

November 1, 2013

VIA ELECTRONIC SUBMISSION: www.arb.ca.gov

Air Resources Board
1001 I Street
Sacramento, CA 95812-2815

RE: Climate Change Scoping Plan First Update

The Truck and Engine Manufacturers Association (“EMA”) hereby submits its comments on the California Air Resources Board’s (“ARB’s”) draft *Climate Change Scoping Plan First Update*, dated October 1, 2013 (the “draft Scoping Plan Update,” or “draft update”). EMA represents the world’s leading manufacturers of internal combustion engines and of medium- and heavy-duty commercial motor vehicles. Please note that these comments are focused on sections of the draft update that are related to reducing greenhouse gas (“GHG”) emissions from medium- and heavy-duty on-highway vehicles and engines.

I. Heavy-Duty On-Highway GHG Programs

A. Maintain a Single National Program

The cornerstone principle that enabled the successful development and implementation of the Environmental Protection Agency’s (“EPA’s”) groundbreaking “Phase I” program to control GHG emissions from heavy-duty on-highway vehicles and engines is that it is intended to serve as a single national program. That is, the EPA’s GHG regulations are fully aligned with the National Highway Traffic Safety Administration’s (“NHTSA’s”) fuel efficiency (“FE”) regulations, such that compliance with one rule means compliance with the other. Further, ARB represented, and it was our understanding, that the Phase I GHG rule also would address ARB’s interests.

We are encouraged that the draft Scoping Plan Update reinforces ARB’s intent to fully harmonize California-specific GHG programs for heavy-duty vehicles and engines with EPA’s. Specifically, we support the following language:

ARB is currently developing a regulation establishing GHG emission reduction requirements for all medium- and heavy-duty vehicles and engines manufactured for use in California. **The regulation will harmonize with a GHG emission reduction rule adopted by the U.S. EPA in 2011** that will apply to the

manufacture of new trucks and engines used nationally between 2014 and 2018. It is anticipated that Phase 1 of the regulation will be adopted by the Board in December of 2013. *See, ARB, Climate Change Scoping Plan First Update*, at 23 (October 1, 2013). (Emphasis added.)

EMA and its members will work with ARB on the expedited adoption of EPA's Phase I GHG regulation, which is scheduled to be considered at the December 12th Board meeting. During the rulemaking process, ARB must take care to ensure that the new regulations fully align with EPA's existing rule, consistent with the principle of maintaining a single nationwide program. Additionally, we look forward to working with EPA, NHTSA, and ARB in the near future on the development of the second phase of the national program.

B. Avoid Unintended Consequences

1. *Technologies Must be Cost Effective*

Since heavy-duty commercial vehicles are business tools, new technology vehicles must earn the purchaser a financial return on the purchase price investment. That is, buyers must be able to conduct their trucking operations more efficiently with the new vehicles or there is a risk that marketplace disruptions will develop. The new GHG/FE technologies must be cost effective – that is, they must not increase operational or maintenance costs, and they must not depress resale prices – otherwise buyers will avoid the new technology.

Many new GHG/FE technologies must be carefully designed and applied only in targeted markets where they provide net benefits to the cost of operation. For example, aerodynamic treatments provide significant benefits during the high-speed operation that is typical of line haul trucking, but those same treatments may provide only a negative weight impact for low-speed regional delivery operations. Therefore, the program must include certification and compliance flexibilities that provide manufacturers the ability to offer customized products that are optimized to suit each unique trucking operation. Otherwise, the marketplace will reject the new products and frustrate the goals of the regulatory program.

2. *Changes Must Work in the Marketplace*

One method of reducing GHG emissions from road freight transport is to reduce the carbon intensity of trucking fuels. However, any new low-carbon fuel must meet appropriate quality specifications to ensure that with it today's advanced engines and aftertreatment systems will continue functioning effectively and efficiently. Additionally, ARB must ensure that new fuels do not have unintended consequences when used in legacy vehicles.

3. *Avoid Stranding Technologies*

Another potential unintended consequence of a GHG reduction program is mandating a technology that will not provide long-term financial benefits to the user. For example, the draft Scoping Plan Update identifies natural gas as a heavy-duty fuel that could reduce both criteria pollutant and GHG emissions. However, the draft plan goes on to state that natural gas "will

have to be mostly phased out to meet 2050 climate targets.” *See, id.*, at 88.

Natural gas, whether compressed or liquefied, requires significant infrastructure for delivery as a fuel to medium- and heavy-duty trucks. Many refueling stations are needed, and each one can cost hundreds of thousands of dollars, or more. However, as stated, the Scoping Plan Update predicts that those infrastructure investments in California would have a limited useful life, if indeed natural gas is phased out by 2050. Such a planned sunset date for a major new technology will have a chilling effect on long-term investments in it, and may doom it to failure in the marketplace.

II. Heavy-Duty On-Highway Emissions Reductions

A. Dramatic Criteria Pollutant Reductions Have Been Achieved

EMA member companies have achieved dramatic reductions in criteria pollutant emissions from their products (specifically, oxides of nitrogen (“NOx”) and particulate matter (“PM”)). With the support of EMA and its members, EPA and ARB have implemented aligned criteria pollutant emissions control programs that represent their world’s most stringent, resulting in 98 percent or better reductions in NOx and PM emissions from heavy-duty diesel engines over the last twenty years. Those dramatic reductions are the result of strong and well-designed emissions regulations to achieve what the marketplace would not accomplish on its own.

B. GHG Reductions Will be More Modest

GHG emissions are fundamentally different than criteria pollutants. The primary method of reducing GHG emissions is to reduce the amount of fuel consumed by the engine, or, said differently, to increase the fuel efficiency of the engine and the vehicle. The success of the business entities that specify and purchase heavy-duty vehicles depends on reducing fuel consumption and thereby reducing one of their largest costs of operation. Accordingly, GHG regulations serve as an overlay to the existing marketplace pressure to increase fuel efficiency – and therefore it is much more challenging for the regulations to achieve significant reductions.

C. Scoping Plan Update Overstates GHG Reductions

Even considering the existing marketplace forces that act to increase fuel efficiency, and thus reduce GHG emissions, EPA’s Phase I GHG program will achieve significant reductions. However, the draft Scoping Plan Update exaggerates the EPA’s own estimates for the Phase I program, and it predicts even greater future reductions. Specifically, the draft update states:

Similarly, for Class 8 heavy-duty vehicles, **U.S. EPA’s “Phase I” GHG standard will reduce new vehicle emissions by about 4–5 percent per year from 2014–2018.** This level of reduction can also continue beyond the current rulemaking, and **an additional 5 percent annual improvement through 2025 or 2030 is feasible and cost-effective** -- using commercially available technologies and advanced transmissions, hybridization, improved trailer aerodynamics, and other technologies. Significant, ongoing vehicle

efficiencies can be achieved in Class 3–Class 7 trucks as well, and will be partly enabled by improvements in light-duty vehicles. See, id. at 87. (Emphasis added.)

The EPA has stated that with Model Year (“MY”) 2017 the Phase I rule will “achieve from nine to 23 percent reductions in emissions and fuel consumption ... over the 2010 baselines.” See, EPA, Regulatory Announcement, EPA-420-F-11-031 (August 2011). In other words, EPA estimates that a MY 2017 vehicle will at best achieve a 23 percent reduction in GHG emissions over a MY 2010 baseline vehicle. EPA’s high estimate of 23 percent over a seven-year period is significantly different than four to five percent per year over a four-year period, as the draft plan states. Moreover, EPA is basing its estimate on unregulated baseline emissions levels, yet in the draft update ARB bases its estimates on products that already are controlled by the Phase I GHG regulation. Additionally, five percent annual improvement through 2025 or 2030, as the draft update predicts, would represent more than a 40 percent increase in fuel efficiency over the first ten years, which far exceeds even the most optimistic projections.

ARB should modify projections in the draft Scoping Plan Update to reflect reasonable GHG emissions reductions from heavy-duty vehicles, in line with estimates calculated by EPA.

III. Leadtime and Stability

A. Clean Air Act Requirements

The Clean Air Act provides for four years of leadtime from the promulgation of a new standard to the date when manufacturers must implement it in production. Additionally, the Act provides for a period of three years of stability between standards changes. See, 42 U.S.C. § 7521(a)(3)(C). Adequate leadtime allows manufacturers time to design and test new technologies before implementing them in production. To do otherwise would risk in-service performance failures and low customer acceptance of immature technologies. Additionally, a sufficient period of regulatory stability ensures that manufacturers have at least three years of consistent production within which to recoup investments made to bring the new technologies to the market.

B. Scoping Plan Update Misstatements

The paragraph copied above states that the stringency of the EPA program will increase every year. However, the EPA program is effective for Model Year (“MY”) 2014 engines and vehicles, and the next increased stringency level will be effective with MY 2017. That three-year period of regulatory stability provides manufacturers an opportunity to recover the implementation costs of meeting the first regulatory requirements, before implementing the second, more stringent requirement. The EPA program does not require, as the draft Scoping Plan Update states, increases in the stringency of the program every year. Such year-after-year regulatory changes would be impossible to implement. Similarly, the criteria pollutant reduction programs increased stringency no more frequently than every three years, a regulatory structure that greatly contributed to the success of that program.

The leadtime necessary to implement a new regulatory standard can vary a great deal. The EPA provided almost six years of leadtime for the criteria pollutant reduction program because it required the development and deployment of sophisticated new exhaust aftertreatment technologies. The GHG Phase I program, on the other hand, was designed primarily to increase the adoption of existing technologies, which is why the leadtime can be so short.

IV. NO_x/GHG Tradeoff

One of the most effective ways for an engine manufacturer to decrease GHG emissions is to maximize combustion efficiency, with subsequent increases in engine-out NO_x, while at the same time maximizing the conversion efficiency of the selective catalytic reduction (“SCR”) aftertreatment system to reduce tailpipe emissions to meet the standard. In effect, manufacturers are maximizing fuel efficiency while meeting the low NO_x emissions standards by using advanced SCR systems to clean up the exhaust.

However, ARB recently proposed new “ultra-low” NO_x standards that are up to 90 percent below ARB’s and EPA’s current low standards. Since SCR systems are near the limits of their NO_x conversion capabilities, engine manufacturers likely will need to reduce engine-out NO_x, and/or provide additional heat to the SCR catalyst to maintain optimum temperature, to meet the new ultra-low emissions standards. Those changes will sacrifice fuel efficiency and increase GHG emissions. With new, more stringent, ultra-low NO_x standards on the horizon, ARB must consider the NO_x/GHG tradeoff when projecting the level of GHG emissions that are achievable.

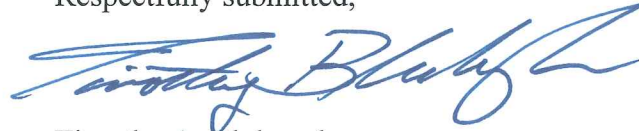
V. Conclusions

By their nature heavy-duty commercial vehicles are involved in interstate commerce, and they are purchased, used, and sold by companies around the country. Only certain regional trucks are operated primarily in one state, and they travel many less miles than line haul vehicles and subsequently emit significantly less greenhouse gases,. Accordingly, a single nationwide program is the most effective regulatory structure for reducing GHG emissions from heavy-duty engines and vehicles. Such a single national program has proven effective in controlling criteria pollutants from the heavy duty sector, and it is proving equally effective for GHG. ARB should continue to maintain the single national GHG program in implementing the Climate Change Scoping Plan.

The Scoping Plan Update should clarify that GHG emissions are fundamentally different than criteria pollutants and that achievable GHG reductions will not be of the same magnitude as recent reductions in criteria pollutant emissions. Similarly, because fuel is one of a commercial truck customer’s highest costs of operation, most fleets measure it very carefully. Any “fuel saving” technology that is mandated by a GHG program must actually deliver benefits in each customer’s specific operation, and also the technology must provide a return on the investment over the vehicle’s entire life cycle. Further, to be successful, a GHG program must provide adequate leadtime and regulatory stability, and it must avoid creating unintended consequences.

We look forward to working with ARB on finalizing the update to the scoping plan, and to the continued implementation of the plan. If you have any questions, please do not hesitate to contact me.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Timothy Blubaugh". The signature is fluid and cursive, with a large initial 'T' and 'B'.

Timothy A. Blubaugh

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