

Docket Optical System - Bioenergy Action Plan

From: "Wrazen, Linda"
To: , ,
Date: 6/28/2007 3:16 PM
Subject: Bioenergy Action Plan
CC: "Pak, Alvin" , "Reed, William L." , "Keith, Erbin" , "Rowley, Joseph" , "Engelbrecht, William R." , "Linam, Jeff" , "Sherwood, Peter" , "Nelson, William" , "Orozco, Bernie" , "Andranovich, Laura A."
Attachments: "Pak, Alvin" , "Reed, William L." , "Keith, Erbin" , "Rowley, Joseph" , "Engelbrecht, William R." , "Linam, Jeff" , "Sherwood, Peter" , "Nelson, William" , "Orozco, Bernie" , "Andranovich, Laura A."

Sempra Energy is pleased to provide comments and recommendations in response to the Bioenergy Action Plan Development Proceeding (Docket No. 06-BAP-1) and the recent workshop sponsored by the California Bioenergy Interagency Working Group on June 11, 2007.

Sempra Energy further would like to offer to meet with and at the convenience of the Staff and Commission to discuss, in more detail, the remarks provided.

Thank you for the opportunity to submit comments in this valuable proceeding.

Respectfully submitted on behalf of,

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DOCKET 06-BAP-1	
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BEFORE THE CALIFORNIA BIOENERGY INTERAGENCY WORKING GROUP

In the Matter of:

Bioenergy Action Plan Development)
) Docket No. 06-BAP-1
)
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Comments of Sempra Energy On California Bioenergy Action Plan

Pursuant to the Notice of Workshop in the Bioenergy Action Plan Development proceeding and at the request of the California Bioenergy Interagency Working Group ("Bioenergy Working Group") made at the June 11, 2007, workshop in this matter, Sempra Energy submits its recommendations in support of the Bioenergy Action Plan. Sempra Energy respectfully requests that the Bioenergy Working Group take appropriate action to encourage and facilitate investments in projects and infrastructure that will support the goals of the Bioenergy Action Plan.

A. Introduction

Sempra Energy is the parent of various firms participating in California, regional, national and international markets for electricity and natural gas. Among their activities, those firms operate gas and electric utility systems and/or are the developers, owners and operators of major energy infrastructure projects, including electric generating facilities, natural gas pipelines, and regasification terminals receiving and processing liquefied natural gas imported from abroad. In response to the State's policies encouraging the addition of electric generation fueled by renewable resources and, more recently, reducing greenhouse-gas emissions, Sempra Energy is seriously evaluating the development of large-scale projects that would contribute to meeting the State's objectives. As our evaluation of candidate projects continues, Sempra Energy urges the Bioenergy Working Group to adopt regulatory innovations that would encourage the development of projects serving the State's Renewable Portfolio Standard¹ and the global-warming program.² In particular, Sempra Energy recommends that renewable energy credits be provided to

¹ Generally, the Renewable Portfolio Standard requires that no less than twenty percent of the energy delivered by all load-serving entities regulated by the Public Utilities Commission ("CPUC") be produced by certified renewable energy resources by 2010. The regulations of the CPUC include interim standards that must be met on a year-by-year basis prior to 2010.

² See California Energy Warming Solutions Act of 2006, Stats.2006, ch. 488, (2006 Assembly Bill 32 (Nunez)).

projects producing biogas or to electric-generating facilities contracting with those projects on a “fuel-equivalents” basis, without requiring that those electric-generating facilities be new and/or co-located with the fuel-production project.

B. Biogas Production

As noted by several parties at the June 11th Workshop, biogas production is an effective method by which to capture otherwise fugitive greenhouse-gas emissions, typically methane from the decay of waste and organic matter, and use those captured gases for, among other applications, the production of electricity. Despite these attractions, however, investments in biogas production facilities have been few and far between. Sempra Energy believes the Bioenergy Working Group should seek to encourage investment in biogas-production projects.

The CPUC and California Energy Commission (“Energy Commission”) have already begun to adopt more flexible regulations in order to provide renewable energy credits to electric-generating facilities that contract with and/or invest in biogas-production facilities. The two commissions, both members of the Bioenergy Working Group, have taken steps recognizing that the environmental benefits and value of capturing, producing and using biogas are created in the fuel-production cycle rather than in the combustion of the fuel. To this end, the CPUC and Energy Commission have begun qualifying the electricity produced by generators that contract for biogas as renewable energy under the Renewable Portfolio Standard on a “fuel-equivalents” basis. That is, notwithstanding that a generator is remote to the source of the biogas, some portion of the generator’s output will qualify for sale as “renewable energy” (a) where the generator has a nexus to the biogas source through ownership or by fuel contract and (b) to the extent that the electricity output of the generating facility can be ratably apportioned to the biogas. The proportion of electricity qualifying as renewable energy is determined on a “fuel-equivalents” basis, typically by comparing the volume of biogas “used” by the generator (i.e., the volumes of biogas delivered into the natural gas transportation system) against the total fuel volumes consumed by the generator across some period of time (e.g., daily, monthly or annually).

The fuel-equivalents approach taken by the CPUC and Energy Commission essentially embeds an explicit environmental attribute into biogas that can be sold to existing generators who then “convert” the biogas into renewable energy and in turn sell the renewable energy to those load-serving entities subject to the regulatory obligations of the state Renewable Portfolio Standard. As several parties at the June 11th Workshop testified, many potential biogas sites are located in areas which are nonattainment with respect

to regulated pollutants and the co-location of electric generation with the biogas-production facility is difficult, if not impossible.³ Allowing existing and/or remote generators to convert, in whole or in part, their existing powerplants into renewable energy facilities through an investment in a fuel-production facility or pursuant to a fuels contract removes this barrier to the development of biogas-production facilities.

The fuel-equivalents approach is entirely consistent with longstanding practices used in the natural gas transportation sector. As with all shippers of natural gas, a generator currently identifies through a “nominations process” the point on the transportation system where their natural gas will be injected into the system and the point at which it will be withdrawn. Their natural gas is metered at both points so as to assure that the generator’s injections and withdrawals are “in balance” pursuant to the terms and conditions specified in the transporter’s tariffs.

During the transportation process, the generator’s natural gas will be commingled with the supplies of all other shippers with contemporaneous nominations and flowing supplies. Obviously, shippers do not receive the precise gas molecules they inject into the transportation system at their designated withdrawal point. Accounting conventions and tariff charges are used to assure that individual shippers receive the like-for-like fuel equivalent of their source gas at the point of withdrawal – as examples, transportation charges will be adjusted for differences between a shipper’s supplies at the original point of injection and the destination withdrawal point related to changes in heat content, contaminants and inert gases resulting from the commingling of supplies received from and withdrawn by all shippers. Under the fuel-equivalents approach taken by the CPUC and Energy Commission, shippers of biogas can isolate and preserve the environmental attributes, as well as the financial value of those attributes, where biogas is injected into the pipeline system and commingled with other supplies of natural gas. The fuel-equivalents approach recognizes that the biogas supply displaces other conventional gas supplies which, but for the availability of biogas, would have been nominated and transported. This permits biogas produced from a remote source to “move” from the production location to any electric-generating facility and allows the generator to sell its output, to the extent biogas is “used” by the facility, as renewable energy. Where the fuel-production end of the cycle creates environmental benefits, e.g., by capturing fugitive methane that would otherwise be released, vented or flared at the source, “transporting” the biogas to the generator intensifies and adds to the environmental benefits associated with biofuels by substituting biogas for and displacing conventional

³ The advantage of co-location is that the technology used for the generation of electricity can be selected based on the characteristics of the local fuel. For example, internal combustion engines that are insensitive to instantaneous variations in fuel quality or randomly occurring contaminants can be used to burn untreated landfill gases where more advanced turbines would not be suited to this application.

sources of natural gas. The fuel-equivalents approach taken by the CPUC and Energy Commission allows a generator to monetize this additional value by providing the generator with a marketable renewable-energy equivalent credit upon the introduction of biogas into the transportation stream.

The Pacific Gas & Electric (PG&E) case presented at the June 11th Workshop demonstrates the fundamentals of the fuel-equivalents approach. PG&E requested permission from the CPUC to enter into a fuels contract with BioEnergy Solutions, a Central Valley producer of digester gas using dairy-based feedstock, and qualify electricity generated at one of its existing fossil-fired units as renewable energy.⁴ BioEnergy treats and “cleans” the biogas so as to meet all pipeline specifications prior to delivery into the PG&E natural gas transportation system. PG&E executed a ten-year agreement to purchase gas supplies from BioEnergy and proposed to “use” that gas at its existing Humboldt Bay Power Plant, a fifty-year-old 105-megawatt steam-turbine generating facility to produce renewable energy.⁵ The “use” of the BioEnergy biogas supplies at Humboldt Bay will displace, as described previously, other natural gas supplies that Humboldt Bay would have nominated. That is, the Humboldt Bay plant operators will nominate gas supplies, including biogas from BioEnergy, based on the facility’s daily operation and PG&E’s gas-system operators will effect an exchange of supplies, physically delivering gas from sources other than BioEnergy to Humboldt Bay (e.g., Canadian supplies received through the main PG&E gas transmission lines at Malin, Oregon) and substituting BioEnergy’s deliveries for natural gas nominated by other gas customers. This “accounting swap,” as PG&E described it, results in a crediting of BioEnergy’s deliveries to Humboldt Bay for the purpose of determining how much of the electricity output of the power plant qualifies as renewable energy. This regulatory innovation is a creative method of increasing the incentives to the fuel producer, the powerplant and the utility to invest in the fuel-production facility: the source dairies can meet emission requirements both under current air-quality regulations and expected future climate-change regulations by delivering feedstock into the production process, and the renewable value of the fuel can be captured through its “use,” via the displacement of other gas supplies, at a powerplant based on that plant’s operating characteristics.

⁴ According to publicly available information, BioEnergy uses an anaerobic digestion process to convert volatile solids (i.e., cow manure) into biogas of a quality and composition generally meeting PG&E’s pipeline standards. Approximately sixty percent (60%) of the volatile solids used by BioEnergy can be degraded during the digestion process. To the extent the gas produced by BioEnergy fails PG&E’s gas-quality standards, it is diverted and flared at the collection site.

⁵ PG&E has filed an application with the Energy Commission to repower the Humboldt Bay unit so as to increase the total gas-fired capacity of the facility to 163 megawatts and otherwise improve the facility’s fuel efficiency. That application is pending approval.

The case presented by RealEnergy, an owner-operator of modular distributed-generation systems, is another example of how the regulatory innovations adopted by the CPUC and Energy Commission can enhance the market for biogas. RealEnergy develops and operates electric-generating units serving what it calls “microgrids,” highly localized subdivisions within the electricity system. In some cases, these units meet the requirements for incentives offered by the utilities under a program implemented by the CPUC – the program encourages the development of distributed generation in order to enhance grid stability and reliability, particularly during periods of peak demand or other system stresses. RealEnergy has recently executed fuel contracts with biogas producers using dairy and agricultural wastes in order to fix fuel costs for its units and, potentially, qualify the electricity it produces for the financial incentives available to producers of renewable energy. As in the PG&E example, RealEnergy builds its units in locations remote from the fuel-production facility (i.e., typically in urban load centers) and the local gas-distribution and – transmission utility effects a substitution of RealEnergy’s biogas for those flowing supplies. The RealEnergy concept creatively leverages several layers of regulatory incentives serving a host of public policies within a single project, improving its economics and, in whole or in part, facilitating the underlying investment:

- The generation unit serves the diversity and reliability benefits of the distributed generation program and is eligible for net-metering incentives, interconnection preferences, and other incentives;
- The fuel-production facility serves emission-reduction requirements by reducing fugitive emissions, venting and flaring, and may create environmental attributes that could be sold in a market-based program related to the reduction of greenhouse-gas emissions; and,
- Allowing the generation unit to capture a renewable-energy credit on a fuel-equivalents basis provides the financial incentives that can encourage an investment by the generator in the fuel-production facility, whether through ownership or by contract, and otherwise support the generation unit’s operating returns.

The regulatory innovation Sempra Energy perceives in the emerging construct being developed by the CPUC and Energy Commission could provide the additional financial incentives necessary to overcome the cost disadvantages that currently exist in the biogas-production cycle. By permitting electric generators and fuel producers to work their respective sides of the value chain and then, through a fuel contract, leverage the environmental attributes and benefits each brings to the combination, the agencies will pave the way for others to enter into even more of these arrangements and partnerships. As noted previously,

allowing the fuel-production and generating units to locate and operate remotely from one another can overcome permitting difficulties by eliminating the need to permit and construct new generation in the air basin where the fuel-producer is located. More significantly, the PG&E example will no doubt encourage large-scale generators to seek supplies of biofuels for their existing or planned conventional projects by permitting them to participate in the renewable-energy market, an option that has heretofore been and would otherwise remain foreclosed to them.⁶ This is a particularly important signal to companies such as Sempra Energy which do not participate in the small-generator market and cannot take the risks that any investments in electric-transmission and generation facilities co-located with and dependent on a source-specific fuel supply might be stranded temporarily or permanently upon failures, whether short-term, extended or permanent, in the fuel-production cycle. Sempra Energy envisions the emerging regulatory construct will dramatically expand the scale of the market for biofuels and their producers by allowing conventional thermal generation to switch to renewable fuels and produce renewable energy.

For the reasons stated above, Sempra Energy strongly supports the emerging regulatory trend that permits biogas producers and electricity generators to convert the renewable attributes and environmental benefits of biogas into a renewable-energy equivalent. This development, and enhancements to it, will serve both the goals of the State's Renewable Portfolio Standard and the Energy Warming Solutions Act by providing financial incentives that will encouraging investment in biogas production.

Finally, the regulatory constructs described above are wholly consistent with the recent recommendations of the California Climate Action Registry regarding the use of farm biogas. In its "Manure Management Project Reporting Protocol; Public Review Draft," issued May 14, 2007, the Registry encourages developers installing biogas control systems to take the additional step of adding systems "capable of using the captured biogas for energy generation" and/or "collect methane for delivery to the gas distribution or transmission pipeline." (See, e.g., Public Review Draft at p.3.) The Registry's interest in these additional steps is to maximize the interest in biogas capture by promoting the availability of additional financial incentives to developers from the renewable energy program. The Registry acknowledges that combustion is the means by which a reduction in agricultural greenhouse-gas emissions

⁶ As the energy agencies are acutely aware, wind generation has been the key source of renewable energy used by load-serving entities to meet their obligations under the state Renewable Portfolio Standard. The disproportionate representation of wind energy in the state resource mix is creating reliability and cost issues stemming from its intermittency -- specifically, the relative unavailability of wind energy during periods of peak demand requires load-serving entities and the California Independent System Operator to acquire supplemental resources that would be available during system peaks to replace wind resources but that are then idled during shoulder and off-peak periods when wind energy is available. Increasing the proportion of biogas-fueled energy in the renewable portfolio should result in economic benefits to retail customers by qualifying dispatchable baseload units as renewable producers, relieving to some extent the need to rely on intermittent resources for renewable energy.

is to be achieved, but takes the logical step of recommending that some practical value-added product be derived from the combustion process. Sempra Energy believes that permitting biogas producers to participate in the market for renewable energy as envisioned by the Registry is a wholly appropriate means of enhancing the returns from biogas capture and combustion, and recommends that the Bioenergy Working Group support the CPUC and Energy Commission in facilitating the economic arrangements that would promote the widescale use of biogas as a powerplant fuel.

C. Next Steps

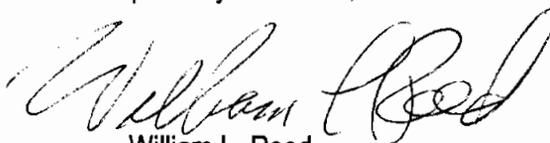
By Executive Order S-06-06, the Governor established important goals related to the development and utilization of biofuels, including the requirement that no less than twenty percent (20%) of renewable energy delivered in the state be produced from biomass resources by 2010. The emerging regulatory construct being implemented by the CPUC and Energy Commission can significantly contribute toward meeting this goal. In order to assure that this occurs, Sempra Energy recommends that the following next steps be taken by the agencies and the Bioenergy Working Group:

- The Energy Commission should amend its Renewable Energy Guidebook so as to qualify any generator purchasing biofuels that meet the intent of the Governor's Executive Order S-06-06 as a hybrid renewable-energy resource to the extent of its purchase of qualifying biofuel under the fuel-equivalents approach exemplified in the case of PG&E's Humboldt Bay Power Plant;
- The Bioenergy Working Group should develop and adopt guidelines that would be used by the CPUC and Energy Commission to identify and certify biogas types, sources and producers qualifying as a renewable-resource fuel; and,
- The Bioenergy Working Group, CPUC and Energy Commission should cooperate so as to provide such additional incentives as might be available to further encourage investments in biofuel-production facilities, including but not limited to allowing fuel producers and/or electricity generators to leverage all available regulatory programs and/or incentives, as might exist currently or be adopted in the future, within single projects or groups of projects.

D. Summary

As noted above, Sempra Energy finds the actions of the Energy Commission and CPUC to be highly creative and innovative. Those actions have substantially lowered the barriers to investments in this important segment of state and regional energy markets. Sempra Energy looks forward to working with the two commissions and the other members of the Bioenergy Working Group to achieve the goals of the Governor as articulated in his executive order and the State in the Bioenergy Action Plan adopted by the members of the Bioenergy Working Group.

Respectfully submitted,



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