



California Natural Gas Vehicle Coalition

Michael L. Eaves
President

February 27, 2007

California Energy Commission
Docket Office
Attn: Docket 06-AFP-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Subject: Comment on DRAFT Well to Wheels, Well to Tank, and Tank to Wheels Reports

The California Natural Gas Vehicle Coalition (Coalition) would like to offer the following comments on the Commission DRAFT reports: 1) Well to Wheels, 2) Well to Tank, and 3) Tank to Wheels. In general the three reports offer an excellent analysis from which to base future policy decisions in California.

In the Tank to Wheels report Section 1.2.4 “Objectives” on page 1-4 cites the following objective:

Determine vehicle emissions occurring in the years 2012, 2017, and 2022. Also support the development of emission scenarios for 2030 and 2050. The full fuel cycle analysis provides input into scenarios that assess the emission impacts in specific calendar years, which depend on vehicle introduction rates and the age of the vehicle fleet. The estimates here reflect the emissions in specific calendar years (and potential air quality impacts) rather than the emissions over the life of the vehicle.

While the quality of the analytical work on greenhouse gas emissions and criteria pollutants seems to be excellent – the next step of developing vehicle penetration rates for various fuels, vehicles, and technologies will hinge a great deal on economics – the area the Coalition has been most critical of over the last several years. After the October 16, 2006 meeting, the Coalition expressed the need for the Commission to hold stakeholder meetings to further refine the Commission’s economic forecasts. It seems that while the current studies do a good job of documenting the greenhouse and emissions benefits of alternative fuels – the greatest problem to still be addressed before a comprehensive state plan can be developed is the issue of economics. Economics will dictate the potential rate of market penetration for alternative fuels that can compete today. It will also define the government policy needs required to be put in place for other fuels to penetrate the

market. The Coalition hopes that the Commission does not underestimate the need for further refining of energy/fuel price forecasts.

Tank to Wheels Report:

The following statement appears in the abstract on page vi of the Tank to Wheels report:

Fuels with clearly lower fuel cycle emissions such as compressed natural gas (CNG) and hydrogen were not analyzed in this study.

Could the Commission please explain what this statement means and why the analysis isn't included for natural gas and hydrogen. If the impact on NMOG is low or insignificant, it should still be documented as such vs. being ignored.

The Coalition appreciates the fact that the Commission has adopted a forward looking approach to technology and makes comparisons based on continued evolution of the technology. This is appropriate given the infancy of some of the vehicle technologies. It is also appropriate for NGVs because of the advances that have been made with natural gas technology.

In terms of GREET modeling, NGVs are assigned a factor of 2.0 for methane emissions (Table 4-9 on page 4-12). Data from Honda (from EPA certification data) shows methane emissions to be extremely low – 0.0102 grams/mile on the City cycle and 0.0001 grams/mile on the Highway cycle. The Coalition believes this represents comparable emissions to gasoline. For that reason, we respectfully request that the GREET factor be adjusted to 1.0 for methane emissions.

In the Tank to Wheels report, Table 3-1 and Table 3.2 on page 3-3, it is not evident that diesel efficiency losses as a result of adding emission control devices in 2007 and 2010 are properly reflected in on-road fuel consumption figures for diesel vehicles. The Coalition understands that efficiency gains for heavy-duty natural gas engines are being reflected in the model. The question is whether the baseline of diesel fuel economy is being properly captured.

On page 3-6 it states that fuel economies for light duty vehicles are discounted 15% to account for real world conditions. Assigning a 15% penalty to all light duty vehicles is inappropriate. Studies conducted over the years by Consumer Reports have shown that the fuel economy claims of some manufacturers are met in real world driving conditions. U.S. manufacturers have had probably the worst record achieving their fuel efficiency claims with consumers. The Commission should look at this carefully and determine if a 15% fuel economy penalty should be assigned across the board to all manufacturers.

Well to Wheels Report:

The well to wheels analysis consists of applying the well to tank and tank to wheels data and applying to mid-sized automobiles. The Coalition questions whether a mid-sized passenger car is the right platform to perform this analysis around. Many of the technologies of the future like fuel cell vehicles, electric vehicles, and plug-in hybrids will be applied to smaller vehicles. CARB greenhouse gas regulations (if implemented) will have a tendency to push the market to smaller vehicles. So one could make the case that greenhouse gas regulations and policies might influence the move to smaller vehicles. A well to wheels analysis on an aggregate fleet of vehicles that is getting smaller may be a better scenario to model. Certainly the greenhouse gas benefits and petroleum demand reduction with a larger population of compact, higher efficiency vehicles would be greater.

The Coalition understands the methodology to document the marginal production scenarios for various fuels. However, it is unclear what the baseline is for current RFG (w/5.7% ethanol) and ULSD. For example, Figures 4-5 and 4-6 on page 4-9 of the Well to Wheels report, properly captures the current baseline for gasoline. But Figures 3-1 and 3-2 on page 3-2 don't have any baseline reference to current RFG with 5.7% ethanol. I think it is important that the report properly captures today's reference point for gasoline and ULSD in all the figures in Section 3 "Well to Wheels Analysis Results". The baseline is critical for making policy decisions on some of the alternative fuel options. Not only will the state be looking at production paths that produce the best environmental and greenhouse gas benefits, it will also be comparing its progress against the current status quo.

I am somewhat disappointed in the lack of analysis of land use impacts and water impacts. While the report discusses potential contamination issues with new fuels, the report does nothing to address how much California grown biocrops will impact the demand for land and water in the state. I think this is a significant omission.

If you have any questions regarding any of these comments or questions, please don't hesitate to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael L. Eaves". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael L. Eaves
President, California Natural Gas Vehicle Coalition