



SENT ELECTRONICALLY

March 20, 2017

Chair Mary Nichols and Board Members
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Subject: Advanced Clean Cars Mid-Term Review – Alliance Comments

Dear Chair Nichols and Board Members:

The Alliance of Automobile Manufacturers (Alliance) appreciates the opportunity to comment on the Air Resources Board (ARB) Staff's Advanced Clean Cars Mid-Term Review (ACC MTR).¹ The Alliance and our member companies have worked closely with ARB staff and the Board both developing and implementing the ACC regulations. Alliance member companies have made significant advancements in continuing to reduce tailpipe and greenhouse gas emissions, while also delivering an increasingly broad range of electrified vehicles to consumers in California and across the United States. Alliance member companies are committed to helping California meet its environmental goals while simultaneously meeting the utility and affordability needs of our customers.

In general, the Alliance provides the following comments:

- **Zero-Emission Vehicle Mandate** – As we have communicated throughout the review process, we remain concerned about customer acceptance of ZEV technology and whether the market demand for electrified vehicles will align with the mandate that automakers are held to in California and other ZEV States. The report tends to focus its analysis on present ZEV purchasers, which are primarily “early adopters.” Although these customers need to be maintained,

¹ Air Resources Board, *Advanced Clean Cars, Mid-Term Review*, January 18, 2017. Retrieved from <https://www.arb.ca.gov/msprog/acc/acc-mtr.htm>

our challenge is to grow the ZEV market with mainstream customers. Mainstream customers are different from early adopters – they demand a no-compromise transportation solution that includes the same or better range, refueling times, energy cost, package, and performance as traditional vehicles all while enjoying the benefits of electrification. Reaching mainstream customers will take the concerted efforts of all stakeholders and is central to achieving compliance with the ZEV regulations. The ACC MTR highlights the critical nature of incentives, but points to future uncertainty of incentives being available to new customers. In addition, the ACC MTR projects a significant deficit in the projected availability of public charging infrastructure, another critical element to the success of ZEVs. To reach this larger audience and improve the path to compliance, we recommend:

1. Market based Section 177 (S177) state requirements to recognize differences between the California and S177 state markets.
 2. Continuous and expanding complementary measures to begin to reach mainstream customers.
 3. Increasing the PHEV cap to grow the market.
 4. Reviewing and adjusting the H2 station rollout to better align with customer demands.
- **1mg/mile Particulate Matter control** – We support the ACC MTR recommendation not to accelerate the 1 milligram per mile (mg/mi) standard from its current timeline. Although LDVs make up less than 5% of all PM emissions, we are committed to doing our part in further reducing PM emissions, including the 70% reduction in the PM standard from today's 10 mg/mile to 3 mg/mile. An accelerated schedule for the 1 mg/mi standard would have certainly required the use of gasoline particulate filters (GPFs) in order to meet the standard. However, even under the existing phase-in schedule that risk remains, primarily due to PM testing variability and the need to quickly implement new and innovative GHG technologies in this timeframe. We will continue working with ARB staff over the next few years to better understand and mitigate the variability associated with PM emissions and PM emission measurement, particularly with regard to in-use testing. We recommend continuing to monitor automaker progress toward meeting and measuring the

1 mg/mile standard and another round-robin test program at ARB, EPA, and automaker labs.

- **Control of Greenhouse Gases for 2022-2025** – The Alliance supports the staff recommendation to maintain the “deemed to comply” provision of California’s light-duty vehicle greenhouse gas regulation. Moreover, we appreciate the commitment that was made in 2012 by leadership from ARB, EPA, and NHTSA to conduct a coordinated analysis of greenhouse gas and fuel economy regulations through 2025. In July 2016, EPA and NHTSA released their Draft Technical Assessment Report (Draft TAR) in which ARB staff were active participants. More recently, EPA announced its intention to reconsider its Final Determination. As this reconsideration is undertaken, the Alliance looks forward to continuing to work with ARB, EPA, NHTSA, and other stakeholders to arrive at a fully informed midterm evaluation.

Summary of Alliance ZEV Recommendations

We wholeheartedly agree with the ACC MTR conclusion that complementary measures are essential to develop the market for ZEVs. The ZEV regulations are very aggressive requiring three and a half times the sales in California over the next nine years (~1.2 million) as compared to the past six (~258,000). Meeting these aggressive requirements requires a high level of commitment and focus by all stakeholders.

The challenge is even greater in the nine other states that have adopted California’s regulations (S177 States) and the path forward is far less certain. Sales in the S177 states must increase far more than in California despite complementary measures that are either non-existent, lower, or years behind those implemented in California. **We recommend ARB review the ZEV market development in these states – if not now then no later than 2019 – and adjust the requirements as needed to compensate for the market differences between these states and California.** At the same time, automakers are committed to continuing to work with the S177 states on ZEV market development and complementary measures.

Automakers are committed to zero emission vehicle technology to meet not only ARB regulations, but also global regulations. This commitment is demonstrated by tens of

billions of dollars already spent in research and development, vehicle design, vehicle development, vehicle production, and vehicle promotion by the automobile industry. The ZEVs produced thus far have won praise from critics and early adopters alike, and virtually every automaker has committed billions more toward the development of ZEVs with longer range, better performance, lower costs, and more functionality.

Currently, automakers offer 24 different ZEV models, and over the next five years expect to offer over 70 models in virtually every vehicle category. However, customer acceptance to date suggests product offerings alone will not suffice to build a self-sustaining, robust, and growing ZEV market needed to meet the goals and regulatory requirements of California and the S177 states. To reach these goals, we continue to recommend:

1. Market-Based S177 State ZEV Requirements: We recommend reducing the S177 state ZEV requirements to be 40 percent of the California requirements, which is based on the relative market share of conventional hybrid vehicles in the regions. The current ZEV market share in S177 states (~0.7 percent) is only about 20 percent of the market share in California (~3.6 percent). While the ZEV regulations contain some S177 state flexibilities for 2018 through 2021, these flexibilities in no way bridge the vast divide between California's ZEV market and the S177 state markets. To be clear, we expect the ZEV market to improve in the S177 states with longer range ZEVs and greater model availability overall and in those states; however, it is highly unlikely to reach the level of California in the given timeframe. Our 40 percent proposal would require twice the increase of ZEV sales in S177 states compared to California, and would ensure the S177 states receive ZEVs; however, it provides a more feasible and achievable ramp to account for the realities of the market in these states.
2. Continuous and Expanding Complementary Measures: Continuous and expanding complementary measures should be adopted and include:
 - a. providing sufficient and growing infrastructure so fueling a ZEV is as convenient as fueling a gasoline vehicle,
 - b. offering vehicle incentives that bring the price of ZEVs to that of their gasoline counterparts,

- c. erasing the price differential between gasoline, electricity, and hydrogen,
- d. providing simple transparent pricing and payment for electric charging.

Finally, customer awareness and education must be consistently in place and constantly promoted. The Alliance and our members have, and will continue to, actively pursue these measures in partnership with ARB and other state agencies.

3. Increase PHEV Compliance Cap: Raise the maximum number of ZEV credits generated by plug-in hybrid electric vehicles (PHEVs). PHEVs appeal to a broader and different customer base (one vehicle households, those with long commutes or longer trips), and aid in expanding the adoption of BEV technology. Moreover, PHEVs can provide a substantial increase in the number of miles driven using electricity from the grid. Currently, the regulations cap the use of ZEV credits generated from PHEVs starting at about 55 percent in 2018 and quickly dropping to about 25 percent in 2025. We recommend allowing 80 percent of the ZEV credits to be generated from PHEVs, which would also result in an increasing number for ZEVs on the road. We would note, however, that increasing the PHEV cap would not address the need for adjusting the Section 177 State ZEV requirements (recommendation #1) or expanding the complementary measures (recommendation #2).
4. Review of H2 Station Buildout Process: The buildout of H2 infrastructure must be accelerated. The 100-station objective should be pulled forward to target the end of 2020 with commensurate funding. To approach the aggressive ZEV targets set by the governor and the legislature, we need to review how stations are developed and implement creative ways to accelerate their development. This effort should incorporate the voice of the customer and the many lessons learned to date, and lead to stations that are reliable with a retail experience comparable to that with current conventional fueling stations. Beyond 2020 and 100 stations, we must develop a plan to make California a leading market for hydrogen fuel cell vehicles.

Additionally, we recommend:

1. Increase PHEV Credits per Vehicle: Increase the per vehicle ZEV credit generated by longer-range PHEVs. Annual miles driven using grid connected electricity from

longer-range PHEVs approaches that of shorter-range battery electric vehicles (BEVs). However, the credit received from these PHEVs is proportionally lower. The electric range-based component of PHEV credits should be adjusted based on annual eVMT. The additional credit for high-power PHEVs that operate 10 miles on the US06 should be maintained as an incentive to minimize cold starts. We do not support changes to BEVx, BEV, or FCEV credit values, since automakers made product plans and investments based on the existing credit structure and reducing credit values would undercut these investments and undermine the credibility of the ZEV program. Moreover, the existing credit structure has helped incentivize longer-range BEVs and FCEVs that are costlier to produce but have the potential to expand the ZEV market and increase production capacity for batteries and fuel cell technologies.

2. Extend Pooling: Extend the pooling provisions beyond 2021 for manufacturers who elected to participate in the optional S177 state compliance path, an intention that was stated in ARB's 2012 ZEV Final Statement of Reasons (FSOR), and allow manufacturers that did not initially join the pool to do so. Pooling maintains the significant ZEV volumes in the S177 states but provides manufacturers some flexibility to meet requirements on a regional basis, which is especially important in the Northeast states where some states are very small (e.g., Rhode Island, Vermont and Maine) and manufacturers have a small number of dealers from which ZEVs can be sold, thus making a manufacturer's sales vulnerable to the sales performance of individual dealers. While extending the pooling provision provides flexibility, it does not bridge the divide between the California and S177 State ZEV market.
3. Extend Transportation System Credits: ARB should extend the transportation system credits provision in the ZEV regulation. This provision awards additional credits for ZEVs, as determined by the Executive Officer, that are placed in transportation systems, such as car-share or ride share programs. As noted in the ACC MTR, these programs provide a broad-scale opportunity to expose potential customers to ZEV technologies – one of the most important determinants to customers purchasing a ZEV. Moreover, many of these are high-mileage applications that could benefit most from electrification. However, the current regulations sunset this provision in 2018 and we have recommended extending it through 2025.

4. Consider Additional Credits Based Upon Vehicle Utility: ARB should consider granting additional credits to FCEVs, BEVs, and PHEVs with greater utility (such as all-wheel-drive, greater seating capacity, etc.) where costs are higher due to the need for larger battery packs or additional electrified components.
5. Consider Increasing the Range-Based ZEV Credit Cap: In order to incentivize longer range PHEVs, BEVs and FCVs, ARB should consider increasing the range-based credit cap. Currently, range-based credits are capped at 1.1 for TZEVs and 4.0 for ZEVs.

Given the wide range of ZEVs and PHEVs that automakers either already offer or plan to offer over the next few years, **the most important barrier to commercialization is consumer acceptance, which cannot be driven without a solid foundation of complementary and necessary measures – incentives, infrastructure, fuel price reduction and simplification, and consumer awareness.** While we appreciate the sincere work of the Governor's office, the legislature, ARB, and other state agencies, the current suite of complementary measures are simply not sufficient nor reliable enough to support the desired growth and compliance with ZEV requirements. Outside of California, the need for market-facing policies is even more pronounced.

In Attachment 1, we provide a detailed discussion on the ZEV, PM, and GHG.

Again, we appreciate the hard work by ARB staff in developing the ACC MTR, and look forward to working with ARB and your staff in the coming years. Please feel free to contact me if you or your staff have any questions or need additional information.

Sincerely,



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Attachments