WASTE MANAGEMENT

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August 19, 2009

Clerk of the Board
Air Resources Board
1001 "I" Street, 23rd Floor
Sacramento, California 95814

Subject: Comments on the Modified Text for the LCFS Regulation

Dear Sir/Madam:

Thank you for the opportunity to submit comments on the Modified Text and Additional Documents for the Adoption of a Regulation to Implement the Low Carbon Fuel Standard (LCFS) made available on July 20th.

Waste Management (WM), operating through it various subsidiaries, 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 and Linde formed a joint venture to develop a Landfill Gas to Liquefied Natural Gas facility at our Altamont Landfill in the Bay Area using technology from 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 remaining concern with the additional LCFS pathway recently made available on Liquefied Natural Gas (LNG) from Landfill Gas (LFG).

As we have commented in the past, it is critical to develop an LCFS pathway that represents the most current technology being used to develop LNG from LFG because waste-stream fuels like this present such an enormous opportunity to produce much needed fuel for our economy, while simultaneously reducing carbon dioxide emissions for the environment. 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 has already begun the startup of a new LFG to LNG production facility at our Altamont Landfill in the Bay Area. We have noticed that the initial LFG-to-LNG

pathway released by CARB on July 20th does not account for the technological breakthroughs WM and Linde have developed together for Altamont.

Specifically, our liquefaction process is built around a mixed refrigerant cycle (MRC) that is significantly more efficient than the simple cascade cycle referenced in the current CARB pathway document. This increased efficiency means that LNG can be produced at our site using much less energy than the example in the current pathway. Less energy required for liquefaction translates to fewer greenhouse gas (GHG) emissions being produced and thus, a lower carbon intensity for the fuel produced.

Further, the current CARB pathway also assumes that the energy used in the liquefaction process will be generated onsite by engines using pipeline natural gas. While this might be the case with some Biomethane production facilities, our Altamont liquefier is using power generated by onsite engines using biogas that is being pulled directly from the landfill's gas collection system. Biogas has a much lower carbon intensity than pipeline gas because it requires less cleanup and should also benefit from the flaring credit inherent with landfill gas fuels.

Recommendation

Given that WM and Linde will soon be the largest producers of LNG from landfill gas in California, CARB should publish an LFG-to-LNG pathway that accounts for the latest technologies we are now using. We understand the value of having a generic pathway for LFG-to-LNG, but ***we respectfully recommend that CARB immediately publish a new "sub-pathway" for LFG-to-LNG that accounts for facilities using mixed refrigerant liquefaction systems and onsite biogas energy production***. We firmly believe this sub-pathway should be included in the current rulemaking process and we (Waste Management and Linde) stand ready to assist CARB in any way we can to make this happen.

As I mentioned above, we have been working closely with CARB staff through the entire LCFS process and we look forward to continuing our work together on this LFG pathway. Please contact me if you have any questions regarding the information provided in this letter or wish to discuss these matters further.

Sincerely,

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

cc: Dean Simeroth, CARB
Floyd Vergara, CARB