feed-In Tariff Implementation Assessment*, Draft Consultant's Report Prepared for the CPUC, April 9, 2013, Tables 4-1 and 4-2, page 4-1.

⁷ AB 1969, section 2(a) codified as Public Utilities Code section 399.20.