



**California  
Natural Gas Vehicle  
Coalition**

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**Michael L. Eaves**  
*President*

**Transmitted by Email**

October 12, 2007

Tim Olson  
AB 1007 Manager  
California Energy Commission  
1516 9<sup>th</sup> Street, MS 45  
Sacramento, CA 95814

**Subject: Docket # 06-AFP-1; Comments on Draft State Alternative Fuels Plan (CEC-600-2007-0111-CTD, October 2007)**

Dear Mr. Olson;

The California Natural Gas Vehicle Coalition (Coalition) appreciates this opportunity to comment on the Draft State Alternative Fuels Plan.

First of all, the Coalition would like to thank staff for the time spent with our industry trying to understand our market and the economics. Staff presented major findings on the Natural Gas Scenarios at the May 31<sup>st</sup> workshop. We find the results presented in the State Alternative Fuels Plan to be consistent with those initial scenarios. But we don't believe the results adequately predict the economic advantage of natural gas highlighted in the report, or the ability of natural gas to achieve even greater market penetration than projected.

**Transparency**

The Commission has created a transparent process to a point. Industry meetings, workshops, and discussions to clarify issues have been productive. But there is more to transparency than just the process. Transparency should also require that the methodology, assumptions and data for economic analyses be clearly explained and available to the public. Conclusions are critically influenced by the assumptions. There is insufficient information on the methodology and assumptions for one to be able to assess the validity of the conclusions contained within the report. Market penetration projections shown in the report for alternate transportation fuels/technologies are inconsistent with the estimates about cost-effectiveness [Table 12] and consumer pay-back

periods [Figure 16]. The report predicts that the lower cost-effective technologies have higher market penetration potential and the high cost-effectiveness technologies (e.g., natural gas) have among the lowest penetration potential. It is hard to understand how these inverse relationships can possibly anticipate developments in a competitive market.

The Coalition is very pleased that the Commission at the October 9<sup>th</sup> workshop agreed to publish an Appendix to the AB 1007 Report that will include the details of the economic assumptions and calculations used to reach the conclusions in the report.

### **Economics**

The report does not lay an adequate foundation for the methodology to support conclusions about market potential. The report is inconsistent in its assumptions about the extent to which technological and economic obstacles will be overcome for the different technologies and fuels. The report assumes that huge technological, economic, and durability obstacles of some technologies, such as hydrogen fuel cells, can be overcome, but relatively smaller obstacles, such as the OEM product availability for light duty NGVs cannot be overcome. Chapter 5 does not contain an example of a very cost effective technology/fuel like natural gas achieving higher market penetrations or of a less cost effective technology achieving a lower market penetration. Without this type of comparison, the report fails to meet the AB 1007 guidelines that recommendations should be consistent with maximizing the cost effectiveness for California.

An example of not having key assumptions identified up front is the issue of fuel price forecasts. Footnote 30 on page 67 defines an entirely new approach than the CEC has used in the past for petroleum prices. The Coalition is pleased that the Commission has decided to use the EIA's high oil price forecast as the reference case and look at sensitivity of +/- 20% around this forecast. Such a key assumption deserves greater discussion than relegated to a footnote on page 67 of an 80 page report. This assumption on fuel prices is contradicted by the current version of the 2007 IEPR which continues to cite the low, medium and high EIA price forecasts for oil – without offering any rationale on which price forecast case has greater probability of being correct. It is more likely that the IEPR oil price forecast gets greater public exposure than the oil price case approach taken in the State Alternative Fuels Plan.

Given the use of the EIA high price forecast, there is no indication from staff that parallel alternative fuel price forecasts have been developed and used in the economic projections. Based upon EIA's own price forecasts, the price differential between oil prices and natural gas prices are expected to grow in the future. This would make natural gas even more competitive in the future than it is in today's marketplace. There is no indication that this has been considered in the report.

### **Treatment of Light Duty NGVs**

In the Executive Summary (page ES-6) there is an implication that fuels like natural gas are relegated to niche market applications. The Coalition feels that this is an unwarranted characterization of the potential of natural gas. Natural gas has pursued several high fuel use niche markets as a business strategy since 1995 that allows profitable expansion of the market for both fuel suppliers and customers. This business strategy has been successful in allowing growth of the industry, conservation of capital, and sharing of financial benefits with both shareholders and customers. This strategy has also helped create one of the most successful public access refueling infrastructures in the world that is open to expand to collateral fleets and consumer demand. On a moving forward basis, natural gas will not be confined to niche markets.

There are inaccuracies and inferences in the report's assessment of light duty NGVs, which will hinder, rather than accelerate the market penetration of light duty NGVs. The Coalition believes the portrayal of an extremely limited role for light duty NGVs needs to be reassessed before the final report is approved by the CEC and CARB. For example – despite the documentation of the favorable economics for NGVs, the report essentially assumes negligible penetration of light duty NGVs. Since the primary market focus of light duty NGVs is the high fuel use fleet and commuter sectors, given the economics of the light duty NGV sector, it is doubtful that other less cost-effective technologies and fuels will displace natural gas and we believe market growth will be much greater than projected in the report.

The report recommends that the CPUC allow utilities be able to ratebase residential home refueling systems and pursue R&D efforts with OEMs to get a greater assortment of NGVs to the market. Getting the CPUC to adopt these recommendations is going to be difficult if not impossible given the exceedingly pessimistic projection in the report that the forecast for light duty NGVs beyond 2020 will essentially disappear [Figure 5, pages 36 and 37 for LD NGVs predicts that the NGV market for these vehicle types will be absorbed by hydrogen fuel cell vehicles]. OEMs currently offer 16 different NGV models in Europe in response to European policies. More NGV models are offered worldwide to address regional and local policies. It is likely that California policies, coupled with utility R&D and customer demand sparked by the ratebasing of residential home refueling systems can reverse the exodus of OEMs from the California/U.S. markets. Making light duty NGV products available in California is a much smaller hurdle to overcome than the technological, infrastructure, first cost and fuel cost disadvantages of some fuels/technologies such as hydrogen fuel cell vehicles. The report is also silent on the potential of hybrid and PHEV technology to be adapted to NGVs while policies at the federal and state level to provide the necessary research and development are being considered by Congress and the Governor. The report also does not address the use of hydrogen blends in NGVs as a means to create a bridge to a hydrogen future.

Customer acceptance of alternative fueled vehicles will be determined primarily by four factors: 1) product availability, 2) first cost of alternative fueled vehicles (vs. cost of conventional fueled vehicles), 3) differential operating cost (primarily fuel costs), and 4) infrastructure availability. It is impossible from a review of the draft report to determine any of the key economic drivers for the

various fuel options presented in the report. Figure 16 (page 65) shows the consumer economic payback periods for various fuel options. There is no indication of how vehicle first cost and or alternative fuel pricing is influencing these payback curves – or over what period of time. For this reason, the lack of economic specifics gives policy makers very little information about the empirical and analytical foundation they are expected to base future policy decisions.

### **Recommended Government Actions**

Details of roles and responsibilities for various government agencies and stakeholders are listed in Chapter 2. While this is an impressive list of seemingly related activities, there is no one agency identified as having responsibility for defining the specific performance goals of the plan and having the accountability to achieve results. All of the listed activities seem to have value in the context of advancing alternative fuels – but there is no leader defined.

The report notes that CARB will be responsible for establishing regulations under the LCFS, but also notes that the LCFS will not be sufficient to achieve the GHG emission goals, petroleum displacement goals, and bioenergy production goals. Other actions relegated to CARB in the report include “evaluating” and “exploring” various alternatives. The Commission should potentially identify CARB as the lead entity to develop petroleum displacement goals for the state and implement policies and regulations to achieve those goals. CARB as the primary regulatory agency in the state is in the best position to plan this role.

### **Recommended Language for CPUC actions**

The Coalition recommends the following more specific language be incorporated in the report for CPUC actions listed on page 12 of the report:

#### **California Public Utilities Commission**

- Encourage/allow preferential or special (for example, off-peak) rates for electricity and incentive or special transportation rates for natural gas transportation fuels
- Allow ratebase recovery of investments in home natural gas vehicle refueling equipment, and home electric vehicle charging equipment and meter installations
- Expand opportunities for electric and natural gas utility rate-based investments in electric and natural gas vehicle market segments, where a competitive market has yet to develop
- Evaluate the desirability of adopting a financial incentive mechanism to reward the utilities for successful efforts in cost-effectively developing the natural gas and electric vehicle transportation markets.

Other comments regarding the report are as follows.

## **2050 Vision Statement**

The vision statement in Chapter 6 is silent on the long term contribution that natural gas can make in both fuel substitution and GHG reductions. This chapter seems to be dedicated to look at the light duty market only. Natural gas in the 2050 timeframe will have a presence in the light duty market that is ignored in Tables 8 and 9 – and a substantial impact in the heavy duty arena (2.4 billion gallons total displacement by 2050). The Coalition strongly recommends that staff's projections of fuel displacement for all fuels should be summarized in a table in Chapter 6.

## **Periodic Updates**

It is recommended in the report that there be periodic updates to the Well to Wheels analysis as production paths for alternative fuels and renewables are better defined. The Coalition agrees with this. The Coalition also thinks there should be periodic updates of the economics of alternative fuels – since fuel price, fuel price differentials, and vehicle technology costs will be the primary market drivers for maximum alternative fuel penetration for California. The Coalition would suggest that economic update be part of the bi-annual IEPR process and be incorporated in the Transportation Fuels segment of that report. These economic updates are critical because they can signal the potential of market growth in various fuel sectors – or identify where financial incentives have to be adjusted to keep alternative fuels on track to meet California's fuel substitution, GHG, and AQ goals.

## **Black Box for GHGs**

As noted in Figure 15 (page 56) the "black box" for GHG emissions reductions is substantial. It is unfortunate (perhaps for time considerations) that there was not more analysis of potential innovations in the heavy duty vehicle side to explore greater GHG emission benefits for that sector. As hybrid technology advances grow for the light duty market, the Coalition believes that hybridization of heavy duty vehicles is only a matter of time. Hybrid development for heavy duty vehicles has already started. Under research priorities for natural gas, staff has correctly identified the industry need and desire to pursue this technology. Greater analysis of the heavy duty market will show that additional GHG reductions can be gained in this area to complement the GHG reductions in the light duty market.

## **Conclusions**

The lack of transparency in regard to basic economic assumptions and methodology seriously detracts from the power of the report. The Coalition is pleased that the Commission has agreed to develop and publish an Appendix that provides proper documentation for the calculations and analyses involved in the report. This Appendix should become an integral part of the Final AB 1007 Report.

The report focuses primarily on the light duty market. The Coalition suggests that the Commission further develop the heavy duty scenarios for next years IEPR update.

The pessimistic forecast for light duty NGVs in the report runs counter to the recommendations in the report that the CPUC allow utilities to ratebase home fueling and pursue R&D programs to develop more products for the market. Staff should consider appropriate revisions given the positive cost effectiveness calculations for natural gas in the report.

It has been suggested by many individuals contacted within the Commission and ARB that some are uncomfortable with the "optimistic" projections contained in the report for natural gas. The NGV industry has been working with U.S. EPA to identify the potential that natural gas can make toward the president's goal of displacing 35 billion gallons of petroleum with renewable and alternative fuels by 2017. The industry recently presented those projections recently in Washington D.C. These projections were not only favorably received by senior staff, but U.S. EPA viewed them as conservative given many of the drivers in the energy markets.

The NGV industry believes that in the future world economic climate for energy, the staff's projections of market penetration could be considered "conservative". The Coalition and its members would like the opportunity to present this new information to CEC Commissioners in the near future. It should give the CEC greater confidence that the projections made in the current State Alternative Fuels Plan are doable and conservative. We will also be conveying this information to CARB Board members and staff.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael L. Eaves", is written over a set of horizontal lines. The signature is fluid and cursive.

Michael L. Eaves  
President, California Natural Gas Vehicle Coalition