EPA and the Automobile Industry: A Short History

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The Early Years

• EPA vs. The Automakers

• Automakers vs. Big Oil

• Emissions Standards and Technology
The 1990’s: A New Collaboration

• Clean Air Act Amendments
• Partnership for a New Generation of Vehicles
  – Cooperative Research and Development Agreements
• Tier 2 Emission Standards
  – Systems Approach
U.S. Vehicle Emissions: A Major Public Policy Success Story

• Cleaner and better
  – New cars are 98% cleaner (similar reductions for heavy-duty, nonroad, etc.)
  – Public health benefits far exceed the costs, often by 10:1 or more
  – Technology innovation also promoted better vehicle quality, reliability, and durability

• Lower ambient pollution levels despite near tripling of U.S. GDP since 1970

• Model for rest of world
Progress Toward Clean Air 1970-2001
*Pollution Down While Growth Continues*

Between 1970 and 2001, gross domestic product increased 161 percent, vehicle miles traveled increased 149 percent, energy consumption increased 42 percent, and U.S. population increased 39 percent. At the same time, total emissions of the six principal air pollutants decreased 25 percent.
Clean Air vs. Energy Policy

- Different Histories and Results
- Willingness to Pay
- Incremental change vs. New Fuels and Powertrains
Adjusted Fuel Economy, 1975-2008

Adjusted Fuel Economy by Model Year (Annual Data)

Adjusted MPG

Model Year


10 15 20 25 30

Cars
Trucks
Both
Where Has the Technology Gone?

- 1975: 22.0 mpg, 102 hp, 3203 lbs
- 1981: 22.0 mpg, 20.8 mpg, 222 hp, 4117 lb

Vehicle miles per gallon (adjusted)

Weight / Horsepower changes relative to 1981

- 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 110% 120% 130%
New World of Climate and Energy Imperatives: 2009-

• The Drivers:
  – Science
  – The Law
  – Energy and Economic Security
  – State Initiatives

• Consequences for Automakers
Taking a Big First Step: New National Policy Announced

- May 2009: President announces New National Policy for Automobile Emissions

- EPA worked closely with President’s Auto Task Force in designing new national policy

- Unprecedented stakeholder support
  - California and 13 other states
  - Automakers and UAW
  - Environmental groups

- September 2009: EPA proposes first-ever light-duty vehicle GHG standards, jointly with DOT CAFE standards

- New standards cover Model Year 2012-2016 vehicles
Impacts for MY2012-2016 Vehicles

• National Program will achieve substantial reductions in fuel consumption and GHG emissions
  – Increase fuel economy by approximately five percent every year
  – 2016 fleet average: 250g/mile 34.1-35.5mpg
  – Reduce greenhouse gas emissions by nearly 950 million metric tons
  – Conserve 1.8 billion barrels of oil

• Vehicle cost
  – Average MY2016 vehicle will cost an extra $1000
  – Fuel savings will offset higher up front costs in 3 years

• Impact on Society
  – Net benefits of about $200 billion
Innovative Features

- Emission banking and trading elements
- Flex-fuel vehicle (FFV) credits
  - MY2012 – 2015 credits similar to CAFE, MY2016+ credits based on actual E85 fuel use
- Air conditioning HFC and CO$_2$-related reduction credits
- Early credit opportunities for doing better
- Advance technology credits
Technology Feasibility

• Large penetration of currently available technologies
  – Gasoline direct injection
  – Engine Down-sizing with Turbocharging
  – 6 speed transmissions/dual clutch
  – High efficiency, low lead AC systems
  – Engine start-stop systems

• Little to no penetration of diesel, hybrid, or electric technologies

• Large opportunity for future reductions
Robust Technical Analysis and Transparency

- Proposed Standards based on significant new analysis
  - new peer reviewed estimates for indirect and direct mfg costs
  - new technology effectiveness estimates based on vehicle simulation modeling and certification data
  - new peer-reviewed technology and cost model

- Transparency
  - baselines and projections based on publicly reviewable data
  - model inputs and outputs available for review
  - commenters can use data to do alternative analysis
Status of Proposal

• 120,000 Comments Received

• Key Issues Analytical:
  – Social cost of carbon
  – Consumer welfare
  – Upstream GHG issues

• Final Rule March 31, 2010
Looking to the Future

Important to Align Federal Policy Levers:

- Regulatory Policy
- Tax Policy
- Research & Development Policy