



California Natural Gas Vehicle Coalition

Michael L. Eaves
President

June 8, 2007

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 06-AFP-1
1516 Ninth Street
Sacramento, CA 95814-5512

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DATE	JUN 08 2007
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**Subject: Docket # 06-AFP-1 – AB1007 “Alternative Fuels Transportation Plan”
Comments on May 31, 2007 Workshop and Natural Gas Scenario**

The California Natural Gas Vehicle Coalition (Coalition) appreciates this opportunity to comment on the May 31st CEC Workshop and provide comments on the Natural Gas Scenario and presentation. The Coalition would also like to provide general comments on some of the other scenarios.

The Coalition appreciates CEC staff efforts to canvas a broad spectrum of stakeholders to identify potential forecasts for market penetration of alternative fuels. In regard to natural gas vehicles (NGVs), CEC staff properly captured in both the presentation and Natural Gas Scenario much of what they learned from stakeholders. A great deal of work has been condensed into a relatively short timeframe. The CEC should be applauded for its efforts.

Scenario Economics

The scenarios for various alternative fuels presented on May 31st vary significantly in content and detail. It appears from the content of the scenarios that great effort was made to document potential market penetration and petroleum displacement over the time (through 2050). But in many scenarios the foundation economic analyses that would support the penetrations are missing.

Missing are any assumptions regarding oil and petroleum fuel price forecasts as well as the forecasts for the alternative fuels. For example, in the Natural Gas Scenario, staff used existing market price differentials between natural gas and petroleum prices (gasoline and diesel) [page 13] – and projected those fuel price savings through 2050. This generated favorable Life Cycle Cost Effectiveness for the heavy-duty CNG and LNG scenarios [Table 5, page 14]. EIA however in their forecasts, show that the price differential between natural gas and petroleum fuels increases

over time. Had a widening price differential been used in calculations, the cost effectiveness of natural gas options would have looked even more attractive.

In some of the alternative fuel scenarios, there is little or no discussion of future price forecasts for petroleum or the alternative fuel in question. For the Propane Scenario it indicated that LPG would be sold at a price 25% below that of gasoline. This price would permit recovering infrastructure costs in 18-24 months. There was no indication of how LPG supply and economics would change over time as refineries had to adjust to other scenarios regarding changes in feedstock and potential internal use of LPG within the refineries.

The Hydrogen Scenario simplified the issue even more by indicating that long term hydrogen pricing would be about the same price of gasoline. Today, this is a very aggressive forecast given the cost hurdles of getting hydrogen from large scale – cost effective production facilities – to a network of dispersed fuel stations.

In both the Renewable Diesel Fuel and XTL Scenarios, staff further confuses the issue by promoting subsidizing the fuels regardless of the whether the high, reference, or low EIA oil price scenario is used. This type of treatment of the different oil price forecasts suggests that each forecast is likely to have predictive validity – even though the track record says that the high petroleum price forecast is the one most likely to occur.

While staff attempted to calculate the cost effectiveness of several scenarios, other scenarios included little or no information on the economic viability of fuel options. The Coalition is concerned that projections of market penetration levels for fuels without proper consideration of driving economics, requirements for government intervention, or quantification of customer financial benefits – will be of little value to the governor, agencies, and legislators as they make decisions on fuel diversity issues in the future. The work to date is valuable and needed – but the scenario “vignettes” are incomplete and must be backed up with additional financial analyses calculated the same for all fuels. The Coalition believes that publishing the final AB 1007 report without these analyses could be unfairly detrimental to several of the alternative fuels under consideration.

The Need for an Oil and Petroleum Fuel Price Forecast

There have been ongoing discussions in CEC workshops on IPER inputs regarding the need for the CEC to adopt and use EIA's High Oil Price Case as the basis for planning state energy strategy. The Commission has received feedback from numerous parties, including the Coalition, that the EIA's High Oil Price Case should be used as the most likely case in its AB 1007 proceedings. To accept EIA's Reference or Low Forecasts would almost certainly underestimate the economic costs of continuing excessive levels of petroleum dependence and result in underestimating of the net benefits of petroleum displacement by alternative transportation fuels – the goal the whole process.

In a June 7, 2007 CEC workshop on the Natural Gas Demand and Price Forecast for the 2007 IEPR, the same issue of using EIA's High Price Forecast came up again. In regards to the natural gas price forecast, CEC indicated that they had evaluated all three of the EIA oil forecasts and found that the natural gas pricing forecast was not necessarily coupled to oil prices since there are very few opportunities today in California for price fuel switching between oil and natural gas.

Commissioner Geesman made a statement that really defines the issue of adopting any particular forecast. Commissioner Geesman indicated [I don't have the transcript – but paraphrased] that 'it is important to look at all forecasts and determine the risk associated with any individual forecast -- and error on the side that does the least damage'. The Coalition believes that the CEC should adopt EIA's High Oil Price Forecast as the one EIA forecast that does the least damage to the emerging alternative fuel markets that California is trying to develop.

Conversely, there are great economic and market risks associated with continuing to promote EIA's Reference and Low Oil Price Forecasts as "equal probability" forecasts for the transportation fuels market. For example, in the CEC's Natural Gas Scenario being developed for the AB 1007 Report, the CEC projects under an aggressive scenario for NGVs that natural gas can displace 19% of the state's transportation fuel by 2050 [this number may go down slightly as projections are revised for the final report]. Again, in the June 7th Workshop on Natural Gas forecasts, it was stated that natural gas prices were decoupled from oil price forecasts. However, if natural gas does have the potential to displace 19% of the gasoline and diesel use in the state by 2050 – the two fuels will be linked. This is especially the case since the current natural gas market for all sectors (residential/commercial, industrial, UEG, EOR, etc.) is about the same as the total transportation fuels market in California today (gasoline and diesel) on a Btu basis. Developing and maintaining a viable natural gas alternative to petroleum fuels is directly dependent upon price to price competition.

Other alternative fuels –with little or no market penetration today – are directly linked to oil or petroleum prices. It is the vision that oil and petroleum fuel prices will continue to increase that is attracting capital interest in the alternative fuels market. While some are projecting that the global warming debate will introduce carbon credits into the equation for alternative fuels – the reality is that carbon credits today are insignificant when compared to price to price competition for fuels in making alternative fuels a reality. If the markets believe that alternative fuels will be competing in a world of high oil prices – it is not productive in terms of market signals – for the CEC to support oil and petroleum price forecasts that optimistically low.

Price forecasts will also be used by policy makers, and state agencies to determine the amount and length of time for financial support of alternative fuels. To use the Renewable Diesel Scenario as an example [it was the only scenario that recommended using fuel price incentives to accelerate the market], it would be difficult for policy makers to recommend extending a federal \$1 gallon

incentive (for an additional 43 years) as well as adopting up to a \$2 per gallon California incentives over that same timeframe when the 2050 EIA Low Price Forecast for diesel is projected to be \$2.07 per gallon and the Reference Case price for diesel is projected to be \$3.01. Policy makers would be more inclined to support incentives (but perhaps not \$2 per gallon) if the 2050 diesel price projection were \$4.53 (or more) per gallon.

The CEC's use of Reference and/or Low EIA oil and petroleum price forecasts deemphasizes the need/urgency for an aggressive state alternative fuel policy at all. Why would state legislators want to pursue developing incentive packages for alternative fuel if the long-term retail price were projected to be \$2.07 per gallon as in the diesel case above.

Concerns have been voiced at many CEC venues that the EIA's forecasts, even for the High Price Case are not necessarily correct. If the CEC is uncomfortable in using any of the EIA forecasts then the Coalition would encourage the CEC to adopt the same approach it has in the Natural Gas Demand and Price Forecast – develop its own oil price forecast. In the absence of a new bottom-up CEC oil price forecast – the Coalition believes that the CEC should adopt EIA's High Price Forecast.

The Coalition recognizes that price projections for many alternative fuels – especially since process economics for some fuels are totally lacking. These price projections can be added to the equation in the CEC annual update of the IEPR and its formal biannual IEPR proceedings. But it is unacceptable that the CEC not weigh in now with a credible oil and petroleum fuels price forecast to be used as the benchmark to for regulators and policy makers to formulate long term state energy policy. As mentioned before, the EIA High Price Forecast can be used as a strawman until the CEC is more comfortable with its own projections.

Greenhouse Gas Reductions

Greenhouse gas reductions, while not the primary purpose of the AB 1007 process, are now a key focal point for policy makers. I am not sure in reviewing all the alternative fuel scenarios that the same treatment has been used for each fuel. For every fuel the GHG reduction impact is a function of the production path, source of the fuel, and even in which type of vehicle the fuel is consumed. In the TIAX Well to Wheels Report, ranges of GHG impacts are given for each fuel depending upon those variables. TIAX has yet to release a FINAL Well to Wheels Report that corrects some previous errors – and that FINAL report is needed to assure consistency in calculating GHG impacts. It is important that CEC staff define specific paths for each fuel and make sure the GHG reductions are identical to the numbers in the TIAX report.

For instance, in the Natural Gas Scenario, CEC staff used a -5% reduction in GHGs as the basis of their calculations. The TIAX report gave a range between -5% and -21% for heavy-duty NGVs. Had the -21% (for CNG vehicles using North American gas) the GHG benefits would have been over four times as great as those stated.

The CEC and TIAX have worked closely with Dr. Alex Ferrell and the University of California Team to make sure there is total consistency between the Well to Wheels Report and the Low Carbon Fuel Standard Report (Part 1). This same diligence should be used to pick the “most likely” GHG scenarios for each of the fuels and capture the most representative GHG impacts for policy makers. It is absolutely essential that all the GHG impacts for the various fuels be reviewed by one “team” within the CEC that can assure uniformity in calculation approach and agreement with underlying assumptions.

Natural Gas Scenario

As mentioned previously, CEC staff did an excellent job capturing the essence of the NGV industry included the successful business model for economic expansion of the market and customer and fuel provider economics. We are generally supportive of the overall content of the Natural Gas Scenario but would like to offer the following comments.

The NGV industry stakeholders have had meetings with staff to discuss the results of their analysis of the NGV industry. We are generally in agreement with the results but wonder if the methodology and guidelines used for the Natural Gas Analysis are the same as used in other fuel scenarios. Staff took great effort and time to identify the research needs of the industry to bring new product online as well as great detail in defining the capital required for infrastructure. This amount of detail is lacking in other scenarios.

NGV stakeholders went through detailed discussions with staff regarding a bottoms-up guide to CNG and LNG pricing that included capital recovery costs and profit. This data was used to document fuel price savings to customers and projections of customer savings through 2050. We have yet to see this detail for other fuels.

Regarding cost effectiveness of the fuel scenarios, we are not sure that other fuels have used the same criteria and list of variables to include in this calculations as were used in the natural gas case. In looking at the cost effectiveness for heavy-duty CNG and LNG vehicles [Conservative Case], we are unsure why the cost effectiveness decreases over time then increases again. If the same incentives are in place for the total timeframe, and the fuel price savings are held constant as staff indicates – we see no reason for the cost effectiveness should be changing as much as it does in the table. A similar comment could be made regarding the cost effectiveness of the light-duty segment. While we have seen the results of the calculations, we have not been shown the calculations nor fully understand the assumptions and data input into those equations. Staff should consider appendices to the Scenario explaining their calculation methodology.

Several of the fuel scenarios have no cost effectiveness calculations at all. For some of the scenarios, cost effectiveness is calculated in \$/ton and not the \$/gge as in the Natural Gas Scenario.

CEC staff has worked to define three scenarios for natural gas: Conservative, Moderate, and Aggressive. The natural gas vehicle industry would label the Moderate case as our business as usual or “most likely” case based on market growth to date, growth in target markets, and potential growth in new markets where we have engine/vehicle products. The industry views the Conservative case as a retreat from our current growth pattern and a case we definitely think we will outperform. The Aggressive case is the one we are setting our eyes on meeting. While the CEC has identified an Aggressive case – it doesn’t seem to offer the same analytical detail for this case (e.g. cost effectiveness) as it does for the Conservative and Moderate case. This is unfortunate and something that deserves more work.

In the natural gas scenario, staff assumes fixing the vehicle purchase price incentives for the entire period. The reality is that as petroleum prices climb and the price differential between natural gas and diesel widens, the economics are more favorable to the customer – and incentives can be reduced. This option isn’t modeled in the scenarios – but it is a very large consideration when determining cost effectiveness.

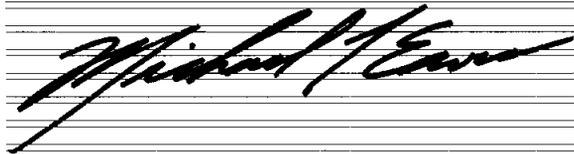
In the scenario report [page 6] it states that the certification cost and requirements is a major obstacle in gaining OEM commitments to produce vehicles. While certification costs are major barriers for Small Volume Manufactures and aftermarket conversion kit manufacturers, it is not a major consideration for OEMs. The lack of commitment from OEMs to manufacturer NGVs is directly related to low historical sales that occurred when federal public policies regarding alternative fuels were ignored and sales revenue didn’t justify maintenance of vendors, parts inventories, service and maintenance training, etc.

And finally, staff has developed a comprehensive table of “actors” in the NGV industry needed to make the scenarios a success. In that list, staff fails to highlight government – from the governor to legislators and state agencies and regulatory bodies – that are also required to help articulate the vision and take appropriate actions to allow the markets to develop as needed in the state. In many ways California is adopting similar goals to those passed by Congress in the 1992 Energy Policy Act. The federal government failed to create the climate for those goals to be realized. It is incumbent upon the policy makers in the state to make sure that state goals on energy and alternative fuels are pursued more rigorously that the federal government pursued energy diversity in the 1990s.

Once again, thanks for the opportunity to comment on the Natural Gas Scenario and the AB 1007 process in general. A great deal of hard work has produced a significant comparison of many alternative fuels. Staff must take a critical look at the data to make sure that all fuels have been analyzed in the same way and that basic assumptions for each fuel are consistent. The largest missing link to date is the availability of a credible petroleum oil/fuel price forecast that the CEC can agree upon – and price forecasts for the alternative fuels. The Coalition hopes that the CEC will adopt the EIA High Oil price forecast as a starting place to determine the amount of state

support needed to achieve 30+% penetration of alternative fuels in the timeframe posed by the state.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael L. Eaves", is written over a set of five horizontal lines that resemble a musical staff.

Michael L. Eaves
President, California NGV Coalition

cc: Commissioner Boyd
Commissioner Byron
Commissioner Geesman
Commissioner Pfannenstiel
Tim Olsen
Susan Brown
Peter Ward
McKinley Addy
Jerry Wiens