ENVIRONMENTAL DEFENSE FUND
STATEMENT ON

ADVANCED CLEAN CAR STANDARDS FOR MODEL YEAR 2022-2025 AND BEYOND

Protecting Human Health and the Environment

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On behalf of Environmental Defense Fund and our more than two million members nationwide and about 600,000 here in California, I sincerely thank you for the opportunity to speak today on California's Advanced Clean Car program. For purposes of background, I retired from the Environmental Protection Agency (EPA) in 2012 and while at EPA, I was the senior executive leading the development of EPA's light-duty vehicle greenhouse gas (GHG) programs for MY2012-2025 working with states, auto manufacturers, an array of technical experts, and numerous stakeholders.

California's half-century of time tested clean air leadership has had far reaching benefits within the state, across the nation, and around the world. California's programs have stimulated the development of many advanced technologies that have enabled significant reductions in criteria and greenhouse gas pollutants across the national fleet. The Advanced Clean Car program is no different. The program was the first program in the U.S. to regulate carbon dioxide (CO2) from passenger cars and served as the blueprint for the historic national program to address GHG emissions from cars and light-duty trucks. I want to give our views on two topics today: the Mid-Term Review of the 2022-2025 GHG standards and post-2025 Advanced Clean Car standards.

Mid-Term Review

In making its Final Determination this past January, EPA considered over 200,000 public comments on the joint CARB/EPA/NHTSA Draft Technical Assessment Report (TAR) as well as extensive additional studies conducted by the Agency and others. As a result, EPA updated technology costs, effectiveness, modeling, consumer impacts, and other aspects of its analyses supporting the Final Determination.[1] The robust analyses supporting the Determination are comprehensive, based on the most current data available, and definitively confirm that the model year 2022-2025 GHG standards are indeed appropriate. In fact, the analysis shows per vehicle compliance costs to be significantly lower than those projected in the final rule and slightly less than those included in the Draft TAR.[2] ($252 lower for cars and $197 lower for trucks as compared to the 2012 final rule.) EPA's extensive technical assessment spanned over a year and provided multiple opportunities for public comment, engagement and input.

The Final Determination continues to show, as did the TAR, that auto manufacturers and suppliers are developing and deploying fuel efficient technologies at a much faster rate than was forecasted in the 2012 final rule. The auto industry as a whole has exceeded the fuel economy and GHG standards in each of the last four years (i.e., model years 2012-2015). These improvements have come while other metrics of vehicle performance have continued to improve, including acceleration times and durability.[3]

In addition to the industry as a whole exceeding today's standards, new technologies are being utilized that allow a number of individual vehicle models to meet standards all the way out to 2025.[4] Today there are over 100 car, SUV, and pickup versions on the market that already meet 2020 or later standards.[5] Furthermore, 19 of 20 manufacturers (representing 99% of MY2015 sales) carried a positive credit balance into MY2016. This has occurred while the industry has rebounded, adding nearly 700,000 direct jobs since the recession low point in mid 2009 – and these jobs support several million indirect jobs throughout the economy.[6] Vehicle exports are up and sales are at an all-time high.[7] As many foreign nations adopt standards that will drive improved passenger vehicle efficiency and pollution reductions around the world, the standards ensure U.S. automakers are positioned for continued global competitiveness.

While EPA concluded that the MY2022-2025 standards will be met with advances in gasoline vehicle technologies (such as engine and transmission improvements, light-weighting, and better aerodynamics), several new technologies were included in the Draft TAR analysis that were neither foreseen nor included in the analysis supporting the 2017-2025 final rule. Examples of these technologies include the application of direct injection Atkinson Cycle engines to non-hybrids and greater penetration of continuously variable transmissions (CVT).[8] The Determination shows that these additional technologies will contribute to lower cost compliance pathways.

Auto manufacturers have steadily innovated and improved vehicle performance for decades.[9] All evidence suggests that these trends will continue and that they will continue to develop cost effective fuel-efficient technologies. As a result, emerging technologies not accounted for in the Agency's analyses will continue to enter the marketplace, making the standards even more achievable. Variable compression ratio engines, dynamic cylinder deactivation, and P2 configuration hybrids are examples of technologies that are currently under development that have the potential to reduce GHG emissions in the 2020-2025 timeframe, while delivering valuable savings to consumers.[10]

The Final Determination and the rigorous technical assessments it is based on firmly and convincingly provide the foundation to reaffirm the MY2022-2025 GHG standards. Indeed, more protective standards could have been justified based on the modeling results in the record. However, EDF believes the better approach is to strengthen the standards for MY2026 and beyond. We agree and support the staff's conclusion that the current MY2022-2025 standards remain appropriate. We also agree with the staff's assessment that the current federal standards will result in equivalent or greater benefits than originally projected for California. Given the substantial and compelling record, we recommend that the Board 1) conclude that changes to the national or California GHG standards are not appropriate and 2) reaffirm California's commitment to the current federal standards for MY2022-2025.

As you all are aware, EPA announced on March 15, 2017, in response to pressure from the auto industry, that it intends to reconsider the final determination. While this action could create uncertainty and slow innovation, it need not deter the Board from moving ahead and reaffirming its commitment to the existing MY 2022-2025 standards based on the compelling, fact based public record that has been established. In addition, two major vehicle manufacturers support retaining the current standards.[11] California can always revisit its decision if EPA changes the stringency of the national standards.

What's Possible in the Post-2025 Timeframe

Reaffirming the robust Phase 2 program will deliver cleaner cars and cleaner air to hard hit American communities. However, additional greenhouse gas reductions from the light-duty vehicle sector post-2025 will be critical to secure long-term reductions in emissions of climate-destabilizing pollutants both nationally and in California. To inform EDF's thinking about possible reductions beyond 2025, we sponsored a study that examined what CO_2 reductions may be possible in 2030 considering conventional and ZEV technologies, vehicle cost, and fuel savings.[12] In addition, the report also explores several policy considerations that will be important in developing a 2030 GHG program. The report does not recommend adoption of specific CO_2 emission standards for 2026 and beyond or make policy recommendations. It is our hope that the study will help initiate, inform, and facilitate future analysis and stakeholder discussions during the development of the next round of GHG standards for cars. Additional technical and economic analyses, and careful consideration of input from all interested stakeholders are necessary prior to adoption of new emissions performance standards for MY2030. Tom Cackette, one of the authors, will provide the Board with a separate presentation on the specific details of the report.

The major findings from the report include:

1. There are underutilized conventional technologies available to further reduce CO2 emissions in the post-2025 timeframe; for many manufacturers, the CO2 reductions are roughly limited to about 10 to 30 grams per mile.

2. The current number of affordable, mass market ZEV models will likely triple by 2020 compared to 2016 and ZEVs may account for 15 to 25% of some manufacturers' vehicle sales by 2025.

3. The cost of lithium ion batteries is declining rapidly; 100 mile BEVs could be cost competitive with a conventional technology vehicle by 2030.

4. Widespread introduction of ZEV models is possible by 2030.

5. The availability of cost competitive ZEV technologies opens a technological pathway for all OEMs to achieve very large CO2 emission reductions by 2030.

6. Cost effective CO2 reductions up to 90 grams per mile are technologically feasible and fuel savings will offset vehicle price by a factor of nearly three; the payback period for all scenarios is about 5 years.

The next phase of Advanced Clean Car requirements offers the opportunity to achieve vital protections for human health and the environment including advances in technology consistent with California's 2050 climate protection goals. The findings summarized above provide strong technological, economic, public health and environmental reasons for initiating the work necessary to begin defining the post-2025 clean car and ZEV programs through data driven discussions with all stakeholders.

In conclusion, Environmental Defense Fund recommends the Board:

1. Affirm California's commitment to the current MY2022-2025 GHG standards based on the ARB staff report, the joint ARB/EPA/NHTSA TAR, EPA's Final Determination, and the robust and compelling record, and

2. Direct the staff to begin work on strengthening the GHG and ZEV program for MY2026-2030 including convening technical workshops and stakeholder-based discussions.

Thank you.

[1] EPA, "Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation," (November 2016); EPA, "Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation: Technical Support Document" (November 2016).

[2] EPA, "Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation," (November 2016) at ES-4.

[3] EPA, "Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation," (November 2016).

[4] EPA, "Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends Report 1975-2016," (2016). *See* https://www.epa.gov/fueleconomy/trends-report.

[5] EPA website at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas-ghg#proposed=determination

[6] BlueGreen Alliance, "Backgrounder: Sound Vehicle Standards & Policies Drive Strong Job Growth, *A summary of research and analysis of the impact of CAFE standards on job growth in the United States*." (June 2016). See https://www.bluegreenalliance.org/resources/sound-vehicle-standards-policies-drive-strong-job-growth/ (last accessed March 10, 2017).

[7] http://www.latimes.com/business/autos/la-fi-hy-auto-sales-20170104-story.html

[8] Proposed Determination at ES-3, ES-4 and pages 4, 5 and 24.

[9] Comments by Environmental Defense Fund on the 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 (Sept. 26, 2016) at 9 and 10.

[10] U.S. Environmental Protection Agency, National Highway Traffic Safety Administration, California Air Resources Board, "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," (July 2016) at 5-1.

[11] Honda and Volkswagen comments submitted to Docket EPA-HQ-OAR-2015-0827 (September 2016).

[12] Cackette and Rykowski, "Technical Assessment of CO_2 Emission Reductions for Passenger Vehicles in the Post-2025 Timeframe," February 2017.