



January 25th, 2012

Mary Nichols, Chair
California Air Resources Board
1001 I St., P.O. Box 2815
Sacramento, CA 95812

RE: Support for the California Advanced Clean Cars Regulations

Dear Chair Nichols and Members of the Board:

The Center for Energy Efficiency and Renewable Technologies (CEERT) strongly supports the Air Resources Board's (ARB) proposed package of Advanced Clean Cars Regulations (aka, 2012 Amendments to LEV-III-Criteria, LEV-III-GHG, ZEV and CFO regulations). CEERT applauds the ARB's efforts to produce a regulation that builds upon California's decades-long success with these regulations that have significantly reduced mobile-source air pollution in California and across the nation.

In expressing our support for the proposed Advanced Clean Card Regulations we would also like to offer some recommendations below on how we think ARB could potentially improve the proposed amendments to the regulations.

Particulate Matter under the Proposed LEV-III Criteria Amendments

We strongly support ARB's proposed ultimate goal of 1 mg/mile under the LEV III PM mass standard. However, the proposed amendments to the particulate matter (PM) emissions standards require that automobile manufacturers reduce PM emissions to 3mg/mile by the 2021 model year (MY). It then allows for a four year hiatus during which no further reductions in PM emissions will be required. Beginning with the 2025MY automobile manufacturers will then begin reducing the PM emissions of their vehicles so that they achieve a 1mg/mile standard by the 2028MY.

We feel that allowing automobile manufacturers 16 years to achieve PM emissions compliance is too long. This concern is highlighted by the fact that, in December, the European Commission adopted a PM emissions standard for light duty passenger vehicles using gasoline direct injection (GDI), and considered by many in the industry to be a more

stringent PM emission standard for GDI vehicles than ARB is requiring under its proposed phase-in for the 3 mg/mile PM standard by the 2021MY. As we have noted in earlier comments we have submitted on the proposed regulations, our research indicates that technology solutions are currently available and more options will soon be available that will allow for cost-effective PM emissions in the 1mg/mile range.¹ While alternative approaches to meeting a 1mg standard might be developed in the longer term, we feel that ARB must take advantage of nearer-term progress and pursue a rapid transition to the 1mg standard so that Californians can benefit from the same robust and highly effective clean air technologies that will be available in Europe. This would also avoid the situation where manufacturers would be removing (decontenting) these technologies from their California models.

We therefore ask that the compliance ramp for achieving the 1mg/mile standard be adjusted so that full compliance with this standard is achieved by no later than 2025. ARB will have an opportunity to monitor progress and to review the feasibility of automobile manufacturers' ability to achieve this standard as part of the mid-term review.

GHG Over-compliance and the ZEV regulations

The provision allowing automobile manufacturers who over-comply with the proposed GHG targets under the federal program to trade-in their credits for partial ZEV-compliance during the 2018-2021MYs introduces considerable uncertainty into the regulation with respect to its influence on the number of Zero Emission Vehicles that could be introduced into the market. We understand this provision could reduce the number of ZEVs introduced in those years by as little as 8-9% or by as much as 40% if all automobile manufacturers were to over-comply. In order to limit the impacts of this provision on the ZEV program we recommend that the ARB: 1) raise the threshold for GHG over-compliance from 2g/mile to 4-5g/mile; 2) avoid the double-counting of an automobile manufacturer's ZEV contributions – which have a 0g tailpipe emissions score – under the federal program. This can be achieved by requiring that automobile manufacturers account for the upstream emissions for any ZEVs the manufacturers use in determining their fleet-average GHG emissions average for GHG over-compliance in 2018-2021MYs; 3) place a cap on participation under the GHG over-compliance option.

¹ Based on our discussions with industry experts and regulators familiar with emissions control technology, the estimated integration costs for gasoline particulate filters in the early years of introduction would fall in \$100-\$200 per vehicle range but with broader market adoption would fall below \$100 per vehicle. This is consistent with other recent research on integration costs: eg. See: International Council on Clean Transportation, September 2011. Estimated Cost of Gasoline Particulate Filters., and See: European Commission Joint Research Centre – Institute for Energy and Transport, December 2011. Draft: Feasibility of Introducing Particulate Filters on Gasoline Direct Injection Vehicles: A Cost Benefit Analysis.

Type 1.5x, Type IIx and BEVx

CEERT recognizes that vehicles under this new category within the ZEV regulation have the potential to allow drivers to achieve greater zero-emissions miles by helping to address their range-anxiety. However, based on the criteria proposed to define this vehicle category – through to the 2025MY – and the creative ability of the engineers for the automobile manufacturers, it is unclear what approaches a manufacturer might develop for these vehicles and what their applications might be in real-world use. We feel it essential that ARB require that any automobile manufacturer introducing one of these vehicles into the market, especially before the year 2017, be required to participate in a monitoring and verification program that would allow ARB to develop a performance or attribute-based approach to credit generation for these vehicles. The simplest approach might be to award credits to the vehicles based on a statistically rigorous analysis of their actual real-world performance. ZEV credits for these vehicles would thus be based on the proportion of zero-emission vehicle miles driven relative to the pure-ZEV version of the same vehicle. ARB should continue to monitor developments in this vehicle category beyond the year 2018 to ensure that these vehicles are being designed and built in a manner consistent with the program goals.

Clean Fuels Outlet

CEERT is an active participant in the multi-stakeholder group working in the ongoing effort to develop a Memorandum of Agreement and strategy to enable a voluntary effort for the deployment of hydrogen fueling infrastructure through 2017-2018. CEERT continues to support and participate in this effort. At the same time CEERT supports the Clean Fuels Outlet requirement as an essential backstop necessary to ensure that California has the needed hydrogen fueling infrastructure to create a self-sustaining market for these vehicles and fuels, and in meeting California's longer-term air quality and climate goals.

Sincerely,



John Shears
Research Coordinator
Program Lead for Clean Transportation and Alternative Fuels
Center for Energy Efficiency and Renewable Technologies