NHTSA'S CAFE RULEMAKING FOR MY 2022 AND BEYOND

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

NHTSA Background

The National Highway Traffic Safety Administration (NHTSA)

- Agency within the Department of Transportation
- Responsible for on-road vehicle safety and fuel economy standards

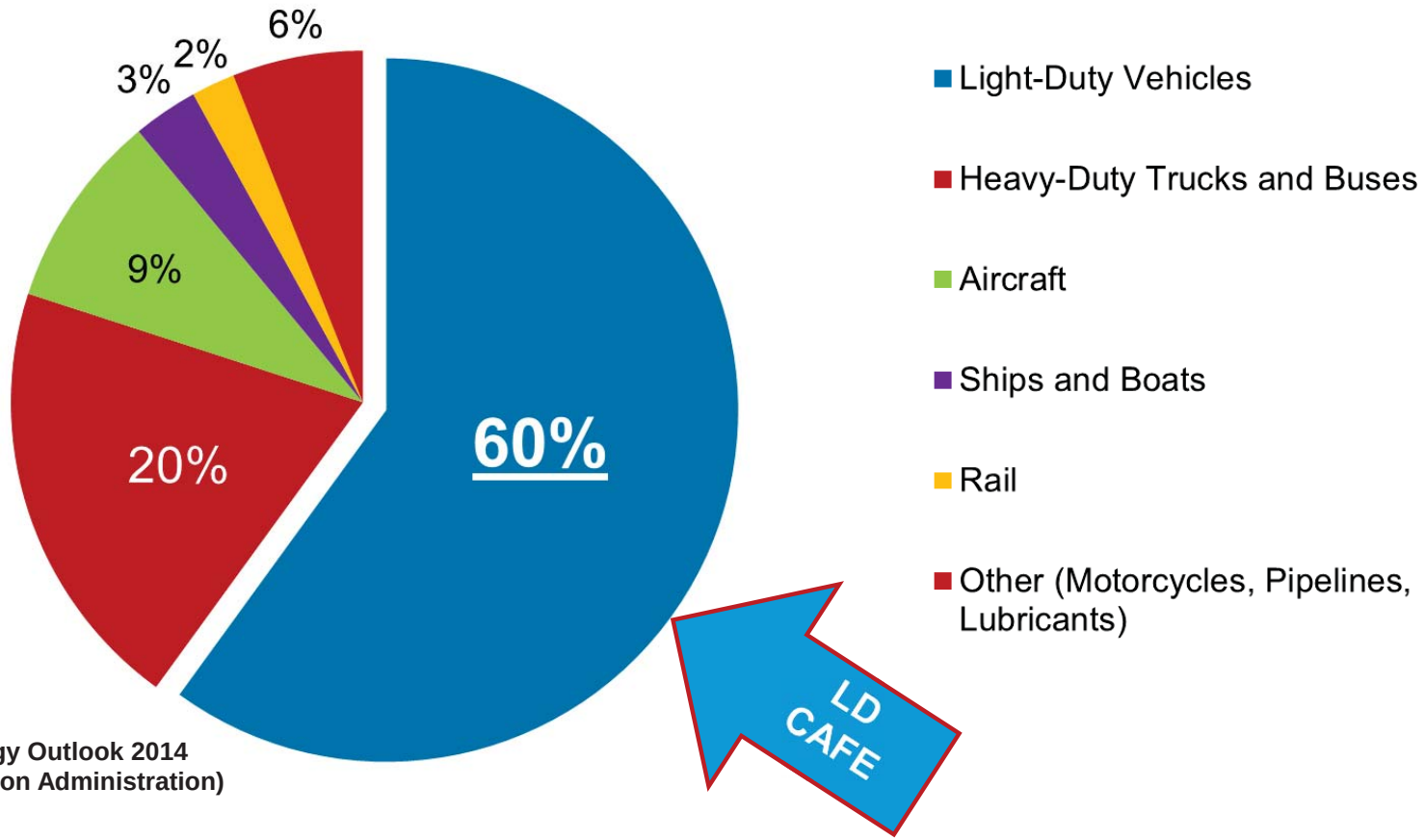
Authority and direction for fuel economy standards from Congress to address energy independence and security

- Energy Policy and Conservation Act (EPCA) of 1975
- Energy Independence and Security Act (EISA) of 2007

Standards in NHTSA's Portfolio

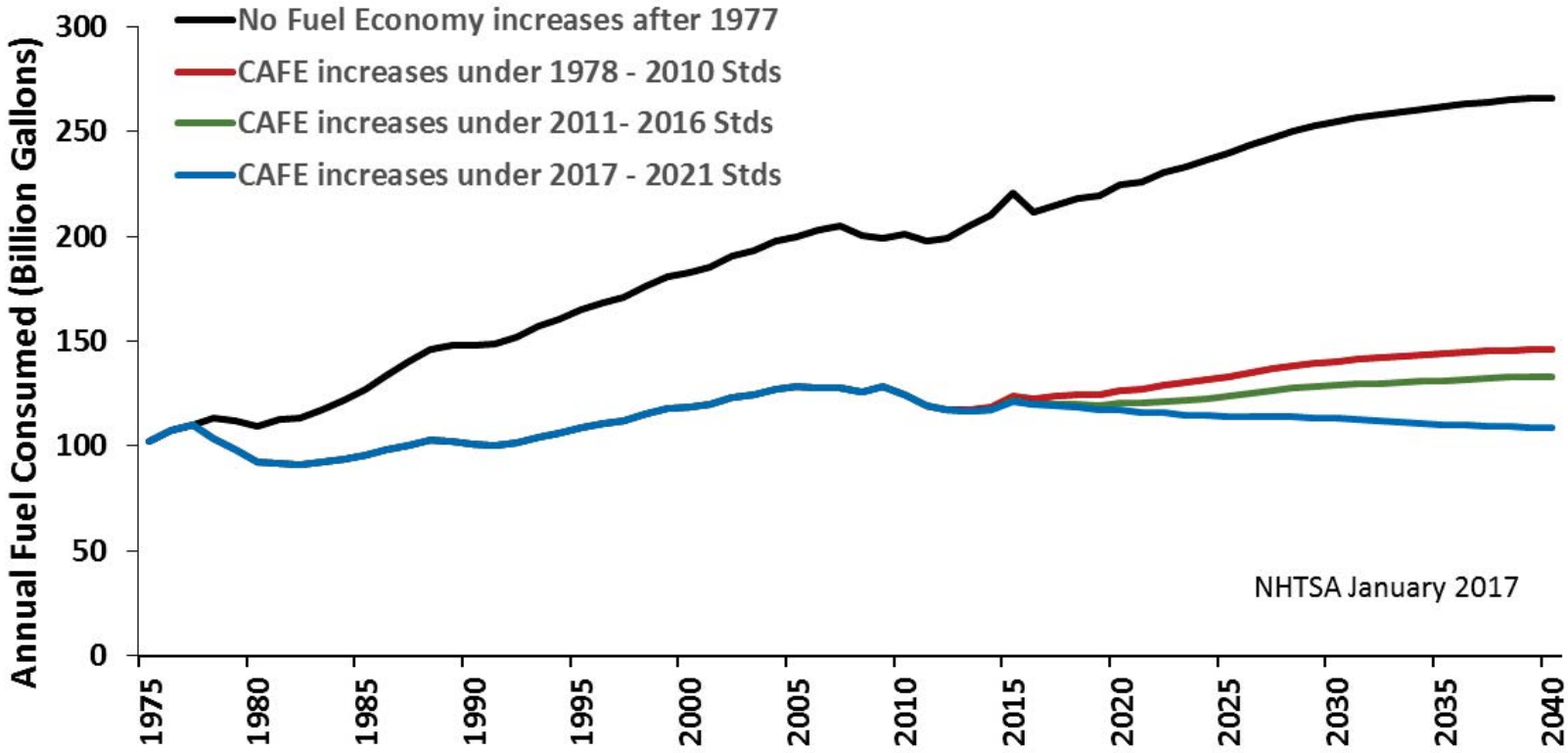
- Corporate Average Fuel Economy standards for passenger cars, light trucks, and medium-duty passenger vehicles (since 1978)
- Fuel Efficiency standards for medium- and heavy-duty on-road vehicles
- Fuel economy and environment labels for new light-duty vehicles
- Consumer information for alternative fuel vehicles
  - Badging
  - Fuel compartment labeling
  - Owner's manual information on the capability and benefits of using alternative fuels.

Transportation Related Energy Use

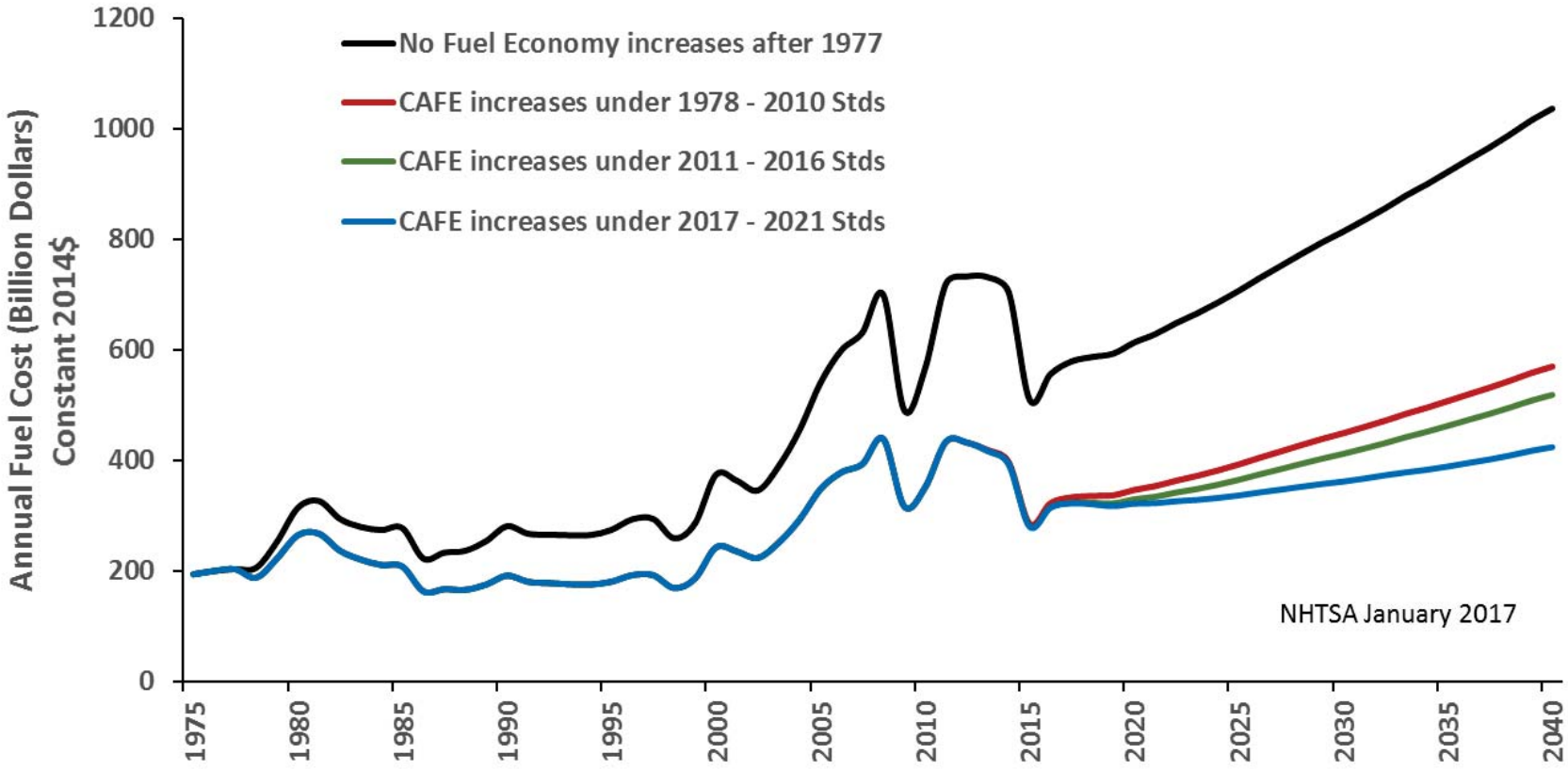


Source: Annual Energy Outlook 2014 (U.S. Energy Information Administration)

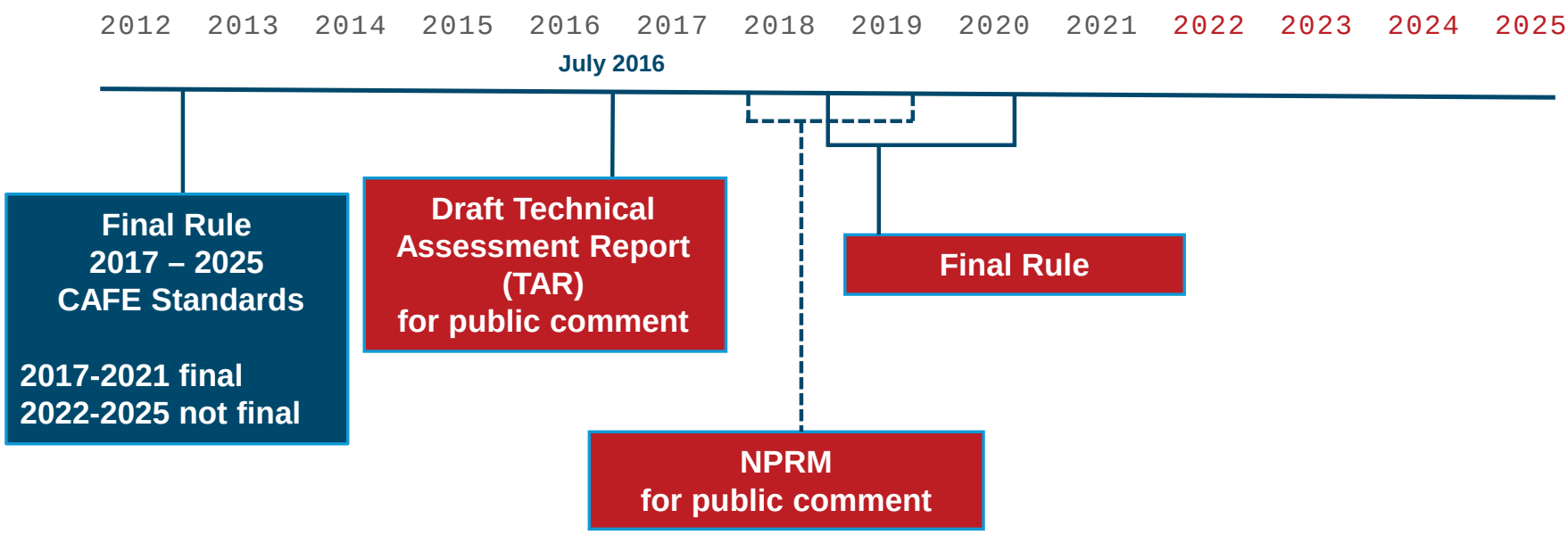
NHTSA CAFE : Significant Impact on Fuel Consumed by Passenger Cars and Light Trucks



NHTSA CAFE : Significant Savings on Fuel Costs



NHTSA CAFE Rulemaking Process for MY 2022 and Beyond



NHTSA Draft TAR Analysis: Benefits and Costs of MYs 2022-2025 Augural CAFE Standards Over the Lifetimes of MYs 2016-2028 Vehicles

	Augural 2022-2025
Fuel reductions (Billion Barrels)	1.6
GHG reductions (MMT CO_2eq)	748
	Billions of 2013$
Fuel savings (pre-tax)	$122
Other benefits	$62
Vehicle, maintenance and other costs	-$99
Net benefits	$85

Values shown in this table are representative values for 3% discount rate.

NHTSA Draft TAR Analysis: Per-Vehicle Average Cost to Meet MY2025 Augural CAFE Standards

	Cost for MY 2028 Incremental to MY 2021 Standards
Car	$1,207
Truck	$1,289
Combined	**$1,245**

Note: the values reported for CAFE primary analysis include civil penalties estimated to be incurred by some OEMs as provided by EPCA/EISA. Estimated technology costs (without civil penalties) average $1,111, $1,246, and $1,174, respectively for MY2028 passenger cars, light trucks, and the overall light-duty fleet.

NHTSA Draft TAR Analysis: Selected Technology Penetrations to Meet the MY2025 Augural CAFE Standards

Technology	Technology Penetration for MY 2028 [1]
Turbo/downsized engines	54%
High compression ratio, naturally aspirated engines (Atkinson2)	<1%
8 speed and other advanced transmissions[2]	70%
Mass reduction	6%
Stop-start	38%
Mild Hybrid	14%
Full Hybrid	14%
Plug-in hybrid electric vehicle	<1%
Electric vehicle	<2%

NHTSA's analysis projected that augural MY2022-2025 CAFE standards could be met largely through improvements in gasoline vehicle technologies, with moderate levels of strong hybridization and very little full electrification (EV/PHEV)

1 Percentages shown are absolute rather than incremental.
2 Including continuously variable transmissions (CVT)

Ongoing Work

- Some examples of work:
  - MY 2016 baseline fleet
  - Mass reduction level in each MY 2016 vehicle model
  - Updates to effectiveness and/or cost for technologies
  - Fuel consumption maps for some engine technologies
  - Unique cost for additional mass reduction for each vehicle segment
  - VMT based on analysis of large scale vehicle odometer readings
  - Rerun large scale simulation modeling using Autonomie to determine technology effectiveness for combinations of technologies (ANL)

Input is Welcomed

- We are continuing to meet with stakeholders
- We welcome your inputs to inform our rulemaking moving forward