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Mr. Bob Nguyen
California Air Resources Board
1001 I Street
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Submitted Electronically: http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=techfuel-report-ws&comm_period=1

RE: Comments on the California Air Resources Board's Draft Technology Assessment: Heavy-Duty Hybrid Vehicles

The California Trucking Association (CTA) and the American Trucking Associations (ATA) are pleased to have the opportunity to review and comment on the California Air Resources Board's Draft Technology Assessment: Heavy-Duty Hybrid Vehicles.¹ We appreciate staff's efforts in preparing the assessment and view the draft as a starting point for a discussion of this technology. The following comments reflect the experience and viewpoint of the trucking industry as they pertain to this technology and should be reflected in the assessment.

General Comment: A recent report by the National Academies provides additional perspective which should be reflected in the assessment.² Specifically, the report identifies key barriers and future opportunities which include:

- While the prices of key components – including the power electronics, motors, and batteries – in hybrid drivetrains for light-duty passenger cars are decreasing, the rate of decrease has not been sufficiently fast enough to allow hybrid drivetrains to meet payback period criteria set by truck purchasers under current conditions...
- ...there are substantive differences between the requirements of LDVs and MHDVs that create important gaps in the technology readiness of commercial hybrid components for truck drivetrain applications.
- The early years of hybrid truck manufacturing, the past 10-15 years, have been marked by a number of immature products that resulted in poor vehicle experiences for the buyers, as well as orphaned products caused by manufacturers who prematurely left the market or went out of

¹ CTA serves the commercial motor carrier industry in California and the companies that provide products and services to the trucking industry. ATA is the national trade association representing the American trucking industry and is a united federation of motor carriers and suppliers, state trucking associations, and national trucking conferences.

² National Academies of Sciences, Engineering and Medicine, *Review of the 21st Century Truck Partnership, Third Report* (2015)

business. This checkered history has hurt resale values and discouraged fleets from adopting hybrids.

The net impact of these barriers on the current market for hybrid trucks is summarized as follows:

When considering volume production over the next 10 years for commercial truck hybrids, ... fleet operators and vehicle manufacturers currently lack a viable business case to support widespread deployment. At least a few considerable barriers remain: the technology is considered somewhat unproven in terms of 'real world' reliability in truck vocations, a lack of significant financial incentives to offset costs, and the current impact of low fuel prices.

Nonetheless, hybrid and electric technology applications continue to be of interest to the trucking industry, especially in the vocational segment. These technologies currently provide manufacturers with credits for exceeding the federal fuel consumption standards although the cost can be substantial. EPA estimated the added cost of hybrid technologies in the range of \$20,000 to \$40,000 for larger vocational vehicles and tractors while full electric technologies are in the \$50,000 to \$150,000 range.³ These costs are the highest of all the fuel efficient technologies identified under the proposed federal Phase 2 heavy-duty fuel efficiency rule and are likely to result in low adoption rates.

Both CTA and ATA support continuing to advance these technologies and their adoption through the incentive-based approach used under the federal Phase 1 standards. A continuation of advance technology credits is expected to provide an incentive for OEMs to pursue the development and sale of hybrid and electric vehicles. These credits will likely help drive down costs while further promoting this technology under the second phase of the federal rule.

In addition to federal credits, state incentives play a significant role in the deployment of hybrid trucks. As noted in the assessment, "staff is not aware of any heavy-duty hybrid vehicles in California that were purchased without some type of financial assistance from incentive programs." CTA and ATA agree with CARB staff's prior assessment that the metrics which help identify when hybrid technologies in specific heavy-duty applications become self-sustaining are unlikely to drive a decision to sunset funding in the near term.⁴

P. V-9: The forecasted incremental capital cost for a Class 3 to 6 Straight Box Truck does not reflect current pricing. According to our member companies, the current incremental cost for this vehicle is \$55,000 which results in a payback period of more than 20 years assuming \$3 per gallon fuel prices.

If you have any questions regarding these comments, please contact us at your convenience.

Respectfully,

³ U.S. Environmental Protection Agency and Department of Transportation National Highway Traffic Safety Administration, *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2* (7/13/2015).

⁴ California Air Resources Board, *Proposed Fiscal Year 2015-16 Funding Plan For Low Carbon Transportation Investments And The Air Quality Improvement Program* (June 25, 2015).

A handwritten signature in black ink, appearing to read 'CS' with a large loop and a trailing flourish.

Chris Shimoda
Director of Policy
California Trucking Association

A handwritten signature in black ink, appearing to read 'Mike Tunnell' in a cursive script.

Mike Tunnell
Director, Energy and Environmental Affairs
American Trucking Associations