

May 4, 2018

TO: Members, Subcommittee on Environment

FROM: Committee Majority Staff

RE: Hearing entitled “Sharing the Road: Policy Implications of Electric and Conventional Vehicles in the Years Ahead”

I. INTRODUCTION

The Subcommittee on Environment will hold a hearing on Tuesday, May 8, 2018, at 10:15 a.m. in 2322 Rayburn House Office Building. The hearing is entitled “Sharing the Road: Policy Implications of Electric and Conventional Vehicles in the Years Ahead.”

II. WITNESSES

- **Megan McKernan**, Manager, Automotive Engineering, Automobile Club of Southern California, on behalf of AAA;
- **Mitch Bainwol**, President and CEO, Alliance of Automobile Manufacturers;
- **Genevieve Cullen**, President, Electric Drive Transportation Association;
- **Bob Dinneen**, President and CEO, Renewable Fuels Association;
- **Geisha Williams**, President and CEO, Pacific Gas and Electric Company, on behalf of the Edison Electric Institute;
- **Frank Macchiarola**, Group Director, Downstream and Industry Operations, American Petroleum Institute;
- **David Reichmuth**, Senior Engineer, Clean Vehicles Program, Union of Concerned Scientists; and
- **Dylan Remley**, Senior Vice President, Global Partners LP, on behalf of the National Association of Convenience Stores and Society of Gasoline Marketers of America.

III. BACKGROUND

The internal combustion engine running on petroleum and agriculturally-derived liquid fuels has dominated personal transportation for decades and will remain the most common passenger vehicle type through 2050, according to the Energy Information Administration.¹ However, electrification and in particular battery electric vehicles (EVs) will make substantial inroads and reach a projected 12 percent of new passenger vehicle sales by 2050.² Market penetration of plug-in-hybrids and hybrids are also expected to increase.³ Thus, to an unprecedented extent in the history of modern automobiles, exclusively liquid-fueled vehicles will be sharing the road with other options.

Market forces and technological advances explain part of this trend, including gasoline reaching \$3.00 and briefly \$4.00 per gallon at times over the past decade. Federal policy has also played a significant role.⁴ Several regulatory programs have contributed to the electrification trend, such as the Corporate Average Fuel Economy/Greenhouse Gas (CAFE/GHG) standards. Parts of these standards are currently under administrative review.⁵

On the other hand, several fuel and vehicle-related federal programs, like the Renewable Fuel Standard, were designed under the assumption that liquid fuels would continue to predominate and did not envision significant market penetration of EVs. Such policies may no longer be reflective of evolving market conditions.

As a result of these changing trends, the driving public has more choice today than in the past, both with regard to the vehicles themselves as well as the energy sources that power them. A number of factors go into a consumer's decision whether to go electric or stay with conventional, including vehicle sticker price, fuel cost, environmental concerns, and refueling convenience.⁶

One key factor has been termed "range anxiety," the fear that an EV will run out of charge before it can reach the nearest charging facility and thus be stranded. Indeed, it is challenging for the nascent EV charging infrastructure to compete with the existing infrastructure of approximately 150,000 liquid fuel retailers located along the nation's roads and highways. Extending the range of EVs and expanding the EV fueling infrastructure will be critical to their continued growth, as will reducing charging times.

¹ Testimony of John Maples, U.S. Energy Information Administration, before the Subcommittee on Environment, March 7, 2018, at https://www.eia.gov/pressroom/testimonies/maples_03072018.pdf.

² Id. at 7.

³ Id. at 7-8. Natural gas, propane, and fuel cell vehicles are projected to account for about 1 percent of new vehicle sales in 2050.

⁴ Federal and state tax incentives applicable to EVs have also played a role but are not a part of this hearing.

⁵ <https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas>.

⁶ See, AAA Green Car Guide, 2017, at [file:///C:/Users/blieberman/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/OR6K3E2X/2017%20Green-Car-Guide-Fact-Sheet-FINAL%20\(1\).pdf](file:///C:/Users/blieberman/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/OR6K3E2X/2017%20Green-Car-Guide-Fact-Sheet-FINAL%20(1).pdf).

Beyond the issues with charging infrastructure, EVs pose both challenges and opportunities for the nation's electricity system. On the one hand, increased electrification of transportation will undoubtedly add to the demand for electricity. However, according to Dr. John Farrell of the National Renewable Energy Laboratory, "vehicle-to-grid technology makes it possible to store surplus electricity generated from intermittent renewable solar and wind sources in EV batteries during non-peak periods and feed power back to the grid when needed, enhancing grid stability and reducing electricity costs at peak hours."⁷ Thus, EVs take from but can also add to the nation's grid.

Liquid fuel providers are considering how to respond to the increased competition from EVs. So are automakers, many of whom have publicly committed to electrification over the long term but are seeking ways to improve their internal combustion engine vehicles for the near and mid-term. One option, which was the subject of this Subcommittee's April 13th hearing, is to establish a new high octane fuel standard and require automakers to produce new vehicles whose engines are optimized to run on these fuels.⁸

IV. ISSUES

The following issues may be examined at the hearing:

- The reasons for the current growth in EVs and expected future trends in electrification.
- The policy implications of increasing EV market penetration.
- The impact of EVs on fueling infrastructure and on the nation's electrical grid.
- The response of liquid fuel providers and automakers to changing market trends.
- The consumer impacts of changing trends in transportation fuels and vehicles.

V. STAFF CONTACTS

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

⁷ Testimony of John Farrell, National Renewable Energy Laboratory, before the Subcommittee on Environment, March 7, 2018, at <https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas>.

⁸ "High Octane Fuels and High Efficiency Vehicles: Challenges and Opportunities," Subcommittee on Environment, April 13, 2018, at <https://energycommerce.house.gov/hearings/high-octane-fuels-high-efficiency-vehicles-challenges-opportunities/>.