The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021 – 2026
Passenger Cars and Light Trucks
What do these rules do?

- EPA amended CO2 standards for model years 2021 and later
- NHTSA amended fuel economy standards for model year 2021 and set new fuel economy standards for each model year 2022–2026
- The standards increase stringency at 1.5 percent per year from 2020 levels
- Expected to achieve approximately 40.5 miles per gallon industry fleet-wide average in model year 2030
How did the agencies decide?

- Administrative Procedure Act rulemaking
- Statutory factors
  - EPCA: Maximum feasible considering tech feasibility, economic practicability, other motor vehicle standards, need to conserve energy etc
  - CAA: Greatest degree of emissions reduction, technology/time, cost, energy, safety etc
- Extensive analysis summarized in 2196 page Regulatory Impact Analysis and 2131 Environmental Impact Statement
Some interesting features of the analysis

❖ In a saturated market, how do new vehicle prices affect sales of both new and used vehicles?
❖ How do changes to the U.S. vehicle fleet affect traffic safety?
❖ Energy Prices are always difficult to forecast; of course, no one anticipated the severe global pandemic.
What are the likely impacts?

❖ Car and light truck gasoline consumption forecast to decline from 140 billion gallons annually to about 95 billion gallons, instead of 80 billion under the 2012 rule
❖ Required technology costs reduced by $86 to $126 billion over the lifetimes of vehicles, compared to 2012 rule
❖ New vehicle purchase prices to U.S. consumers forecast to be $977 to $1,083 lower than under the 2012 rule
❖ Impact on climate “very small”, criteria and air toxic pollutants “too small to observe”
❖ 2.7 million additional new vehicles sold because new vehicles are more affordable
Safety Benefits

❖ 3,300 fewer crash fatalities
❖ 46,000 fewer hospitalizations after serious crashes projected over the lifetimes of vehicles built through 2029
❖ 397,000 fewer injuries
❖ 1.8 million fewer vehicles damaged in crashes
Figure VI-161 – Historical and Projected Fleet-Wide Fatality Rates
Categories of Benefits and Costs

- Technology Costs
- Implicit Opportunity Costs
- Lost New Vehicle Consumer Surplus
- Rebound fatality costs
- Rebound non-fatal crash costs
- Reduced Fuel Tax Revenue
- Congestion Costs
- Noise Costs
- Non-Rebound Fatality Costs
- Non-Rebound Non-Fatality Crash Costs

Retail Fuel Savings
Rebound Fuel Consumer Surplus
Refueling Time Benefit
Rebound Fatality Benefit
Rebound Non-Fatal Crash Benefit
Petroleum Market Externality
CO2 Damage Reduction Benefit
NOx Damage Reduction Benefit
VOC Damage Reduction Benefit
PM Damage Reduction Benefit
SO2 Damage Reduction Benefit
Table I-1 – Estimated 1977-2029 Model Year Costs, Benefits, and Net Benefits under the Preferred Alternative, CAFE Standards (Billions of 2018$)

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Table I-2 – Estimated 1977-2029 Model Year Costs, Benefits, and Net Benefits under the Preferred Alternative, CO₂ Standards (Billions of 2018$)

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Humility in Regulatory Analyses

- Regulatory analysis informs *but does not determine* the best policy
- Predicting the future is really hard
- Putting numbers on things makes them seem more certain than they are
Watch for:

Litigation

Heavy Duty Truck standards

and the next 5-year set of
Passenger Vehicle and Light Truck standards