Crosstown Traffic: Getting through to The SAFE Rule

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July 27, 2020
Washington, DC
Presentation Outline

• SAFE Rule precursors: CAFE Standards and the “One National Program”

• The unraveling of the One National Program

• SAFE (Safer Affordable Fuel-Efficiency) Vehicles Rule Introduction & Features

• Select Issues / Considerations
CAFE Standards, History to the Present - 1

• **Corporate Average Fuel Economy (CAFE)** Standards in their original form were …
  - Introduced through the 1975 Energy Protection and Conservation Act (EPCA)
  - In reaction to the 1973 Arab Oil Embargo that cut supplies and raised prices
  - Sought to reduce fuel consumption through the regulation of fuel-efficiency motor vehicle standards rather than through a consumption tax
  - Administered by the **National Highway Traffic Safety Administration** (NHTSA) (one agency, not three)
  - Key guideline: “**Maximum Feasible**”
CAFE Standards, History to the Present - 2

• September 2004: California Air Resources Board (CARB) formulated GHG standards for motor vehicles to begin in MY 2009.

• April 2, 2007: SCOTUS decides Mass. vs EPA; this ruling effectively enabled EPA to regulate CO2

• May 19, 2009: the CAFE “One National Program” established; jointly administered by NHTSA, EPA, and CARB setting CAFE and GHG standards
  – Phase 1 for Model Years 2012 to 2016
  – Phase 2 for Model Years 2017 to 2025
  – Phase 2 required a technical assessment review (TAR) to be published in June 2016, and a Final Determination in April 2018 for MY 2022 to 2025 for MV manufacturing reassessment.
One National Program
Fuel Economy & GHG Regulators

Cali Air Resources Bd

One National Program
Has its own Greenhouse Gas (GHG) Standards

Regulates Greenhouse Gas (GHG) Emissions

DOT-NHTSA
Regulates Fuel Economy via the Corporate Fuel Economy (CAFE) Program

EPA - Environmental Protection Agency
“Can’t you see the signals turn from green to red?”

CAFE: Required vs Achieved MPG

Analysis Based on NHTSA Data

Original Obama Administration Target of Average “54.5 MPG”
The Great Un/Re/raveling - From TAR to SAFE (One National Program Breaks down) - 1

- July 2016: Draft TAR issued one month late; the public comment period closed early in December 2016
- November 30, 2016: EPA Administrator McCarthy proposes that original standards are appropriate, and that a rulemaking to change them is not warranted
- January 12, 2017: Less than two weeks before a change in administration Administrator McCarthy signs the Determination to maintain the original standards
- March 15, 2017: Joint announcement by EPA Administrator Pruitt & DOT Secretary Chao to reconsidered final Determination
The Great Un/Re/raveling - From TAR to SAFE (One National Program Breaks down) - 2

- April 2, 2018: EPA deemed that the targeted MY2022-2025 were inappropriate and should be revised

- August 2, 2018: Announcement of proposed Rulemaking, renamed Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for MY 2020-2026

- August 2, 2018: EPA & NHTSA propose revocation of California’s waiver authority

- July 25, 2019: California separately from EPA & NHTSA signs an agreement with four automakers: Ford, Volkswagen, Honda, and BMW

- March 31, 2020: EPA & NHTSA release final SAFE Rule
Octane as a Path to a Grand Compromise - 1
*(Trying to Get Humpty Dumpty Back Together, and Then Some …)*
Congressmen Shimkus/Flores 21st C. Transportation Act

U.S. Average AKI Octane (LHS) vs Compression Ratio (RHS)

Analysis Based on ORNL Data

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Octane as a Path to a Grand Comprise - 2

Congressmen Shimkus/Flores 21st C. Transportation Act

Proponents' View of a "Grand Compromise"

- Harmonized & Competitive Standards
- EPA Rulemaking
- EPA-DOT Rulemaking
- Eliminate overlapping GHG Policies
- Higher Octane Standard Partially Replaces RFS
- ICE efficiency gains. Infrastructure compatibility.
- Higher Octane Fuel allows for more efficient engines
SAFE Rule Select Summary

Overall Impact:

• increase stringency of CAFE and CO2 emissions standards by 1.5% each year through model year 2026, as compared with the CO2 standards issued in 2012, which would have required increases of about 5% per year

• $1,400 reduction of total consumer cost of ownership per new vehicle

• More than $1,000 reduction in sales price per new vehicle

• 2.7 million additional new vehicles sold
  • Source: NHTSA/EPA
Select Issue 1: CAFE/SAFE Rule Algebra

OO > NewCARB > SAFE

• Where:
  • 54.5 = Original Obama Administration "MPG" target by 2025 (OO)
  • 50.0 = California 2019 "MPG" target by 2026 (NewCARB)
  • 40.4 = SAFE Rule "MPG" target by 2026 (SAFE)
Select Issue 2: Consumer Fuel Expenditures

Key fuel policy initiatives take place when expenditures are rising as a percentage of income.
Select Issue 3: law of diminishing returns

Reductions in Fuel Efficiency follow a pattern of diminishing returns.

<table>
<thead>
<tr>
<th>Savings</th>
<th>@$3.50/gal</th>
<th>@$2.25/gal</th>
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<tbody>
<tr>
<td>10MPG-&gt;20MPG</td>
<td>$2,100</td>
<td>$1,350</td>
</tr>
<tr>
<td>15MPG-&gt;30MPG</td>
<td>$1,400</td>
<td>$900</td>
</tr>
<tr>
<td>30MPG-&gt;60MPG</td>
<td>$700</td>
<td>$450</td>
</tr>
</tbody>
</table>

Annual fuel consumption per vehicle (assuming 12,000 miles per year) vs. Annual fuel cost per vehicle (under two price scenarios)

Miles per Gallon - Increasing Efficiency --->

Analysis Based on EIA data
Select Issue 4: urban mobility vectors in play

What Will Be the New Mix for Cars?

Ownership

Automatically

Electrified
Shared Autonomous
Vehicles?

Personally owned
vs.
Share/Hail

Human operated
vs.
Driverless

Gasoline/Diesel vs.
Electric

Powertrain
EPRINC Downstream Reports, Presentations, and Testimony Available at www.eprinc.org

- Octane: Pathway to a Compromise?
- Understanding California’s High Transportation Fuel Prices
- The Biofuel Mandate: Technical Constraints And Cost Risks
- CAFE, Gasoline Prices and the Law of Diminishing Returns: A New Agenda for the Midterm Evaluation
- Presentation at the Energy Information Administration (EIA) 2017 Annual Conference on Octane and the CAFE Standards
- Testimony on the RFS on February 24, 2016 by Lucian Pugliaresi (EPRINC’s President) before the U.S. Senate Committee on Environment & Public Works
Thank you!

Questions?