

March 5, 2018

TO: Members, Subcommittee on Environment

FROM: Committee Majority Staff

RE: Hearing entitled “The Future of Transportation Fuels and Vehicles”

I. INTRODUCTION

The Subcommittee on Environment will hold a hearing on March 7, 2018 at 10:15 a.m. in 2322 Rayburn House Office Building. The hearing is entitled “The Future of Transportation Fuels and Vehicles.”

II. WITNESSES

- **John Maples, Senior Transportation Analyst, U.S. Energy Information Administration;**
- **John Farrell, PhD, Laboratory Program Manager, Vehicles Technologies, National Renewable Energy Laboratory;**
- **Joshua Linn, PhD, Senior Fellow, Resources for the Future;**
- **Jeremy Martin, Senior Scientist and Fuels Lead, Clean Vehicles Program, Union of Concerned Scientists; and**
- **John Eichberger, Executive Director, Fuels Institute.**

III. BACKGROUND

Americans use over 140 billion gallons of gasoline annually in the estimated 260 million passenger vehicles they own, along with diesel fuel, natural gas, electricity, and other fuels. Currently, the gasoline-powered internal combustion engine is far and away the most common passenger vehicle type, but the fuels and vehicles mix is changing.

A number of federal policies are contributing to the transformations in the fuels and vehicles marketplace. Most notably, the Renewable Fuel Standard (RFS) requires that specified amounts of four categories of biofuels be added to the gasoline and diesel fuel supply. As a result, most gasoline sold in the U.S. now contains 10 percent ethanol, and biodiesel is being used to extend the diesel fuel supply. Corporate Average Fuel Economy and Greenhouse Gas (CAFE/GHG) standards require increases in vehicle fuel economy through 2025. Both the RFS and CAFE/GHG are scheduled to become more stringent over the next several years and may

necessitate further changes in fuels and vehicles to ensure continued compliance. Tax incentives and other federal measures also impact the fuels and vehicles mix.

Apart from federal policy measures, technological, demographic, economic, and other factors are also having an impact on the evolving fuels and vehicles marketplace. This includes advances in battery electric, plug-in hybrid electric, and hybrid electric vehicles. In addition, the shale revolution and resultant growth in the supply of affordable domestic natural gas may lead to its increased use in transportation. Even automotive breakthroughs not directly related to fuel choice, such as autonomous vehicles, will likely have an influence on the kinds of cars we will drive and the fuels they will use.

According to the Energy Information Administration's (EIA) "Annual Energy Outlook 2018 With Projections to 2050," the gasoline-powered internal combustion engine will remain the dominant vehicle type through 2050, but it yields some market share to electric vehicles and other alternatives.¹ Fuel efficiency in these vehicles is projected to increase by 66 percent by 2050, more than enough to offset the projected rise in vehicle miles travelled, so that overall transportation energy use declines.²

EIA also projects a large percentage increase in battery electric vehicles, from 1 percent of the U.S. vehicle sales in 2017 to 12 percent in 2050.³ Combined battery electric, plug-in hybrids, and hybrids grow from 4 percent in 2017 to a projected 19 percent in 2050.⁴ Other alternative fuels and vehicles are also projected to make inroads. Changes in the fuels mix also means changes in the fueling infrastructure, both for conventional gasoline and diesel fuel as well as alternatives.

Federal and private sector research is underway on a variety of alternative fuels and vehicles, as well as work to improve efficiency in gasoline-powered internal combustion engines. Research is also ongoing to address the logistical and infrastructure challenges associated with providing new fuels to consumers.

Ultimately, new fuels and vehicles can succeed only if they are accepted by consumers. Cost, convenience, and reliability are paramount to achieving market penetration. In particular, alternative fuels must compete against gasoline, which EIA projects to cost \$2.41 per gallon in 2050 under the Low Oil Price case and \$5.95 per gallon under the High Oil Price case.⁵

IV. ISSUES

¹ U.S. Energy Information Administration, *Annual Energy Outlook 2018 with projections to 2050*, pp. 105 – 118, at https://www.eia.gov/outlooks/aeo/pdf/AEO2018_FINAL_PDF.pdf.

² Id. at 108, 112.

³ Id. at 116.

⁴ Id. at 114.

⁵ Id. at 58.

The following issues may be examined at the hearing:

- How transportation fuel and vehicle choices are likely to change in the years ahead.
- The research currently underway on alternative fuels and vehicles as well as research on improving the gasoline-powered internal combustion engine and fueling infrastructure.
- The impact on consumers of a changing fuels and vehicles marketplace.

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.