

October 5, 2009

Dr. Alan Lloyd  
Chair - Economic and Technology Advancement Advisory Committee  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Subject: Comments on the September 18 Draft ETAAC Report

Dear Chairman Lloyd,

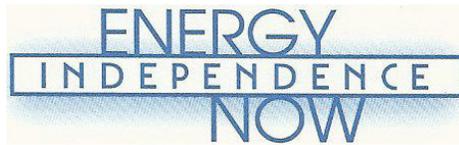
Energy Independence Now (EIN) would like to thank the ETAAC for the opportunity to submit comments on the draft report, released on September 18th. We have followed the development of this second report with interest and commend you and the authors on an excellent synthesis of the state of advanced technology and policies.

In particular, we would like to recognize the addition to the report of Table 1.1: *Potential Barriers to the Commercialization and Deployment of Low and Zero Greenhouse Gas Technologies*. In our comments on the first ETAAC report, we noted the insufficient attention to the problem of infrastructure and government regulatory barriers. We are pleased to see these prominently identified as cross-cutting barriers, alongside costs, markets and information. In future reports, we would encourage the authors to apply that same cross-cutting analysis in a systematic way within each of the chapters.

Secondly, we commend ETAAC for recognizing the important contribution of black carbon emissions to climate change, and for suggesting that it should be recognized within the pollutants defined by AB32 (page 6, Transportation section). Although the suggestion is currently embedded within the transportation sector, we believe addressing black carbon emissions is an important strategy for California's overall climate change and air quality objectives, and if possible, should be highlighted earlier in the document. A logical place to mention it would be in the last paragraph of page 3, in chapter 1, which addresses the health co-benefits of climate-related actions.

Our specific comments are focused on Chapter 6: Transportation. This chapter does an excellent job at synthesizing the current policies and industry investments, especially in the light duty sector. We believe it would be further enhanced with the following two additions.

- 1. Better recognition of the complementary nature of fuel cell and battery-electric technologies.** The Air Resources Board has long maintained that a commitment to both battery and fuel cell technologies is critical to achieve our long term GHG goals, and CARB was instrumental in reversing the recent DOE attempt to zero-out hydrogen funding for transportation. The need for government to continue its dual-pronged support of battery and fuel cell technologies is not only to avoid incorrectly picking winners and losers, but also from the inherent differences between these technologies,



and the fact that we will ultimately need both batteries and fuel cells to replace the full span of duty and range which petroleum currently provides. We therefore propose the following changes to the text (our additions underlined).

**Section IA: Light Duty Vehicles/ The global electric passenger vehicle technology race.** (Chapter 6, Page 5)

*“Looking longer term, Congress has re-established funding for hydrogen fuel cell technology that DOE reports has made important steps towards commercialization. Fuel cell technology is now capable of delivering performance that matches gasoline vehicles in today’s medium duty and long range markets (e.g. rural needs and SUVs). This will allow it to complement battery-electric vehicles, which are expected to primarily serve the lower range / light duty markets (e.g. urban commuting). While automakers work on lowering fuel cell costs, California should continue to use the Zero Emission Vehicles policies, complemented as needed by the Clean Fuels Outlet provision for infrastructure, to advance the hydrogen fuel cell sector from the “demonstration” to “deployment” stage. ~~While EVs are a potential competing technology with fuel cells,~~ Expanding commercialization for EVs and PHEVs will likely also facilitate fuel cells by driving down the costs of shared components. CARB predicts that these three technologies will together make up a third of the vehicle fleet by 2030.”*

**2. Section 1B. Medium and Heavy-Duty vehicles**

As noted above, we commend ETAAC for the suggesting that black carbon should be recognized within the pollutants defined by AB32, and highlighting how this would encourage emission improvements in the heavy duty sector.

However we are concerned that, unlike the section on light duty vehicles, this section lacks both short term and long-term strategies for de-carbonizing the medium and heavy duty sectors. We have observed that a clear strategy for these sectors is frequently lacking in both CEC and CARB projections, and are therefore not surprised at its absence here.

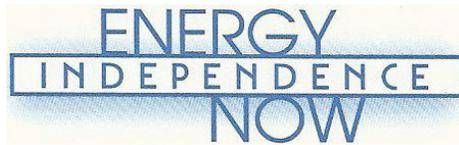
While it is beyond the scope of the ETAAC mandate to define such a strategy, we think it is important to highlight this significant gap in the state’s climate change efforts, and to warn that without a clear strategy, we risk funding a piecemeal approach to retrofits, customer incentives and incremental improvements in efficiency that will be insufficient to reach our 2050 goals.

We therefore suggest language such as the following at the beginning of section 1B.

**1B. Medium and Heavy Duty Vehicles**

*Lack of clear pathway for heavy duty sector*

Unlike the light duty sector, the State’s strategy for de-carbonizing the heavy duty sector is far less clear. While there does seem to be agreement on buses (a transition to electric drive) as well as on improving long haul truck efficiency (hybridization, truck stop



electrification etc), there is no apparent alignment on what fuel substitution pathways are seen as most promising.

In order to drive private sector investment in this sector, greater clarity is needed on the state's objectives and strategies. This is especially true regarding fuel for long haul goods transport, and whether modal shifts, renewable diesel or a natural gas to hydrogen transition offers the most realistic pathways to de-carbonization. An alignment by CEC and CARB on such a vision would help contextualize and prioritize the current regulations and incentives.

*Importance of California Technology funding [This should follow]*

*Immediate opportunities to reduce black carbon.....*

We hope the above comments are helpful in finalizing the draft ETAAC document.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Emmett".

Daniel Emmett  
Executive Director

A handwritten signature in blue ink, appearing to read "R. Garderet".

Remy Garderet  
Clean Transportation Program