

CAFE Overview

- Federal program to reduce fuel consumption was established in 1975 by the Energy Policy and Conservation Act (EPCA)
- Passed in response to the 1973-1974 oil embargo
- Goal was to double motor vehicle fuel economy by 1985

CAFE Overview (Cont'd)

- Congress set passenger car standard at 27.5 miles per gallon (mpg), beginning in 1985
 - NHTSA has authority to change the default standard, but the default standard applies absent agency action

CAFE Overview (Cont'd)

- Congress directed Secretary of Transportation to establish CAFE standards for light trucks at “maximum feasible level”
 - Unless NHTSA sets a standard at least 18 months before the start of a model year, there is no CAFE standard for light trucks in that model year

Maximum Feasible Level

- In deciding upon maximum feasible level, NHTSA **must** consider:
 - Technological feasibility
 - Economic practicability
 - Effect of other standards on fuel economy
 - Need of the nation to conserve energy
- It has long been recognized that NHTSA must also consider impact of CAFE standards on safety

Most Recent Light Truck CAFE Rule

- In April 2003, NHTSA set standards of:
 - 21.0 mpg for MY 2005
 - 21.6 mpg for MY 2006
 - 22.2 mpg for MY 2007
- This rule was the first increase in light truck CAFE standards since MY 1995 and represented the largest CAFE increase since the mid-1980's
 - 3.6 billion gallons of fuel saved over the lifetime of MY 2005-2007 vehicles
- Must issue final rule for MY 2008 light truck CAFE by April 2006

Why Reform CAFE?

- A 2002 study by the National Academy of Sciences concluded that CAFE standards have contributed to increased fleet fuel economy
- But the study made also several key criticisms of the current CAFE program:
 - Limits future fuel savings that can be achieved without adverse economic impacts
 - Harms safety by creating incentive to produce more small light trucks
 - Uses outdated light truck definition

Criticism # 1 – Fuel Savings

- Uniform (one-size-fits-all) standard limits fuel savings that can be attained while meeting economic practicability test
- Full line manufacturers bear most of the cost burden of a uniform standard

Criticism # 2 - Safety

- Concern that current program encourages companies to comply with CAFE by downsizing their vehicles
- Both NAS and NHTSA reports have found that downsizing adversely impacts safety

Criticism #3 – Light Truck Definition

- Distinction between autos and light trucks has blurred since NHTSA established current definitions in 1977
- Disparity between car and light truck standards encourages manufacturers to design models to qualify as light trucks
- Light truck definition is outdated and offers easy opportunities to classify vehicles as light trucks
- Doing so allows manufacturers to produce more large light trucks while still meeting standard

National Energy Policy Development Group

- Recommended that the President and the Secretary of Transportation:
 - Set future fuel economy standards based on sound analysis and science
 - Consider safety, economic concerns, and disparate impacts on manufacturers

How Unreformed Light Truck CAFE Works

- A CAFE number expressed in mpg is set at least 18 months before each model year at the maximum feasible level
- All manufacturers are required to meet the same level of CAFE, regardless of the mix of sizes they produce
- Compliance is assessed by calculating manufacturers' actual CAFE levels after the model year

How Unreformed Light Truck CAFE Standards are Set

- To set maximum feasible standard, agency conducts an engineering analysis of the product plans for manufacturers with a significant share of the market
- Technology Application
 - Look at each vehicle model individually and for each model year
 - Identify the potential technologies that could be applied to each model, in the order of cost effectiveness
 - Stop applying technologies at point of maximum feasibility
 - Standard based on not causing economic harm to any manufacturer with a significant share of the market

Reformed CAFE

Guiding Principles

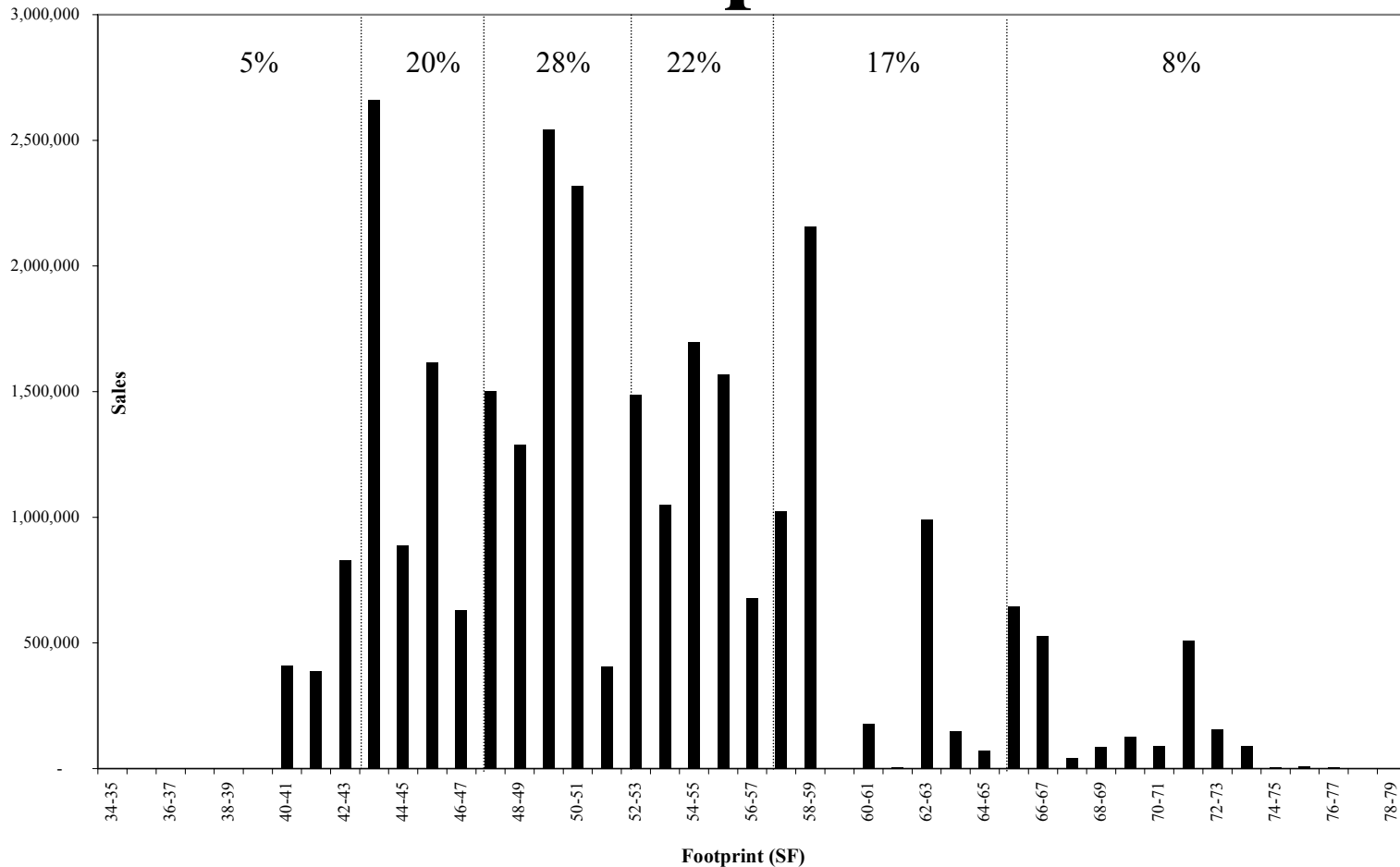
- Above all, the new structure must result in more fuel savings
- In addition, the new structure should:
 - Reduce the incentive for manufacturers to respond to CAFE in ways that would increase fatalities
 - Distribute the compliance costs across the entire industry
 - Achieve a better benefit-to-cost ratio for CAFE

Reformed CAFE -- Proposed Approach

- Replace uniform standard with a size-based CAFE system
- Divide light trucks into 6 categories based on their footprint (wheelbase x track width)

Reformed CAFE

MY 2008-2010 Projected Sales vs. Footprint



Reformed CAFE --Standard Setting

- A target is set for each footprint category. The targets are used to create a standard requiring each manufacturer to ensure fuel efficiency of its fleet by employing available fuel economy technologies
- Each manufacturer's required CAFE level would be based on the targets and the manufacturer's production mix

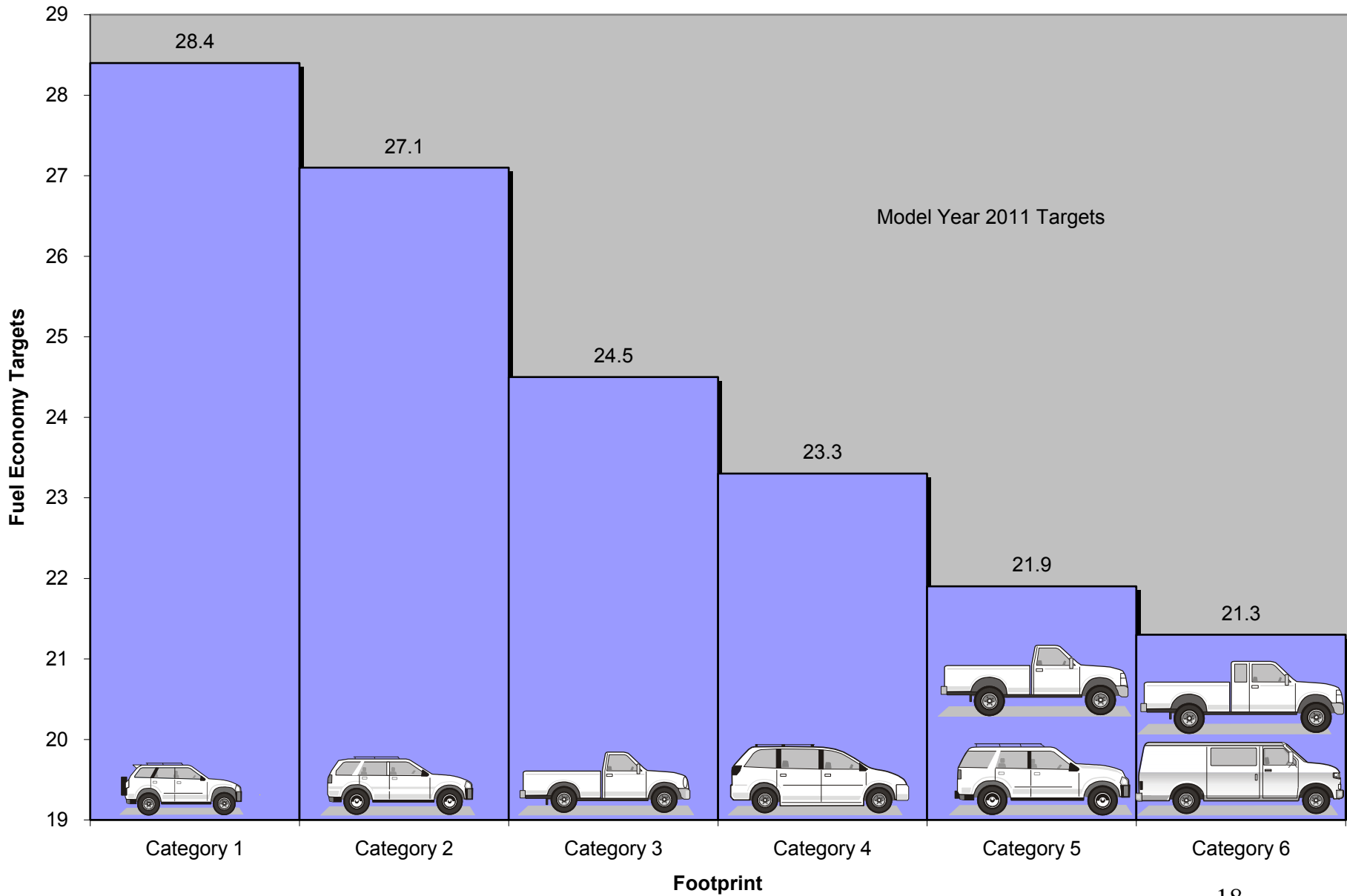
Manufacturer's Light Truck Production for Applicable Model Year

$$\frac{\text{Category 1 Production level}}{\text{Category 1 target}} + \frac{\text{Category 2 Production level}}{\text{Category 2 target}} + \frac{\text{Category 3 Production level}}{\text{Category 3 target}} + \frac{\text{Category 4 Production level}}{\text{Category 4 target}} + \frac{\text{Category 5 Production level}}{\text{Category 5 target}} + \frac{\text{Category 6 Production level}}{\text{Category 6 target}}$$

- The manufacturer must meet or exceed that required level of CAFE to achieve compliance

Reformed CAFE – Target Setting

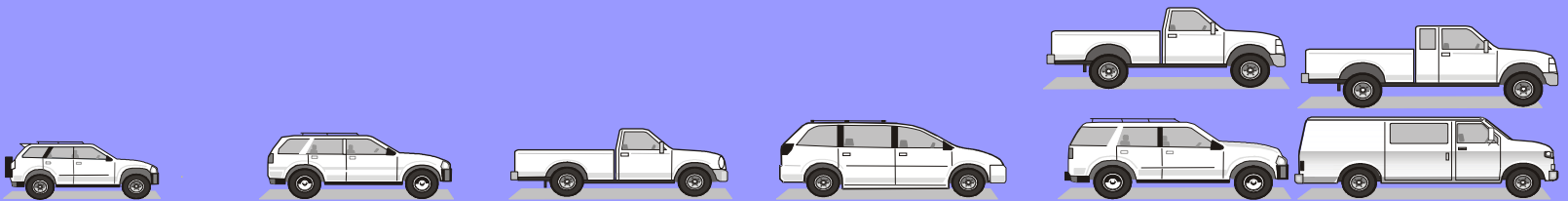
- We used a computer model developed by the Volpe Center to assist us in adding technologies to vehicles in categories
- Volpe model applies the NAS list of technologies, together with the costs and energy savings for the technologies, in a cost minimizing fashion
- Technologies continue to be applied as long as the value of fuel saved exceeds the cost on an industry wide basis



Fuel Economy

Unreformed Fuel Economy Standard

22.5 mpg in 2008
23.1 mpg in 2009
23.5 mpg in 2010



Footprint

Reform Enhances Energy Savings (NAS Criticism #1)

- Increases economically practicable level of fuel savings
 - Reformed CAFE would require more improvements from more manufacturers
 - 10 billion gallons of fuel savings over the lifetime of light trucks sold during 2008-2011. This is almost triple the savings achieved in the 2005-2007 rule
- Distributes cost burden across more manufacturers
- Ensures that consumers will continue to be able to buy the light trucks they need and want

Reform is Better for Safety (NAS Criticism #2)

- Reduces existing incentive to produce smaller vehicles for the purpose of meeting CAFE regulations
- Will not increase the production of vehicle types more susceptible to rollover crashes

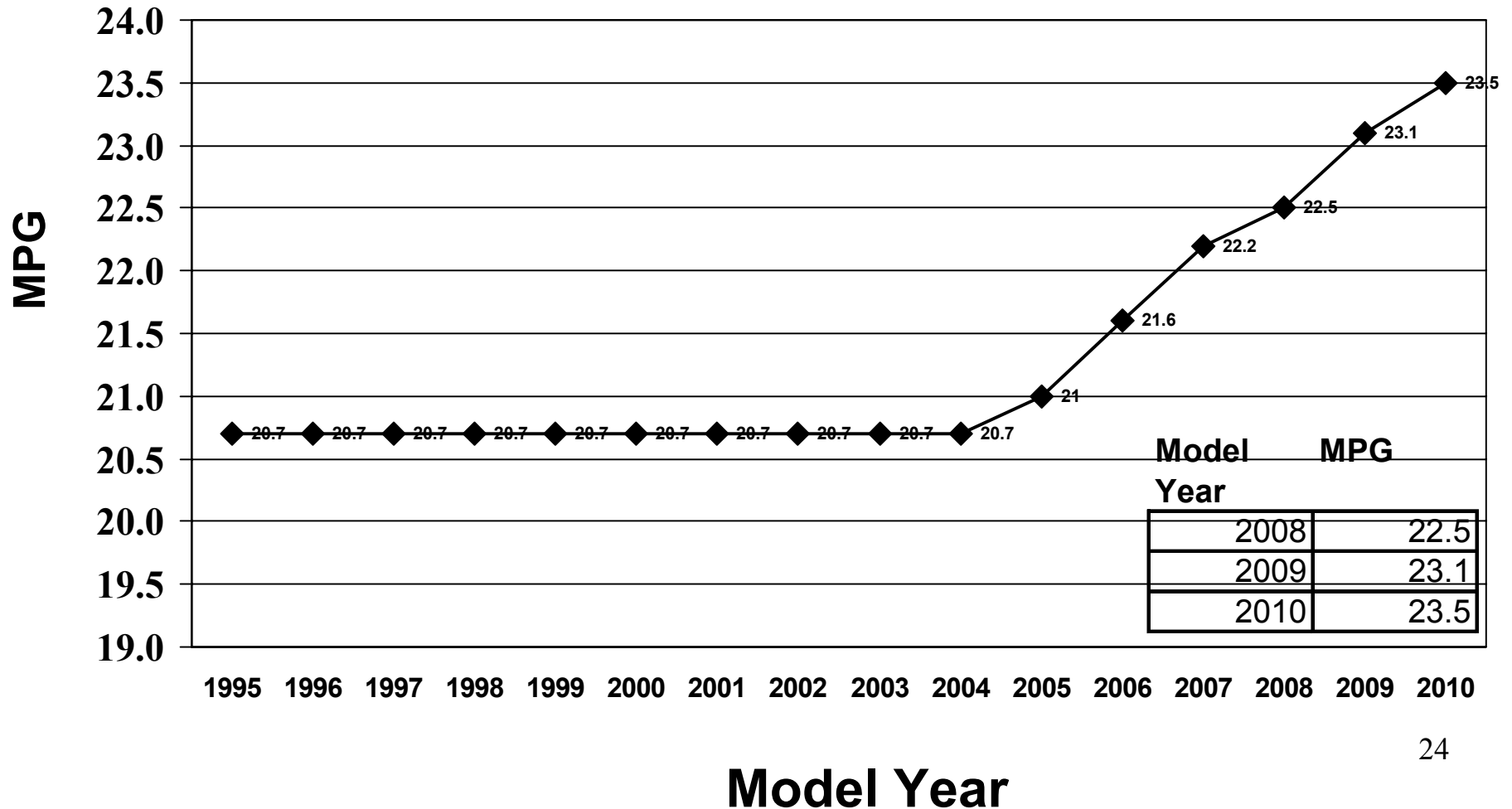
Reform Reduces the Need to Address Outdated Definitions (NAS Criticism #3)

- Minimizes incentives to classify car-like vehicles as light trucks
- Reduces incentive to use small light trucks with high fuel economy to offset the low fuel economy of large light trucks
- Manufacturers will need to rely on fuel efficient technologies to meet the standard

Proposed Transitional Period

- Proposed standards were established under the reformed and existing CAFE systems
- For MYs 2008-2010, a manufacturer would have the option to comply with either the reformed or current CAFE standards
- Beginning with MY 2011, all manufacturers will be required to comply under the reformed CAFE system

Proposed CAFE Standards under Current System



Proposed Category Targets under Reformed CAFE MYs 2008-2011

Category	Size (sq. ft.)	Targets			
		2008	2009	2010	2011
1	<43.0	26.8	27.4	27.8	28.4
2	43.1-47.0	25.6	26.4	26.4	27.1
3	47.1-52.0	22.3	23.5	24.0	24.5
4	52.1-56.5	22.2	22.7	22.9	23.3
5	56.6-65.0	20.7	21.0	21.6	21.9
6	>65.0	20.4	21.0	20.8	21.3

Fuel Savings and Costs

Model Year	Fuel Savings (Bill. gallons)	Total Cost (\$Billions)	Total Benefits (\$Billions)
2008	0.9	0.5	0.7
2009	2.2	1.3	1.6
2010	2.9	1.8	2.1
2011	4.1	2.7	3.1