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CALIFORNIA



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MAYOR

December 28, 2010

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Mr. James D. Boyd
California Energy Commission
Dockets Office, MS-4
Re: Docket #10-BAP-01
1516 Ninth Street
Sacramento, CA 95814

DOCKET	
10-BAP-1	
DATE	DEC 28 2010
RECD.	DEC 28 2010

Dear Mr. Boyd:

Subject: **CITY OF LOS ANGELES, BUREAU OF SANITATION COMMENTS ON THE DRAFT PREPARATION OF THE 2011 BIOENERGY ACTION PLAN**

The Bureau of Sanitation (Bureau) appreciates the opportunity to provide comments on the draft Preparation of the 2011 Bioenergy Action Plan. The Bureau's comments are enclosed with this letter.

We are looking forward to working with the Bioenergy Interagency Working Group in helping the state reach its goals in reducing greenhouse gas emissions, lessening landfill dependency, increasing renewable energy production, and replacing harmful diesel, coal, and other fossil fuels with biofuels.

If there are any questions or further discussions are needed, please do not hesitate to contact me at (213) 485-2210, email: alex.helou@lacity.org, or Mr. Javier Polanco at (213) 485-3825, email: javier.polanco@lacity.org.

Sincerely,

ALEXANDER E. HELOU, P.E.
Assistant Director
Bureau of Sanitation

AEH:JP

Enc.: Bureau of Sanitation Comments Letter

- c. Cynthia M. Ruiz, Board of Public Works
- Michael Mullin, Mayor's Office
- Enrique C. Zaldivar, Bureau of Sanitation
- Traci J. Minamide, Bureau of Sanitation
- Javier L. Polanco, Solid Resources Support Services Division
- Alternative Technologies Team



City of Los Angeles, Bureau of Sanitation Comments on the Draft 2011 Bioenergy Plan

BACKGROUND:

The City of Los Angeles, Bureau of Sanitation (Bureau) provides Collection, Recycling and Disposal of four solid resources commodities (recyclables, green material, refuse, and manure) for the residents of the City of Los Angeles (City). Sixty- five percent of the total solid resources material generated by the City is currently beneficially reused or recycled. The remaining is sent for landfill disposal.

Mayor Antonio R. Villaraigosa has set a goal of 70% diversion by 2013. Renew LA plan authored by Councilmember Smith and adopted by the City Council has set a zero waste goal by 2025.

To assist in achieving the City's landfill diversion and greenhouse gas (GHG) reduction goals, under the Mayor's direction, the Bureau has launched an Alternative Technologies Program for processing post-source separated municipal solid waste (MSW, aka black bin waste). As the Bureau's mission is to protect public health and the environment, this program aims to reduce our reliance on urban landfills, increase our landfill diversion rate, generate renewable energy, and reduce GHG emissions. The Bureau released a Request for Proposals in February 2007 for the establishment of Alternative Technology (Alt Tech) facilities to process its black bin waste for resource recovery and energy production. Several different proposed Alternative Technologies including physical, biological, and thermal technologies are being evaluated.

Please consider our comments below regarding the draft 2011 Bioenergy Plan (draft Plan).

(1) Consider MSW as Eligible Biomass Feedstock

The Bureau supports the California Energy Commission (CEC) and the Department of Resources Recycling and Recovery (CalRecycle) in continuing their work to determine whether the organic fraction of MSW should be considered as a biomass feedstock for RPS (Renewable Portfolio Standard) compliance, and if necessary, to identify changes to statute and/or regulation to allow its use in the RPS.

Currently, CEC's Guidebook has a broad definition of biomass, which includes "any organic material not derived from fossil fuels." MSW may contain a mixture of organic, inorganic, and fossil-fueled derived materials. Therefore, CEC does not consider it as an eligible type of biomass. However, the Bureau utilizes a four-bin system that separates the recyclable materials, yard trimmings, and manure from the black bin waste (MSW). Instead of landfilling the black bin materials, the Bureau's Alt Tech project would convert them into renewable energy and/or biofuels. It should be noted that a regular landfill operation takes in MSW and generates landfill gas, which is considered by CEC as RPS eligible. In addition, under the current statute, power generated from MSW via an Alt Tech facility utilizing Waste-to-Energy (WTE) technology is RPS ineligible unless the facility is located in Stanislaus County and operational as of September 1996. Given the potential opportunities of using the Bureau-collected, source-separated MSW as a feedstock for power that can be generated locally and thus beneficial to the City residents, the Bureau recommends that CEC and CalRecycle to consider the Bureau's unique operation and to identify the Bureau-collected MSW as a biomass feedstock and thus making it RPS eligible. This would not only reduce our reliance on landfills and fossil fuels, as well as reducing GHG emissions, but it would also help the City of Los Angeles Department of Water and Power attain its RPS goals.

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While most landfills are equipped with gas collection systems to capture roughly 60-90% of the methane (CH₄) emitted, it is important to note that there are still fugitive emissions that are released to the atmosphere. In California, MSW landfills are known to be the second largest anthropogenic source of CH₄, which is 21 times more potent than carbon dioxide (CO₂). An Alt Tech facility, on the other-hand, must be equipped with the Best Available Control Technology (BACT) to mitigate air emissions, along with other requirements to comply with stringent local, state, and federal regulations.

We, therefore, recommend that MSW as a whole should be considered as an eligible biomass feedstock, and not merely its organic fraction.

(2) Remove Statutory and Regulatory Hurdles

a. Gasification Definition

As shown below, we concur with the authors of the Draft 2011 Bioenergy Plan that the current statute on conversion technologies, especially the gasification technology definition, ought to be amended, since its requirements are technically infeasible to comply with:

First, “the *technology does not use air or oxygen in the conversion process, except ambient air to maintain temperature control.*” Existing gasification technologies known by the Bureau utilize limited supply of oxygen for the gasification of organic material to produce synthetic gas (syngas). Syngas is comprised of hydrogen (H₂) and carbon monoxide (CO) and can be used to generate electricity or produce transportation fuels.

Second, “*the technology produces no discharges of air contaminants or emissions, including greenhouse gases.*” It should be noted that all Alternative Technologies, including biological and thermal technologies, produce air emissions during the energy recovery process or when the syngas/biogas is used for electricity production. Consequently, all Alternative Technologies produce air emissions. The real issue should be whether these Alt Tech facilities are equipped with the BACT to mitigate emissions, and can meet or exceed all stringent requirements set by the local, state, and federal agencies for all contaminants.

b. MSW Combustion Facilities

In California, there are three operating waste-to-energy (WTE) facilities for MSW, namely, the Commerce Refuse-to-Energy Facility (CREF, Commerce), the Stanislaus County Resource Recovery Facility (SRRF, Crow’s Landing), and the Southeast Resource Recovery Facility (SERRF, Long Beach). The three facilities collectively processed approximately 790,000 tons of MSW in 2008. According to CalRecycle, this represents 2% of the total post-recycled waste generated in the state (36,376,000 tons), while the other 98% was disposed at solid waste landfills.

As stated in the draft Plan, MSW processed via a combustion technology is considered renewable by CEC. However, the California Public Resources Code Section 25741 and the Public Utilities Code Section 399.12, Subdivision (b) set several stipulations that need to be met: the facility has to be located in the Stanislaus County and it has to be operational prior to September 26, 1996. Due to these stipulations, only one existing facility meets the criteria for RPS eligibility while the other two as well as any new WTE facilities to be built in California are not RPS eligible. The Bureau

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recommends that the Bioenergy Interagency Working Group reconsider these stipulations as the other existing and the new waste-to-energy facilities can demonstrate that they can contribute toward achieving the California's goals set by the state legislature as described below.

(3) Consider Advanced Thermal Recycling (aka Waste-to-Energy) as a Means to Reduce GHG, a Source of Renewable Energy, and Reduce Landfill Dependence

Alternative Technologies currently being evaluated by the Bureau include Advanced Thermal Recycling (ATR), which is the second-generation advancement of WTE technology and is equipped with the latest air emissions control system. As mentioned above, current California statute only recognizes RPS eligibility for one MSW thermal treatment facility that is located in the Stanislaus County and was operational before September 26, 1996. This is the Stanislaus Resource Recovery Facility that sells its power to PG&E.

Federal laws have recognized WTE facilities to be a source of renewable energy for more than 30 years. This recognition is further supported by 24 state governments and the District of Columbia, and through legislation including the Energy Policy Act of 2005, Public Utility Regulatory Policy Act of 1978, Biomass Research and Development Act of 2000, Pacific Northwest Power Planning and Conservation Act, Federal Power Act, and the Internal Revenue Code. In addition, WTE operators have made significant improvements to the air emissions control systems at their facilities. In 1995, the U.S. EPA implemented the new, more stringent emissions standards for WTE plants. WTE facilities are now required to comply with the Maximum Achievable Control Technology (MACT) regulations. As a result, air emissions from WTE facilities have drastically reduced. The WTE industry has invested more than \$1 billion in upgrades and replacements to its air emissions control systems. Also, according to the Confederation of European Waste-to-Energy Plants, Germany, Belgium, and the Netherlands are countries recognized as having most successfully reduced landfill dependence while achieving the highest recycling rates among European countries in 2007. These countries have done so with WTE as one of their solid waste disposal options.

It has been reported that combusting one ton of MSW through WTE generates 550 kilowatt-hours of electricity (net), and avoids mining of a quarter of a ton of coal or the importation of one barrel of oil. In addition, as AB 32 calls for the reduction of GHG emissions from the electricity generation and solid waste management sectors, it has been estimated that processing MSW through WTE rather than disposing it into a landfill ***reduces GHG emissions by 1.25 ton of CO₂ per ton of MSW processed.*** In addition, in comparison to other fuel types, ***WTE facilities emit significantly less CO₂ than fossil fuel power plants*** since ***67% of the CO₂ emissions*** from WTE facilities ***are biogenic.***

WTE facilities can also help reduce fossil fuel use and foreign oil dependence. Since these facilities operate continuously (24 hours per day, 7 days a week), they can provide base-load electricity and be an alternative source of renewable energy, in addition to other sources including solar and wind power. It should be noted these later renewable resources are not continuously operational and subject to seasonal variations and/or adverse weather conditions.

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As noted in the draft Plan, one of the risk factors in obtaining financing for bioenergy facilities is the uncertainty related to the availability of biomass. For MSW, this is not an issue since it is an abundant feedstock that can be utilized for power generation via WTE facilities. Despite our highly successful recycling efforts, California still disposes an estimated 40 million tons of waste at landfills each year, according to the California Air Resources Board's 2009 Staff Report "Initial Statement of Reasons for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills."

In summary, not only can WTE reduce the volume of MSW disposed up to 90% of its original volume, but also it can generate renewable energy, thereby lessening our reliance on fossil fuels, in addition to reducing GHG emissions from electricity generation and solid waste management sectors. Therefore, the Bureau recommends that ATRs be recognized as another source of renewable energy and as a means to reduce GHG emissions in compliance with AB 32's mandate.

(4) Commercialize the Next Generation Conversion Technologies

The Bureau supports the aim for commercialization of next generation conversion technologies. However, for the reasons that were discussed above, the Bureau would like the draft Plan to include other thermal technologies, e.g., Advanced Thermal Recycling as additional options for the state to meet its goals, including energy security and diversification, GHG mitigation, etc.