



## WASTE MANAGEMENT

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September 30, 2011

California Energy Commission  
Dockets Office, MS-4  
Re: Docket No. 11-RPS-01  
and  
Docket No. 02-REN-1038  
RPS Proceeding  
1516 Ninth Street  
Sacramento, CA 95814-5512

Via Email: [docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

**Subject: Docket Nos. 02-REN-1038 and 11-RPS-01, RPS Proceeding**

Dear California Energy Commission:

Thank you for the opportunity to comment on the introduction of biomethane into the natural gas pipelines for delivery to an RPS-eligible electric generating facilities in California that meet the requirements in the law under the California Renewable Portfolio Standard (RPS) and SB 1x 2 (Simitian).

Waste Management (WM) provides comprehensive solid waste and recycling services throughout the US and in California. WM currently has several projects in other states that inject treated low-carbon renewable landfill gas into pipelines for beneficial use. WM has developed and is considering the further development of landfill gas projects in other states that can provide low carbon Renewable Portfolio Standard (RPS) credits to utilities in California. We would similarly like to develop such projects in California were it not currently prohibited by tariffs adopted by the California Public Utilities Commission (CPUC).

The CEC's Renewables Portfolio Standard Eligibility Guidebook, Fourth Edition (RPS Guidebook) describes the eligibility requirements and process for certifying renewable resources using pipeline biomethane as eligible for California's RPS. WM believes the current framework for eligibility in the RPS Guidebook is appropriate and does not warrant any change. Further, WM believes that SB X1 2 did nothing to alter the way in which RPS eligibility is granted for landfill gas – particularly out-of-state landfill gas. Eligibility for "Bucket 1" RPS credit is based on the location of the renewable electrical power generation facility. If the generating facility is located in California, it is eligible for Bucket 1 RPS credit. The location of the source of the fuel, including landfill gas, should not be a factor in determining the eligibility of a resource for RPS credits. Most of the fossil natural gas used for electrical power generation in California comes from out-of-state sources. Substituting out-of-state fossil sources of natural gas with out-of-state sources of renewable biomethane, including landfill gas, is totally consistent with the RPS Guidebook and the provisions of SB 1x 2.

**02-REN-1038**

**DOCKET**

**11-RPS-01**

**DATE SEP 30 2011**

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With respect to the development of instate renewable natural gas resources, we strongly support efforts to eliminate the restrictive tariffs on the development of instate biomethane resources – particularly the development of instate landfill gas resources. The Gas Technology Institute (GTI) is expected to finalize their report this year on whether technology exists to reliably treat landfill gas to be safely and reliably introduced into utility pipelines. The CEC and CPUC should take this opportunity to develop appropriate standards for the acceptance of instate biomethane into California utility pipelines. The gas utilities should be called upon to work cooperatively with other stakeholders to develop gas quality standards that are necessary to protect public health and safety yet reliably allow biomethane to be cost-effectively introduced into utility pipelines. This can begin the process for the CEC and CPUC to develop appropriate statewide standards and procedures for the development of biomethane-to-pipeline projects.

Following is WM response to the issues raised in Attachment A and B of your public notice for the Workshop that took place on September 20, 2011 on this matter.

### ***Attachment A: Pipeline Biomethane Discussion Points***

1. *The fourth edition of the RPS guidebook requires biomethane to be delivered to California or the electricity generation facility if it is located outside of California before it can be used in the generation facility. Given the two separate pipeline systems in California is it appropriate to require:*
  - a. *Delivery of biomethane to the gas pipeline system in California from which the facility accepts delivery of gas, or directly to the electricity generation facility if it is located outside of California.*
  - b. *Delivery of biomethane directly to the electricity generating facility.*

**WM Response:** Consistent with the current practice as outlined in the RPS Guidelines, it is appropriate to allow biomethane to be injected into a natural gas system and be contractually delivered into California for use in an RPS-certified facility. However, it is not appropriate to actually require that the biomethane be physically delivered to a pipeline system in California. No, it is not appropriate to require physical delivery of biomethane directly to the electricity generating facility.

As stated on Page 19 of the RPS Guidelines:

RPS-eligible pipeline biomethane, also referred to as biomethane, may be injected into a natural gas transportation pipeline system and delivered into California (or delivered to the electric generation facility if the electric generation facility is located outside of California) for use in an RPS-certified facility. The resulting generation will be considered RPS-eligible electricity, if all other eligibility requirements have been met. It should be noted that the biomethane must meet strict heat content and quality requirements within a narrow band of tolerance to qualify as pipeline-quality gas.

Quantifying RPS-eligible energy production requires accurate metering of the volume of the biomethane injected into the transportation pipeline system and the measured heat content of the injected

biomethane. Although blending the biomethane into the transportation pipeline system mixes the biomethane with other pipeline gas, biomethane entering the system must

be designated for use at a specific power plant or designated to a pipeline system owned by the local publicly owned electric utility (POU) or other load-serving entity (LSE) procuring the biomethane, with the POU or LSE then designating which facility will consume the biomethane. The facility to which biomethane is designated must be certified as RPS-eligible, recognizing that the facility may use a blend of RPS-eligible and ineligible fuels. (Emphasis added)

The California Energy Commission and the California PUC have, for at least the past three years, allowed California load serving entities to procure biomethane (pipeline quality renewable natural gas) from out-of-state producers, burn that biomethane in their in-state power generation facilities and generate “Bucket No. 1 eligible” renewable power under P.U. Code Section 399.16(b)(1). The CEC has certified and subsequently audited these transactions and confirmed their treatment under the RPS and issued guidance under the CEC’s Guidebook that confirms the rules governing these transactions. Most notably, the CEC requires that the biomethane producer not only demonstrate a physical pathway on the natural gas pipelines for the transportation of the biomethane to the California market, but also that the producer actually contract for (and pay for) physical transportation of the biomethane along the physical pathway. These rules ensure that the biomethane is injected into the natural gas resource pool that supplies California.

The delivery of gas on the North American pipeline grid is done through contract. The California market is a variable mixture a variety of different sources of natural gas from Texas, the Rocky Mountain Region and Canada. This gas arrives in California via the interstate natural gas transportation system in variable quantities every day. Some biomethane producers, depending on the location of the project, have the ability to contract to have their product shipped through the interstate natural gas pipeline system that feeds California’ s energy demands. The CEC and PUC have concluded that if a biomethane producer enters into an auditable transaction with a California load serving entity to buy the producer’s biomethane delivered by the interstate gas pipeline system that the power that is subsequently generated with that fuel at an in-state facility and properly qualifies for Bucket No. 1 treatment under the RPS.

The current system for contracting and tracking biomethane resources for use in California is appropriate as written and does not warrant changes or further restrictions. California regulators should require that the gas be committed to a California electricity generating facility and have the potential to be physically delivered. The specific “quanta” of contracted gas should not be required to be physically delivered to the electrical generating facility in California or even to the California pipeline because it is impossible to control where any single “quanta” of natural gas, either fossil or biomethane, is actually used to produce electricity – nor does it matter. It only matters that that the biogas be contracted for that use.

2. *Should the Energy Commission consider adding any location requirements to sources allowed to provide biomethane to facilities participating in California’s RPS in addition to any restrictions implied by required delivery agreements?*

**WM Response.** No -- no further restrictions or location requirements on biomethane are appropriate. California obtains most of its fossil natural gas from outside of California. The same will be true for biomethane resources. Just as California does not put any restriction on the source of fossil natural gas it uses, neither should it impose restrictions on the source of biomethane that is committed by contract for use in California to comply with RPS requirements.

California already has imposed a huge “location restriction” on the largest existing instate source of biomethane – landfill biomethane. Existing CPUC tariffs prevent the injection of landfill biomethane produced in California into IOU utility pipelines. *In fact, virtually the only biomethane currently available to California load serving entities today is produced out-of-state.* Thus, imposing restrictions on out-of-state methane simply does not make sense. Rather, efforts should be undertaken to remove existing restrictions on in-state landfill biomethane – not impose new restrictions on other out-of-state sources.

Some who are opposed to the current treatment of out-of-state biomethane under the California RPS have suggested that out-of-state biomethane should be treated like out-of-state electricity – and not eligible for Bucket #1 under the revised California RPS. *But this misses the point that biomethane is a power source and not the power itself.* There is no statutory basis for the opponents’ proposed classification of biomethane as “generation facility” and no obvious reason why electricity generated at an in-state facility with a renewable fuel that was produced out-of-state should be treated like out-of-state electricity under the RPS. According to P.U. Code Section 399.16(b)(1), out-of-state biomethane that is burned in a certified in-State generation facility is included in “Bucket No. 1” because the electric generating facility has its first point of interconnection with a California balancing authority. There is no statutory justification that we are aware of for classifying the electricity generated with a renewable fuel at an in-state facility as anything other than a bundled REC – even if the source of the fuel is from outside of California.

An in-state load-serving entity that uses biomethane fuel produced outside the state to generate power at an in-state facility is analogous to a wind power producer or solar power producer who sources their critical supplies (i.e., solar panels or wind generating devices) out of state or even overseas. It is self evident that some of the economic activity that occurs as a result of California’s RPS will occur outside of the state and the lines that have been drawn already (the power must be produced within the state for bundled REC treatment) already function well to ensure that California is the primary beneficiary of economic activity associated with the RPS. There is no statutory basis or sound policy reason to single out biomethane fuel for disparate treatment as compared to solar panels, wind turbines or other biomass derived fuel that is produced outside of the state and used in the state for power generation.

3. *The Energy Commission currently allows backhaul and forward haul transportation agreements that are either firm or interruptible to be considered eligible delivery methods, should the Energy Commission:*
  - a. *Retain the current requirements?*
  - b. *Restrict delivery to only forward haul transportation?*

*c. Restrict delivery to only firm transportation agreements?*

**WM Response:** The CEC should retain the current requirements. The variations in delivery methods are a function of the necessities for moving gas along a pipeline. Natural gas is produced, distributed and consumed in highly variable quantities every day. Patterns of distribution can also change dramatically based on new production and new source of consumption. The natural gas industry uses forward haul, back haul firm and interruptible transportation to help manage the variability of the system. Any requirement that physical delivery be achieved by one particular type of transportation arrangement would be impractical and potentially eliminate producers' ability to comply with the CEC requirements and deliver biomethane to the California market. WM does not operate natural gas pipeline systems so our comments are general in nature. We defer to other in the natural gas distribution industry to expand on these comments.

- 4. Should any delay be allowed in the consumption of biomethane at the electric generating facility once it has been delivered to California or the electricity generating facility? If so, please specify what reasons for delays should be allowed and what, if any, limits should be imposed on the delay. Explain your answer. If no delay should be allowed, please explain why.*

**WM Response:** In the natural gas industry delays in consumption are allowed and are critical in managing the dislocation between producer supply and user consumption. The same delays should be allowed in the consumption of biomethane at the electric generating facility in order to utilize renewable natural gas as a dispatchable resource and to reduce the integration cost associated with intermittent renewable resources, such as wind and solar. Integration costs are largely driven by the fuel cost necessary to provide the additional required reserves, and gas fired units provide flexible generation to meet additional ramping requirements. By using biomethane in gas fired units, generators can address the variability challenges associated with increased reliance on intermittent renewable resources without resorting to the use of fossil-fuel facilities. WM does not operate NG pipeline systems so our comments are general in nature. We defer to other in the natural gas distribution industry to expand on these comments.

- 5. How should the Energy Commission treat biomethane imbalances resulting from differences between scheduling and use of the biomethane?*

*a. Specify why such imbalances could occur, and if they should be allowed. Please explain.*

**WM Response:** Natural gas imbalances are a common occurrence with regard to the movement of natural gas. Imbalances serve a dual function in allowing both the producer to manage through variable production and the imbalances allow the end user to manage consumption variability. These imbalances should be allowed because they allow for the ability to more efficiently manage gas volumes and thus allow for the renewable energy to be dispatched.

*b. What limits are placed on imbalances by pipelines, and should the Energy Commission enforce stricter limits on imbalances? Please explain.*

**WM Response:** Pipeline imbalances are defined in each pipeline's tariff and vary from pipeline to pipeline based on physical and operation conditions. Pipelines typically allow

imbalances as long as the physical capacity of the pipeline is not exceeded. Many pipeline operators offer management tools for imbalances. We urge the CEC to directly consult with the pipeline operators on this matter. Because imbalances are effectively managed by individual pipeline operators according to FERC regulations and pipeline tariff provisions, biomethane should receive the same treatment as natural gas in the current regulatory structure.

- c. *What is the magnitude of imbalances in natural gas deliveries, and how do imbalances in biomethane deliveries differ?*

**WM Response:** We understand that imbalances in the natural gas deliveries typically range from 2-5% of a facility's production volume. Production of biomethane tends to be more volatile than natural gas due to the fact that landfills, anaerobic digestion facilities, and waste water treatment plants have more variability than traditional gas wells due to operational difficulties and variability in gas production. Imbalances are used to manage swings in production relative to the nominations to end users. In biomethane purchase agreements, electrical power generators typically require delivery of a certain quantity of biomethane on each delivery day to support consistent generation capacity. If an interruption in production creates a differential between the quantity nominated to an electrical generating facility and the actual amount produced, creation of an imbalance allows for the producer and the electrical generating facility to manage through the interruption by the delivery of biomethane made up in the current accounting period. At the conclusion of the accounting period, the imbalance is reconciled with actual production volumes by the fuel production facility to ensure that the electrical generator is only invoiced for the amount of the biomethane produced and delivered to the electrical generator during the accounting period.

6. *What records should an applicant for an electric generating facility using pipeline biomethane be required to maintain and provide to the Energy Commission in the event of an audit process. How will these records ensure that the biomethane has not been claimed for use by more than one entity and all delivery and eligibility requirements have been met?*

**WM Response:** The electrical generating facility should be required to maintain pipeline reports to support any invoices received for biomethane as well as attestations provided to the generating facility by the fuel production facility and pipeline biomethane deliverer as required under the current CEC Eligibility Guidebook.

#### ***Attachment B: Barriers to In-state Biomethane Injection into the Natural Gas Pipeline***

*The following barriers have been summarized from the 2011 Bioenergy Action Plan. Please provide update on these barriers to in-state biomethane injection into a natural gas pipeline or any additional barriers that are not addressed.*

1. *Biomethane quality standards and pipeline interconnection.*

- a. *California utilities do not have uniform biomethane quality standards and the standards in place may not be appropriate for biomethane, most standards were designed for natural gas injection.*

**WM Response:** Most states other than California do not have separate standards for biomethane and natural gas. States typically have just one set of gas quality standards that must be met for any gas that is introduced into the pipeline. To our knowledge, California is the only state to ban the injection of landfill biogas into a utility pipeline. Most other states allow landfill biogas to be injected provided the applicable gas quality standards are met.

Currently, there are different gas quality standards between the three major gas utilities in the California. The standards are adopted in the form of tariffs by the CPUC and are among the most stringent in the United States. We urge the CEC to work with the CPUC to develop a consistent set of gas quality standards that will allow biomethane, including treating and monitoring landfill gas, to be safely introduced into California utility pipelines.

One of the most significant barriers in the existing CPUC gas quality tariffs is the Rule 30 tariff applied to Sempra Gas utilities in Southern California. This tariff requires a minimum heating value of 990 BTUs per standard cubic foot for gas introduced into the utilities pipelines. Most other states have heating values ranging from 950 to 960 BTUs per standard cubic foot of gas.

Biomethane typically lacks the higher chain hydrocarbons that typically accompany the methane in fossil natural gas – resulting in lower BTU values in the 960 to 980 BTU range. Other states also allow blending with higher BTU feedstocks – which is not allowed in California.

California will benefit from a wider, national renewable energy market. The state's inconsistent and more complex standards structure for biomethane and gas in general present significant obstacles to expanding California's renewable market and developing more clean, renewable energy for state consumption.

The Gas Technology Institute (GTI) is currently completing there study of technologies available to reliably treat landfill gas. We hope that this GTI study, to be published late this year, will set the stage for serious discussions between the CEC, CPUC, gas utilities and biomethane project developers to amend the current California regulatory structure to allow instate biomethane projects to be developed. Upon completion of the GTI study, the CEC should take a leadership role with the CPUC to encourage revision of the current gas quality standards contained in gas utility tariffs.

- b. Current utility tariffs require project developers to pay for the costs of the pipeline interconnection which is a large cost barrier.*

**WM Response:** The cost of interconnection can be a substantial barrier facing the development of new biogas projects. WM is interested in developing arrangements whereby these costs can be shared or reduced. If the policy of the state is to encourage the development of renewable natural gas projects, then the cost of these projects (including interconnection costs) should be mitigated by tax incentives or grant programs. To encourage renewable biomethane development, WM believes that the interconnection costs should be covered by natural gas utilities and then these utilities should be allowed by the CPUC to recover their cost in the base rate.

2. *Biomass-to-biomethane conversion technologies.*

- a. The commercially available conversion technologies, such as anaerobic digestion, are generally limited to high moisture (non-woody) feedstocks.*

**WM Response:** This is true – food wastes are typically the targeted feedstock for anaerobic digestion facilities. Anaerobic Digestion (AD) has the easiest regulatory path for the siting and permitting of such facilities. CalRecycle treats these facilities as a form of in-vessel composting rather than as a conversion technology. There is a clear regulatory pathway for the permitting of compost facilities – including anaerobic digestion technologies. However, conversion technologies such as waste gasification to produce syngas, which are generally thought to be more efficient, have a much more difficult regulatory framework for siting and permitting than AD. Current statutory limitations and definitions in the Public Resources Code and Public Utilities Code make the siting and permitting of non-AD conversion technologies (i.e., those that are not considered a form of “composting”) very problematic. The current provisions of the PRC and PUC relative to conversion technologies and “gasification” needs to be revised to allow the careful evaluation and development of non-AD types of technologies. CalRecycle has attempted to interpret these provisions in a way that would allow these technologies to be developed. However, a cloud still hangs over the interpretation and application of these provisions of state law. A revised regulatory framework needs to be developed in the spirit of cooperation to provide for the measured development of these technologies while demonstrating their ability to protect human health and the environment. Greater clarity in the California regulatory framework for conversion technologies is absolutely essential to the careful and considered development of these technologies.

- b. New technologies are in development, but have high capital costs and other economic, regulatory, and development barriers.*

**WM Response:** WM is investing in a wide range of anaerobic digestion (Harvest Power to produce BioGas) and conversion technologies (Enerkem, Agnion Energy, High Mountain Fuels, and S4 Energy Solutions to produce SynGas) to convert municipal, agricultural and forest wastes into renewable fuels and energy. The later conversion technologies produce a syngas (principally hydrogen and carbon monoxide) through high temperature conversion

technologies. This syngas can be further refined to formulate methane, methanol, ethanol, hydrogen and commercial chemicals. If methane is used as a fuel, these technologies can produce a renewable natural gas as a substitute for fossil natural gas. The actual fuel product of these technologies will be highly dependent on the type of fuel or chemical that is in highest demand. That may not be methane. These technologies are in the early stages of development, but WM believes they offer the greatest potential for development over the long term. High temperature processes are much more efficient in extracting energy value from waste materials. The challenge will be to clearly demonstrate that these technologies can operate reliably and safely with a minimum amount of emissions and environmental impact.

3. *Statutory and regulatory issues.*

- a. *Utility gas tariffs currently prohibit the injecting landfill gas into the natural gas pipeline in-state. However, utilities are not precluded from purchasing landfill gas from out-of-state sources that inject the gas into the interstate natural gas pipeline; other states allow landfill gas to be injected into their systems that deliver gas into the California system.*

**WM Response:** Landfill gas is currently the low hanging fruit of the renewable natural gas resources in California. Methane is already being produced every day at hundreds of landfills all over the state – with only about 50% of methane being used beneficially to produce energy or fuel. The other 50% is simply flared and wasted.

WM is currently producing up to 13,000 gallons of LNG per day from landfill gas at our Altamont landfill in Alameda County. We are working with the Energy Commission to develop a 2<sup>nd</sup> larger project at one of our landfills in Southern California. The LNG technology is currently the only option we have to produce significant quantities of renewable natural gas for use in our heavy duty truck fleet. However, the CNG fuel platform is actually our preferred fuel for our truck fleet, and this preference requires WM to build fueling stations that allow the LNG to be reconverted to CNG for our trucks. WM would very much prefer to directly produce renewable CNG from landfill gas for pipeline distribution as opposed to producing LNG that must be converted to fuel our CNG trucks through truck distribution system in California. The best method to distribute renewable CNG would be through the utility natural gas pipeline system – not by trucking LNG all over California. Unfortunately, given the current restrictions on placing treated landfill gas into pipelines in California, our only option is to produce LNG, truck it to a dual LCNG fueling station and convert it to renewable CNG that is used to fuel our heavy duty CNG trucks.

The Gas Technology Institute (GTI) is currently conducting a study to evaluate the availability of technology to reasonably and reliably treat and monitor landfill gas prior to placement into utility pipelines. WM is supporting this study through the Solid Waste Association of North America. We are confident that such technology does exist and we are hopeful that the GTI study will provide an opportunity to approach the CPUC and legislature in 2012 to amend existing legislation and tariffs to support the responsible use of treated and monitoring landfill gas to help meet California's renewable natural gas needs.

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**Conclusion**

WM supports the development of both instate and out-of-state biomethane sources to help meet California's renewable energy goals. However, due to existing barriers that have effectively prevented in-state development of pipeline quality biomethane projects, WM has been forced to either develop on-site less efficient energy projects (internal combustion engines or turbines) or produce truckable Renewable LNG (Altamont and potentially Simi Valley landfills) – or simply continue flaring the gas. We are also developing out-of-state, biomethane projects consistent with existing law to help meet California's renewable energy goals. WM supports efforts by the CEC to continue the use of out-of-state biomethane projects and to help remove some of the barriers to instate biomethane project development. Until access can be made available to instate biomethane sources, we urge the CEC and others to keep the doors open to out-of-state biomethane development.

Please contact me if you have any questions or require further information.

Sincerely,

Charles A. White, P.E.  
Director of Regulatory Affairs/West

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