



California Natural Gas Vehicle Coalition

February 13, 2009

Via email: mansingh@arb.ca.gov

Ms. Manisha Singh
California Air Resources Board
1001 I Street
Sacramento, CA 95812

RE: Comments on Draft LCFS Regulation

Dear Ms. Singh:

The California Natural Gas Vehicle Coalition (CNGVC) appreciates the opportunity to submit comments on the January draft of proposed regulations on the Low Carbon Fuel Standard. The CNGVC includes the state's major natural gas utilities, natural gas fuel providers, owners and operators of retail fueling facilities, major automobile manufacturers, heavy-duty engine manufacturers, equipment manufacturers, and fleet users of natural gas vehicles.

We wish to acknowledge and thank staff for a number of changes in the January draft which reflect recommendations of the CNGVC. Most notably, we support changes to the description of regulated parties for natural gas, the independent designation of biogas separate from conventional CNG and LNG, and the exemption of LCFS compliant fuels from the LCFS regulations unless credits are generated. The attached documents also identify several remaining concerns and recommendations from the CNGVC.

We look forward to further discussions with staff on outstanding issues. Please feel free to contact me with any comments or questions at (916) 448-1015 or pete@pricecon.com.

Sincerely,

A handwritten signature in black ink that reads "Pete Price".

PETE PRICE
Executive Director

cc: Dean Simeroth, ARB
Floyd Vergara, ARB
Mike Waugh, ARB
Renee Littaua, ARB
John Curtis, ARB

**Comments of the California Natural Gas Vehicle Coalition
Draft Regulation: California Low Carbon Fuel Standard
February 13, 2009**

95420. Definition of biomethane.

The December LCFS regulations defined biomethane as follows:

“Biomethane” means pipeline-quality gas derived from biomass as defined by the California Energy Commission (CEC), which includes any organic material not derived from fossil fuels, including agricultural crops, agricultural and forestry wastes and residues, and construction wood wastes, among others.

The CNGVC’s December comments asked the ARB to delete “pipeline quality” from its definition of biomethane and to clarify the definition of biomass to ensure it included landfill waste.

Biogas specifications: The January amendments do not change the definition of “biomethane” but add the following definitions:

“Biogas (also called biomethane)” means natural gas that meets the requirements of 13 CCR §2292.5 and is derived from anaerobic digestion of agricultural waste, animal waste, or other biomass.

CNGVC supports the deletion of “pipeline quality” and the addition of the criteria in 13 CCR §2292.5 as the standard for biogas. This change avoids a conflict with the use of biogas to fuel vehicles directly at the point of generation and appropriately refers to existing vehicle fuel specifications for natural gas.

Definition of biomass: We appreciate staff referencing the CEC report (CEC-300-2007-003-ED2-CMF) as the source of its definition of biomass. That definition begins by stating that biomass is “any organic material not derived from fossil fuels,” but then goes on to list a number of sources of that organic material. Landfill waste and municipal solid waste are conspicuously absent from that list. While not all landfilled waste is organic material, a substantial fraction is, and it is the portion that generates all biogas.

It may be difficult to amend your definition of biomass, since you are simply referencing a CEC definition. As an alternative, Waste Management, a member of the CNGVC, has proposed a revised definition of “biogas” to resolve this uncertainty:

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 thermochemical 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.

We urge you to consider their proposal.

Anaerobic digestion: The December regulations define “biomethane” as “gas derived from biomass.” The January amendments are more restrictive, limiting “biogas” to “natural gas that is derived from ‘anaerobic digestion’ of biogas.” This definition would exclude gas produced by other processes, such as thermochemical gasification, from the definition of biogas. Many biomass waste streams are suitable for the production of biogas through this process. In fact, the CEC has identified 250 billion cubic feet of dry biomass in the state that could be used to produce biogas transportation fuel through thermochemical gasification (CEC, *A Roadmap for the Development of Biomass in California – Draft Collaborative Report*, November 2006, CEC-500-2006-095-D). This number compares to the estimated 121 bcf of biomass feedstock available to produce biogas through anaerobic digestion. It is essential that the LCFS definition of biogas not exclude processes other than anaerobic digestion that are capable of producing biogas for transportation fuel.

Biomethane vs. biogas: The January amendments do not delete the existing definition of biomethane, but they add a definition of biogas that is “also called biomethane.” To the extent these two definitions differ – and there are several differences – they are in conflict and will lead to confusion among stakeholders. In addition, “biogas” is commonly used to refer to the raw gas generated from biomass, while “biomethane” is commonly used to refer to the gas that meets quality standards (e.g. compliance with 13 CCR §2292.5). To avoid conflicts and confusion with the two definitions and to be consistent with common usage, we recommend that the existing definition of “biomethane” be deleted, the current definition of “biogas” be changed as recommended above, and then the term “biogas” be dropped and replaced with “biomethane,” which more accurately describes the gas as defined.

95421. Applicability of the Standard

Exemption for compliant fuels, recognition of biomethane: The CNGVC supports and appreciates the new subdivision (b), which 1) exempts fuels presumed to comply with the 2020 LCFS standard from LCFS regulations unless the regulated party chooses to generate LCFS credits and 2) recognizes biomethane as a distinct fuel from conventional natural gas.

Home Refueling Appliances: It appears that owners of natural gas home refueling appliances (HRAs) are considered regulated parties and will be exempt from LCFS regulations only if they choose not to generate LCFS credits. While we do not expect individual HRA owners to seek to generate LCFS credits, which would be extremely small, the fact remains that they appear to be a regulated party, as follows:

- HRAs dispense compressed natural gas.
- Pursuant to 95424(a)(5)(A), the regulated party for CNG, whether biogas or conventional gas, is “the person that owns the natural gas fueling equipment at the facility at which the gas is dispensed to motor vehicles for transportation use.”
- It appears that an HRA is “fueling equipment,” the facility at which the gas is dispensed” is the garage where the HRA is installed, and the regulated party is the individual that owns the HRA.
- Because natural gas for transportation purposes is supplied by all providers in California at an aggregated volume of more than 3.6 million gge/year, natural gas regulated parties cannot exercise the low volume exemption in 95421(c).

In other words the owner of an HRA would be subject to all LCFS regulations in the unlikely event that he or she decided to generate LCFS credits. This interpretation also has implications for the quarterly reporting requirements in 95424(c)(3). We will discuss this question further with ARB staff to seek clarification.

95422. Standards

The CNGVC acknowledges the slight adjustment to the compliance curve for gasoline and diesel. While it slightly increases the amount of required carbon reductions in years 2013-2015, it slightly relaxes the requirements for 2016-2019. As the chart below shows, both the December and January proposals lag considerably behind a straight-line reduction schedule. As we noted in our December comments, the combination of a back-loaded compliance schedule and a strict cap on the use of prior year credits (95425(c)) results in unfair treatment of low carbon alternative fuels that meet and exceed the LCFS requirements and have buyers in the marketplace. We will speak to this issue in more detail in our comments below.

	<u>Gasoline</u>			<u>Diesel</u>		
	Dec.	Jan.	Straight Line	Dec	Jan	Straight Line
2011	0.3	0.25	1.0	0.3	0.25	1.0
2012	0.5	0.5	2.0	0.5	0.5	2.0
2013	0.8	1.0	3.0	0.8	1.0	3.0
2014	1.3	1.5	4.0	1.3	1.5	4.0
2015	2.3	2.5	5.0	2.3	2.5	5.0
2016	3.8	3.5	6.0	4.0	3.5	6.0
2017	5.5	5.0	7.0	5.5	5.0	7.0
2018	7.3	6.5	8.0	7.2	6.5	8.0
2019	9.1	8.0	9.0	8.6	8.0	9.0
2020	10.5	10.0	10.0	10.0	10.0	10.0

95424. Compliance

Natural gas regulated parties: The CNGVC appreciates the work done by staff on this complicated issue. The January amendments recognize different forms and pathways of natural gas (fossil CNG and LNG, biogas CNG and LNG, and biogas/fossil blends) and three different regulated parties:

- Conventional CNG: the person that owns the fueling equipment at the vehicle fueling facility.
- Conventional LNG: the person that owns the LNG when it is transferred to the fueling facility.
- Biogas: the producer or importer of the biogas.

The amendments also provide a process whereby an entity not identified as the regulated party by the regulations can become the regulated party – in order, for example, to generate LCFS credits – by acquiring ownership of the fuel from the regulated party and agreeing in a written contract to accept responsibility for compliance with LCFS regulations.

The amendments do raise one question: for CNG blends of conventional gas and biogas, the regulated party is “initially” the person that owns the fueling equipment; for LNG blends and for unblended conventional LNG, the regulated party is “initially” the person that owns the conventional LNG. We do not understand the import of the word “initially.” Is it used to indicate that, pursuant to (D), the status of regulated party may be transferred? If so, why doesn’t it apply equally to regulated parties in other scenarios (unblended conventional CNG and unblended biogas CNG or LNG)? We seek clarification on this point.

Quarterly reporting requirements: The January amendments make no changes to the December language on quarterly reporting requirements. As we stated in our December comments, we continue to believe that separate metering is unnecessary in many cases. We also remain concerned that the option of using an alternative reporting method that is “equivalent to or better than” the separate metering method is a vague standard that may be impossible to meet.

For example, home fueling facilities are included in the reporting requirements. HRAs only provide CNG and are designed only for light-duty vehicles. We find it hard to believe the ARB actually wants to receive quarterly reports from each individual owner of an HRA, especially when even without any reporting you can be assured of what kind of fuel is being dispensed and into what class of vehicle. Beyond HRAs, there are other fueling settings (municipal bus fleets, private truck fleets) where both the type of fuel and the type of vehicle is known without any need for metering at each dispenser. In these cases, facility-wide metering will provide the same data at much less expense. We would like to discuss this issue further with staff.

95425. LCFS Credits and Deficits

EER values for fuels: The CNGVC urges the ARB to reconsider its change in the EER value for CNG and LNG in heavy duty ICEV applications. The TIAx study upon which the previous 1.0 EER was based cited more precise values of 0.94 for CNG and 0.95 for LNG. We believe these numbers are inaccurate. And even if accurate, the rounding down to 0.9 EER unfairly penalizes heavy-duty natural gas vehicles. We urge staff to consider the following

- High pressure direct ignition (HPDI) natural gas engines currently in the market carry no efficiency penalty. It appears the Westport Innovations HPDI engine was not considered by the ARB, even though the engine was certified by the ARB in November 2007 (A-343-0004). Given the performance of numerous natural gas engines in meeting the 2010 emission standards years early, there is little reason to suspect the Westport HPDI engine will not as well. And because the HPDI will need less treatment to meet the standard than will comparable diesel engines, its EER value may well exceed 1.0.
- We believe the ARB’s finding of ~0.93 EER for spark-ignited natural gas engines is flawed and based on faulty comparisons. Specifically, it is our understanding that the EER value for heavy duty natural gas engines was revised down to 0.9 based only on the certification data of one engine (Cummins Westport ISL-G), which is certified to the 2010 EPA emission standards, when compared to a diesel engine not certified to 2010. Since no diesel engines are yet certified to 2010, it would be impossible to make a fair comparison based on 2010. Nor should the ARB assume that a diesel engine certified

to 2010 will be as efficient as a pre-2010 engine; all indications are the opposite, based on the impact of 2010-compliant after-treatments.

- History should give the ARB little confidence that diesel engine manufacturers will even comply with the 2010 standard. Previous deadlines have been missed or delayed, Caterpillar has left the market in response to the 2010 standard, and International is seeking a deadline extension.
- Finally, the impact of small differences in EER values is multiplied by the double penalty on fuels with a value of less than 1.0, which is embedded in the equation used to determine credits. Specifically the equation applies the EER value of a fuel not only to the calculation of the fuel's AFCl but also to its fuel displacement factor, effectively increasing the fuel's carbon intensity and reducing the amount of conventional fuel it displaces. For a fuel even with only a slightly lower EER than the baseline fuel, such as natural gas, the double-counting of the EER in the calculations results an inaccurate and disproportionate reduction in credits. Conversely, a fuel with an EER >1 would unduly benefit from the double-counting. We are concerned that this error will significantly skew the resulting credit values.

The CNGVC recommends that the EER for heavy-duty CNG and LNG applications 1) be returned to 1.0, or at a minimum that the values more accurately reflect the true values based on both spark-ignited and compression ignition engines and 2) be applied only to the displacement factor and not to the AFCl calculation when determining credit values.

20 percent credit rollover cap: The CNGVC is surprised and disappointed to see that the 20 percent credit rollover cap remains in the January amendments. As we stated in our December comments, the combination of a backloaded compliance schedule in 95422 and the inability to meet more than 20 percent of an annual compliance obligation with credits generated from a previous year imposes a heavy penalty on producers of low carbon fuels that meet and exceed the 2020 LCFS requirements. The *Supporting Documentation for the Draft Regulation on the LCFS* (ARB, Oct. 2008, page 38) states that “the gasoline and diesel standards are backloaded so that, if necessary, credits that were banked in the early years will help with compliance in the later years.” The stringent 20 percent cap on prior year credits directly conflicts with the ARB’s earlier thinking on this issue.

Staff commentary in the December version states that the cap on prior year credits is proposed to ensure that they “are not used preferentially for compliance purposes in a manner that would effectively circumvent the compliance obligation of a given year.” But in what way is compliance circumvented? If a regulated party fails to meet the LCFS carbon reduction requirement and complies instead by buying credits, that means a complying alternative fuel producer is not only producing low carbon fuel but is selling it into the vehicle fuel marketplace. In other words, as more credits that are sold, that is evidence that more GHG emissions are being reduced by the use of alternative fuels. Far from being a failing of the program, that is the point of the program – to increase the production and use of compliant low carbon fuels. We again urge the ARB to eliminate or, at a minimum, relax the limit on the use of prior year credits.