U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE

December 8, 2017

TO: Members, Subcommittee on Environment and the Subcommittee on Digital Commerce and Consumer Protection

FROM: Committee Majority Staff

RE: Joint hearing entitled "Update on the Corporate Average Fuel Economy Program (CAFE) and Greenhouse Gas Emissions Standards for Motor Vehicles."

I. INTRODUCTION

The Subcommittee on Environment and the Subcommittee on Digital Commerce and Consumer Protection will hold a hearing on Tuesday, December 12, 2017, at 10:00 a.m. in 2123 Rayburn House Office Building. The joint hearing is entitled "Update on the Corporate Average Fuel Economy Program (CAFE) and Greenhouse Gas Emissions Standards for Motor Vehicles."

II. WITNESSES

- Mitch Bainwol, President and CEO, Alliance of Automobile Manufacturers;
- John Bozzella, President and CEO, Global Automakers;
- Forrest McConnell, III, President, McConnell Honda & Acura, Montgomery, Alabama on behalf of the National Automobile Dealers Association; and
- Dave Cooke, Ph.D, Senior Vehicle Analyst, Union of Concerned Scientists.

III. BACKGROUND

A. CAFE History

In 1975, Congress passed the Energy Policy and Conservation Act (EPCA), which established the Corporate Average Fuel Economy (CAFE) program for passenger cars and light trucks sold in the United States.[1] Under EPCA, the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) was authorized to administer the CAFE program.[2] The purpose of the CAFE program is to "reduce energy consumption by increasing the fuel economy of cars and light trucks."[3] NHTSA's authority over the program included the authority to amend fuel economy standards set forth in the statute and to set new standards for

[1] https://www.transportation.gov/mission/sustainability/corporate-average-fuel-economy-cafe-standards
[2] https://www.govtrack.us/congress/bills/94/s622/text
[3] https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy

passenger cars and light trucks after 1985.[4] In changing or setting new fuel economy standards, EPCA directed NHTSA to set the fuel standard at the "maximum feasible average fuel economy level" and consider the following factors in its determination: technological feasibility, economic practicability, the effect of other Federal motor vehicle standards on fuel economy, and the need of U.S. to conserve energy.[5] Additionally, EPCA authorized the Environmental Protection Agency (EPA) to calculate and test manufacturers' compliance with fuel economy standards across vehicle fleets.[6]

A credit banking system was introduced under EPCA as a compliance mechanism for manufacturers to meet mandated standards.[7] CAFE credits were created to help manufacturers offset their deficiencies or shortfalls in meeting the fuel economy standard for a particular fleet category.[8] Credits were earned by manufacturers for exceeding fuel economy standards for a specific vehicle fleet in a given model year.[9] Such credits could be transferred forward for up to three consecutive model years and applied to the fleet category in which the credit was earned if the manufacturer fell short of meeting the fuel economy standard.[10]

B. Energy Independence and Security Act

Following the enactment of EPCA, CAFE standards remained virtually unchanged from 1985 to 2006 due to various political and economic factors.[11] However, in response to a rapid rise in gasoline prices, global climate concerns, and a push for greater energy security in the U.S., Congress passed the Energy Independence and Security Act (EISA). EISA increased fuel economy standards and amended elements of the CAFE program.[12]

EISA established a new national fuel economy target of 35 mpg (miles per gallon) by 2020 for both passenger cars and light trucks, and established a CAFE program for medium and heavy-duty trucks.[13] EISA also changed how the average fuel economy would be calculated among auto manufacturers' fleets. Specifically, instead of using one average miles per gallon standard for all cars and light trucks, the average fuel economy would be calculated based on each vehicle's attributes, known as the "footprint standard."[14] The change to a size-based standard occurred for safety reasons and was done in an effort to protect domestic manufacturers producing larger vehicles from being disproportionately affected by CAFE standards in comparison to foreign manufacturers that traditionally produced smaller cars.[15] The credit banking system was also modified under EISA. Under the new law, credits could be used by auto manufacturers to trade

[4] https://www.govtrack.us/congress/bills/94/s622/text
[5] *Id.*
[6] *Id.*
[7] *Id.*
[8] http://www.nhtsa.gov/cars/rules/rulings/CAFE/alternativefuels/background.htm
[9] *Id.*
[10] *Id.*
[11] https://spea.indiana.edu/doc/research/working-groups/fuel-economy-policy-022016.pdf
[12] *Id.*at 10.
[13] https://www1.eere.energy.gov/manufacturing/tech_assistance/pdfs/crs_report_energy_act_2007.pdf
[14] *Id.*at 9.
[15] http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-13-14.pdf

and transfer between their car and light truck fleets.[16] Additionally, EISA included an extension allowing manufacturers to carry forward credits up to five consecutive model years.[17]

C. Environmental Protection Agency

The Clean Air Act authorized the EPA to establish national standards for air quality and to regulate sources of hazardous air pollutants and other toxins.[18] The 1970 amendments to the Clean Air Act expanded EPA's authority to include the regulation of tailpipe emissions from new automobiles.[19] The first tailpipe emissions standards for cars went into effect in 1975, and since that time, EPA has modified, tightened, and introduced new emissions standards for cars and other classes of vehicles including light-duty and heavy-duty trucks.

In 2007, the Supreme Court affirmed EPA's authority under the Clean Air Act to regulate greenhouse gas emissions from new motor vehicles as air pollutants in *Massachusetts v. EPA*.[20] However, the Court's decision compelled EPA to determine whether greenhouse gases contribute to air pollution and endanger public health or welfare. This finding required EPA to establish emissions standards for new cars. Thus, in 2009, the EPA issued an endangerment finding establishing that greenhouse gas emissions from new automobiles endanger public health and welfare.[21] As a result, the EPA has worked with NHTSA to reduce fuel consumption. Failure to comply with either EPA's greenhouse gas emissions standards or CAFE result in a penalty as high as $37,000 or of $140 per mile per gallon per vehicle respectively.[22]

EPA also has its own credit banking program, but there are significant differences with NHTSA's credit program. EPA's credit program allows manufacturers to earn credits when they produce sales-weighted average fleets with fewer grams of CO2 emissions per mile than the agency's standard.[23] Additionally, EPA established a 5-year credit banking period, but has permitted manufacturers that earned credits between model year 2010 and 2016 to carry those credits forward through model year 2021.[24] There are also no limits on transfers between cars and trucks in each manufacturer's fleet under EPA rules, whereas there are limitations in NHTSA's credit program. Lastly, carryback credits under EPA rules are permitted for a 3-year period.[25]

D. California Air Resources Board

California's state legislature established the California Air Resources Board (CARB) in the late 1960s to address California's air pollution problem.[26] Seeking greater federal action on fuel economy standards in the late nineties and early 2000s, the California legislature passed a law in

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[16] http://www.theicct.org/sites/default/files/publications/ICCTbriefing_CAFE-credits_20140307.pdf
[17] http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-13-14.pdf
[18] http://www.meca.org/regulation/the-clean-air-act
[19] *Id.*
[20] *Massachusetts, et al. v. Environmental Protection Agency et al.*, 549 U.S. 497 (2007).
[21] https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean
[22] http://www.rff.org/blog/2016/nearly-tripled-cafe-fine-highlights-differences-epa-and-nhtsa-rules
[23] http://www.rff.org/files/document/file/RFF-Resources-190_USVehicleMarketCreditTrading_0.pdf
[24] *Id.* at 3.
[25] *Id.*
[26] http://www.arb.ca.gov/knowzone/history.htm

2002 limiting greenhouse gas emissions from new motor vehicles sold in the state.[27] This law required CARB to obtain a reduction in greenhouse gas emissions equivalent to approximately 36 mpg by model year 2016.[28]

California's law prompted legal challenges contesting the state's authority to implement its own greenhouse gas emission standards separate from EPA's federal standard.[29] However, a federal court affirmed that California had authority under the Clean Air Act to set its own tailpipe emissions standards for motor vehicles if it met certain conditions and obtained a waiver from EPA.[30] Therefore, although denied a waiver in 2008, California was granted a waiver in 2009 from EPA for its greenhouse gas emissions standards.[31]

Additionally, in a separate effort to improve air quality and reduce vehicle emissions to zero, California instituted a Zero Emission Vehicle (ZEV) mandate in 1990.[32] Under this mandate, auto manufacturers are required to produce for sale a certain percentage of ZEVs in the state.[33] ZEVs include cars such as plug-in hybrid electric vehicles, fuel cell vehicles, and battery electric vehicles.[34] Over time, CARB has amended the mandate to increase the percentage of ZEVs that must be sold by automakers.[35] And, by 2025, 15 percent of a manufacturers' new vehicle sales must be ZEVs.[36] Following California's lead, the following nine other states adopted the ZEV mandate: Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont.[37]

E. One National Program

In 2009, President Obama announced a National Fuel Efficiency Policy that proposed further modifications to the average fuel economy standard for new cars and light trucks sold in the United States.[38] Under the new national policy, known as the National Program, the Obama Administration proposed new fuel economy standards covering model years 2012 to 2016 that would increase to 35.5 mpg by 2016.[39] The National Program was intended to address growing global climate concerns, reduce oil consumption and, importantly, was intended to establish harmonized national standards.[40] As a result, the National Program was intended to establish a consistent national standard across the following programs:

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[27] https://spea.indiana.edu/doc/research/working-groups/fuel-economy-policy-022016.pdf
[28] *Id.* at 10.
[29] *Id.*
[30] *Id.*
[31] *Id.*
[32] https://www.arb.ca.gov/msprog/zevprog/zevregs/zevregs.htm#background
[33] *Id.*
[34] http://www.zevfacts.com/zev-mandate.html
[35] *Id.*
[36] https://www.arb.ca.gov/msprog/zevprog/zevregs/1962.2_Clean.pdf
[37] http://www.zevfacts.com/zev-mandate.html
[38] https://obamawhitehouse.archives.gov/the-press-office/president-obama-announces-national-fuel-efficiency-policy
[39] *Id.*
[40] *Id.*; *see also* https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-model-year-2012-2016-light-duty-vehicle

- NHTSA: CAFE
- EPA: Greenhouse Gas Emissions
- CARB

Such a uniform policy on fuel economy and greenhouse gas emissions was expected to help auto manufacturers "build a single light-duty national fleet that satisfies all requirements under" the Federal programs, as well as applicable state standards.[41] California also committed to accept vehicles in compliance with EPA emissions standards under the National Program for model years 2012 to 2016 to be compliant with its own state regulations[42] and later extended that commitment to model year 2017 to 2025 vehicles.

In 2010, NHTSA and EPA issued a joint final rule establishing the first phase of the National Program. Under the final rule, NHTSA set new average fuel economy standards for passenger cars and light trucks manufactured in model years 2012 through 2016.[43] These new standards required vehicles to meet an estimated combined average of 34.1 mpg in model year 2016, which represented, "an average annual increase of 4.3 percent…from model year 2011."[44] When combined with the EPA's greenhouse gas emission standard, the expected fuel economy increase would be 35.5 mpg for model year 2016 vehicles.[45]

Following the publication of the 2010 joint final rule, President Obama called on NHTSA and EPA to extend the National Program to model years 2017 through 2025.[46] In response, NHTSA and EPA issued another set of joint final rules in October 2012.[47] The rules on fuel economy included two phases: the first phase applied to vehicle model years 2017 through 2021, and the second phase applied to vehicle model years 2022 through 2025.[48] The first phase established a finalized combined fleet-wide fuel economy standard of 40.3-41.0 mpg by model year 2021.[49] The second phase projected a fuel economy standard of 48.7-49.7 mpg in model year 2025.[50] The second phase consisted of only "augural standards" or NHTSA's "best estimate, based on the information available to the agency, of what the levels of stringency might be maximally feasible in those years."[51] Due to statutory requirements, NHTSA is not permitted to set average fuel economy standards for more than five years at a time.[52] When combined with EPA's

[41] https://obamawhitehouse.archives.gov/the-press-office/president-obama-announces-national-fuel-efficiency-policy
[42] http://www.arb.ca.gov/regact/2010/ghgpv10/res1015.pdf
[43] *Id.*
[44] https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-model-year-2012-2016-light-duty-vehicle
[45] https://www3.epa.gov/otaq/climate/regulations/420f10014.pdf
[46] https://obamawhitehouse.archives.gov/the-press-office/president-obama-announces-national-fuel-efficiency-policy
[47] https://www.gpo.gov/fdsys/pkg/FR-2012-10-15/pdf/2012-21972.pdf
[48] *Id.*at 2.
[49] *Id.*at 8.
[50] *Id.*
[51] *Id.* at 410.
[52] 49 U.S.C. 32902

greenhouse gas emissions standards, the projected average industry fleet-wide fuel economy level would be equivalent to 54.5 mpg.[53]

Prior to NHTSA and EPA issuing the October 2012 joint final rules, in January, CARB approved a package of new emissions rules, known as the "Advanced Clean Car" program.[54] This program applied to cars and light trucks, model years 2017 through 2025, and combined "the control of smog, soot causing pollutants, and greenhouse emissions into a single, coordinated package of requirements," for cars sold in California.[55]

F. Compliance Flexibility Mechanisms

The 2012 joint final rules included a set of compliance flexibility mechanisms for auto manufacturers to use in order to meet new standards for model years 2022 through 2025.[56] Compliance flexibility mechanisms included additional credits to manufacturers for improving the efficiency of a vehicle's air conditioning system; applying greater weight to electric vehicles, plug-in hybrid electric vehicles, fuel cell vehicles, and natural gas vehicles in the calculation of fleet average compliance; offering additional credits to automakers using "game-changing" technologies in full-size pickup trucks that reduce greenhouse gas emissions; and offering "off-cycle" credits to manufacturers using technologies that achieve tailpipe emissions reductions in the real world but are not adequately captured in testing.[57]

G. Medium Duty and Heavy Duty Trucks

In addition to establishing a National Program for the regulation of fuel economy and greenhouse gas emissions for passenger cars and light trucks, NHTSA and EPA also proposed a National Program to reduce fuel consumption and greenhouse gas emissions in the medium and heavy-duty highway vehicle sector.[58] Medium and heavy duty vehicles include pick-up, garbage, and delivery trucks, buses, vans, and tractors, known as big rigs and semi-trucks.[59]

In 2012, NHTSA and EPA issued a joint final rule on fuel economy and greenhouse gas emissions standards covering medium and heavy-duty vehicles model years 2014 through 2018.[60] The new standards require trucks to achieve an approximate 10 to 20 percent reduction in fuel consumption and greenhouse gas emissions by model year 2018 depending on the design and purpose of the vehicle.[61]

In June 2015, NHTSA and EPA issued a notice of proposed rulemaking for Phase 2 of the fuel efficiency and greenhouse gas emission program for medium and heavy-duty trucks.[62] Phase 2 of the program covers vehicles model years 2018 through 2027 and is intended to "further reduce

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[53] https://www.gpo.gov/fdsys/pkg/FR-2012-10-15/pdf/2012-21972.pdf
[54] http://www.arb.ca.gov/newsrel/newsrelease.php?id=282
[55] http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf
[56] https://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf
[57] *Id*. at 6.
[58] http://www.nhtsa.gov/fuel-economy
[59] *Id*.
[60] *Id*.
[61] *Id*.
[62] Phase 2 available at: http://www.nhtsa.gov/fuel-economy

fuel consumption and carbon pollution through performance-based standards."[63] Phase 2 also regulates trailers for the first time. In August 2016, NHTSA and EPA released joint final rules for Phase 2 of the fuel efficiency and greenhouse gas emissions program for medium and heavy-duty trucks.[64] The new standards are expected to reduce greenhouse gas emissions and fuel consumption by 10 percent.[65]

H. Midterm Evaluation

When NHTSA and EPA issued joint final rules in October 2012 for cars and light trucks model years 2017 through 2025, both agencies committed to conducting a Midterm Evaluation beginning in 2016.[66] Given that fuel economy and greenhouse gas emissions standards were developed based on assumptions about future market conditions, and NHTSA's statutory obligation to "conduct a de novo rulemaking in order to establish final standards for [model years] 2022-2025," the Midterm Evaluation was intended to be an opportunity to assess developments in technology, consumer acceptance and marketplace penetration of fuel efficient technologies, the effects of vehicle mass and size on safety, fuel price trends, and other factors that impact the suitability of standards for future years.[67]

The Midterm Evaluation consists of a three-step process: 1) a June 2016 Draft Technical Assessment Report (Draft TAR) issued jointly by NHTSA, EPA, and CARB examining the relevancy of the 2022 through 2025 standards; 2) a notice of proposed rulemaking from NHTSA on CAFE standards for 2022 through 2025 vehicles, and a proposed determination from EPA on whether its greenhouse gas emissions standards are appropriate for those model year vehicles; and 3) a final rule and determination from both agencies on those standards, which were expected to be released in April 2018.[68]

In July 2016, NHTSA and EPA, in coordination with CARB, issued the Draft TAR. The Draft TAR did not present alternatives to EPA's greenhouse gas emission standards or NHTSA's augural standards proposed for vehicles model years 2022 through 2025, but rather examined a range of technical issues, including the technologies available, marketplace trends, fleet projections, consumer acceptance, effects on vehicle safety, and other factors that may impact manufacturers' ability to comply with the future standards.[69]

In conducting independent analyses of those issues, both NHTSA and EPA reached similar conclusions finding that: 1) a wide range of technologies exist for manufacturers to meet the model years 2022 through 2025 standards at costs similar or lower than those projected in the 2012 rule; 2) advanced gasoline vehicle technologies will continue to be the predominant technologies; and

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[63] *Id.*
[64] https://www.nhtsa.gov/press-releases/epa-and-dot-finalize-greenhouse-gas-and-fuel-efficiency-standards-heavy-duty-trucks
[65] *Id.*
[66] Draft TAR available at: https://www.nhtsa.gov/corporate-average-fuel-economy/light-duty-cafe-midterm-evaluation
[67] *Id.*
[68] *Id.*
[69] *Id.*

3) the proposed mix of cars and trucks in a manufacturer's fleet reflects updated consumer trends.[70] The agencies also noted in the Draft TAR that on average, the auto industry has been "over-complying" with the first several years of the National Program.[71] However, NHTSA and EPA did find that the projection of 54.5 mpg for the fleet average by model year 2025 would likely not be reached if current market trends continue and instead may be closer to 50.8 mpg.[72]

The Draft TAR was open for public comment until September 26, 2016. EPA and NHTSA were expected to issue a determination and proposed rulemaking, respectively, as to the appropriateness of the model years 2022 through 2025 standards no later than April 1, 2018. However, on January 13, 2017, just days before President Obama left office, the EPA issued its determination that no major changes are necessary in greenhouse gas standards.[73] On March 15, 2017, EPA Administrator Scott Pruitt and DOT Secretary Elaine Chao announced that EPA intends to reconsider the final determination issued by the last administration.[74] According to Administrator Pruitt, "[EPA] will work with…DOT to take a fresh look to determine if [the last administration's] approach is realistic" and, in doing so, will "ensure that th[e] national program is good for consumers and good for the environment."[75] In accordance with the Midterm Evaluation schedule, EPA will make a new determination no later than April 1, 2018.

IV. ISSUES

The following issues will be examined at the hearing:

- NHTSA's CAFE program and EPA's greenhouse gas standards' impact on economic growth, innovation, product development and job creation within the auto industry.
- How fuel economy standards impact vehicle safety, reliability, durability, performance, and stability.
- Consumer demand for and acceptance of fuel efficient vehicles.
- The uniformity and consistency of standards across NHTSA, EPA, and CARB under the National Program.
- The impact of EPA's January 13, 2017 Final Determination on the appropriateness of fuel economy standards for model years 2022 through 2025 on the Midterm Evaluation process and the goal of achieving harmonization.

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[70] *Id.*
[71] *Id.*
[72] *Id.*
[73] https://www.bloomberg.com/news/articles/2017-01-13/epa-defies-automakers-by-keeping-efficiency-standards-intact
[74] https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas
[75] https://www.epa.gov/newsreleases/epa-reexamine-emission-standards-cars-and-light-duty-trucks-model-years-2022-2025

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Melissa Froelich, Mary Martin, Ben Lieberman, or Bijan Koohmaraie of the Committee Staff at (202) 225-2927.