

March 24, 2017

FCA Comments submitted to:

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

Re: FCA Comments on California Air Resources Board Advanced Clean Cars Mid-Term Review

Dear Chair Nichols and Board Members:

FCA US LLC (FCA) submits the following summary comments to the California Air Resources Board Advanced Clean Cars Mid-Term Review (ACC MTR)¹. In addition to these comments, FCA helped develop and supports the comments submitted by the Alliance of Automobile Manufacturers (Alliance) which provides more detailed discussion of specific issues related to the ACC MTR.

FCA supported the 2012 finalization of the California Air Resources Board Advanced Clean Cars (ACC) suite of regulations aimed at reducing criteria pollutants and greenhouse gas emissions, and further commercializing electric vehicles. FCA was an active participant in the development of these regulations and worked in coordination with our industry colleagues through the Alliance. Central to the support of ACC was the expressed intent to coordinate the development of these regulations with similar concurrent efforts at the US EPA and NHTSA. All stakeholders, including FCA, shared the goal of achieving harmonized regulations amongst the three agencies. Harmonization helps achieve emission reductions at lower costs for consumers by allowing manufacturers to produce a single fleet of vehicles that comply with the multitude of US National and State regulations.

Due to the long time horizon of the regulations promulgated by California and its Federal partners, all stakeholders agreed to establish a coordinated series of mid-term reviews to reassess the technology and market assumptions used to set the standards through 2025. FCA supports ARB's commitment to conduct this ACC MTR and the expressed intention throughout the ACC MTR to continue to remain engaged with Federal agencies.

FCA has invested significant resources into developing and marketing advanced emissions reducing technologies and continuing to improve our fleet average greenhouse gas emissions. FCA has also invested heavily into developing electrified vehicle powertrains and is in process of launching the all-new Chrysler Pacifica Hybrid, the first plug-in electric minivan for the US market. FCA needs to balance the goals of emissions improvements with the evolving requirements of our customers, including affordability. Today's new car shoppers can choose from an unprecedented variety of efficient vehicles, including a wide range of electric cars. Yet lingering challenges with mainstream consumer adoption, many of which are highlighted throughout staff's ACC MTR report, have resulted in lower than expected

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>

sales of efficient models, including electric cars. FCA believes that many of the discussions related to the complex issue of customer acceptance remain inconclusive throughout the ACC MTR and warrant further study by staff. Producing and offering technology for sale will not result in cleaner air if customers do not select the technology in their next purchase. Understanding the diverse and complicated process by which consumers value advanced emissions technology is critical to achieving success with any of the regulatory programs in place today.

In general, FCA provides the following comments to the ACC MTR:

Control of Greenhouse Gases for 2022-2025 –

In 2012, FCA supported the extension of ARB, EPA and NHTSA National Program for controlling greenhouse gas emissions and improving fuel economy of light-duty vehicles for MY 2017-2025, commonly referred to as “One National Program” (ONP). FCA’s support for ONP was predicated upon the agencies’ inclusion of a coordinated Midterm Evaluation that would reassess the underlying assumptions used to establish the MY 2017-2025 standards. FCA, both individually and in coordination with the Alliance, was an active participant during the development of the mid-term reviews and appreciates the opportunity on various occasions to meet with ARB staff. Our goal remains to provide meaningful insight into technical and market issues in order to help arrive at a fully informed decision on the appropriateness of future standards.

ARB staff are recommending that the 2022-2025 light-duty greenhouse gas emission standards remain appropriate and have aligned their conclusion with the January 2017 EPA Final Determination. FCA maintains that there are significant concerns with EPA’s analysis, notwithstanding the lack of coordinated conclusion from NHTSA, and had requested EPA to reconsider their decision and reengage with NHTSA to continue the mid-term review process.

EPA announced their intention to reconsider the January 2017 Final Determination and to coordinate with NHTSA² in a continuing study of key assumptions. FCA is committed to supporting the ongoing Mid-Term Review process and looks forward to ARB’s full engagement in this continuing, collaborative analysis.

FCA had provided extensive comments to the Draft Technical Assessment Report³ (Draft TAR) and the subsequent Proposed Determination⁴ released by EPA. Key points are summarized as follows.

² 82 FR 14671, March 22, 2017

³ FCA Comments on Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025 (Docket ID: EPA-HQ-OAR-2015-0827)

⁴ FCA Comments on EPA Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation (Docket ID: EPA-HQ-OAR-2015-0827)

- **Compliance with near-term fleet GHG standards are becoming more challenging** - Analysis of early 2016 model year data is already indicating a closing compliance gap with near-term standards with many OEMs no longer achieving compliance in 2016, thus relying on banked credits. The notion that manufacturers are far outpacing standards may no longer be true.
- **Need more than advanced conventional technology** - Today less than 4 percent of vehicles meet 2021MY targets and no diesel or gasoline powered (non-hybrid) vehicles meet 2025 standards. Assuming the fleet could average 2025 targets in less than 8 years primarily with improved combustion technology is inconsistent with FCA's assessment of technology effectiveness and outlook for consumer demand. The ACC MTR provides no additional supporting evidence than was presented in the Draft TAR.
- **Unproven technologies** - FCA is concerned about the assumed high penetration of unproven advanced gasoline technologies applied across a diverse range of cars and trucks at high volumes with limited remaining timeframe to 2025.
- **Underestimating the level of electrification** - The FCA Draft TAR comments, supported by detailed analysis⁵, maintains that the Draft TAR has significantly underestimated the level of electrification needed to comply with standards through 2025. This results in a gross underestimation of compliance costs and lacks adequate discussion regarding the wide range of challenges with deploying higher levels of electrification, including customer acceptance, charging infrastructure and incentives.
- **Modeling outputs do not match third party analyses** - FCA has identified many issues with the Agency models that need improvement. FCA maintains discrepancies exist between the output of agency models and internal predictions and even third party external analysis. In addition, the current suite of models fails to account for customer effects such as the impact of cost on sales and elasticity of the overall market. ACC MTR includes no additional modeling insight.

FCA believes that there are many questions from the Draft TAR which warrant continued assessment, especially with regards to the core questions of consumer acceptance and future technology pathways. FCA delivers the same message today to the CARB ACC MTR report for GHG. It is the opinion of FCA that the report does not adequately support the appropriateness of the 2022-2025 GHG standards and more study is needed by all stakeholders. The determination that the standards are appropriate through 2025 is generally premature and warrants further analysis. We look forward to continuing dialogue and provide further technical assessments to ensure that customer acceptance and technology pathways are fully considered.

⁵ Novation Analytics. "Technology Effectiveness – Phase II". September 20, 2016

Zero-Emission Vehicle Mandate

FCA remains concerned that even with the expanded range of available electric vehicles, broad market adoption beyond “early adopters” remains challenging and does not appear on pace to meet the projected sales volumes required to comply with the 2025 mandate, especially in ZEV States outside of California. Achieving mainstream adoption of electric vehicles must explore concerns raised by customers regarding the perception of compromise and challenges regarding range, refueling times, energy cost, packaging and performance. Interest in the technology is growing, but actual purchases remain low. Complimentary measures such as incentives and infrastructure, both cited by staff within the ACC MTR as being critical to the success of electric vehicle adoption, remain open issues clouded with uncertainty.

The following are a summary of high level points from FCA:

- **Incentives are critical to growth, but future availability is clouded** - Staff repeatedly states the importance of incentives and the need to expand and accelerate their availability while at the same time stating that future availability of incentives is questionable. No analysis was provided to model viability of market growth and manufacturer compliance in an environment without incentives. Recent eliminations of incentives in certain US markets have led to sales drops for EVs of over 80%.
- **Only half the necessary charging infrastructure is projected to be in place by 2025** - Staff again spent considerable effort to discuss the importance of infrastructure, but point out that the latest available research predicts that only half the necessary charging infrastructure will be in place by 2025. No analysis was provided discussing the viability of electric sales growth if future consumers are left to deal with a charging infrastructure gap.
- **Reaching mainstream consumers remains challenging** - Expanding beyond the existing pool of “early adopters” is unclear, but will take efforts from all stakeholders.
- **Availability and variety of EVs is expanding rapidly, but sales remain low** - Many manufacturers, including FCA, have invested significant resources to expand the number and variety of available EVs available in the market. California consumers have access to dozens of plug-in electric vehicles at a variety of price points and with a range of utility. Industry has delivered the vehicles that CARB and the Board have sought, yet sales remain stubbornly low.
- **The most important barrier to ZEV commercialization is consumer acceptance** - While we do not know what will ultimately drive consumer acceptance, it cannot be driven without a solid foundation of complementary measures – incentives, infrastructure, fuel price reduction and simplification, and consumer awareness.

The Alliance comments, supported by FCA, include a series of recommendations that both help to achieve broader adoption of electrification, and aid in compliance with a challenging mandate. FCA appreciates the efforts of California and several of the other ZEV States in coordinating with industry to explore best practices aimed at building support for electrified vehicles. Many of these efforts are focused on exploring the needs of consumers and helping identify ways to build awareness and interest in the technology. All stakeholders in the process have identified the need for sustainable, positive market-facing policies. FCA looks forward to continue to be a constructive partner in this process.

1mg/mile Particulate Matter control

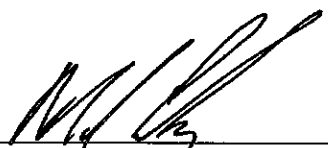
FCA finds that staff's recommendation to maintain the existing phase-in timing for control of PM at 1mg/mile starting in model year 2025 is appropriate. Open issues remain regarding accuracy of measurement at this extremely low level of emissions. FCA and the Alliance will request an additional test program to survey measurement capabilities.

- **Maintaining the existing phase-in is appropriate** - FCA maintains that the existing phase-in is appropriate and will allow time for OEMs to further develop combustion and control measures to meet super ultra-low PM emissions.
- **Accuracy of measuring 1mg/mile remains a technical challenge** - FCA has invested extensively into technology to measure low levels of PM for production certification of new vehicles. Challenges with robust measurement and background concerns at extreme low levels of PM remain open issues and warrant a coordinated test program to confirm measurement capability.

Conclusion

FCA appreciates California's commitment to coordinated, harmonized standards that are aligned with its Federal partners. Harmonization facilitates development and deployment of cost-efficient solutions to achieve clean air and climate objectives at lower costs for both Californians and drivers across the US. FCA appreciates having had the opportunity to engage with ARB staff during the development of the ACC MTR and looks forward to continuing dialogue.

Sincerely,



Mark Chernoby
Chief Technical Compliance Officer
FCA US LLC

