



WASTE MANAGEMENT

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April 20, 2009

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: Comments on the Proposed LCFS Regulation

Dear Sir/Madam:

Thank you for the opportunity to submit comments on the proposed LCFS regulations that will be considered for adoption at your Board Hearing on April 23, 2009. Waste Management (WM) provides comprehensive waste and recycling services throughout California. We operate a heavy-duty fleet of over 3,000 vehicles in California – most running on diesel, including over 500 on various bio-diesel blends and over 500 natural gas fueled vehicles. In addition, Waste Management operates 12 solid waste landfills that generate significant landfill gas and accept biogenic wastes in a variety of forms. WM has a partnership to develop a Landfill Gas (LFG) to Liquefied Natural Gas (LNG) facility at our Altamont Landfill in the Bay Area in partnership with Linde/BOC and the Gas Technology Institute (GTI). We expect to produce over 13,000 gallons of Very Low Carbon Fuel (VLCF) in the form of LNG starting in 2009.

WM fully supports the implementation of a low carbon fuels standard and stands ready to participate in this new marketplace. In general, WM is in agreement with the proposed regulation and has participated with CARB staff during the development of this regulation. We have a number remaining concerns that have not been addressed in the latest version of the regulation and supporting materials coming before the Board for adoption.

- **Section 95420(a)(3) – Biomethane Definition.** We have submitted several comments about our concern over the definition of Biogas. The current definition for Biogas is a bit oversimplified and may not cover all of the probable sources of Biogas.

WM recommends the following language for a definition of Biogas:

Biogas means natural gas that meets the requirements of 13 CCR §2292.5 and is

produced from the breakdown of organic material in the absence of oxygen. Biogas is produced in processes including, but not limited to, anaerobic digestion, anaerobic decomposition, and thermo-chemical gasification. These processes are applied to biodegradable biomass materials such as manure, sewage, municipal solid waste, green waste, and energy crops to produce biogas, including landfill gas and digester gas.

Because *landfill gas* and *digester gas* are both clearly recognized by CARB to be very low carbon intensity sources of biogas fuels, and *municipal solid waste* and *other wastes* are likewise recognized by CARB to be very low carbon sources of biogas, we suggest that these terms be specifically included in the definition of biogas.

- **Biogas LNG Fuel Pathway.** WM has discussed the importance of the publication of the Biogas LNG LCFS pathway on multiple occasions with CARB staff. We have been assured that this pathway, along with a Fossil LNG pathway, will be published in the very near term.

WM would like to reinforce to the Board the importance of this publication and the positive impact it will have upon a brand-new transportation fuel industry. The production of Biogas/Biomethane from landfill waste streams offers one of the lowest carbon intensity fuels currently known to the transportation sector. As mentioned above, WM is nearing startup on a new landfill gas to LNG production facility at our Altamont Landfill in the Bay Area. It is vitally important that CARB publish the Biogas LNG pathway that will allow us to begin generating credits on the very first day of the LCFS program (January 1, 2010). By not publishing this pathway in the very near term, CARB would introduce uncertainty in to this very important new industry.

- **Section 95425(c)(2), p33 – LCFS Credit Trading Limitations.** As it is currently written, this section limits the purchase, sale, and trading of LCFS credits to regulated parties or a 3rd party acting on behalf of a regulated entity. We discussed this issue with CARB staff on January 29th and understand there are a number of major corporate opponents that do not want to see carbon brokers involved in the LCFS program.

While we appreciate the opinion of these opponents, WM still believes that this language could stifle the development of a proper trading market for LCFS credits. In a large-scale market-based program like the LCFS, WM would like to see third party carbon brokers able to “make a market” for these credits. This type of market making activity tends to increase the liquidity of these credits, stimulate firms to generate these types of credits, and improve price transparency. These activities also tend to make it easier for more companies to meet their compliance obligations under the new LCFS. Furthermore, WM is concerned that some of the larger entities regulated under the LCFS could “band together” to manipulate pricing in the LCFS credit market.

WM respectfully suggests that this section be removed in its entirety.

- **95425, Table 7 – EER Values for Fuels.** WM has had several discussions with CARB staff on this topic and we remain concerned about the single energy economy ratio (EER) of 0.90

for heavy-duty CNG and LNG ICEVs. Natural gas engine manufacturers have been working continuously for the past decade to improve the thermal efficiency of their engines and have made significant improvements over the past five years. Today's spark-ignited natural gas engines still experience a small thermal efficiency penalty (2% to 6%) compared to their diesel counterparts, while today's compression ignition natural gas engines are at parity with diesel thermal efficiency.

WM recommends that, given these current thermal efficiency comparisons, CARB should set the EER for CNG and LNG engines at a minimum of 0.95, if not at 1.0 given the latest natural gas engines that are now comparable to diesel cycle efficiency. A viable alternative would be to introduce separate EERs for spark-ignited and compression ignition natural gas engines. Either way, WM respectfully requests that CARB staff carefully review the latest certification data for heavy-duty natural gas engines to determine the most correct EER values for each current technology.

Please contact me if you have any questions regarding the information provided in this letter or wish to discuss these matters further.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew", is written over a light blue rectangular background.

Director of Regulatory Affairs/West

cc: Dean Simeroth, CARB
John Courtis, CARB
Floyd Vergara, CARB