

Background

California adopted greenhouse gas emissions (ghg) standards for new passenger vehicles, effective with 2009 models. Manufacturers have flexibility in meeting these standards through a combination of reducing tailpipe emissions of carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) and receiving credit for systems demonstrated to mitigate fugitive emissions of hydrofluorocarbons (HFCs) from vehicle air conditioning systems. The emission standards become increasingly more stringent through the 2016 model year¹ (Pavley regulation). California is also committed to further strengthening these standards beginning in 2017 to obtain a 45 percent greenhouse gas reduction from 2020 model year vehicles. As allowed by the federal Clean Air Act, 12 additional states have adopted California's standards and other states, as well as Canadian provinces, have also expressed interest in doing so.

California standards regulate GHG emissions; federal CAFE standards are aimed at reducing the nation's fuel consumption. In this discussion, the two programs are evaluated so that the reductions in GHG gases under the California rules can be compared to those expected from implementation of the CAFE portion of the 2007 Energy Bill.¹

Discussion

According to a recent report released by the California Air Resources Board (CARB), the Clean Car (Pavley) law not only provides greater greenhouse gas (ghg) emissions reductions but results in greater fuel economy improvements in cars and trucks than the recently passed Energy Independence and Security Act (EISA). In fact, California's Pavley I law and Pavley 2 (executive order) increase fleet fuel economy to 43 miles-per-gallon (mpg), while EISA only mandates a 35 mile-per-gallon (mpg) fleetwide average by 2020.²

Below is a detailed discussion of multiple research studies on the impact of raising fuel economy requirements on automakers profits and jobs conducted by The University of Michigan's Transportation Research Institute (UMTRI) Automotive Analysis Division. **Together, these reports provide extensive evidence that achieving higher fleetwide**

¹ California Air Resources Board "Comparison of Greenhouse Gas Reductions for the U.S. and Canada under U.S. CAFE Standards and CARB Greenhouse Gas Regulations" February 25 2008

² Ibid

fuel economy performance is critical to vehicle manufacturers' long-term health, and the jobs they each provide.

In 2005, we published a study predicting that the Big Three stood to lose billions in profits and thousands of jobs in the event of an oil spike, a prediction unfortunately borne out as Hurricane Katrina and tensions around the world have sent prices skyward. We predicted that gasoline prices over \$3.00 per gallon could lead to combined losses of \$7 to \$11 billion of profits for Detroit automakers because of their over dependence on gas guzzling SUVs and pick-up trucks, and the lack of fuel efficient vehicles in their fleet. Our study sustained considerable criticism from the auto industry.

Since that report, gasoline prices have risen more than 60%, and have consistently remained well above \$3 a gallon with spikes close to \$4. Over the last 4 years, Ford Motor Company (Ford) and General Motors (GM) have reported over \$30 billion in combined losses, and eliminated or announced plans to eliminate up to 50,000 jobs.

In 2006, we published a study on the financial impact on automakers of pursuing a proactive fuel economy strategy. We found that with the price of gas at only \$3.10, financially strapped domestic automakers could turn their losses to profits by significantly improving fuel-economy performance across their model lineups.³ The study also estimated the impact of strategic choices by automakers on U.S. employment. At \$3.10 a gallon, a market-wide proactive fuel-economy strategy could save nearly 35,000 jobs at GM, Ford and DaimlerChrysler. By contrast, a business-as-usual approach could result in Big Three job losses of nearly 43,000.

In 2007, we found that under a standard of 35 miles-per-gallon by 2020 with an annual 4 percent increase thereafter, GM, Ford and Chrysler stand to make \$32 billion dollars by 2017, over \$10 billion more than Honda, Nissan and Toyota.⁴ We also found that Detroit automakers stand to receive the most of the profit gains from higher CAFE. The market value of one mile per gallon improvement in a vehicle's fuel economy is higher for vehicles with lower initial fuel economy. With product portfolios that are more concentrated in vehicle segments with lower fuel economy, Detroit automakers will make improvements that have higher market value.

In 2007, we also examined the link between fuel prices and sales of cars and trucks. U.S. automakers have long denied that such a link exists. One source of this false belief is an obsession with the crude count of units sold, equating Hummers with Minis. Another source is the conventional "wisdom" that Americans are unwilling to pay for fuel

³ McManus, Walter et al "Can Proactive Fuel-Economy Strategies Help Mitigate Fuel-Price Risks?" University of Michigan Transportation Research Institute September 2006

⁴ UMTRI "The Impact of Attribute-Based Corporate Average Fuel Economy (CAFE) Standards on the Automotive Industry" Fall 2007

economy. The paper presents theoretical reasons and market evidence that refute Detroit's conventional wisdom. American manufacturers' reaction to rising fuel prices over the last few years revealed the shortcomings of the U.S. automakers' recent product and powertrain strategies. The effect of rising fuel prices has, in effect, been offset by reducing prices of vehicles in inverse proportion to fuel economy. Thus, unit sales of large SUVs could be maintained, but their revenue (and profit) fell because vehicle prices were cut, directly through rebates and incentives or indirectly through zero rate interest financing programs. When the incentives growth slowed, sales of the least-fuel-efficient vehicles collapsed.

The Energy Information Administration recently projected that the price of oil will average \$101 a barrel in 2008, with the nationwide average price of gasoline reaching \$4 this summer. In response to the falling sales of SUVs and pick-up trucks, automakers have each announced a new round of multi-thousand dollar incentives on their largest cars and trucks to lure back customers who are turning to more fuel-efficient vehicles. GM is offering cash incentives of as much as \$4,000 on even its newest 2008 SUV and pickups.⁵

Responding to rising gas prices and the twin threats of global warming and energy security, the Congress passed EISA, requiring that automobile manufacturers meet **at a minimum** a 35-mpg fleetwide standard by 2020. A recently released rule from the National Highway Transportation Safety Administration (NHTSA) requires that all manufacturers improve the fuel economy of their fleet by 4% a year to meet a 31.6-mpg fleetwide standard by 2015. Also recently, the Environmental Protection Agency (EPA) Director of Transportation and Air Quality Margo Oge said cars and trucks may have to average 75 mpg to meet the greenhouse gas emissions (ghg) reductions called for by the world's leading scientists to avert the worst impacts of global warming. On April 23, the National Oceanic and Atmospheric Agency released data showing that in 2006, carbon dioxide concentration in the air increased by 2.4 parts per million – accumulating at a faster rate than ever before.

Every year automakers make changes to their fleets. Every eight years, they changeover their entire fleet. The question becomes how do they invest the money they are already spending to changeover their fleet? The National Academy of Sciences has concluded that the technology exists today to meet a fleetwide 35 mpg standard. The Clean Car Law being adopted in states around the country spurs greenhouse emissions reductions that at the same time provides fuel economy improvements that would allow automakers to meet the EISA standard in a more appropriate 8-year timeframe. And in so doing, automakers will achieve greater financial health, increasing their profits and jobs sooner than merely complying with EISA.

By not pursuing maximum feasible fuel economy improvements, our domestic automakers have experienced decades of unrelenting share losses to rivals with more fuel

⁵ Detroit News“GM Offers” 4/3/08.

efficient fleets; paid billions of dollars of “consumer incentives” annually to keep selling gas guzzlers as the price of gasoline rose; suffered the collapse of already weak resale values; and continued to produce fuel inefficient cars and trucks that exacerbate global warming and will be on the road for years to come.

A handwritten signature in black ink, appearing to read "Walt McManus". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Dr. Walter McManus
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