



Vehicle Fuel Economy and Greenhouse Gas Regulations

2008 Toyota Sustainable Mobility Seminar

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Topics

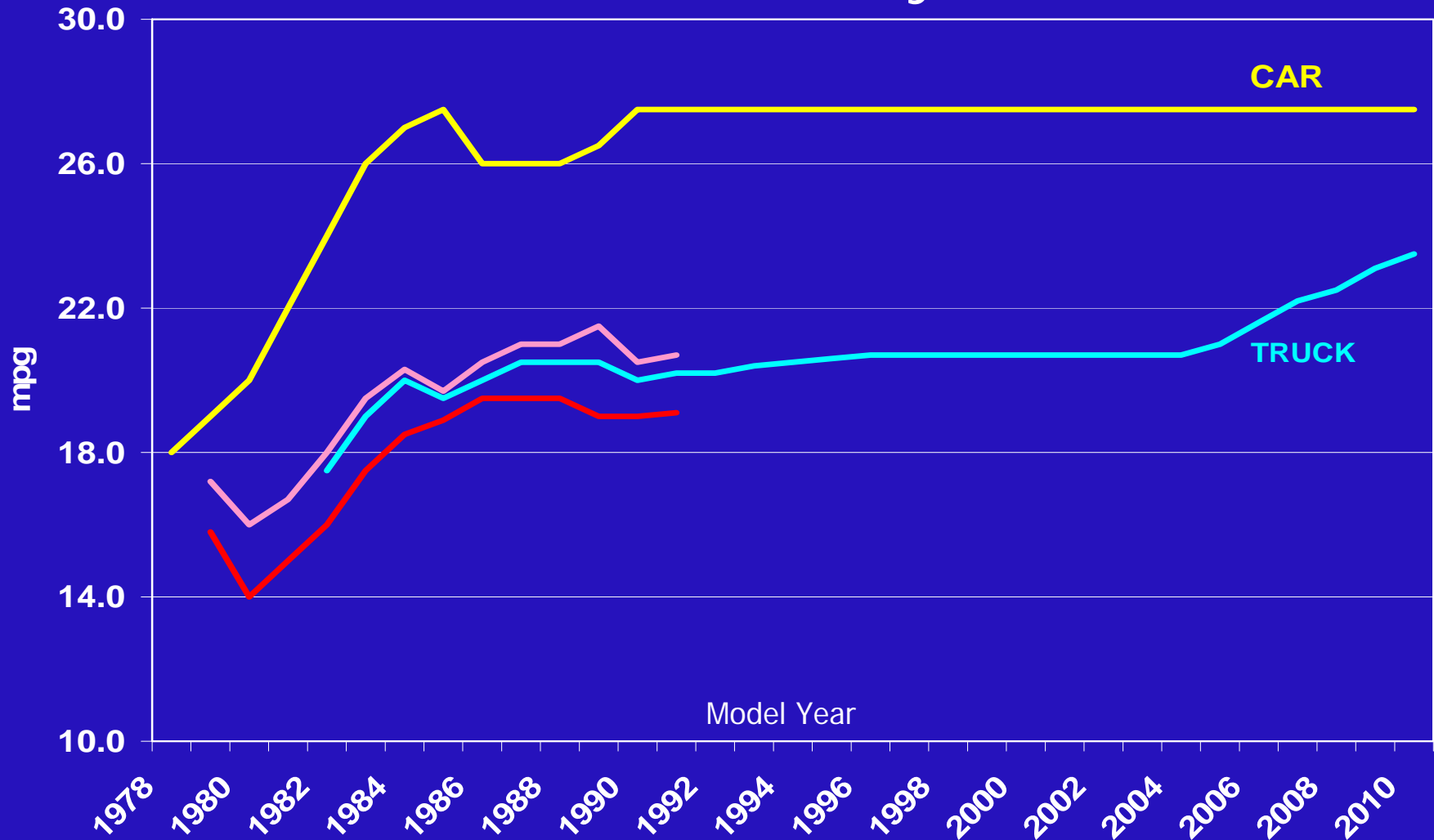
- CAFE History and Background
- Energy Independence and Security Act of 2007
- NHTSA Proposed CAFE Rulemaking
- CA AB1493
- EPA Greenhouse Gas Proposal
- Conclusions



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CAFE History





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Toyota's Car CAFE Performance ('99-'08)

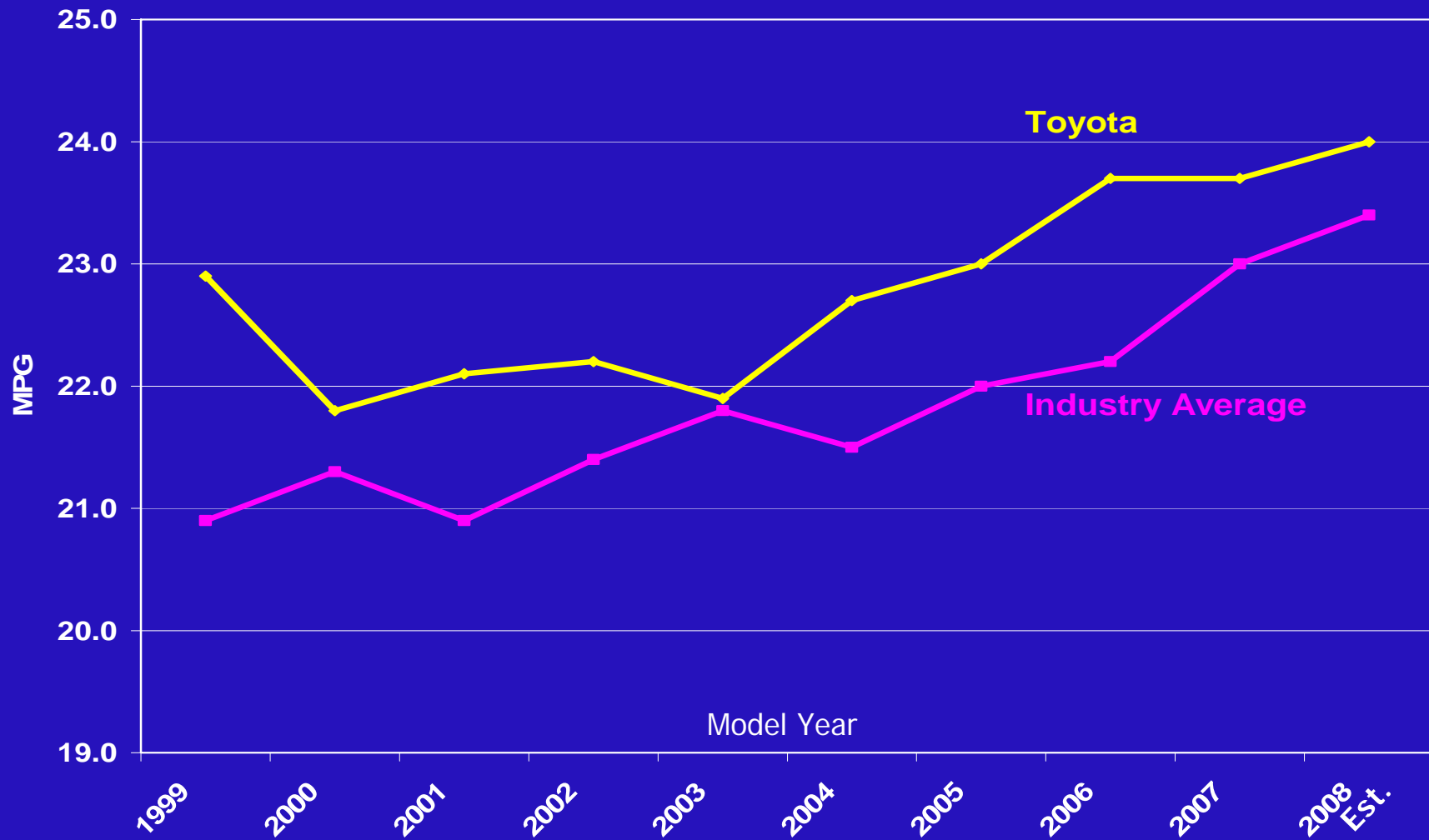




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Toyota's Truck CAFE Performance ('99-'08)

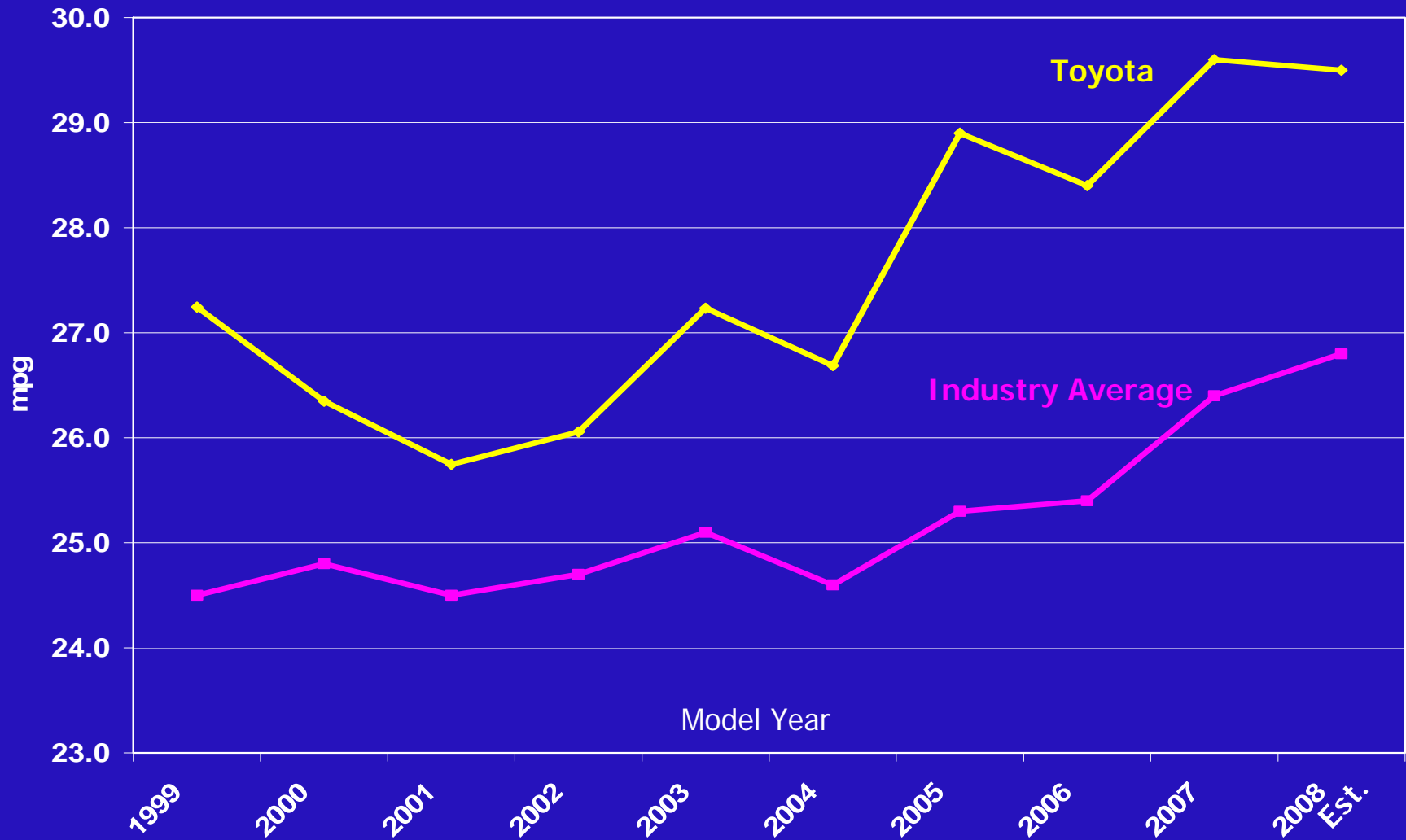




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Toyota's Overall CAFE Performance ('99-'08)

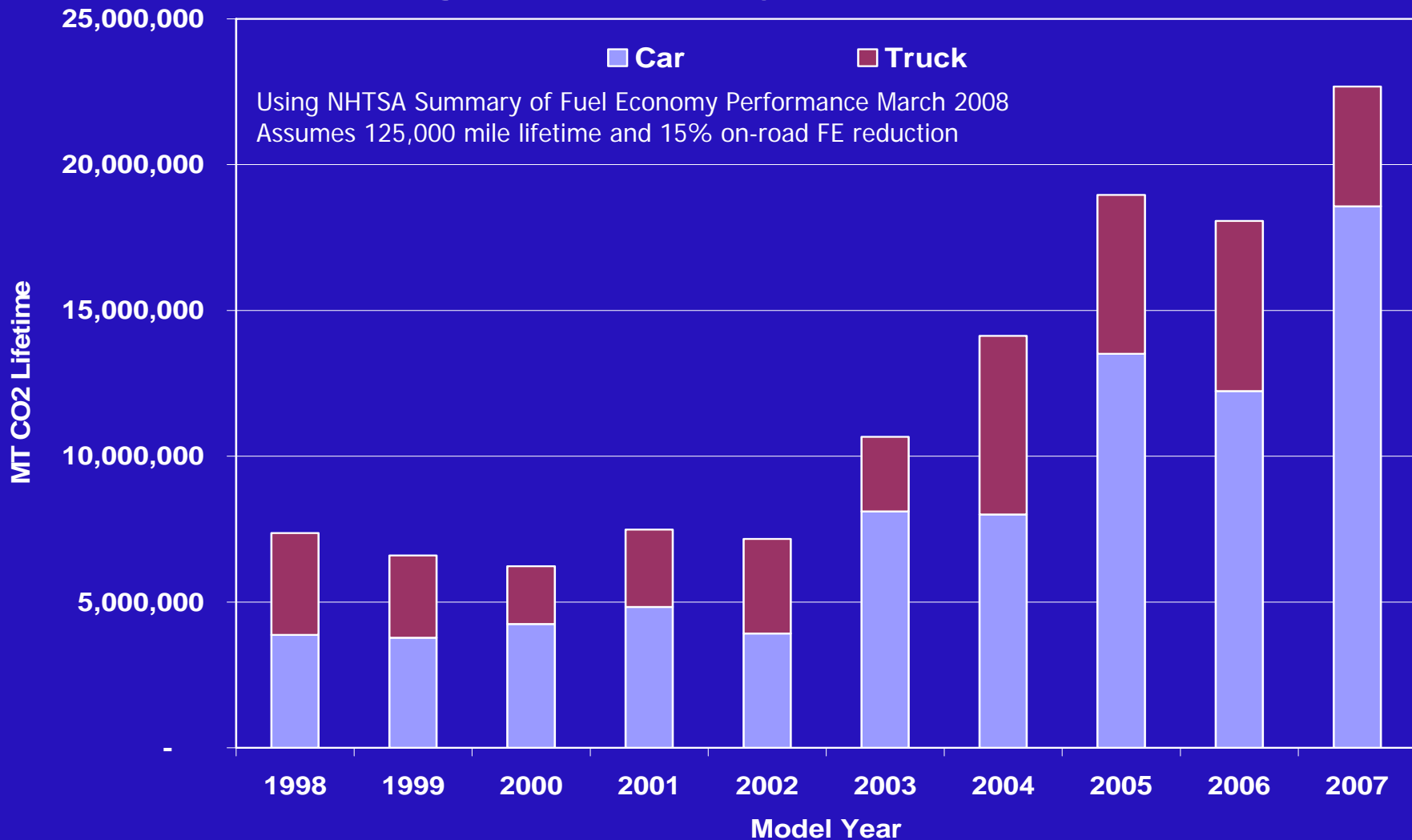




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CO2 Savings from Toyota Overcompliance

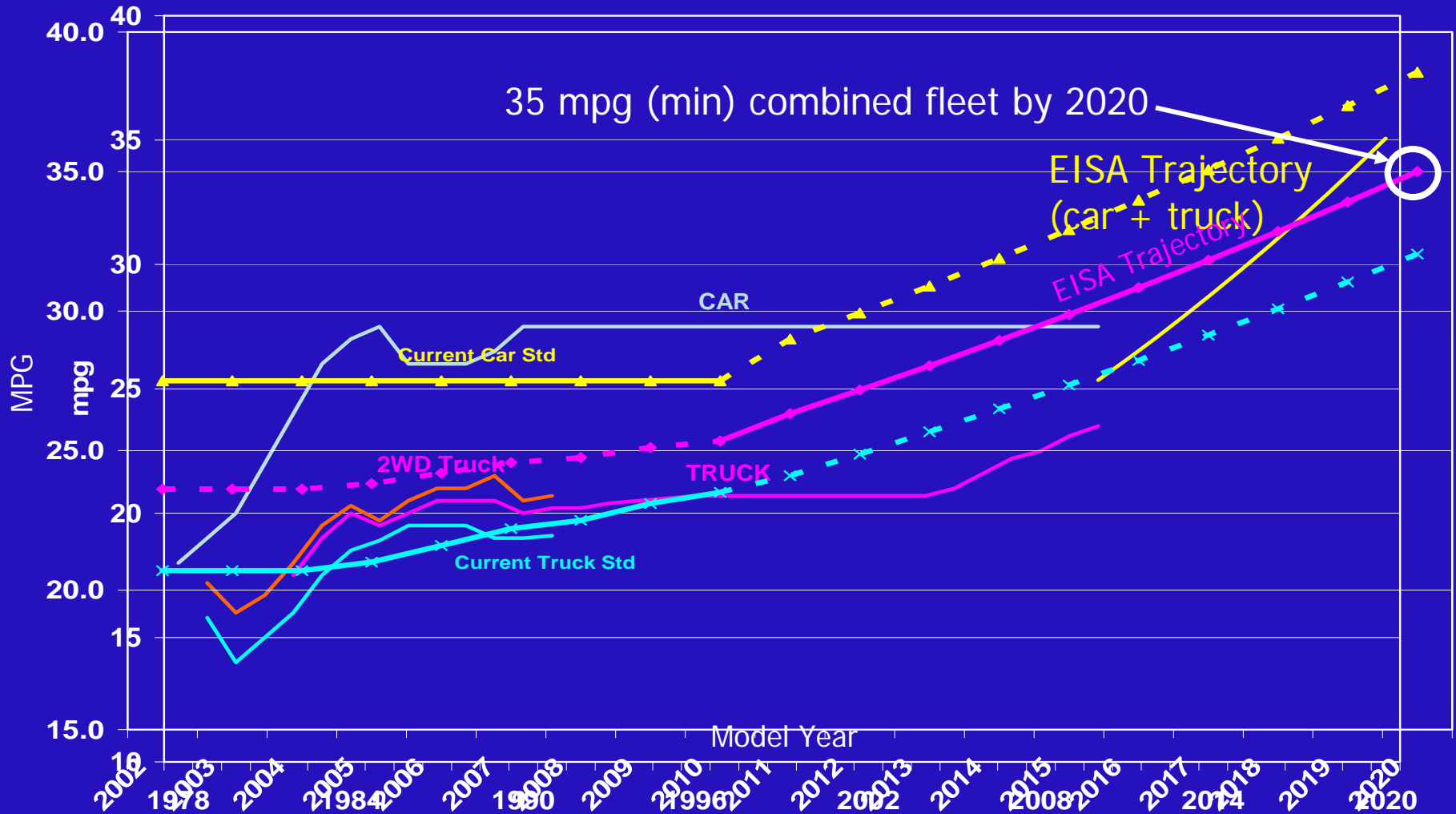




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EISA 2020 CAFE Target



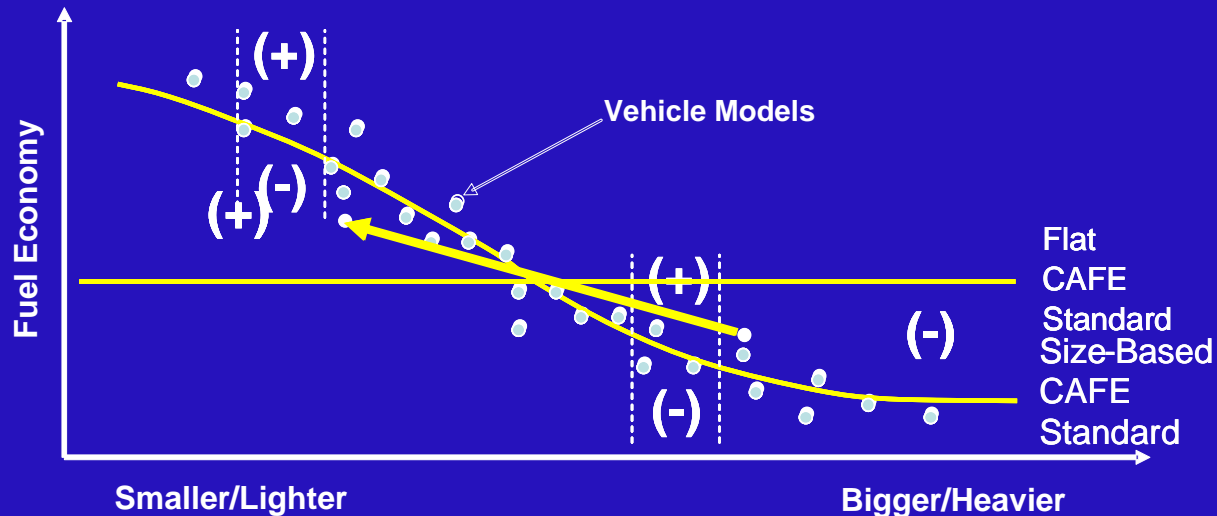


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Reformed CAFE Concept

Old CAFE System (2011 model year)



“Old” CAFE System

- Smaller vehicles provided a benefit
- Concern about small vehicle safety
- Concern about manufacturers with greater number of larger vehicles

New CAFE System

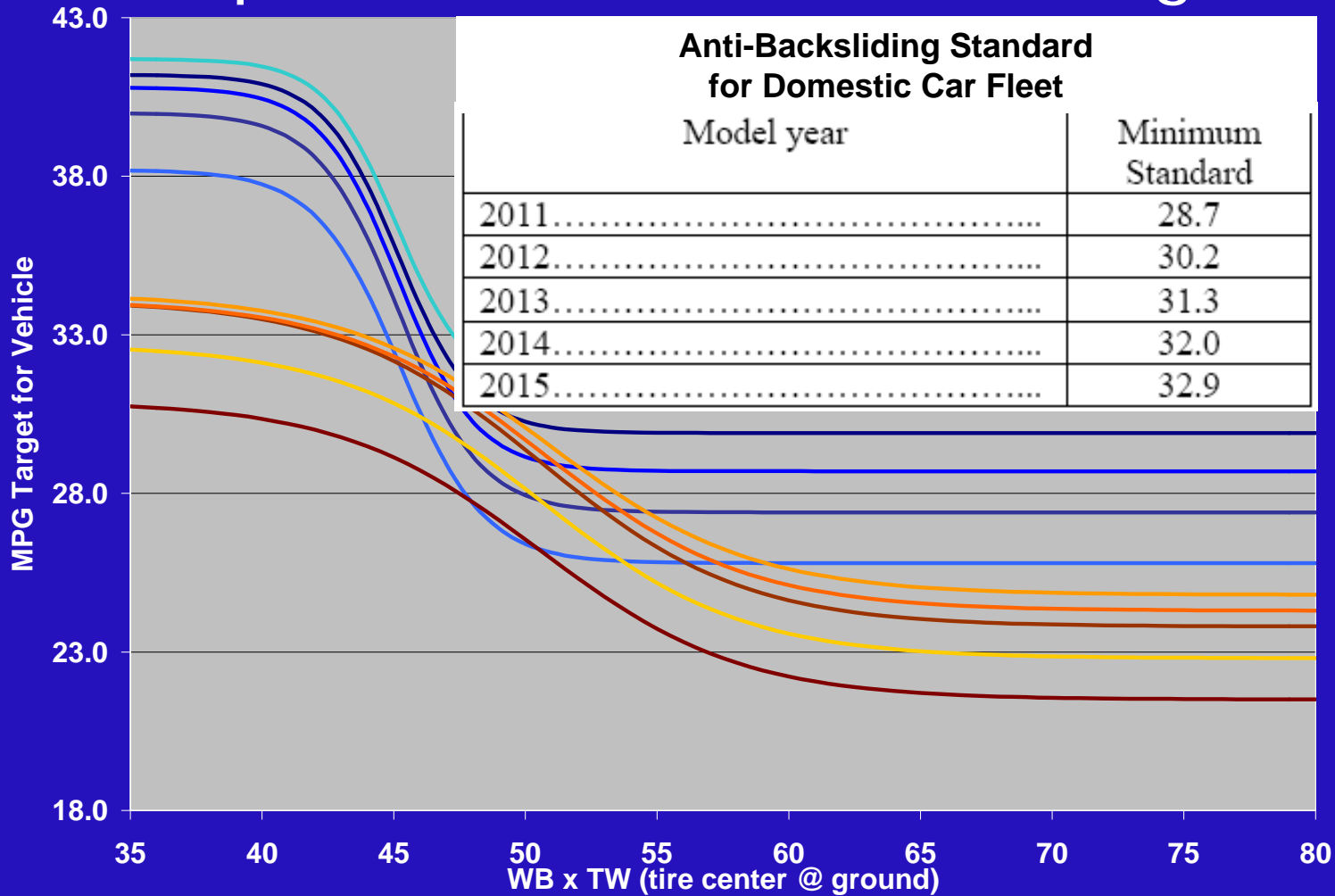
- Target based on size of vehicle
- Head-to-head fuel economy within each class is more important
- Technology needed on all size classes



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Proposed Size-Based CAFE Targets

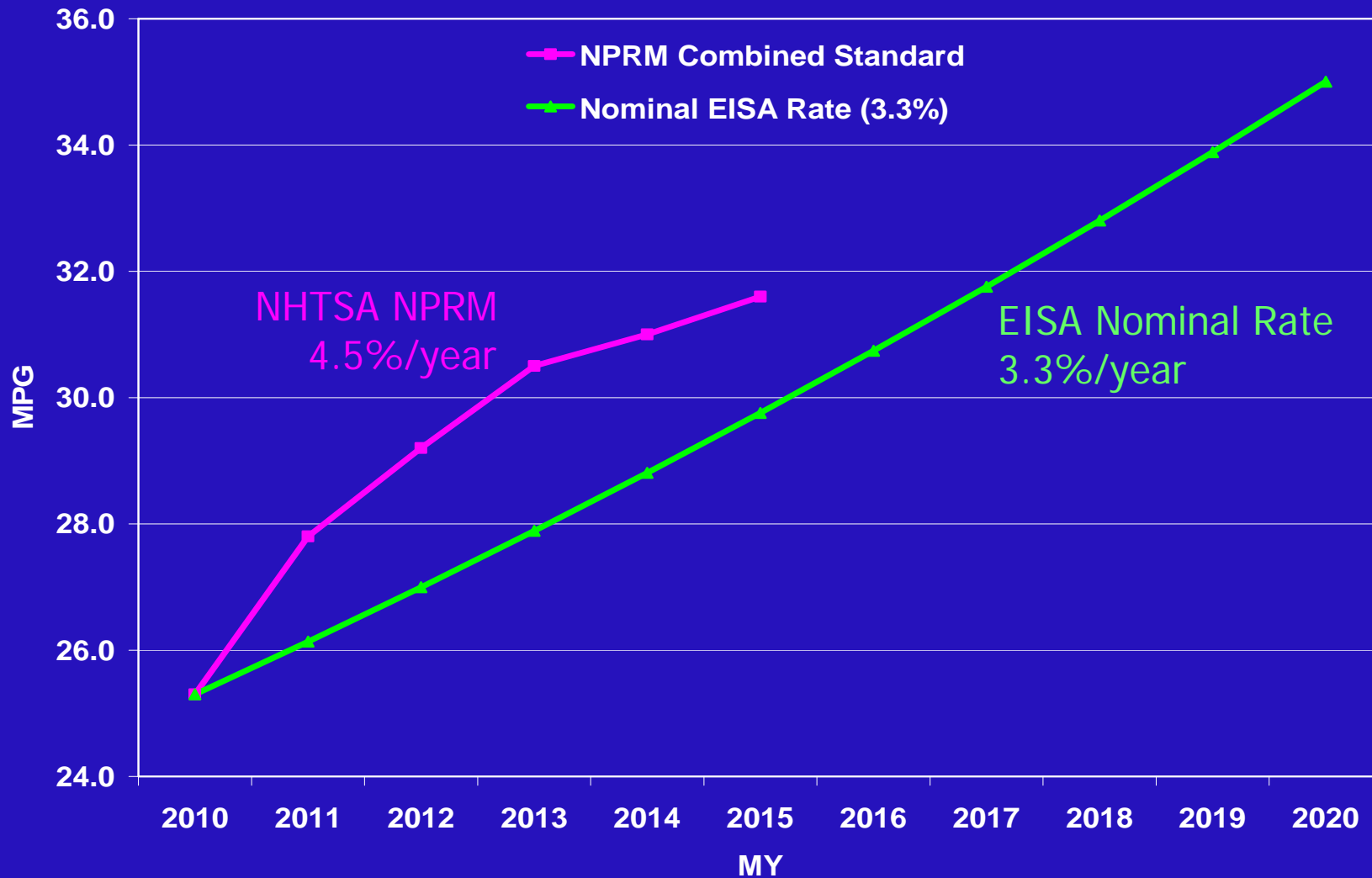




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NHTSA Proposal vs. EISA

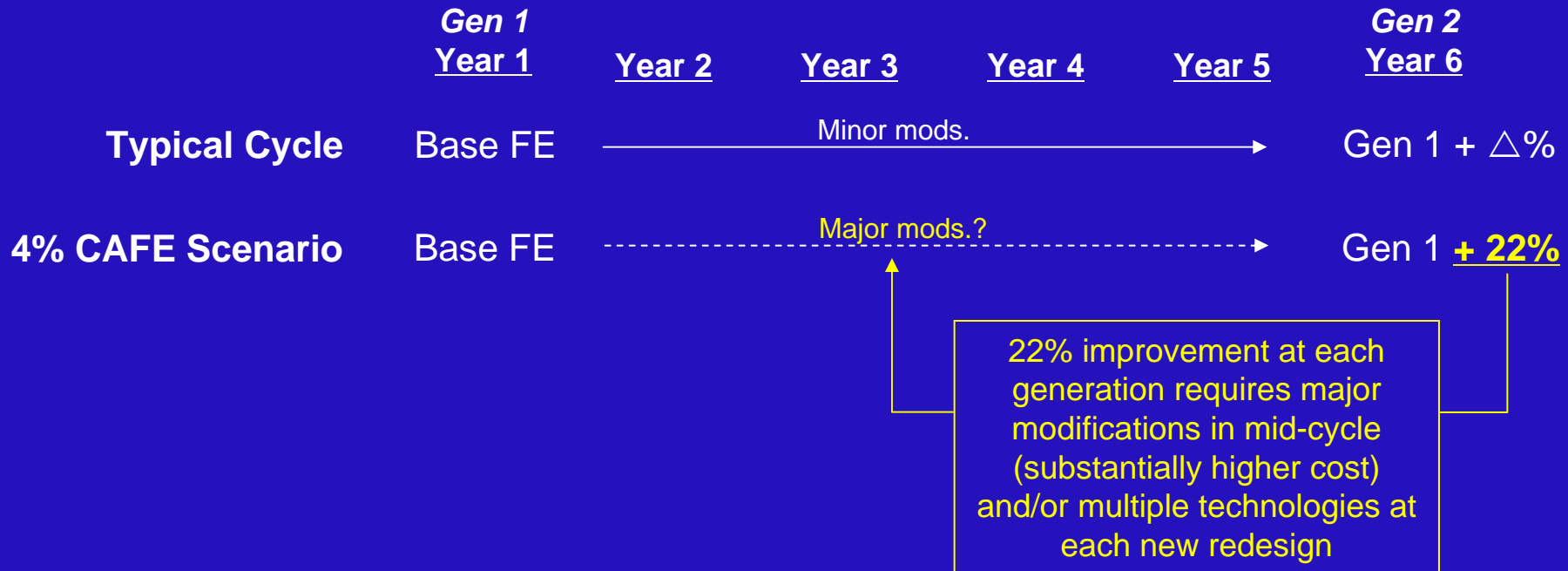




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What Does 4% per Year Really Mean?



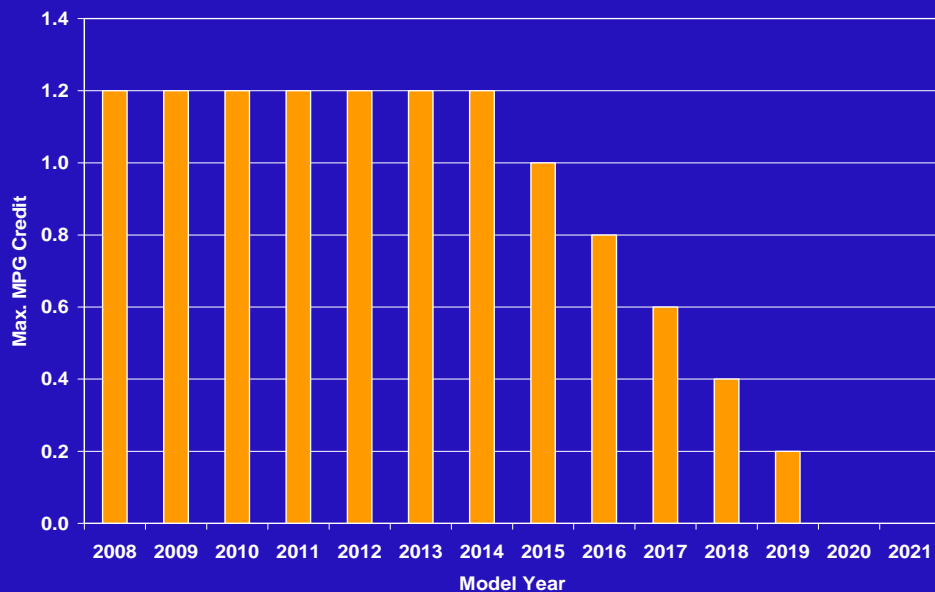


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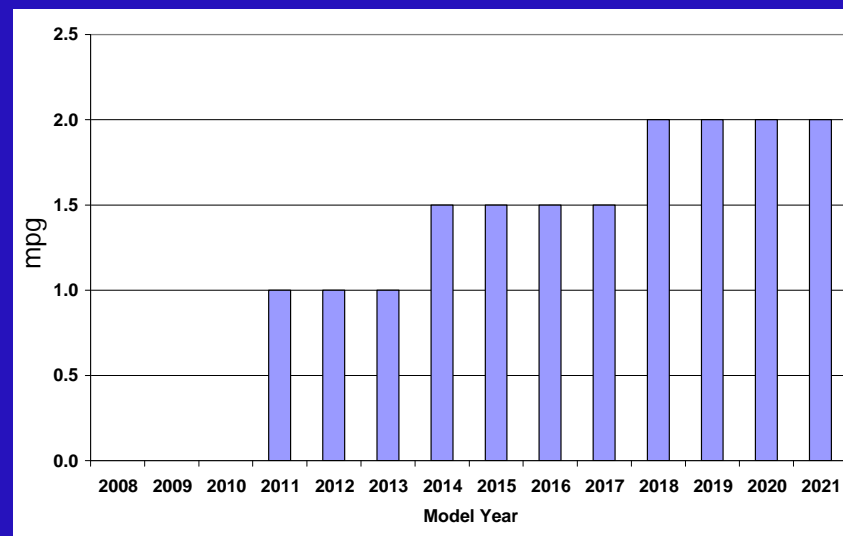


Compliance Flexibilities

FFV Credit Phase-Down



Credit Transfer Between Fleets



- NHTSA also has authority to establish a credit trading program among manufacturers



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EISA Summary

- Much more complicated regulatory program than in the past
 - 3 regulated fleets (import car, domestic car, truck)
 - Anti-backsliding standards (domestic car)
 - Reformed attributed-based structure (all fleets)
 - FFV credit phase-down
 - New inter-fleet credit transfers
- Extremely challenging compliance planning
- Final rule in November 2008



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CA AB1493 (Pavley)

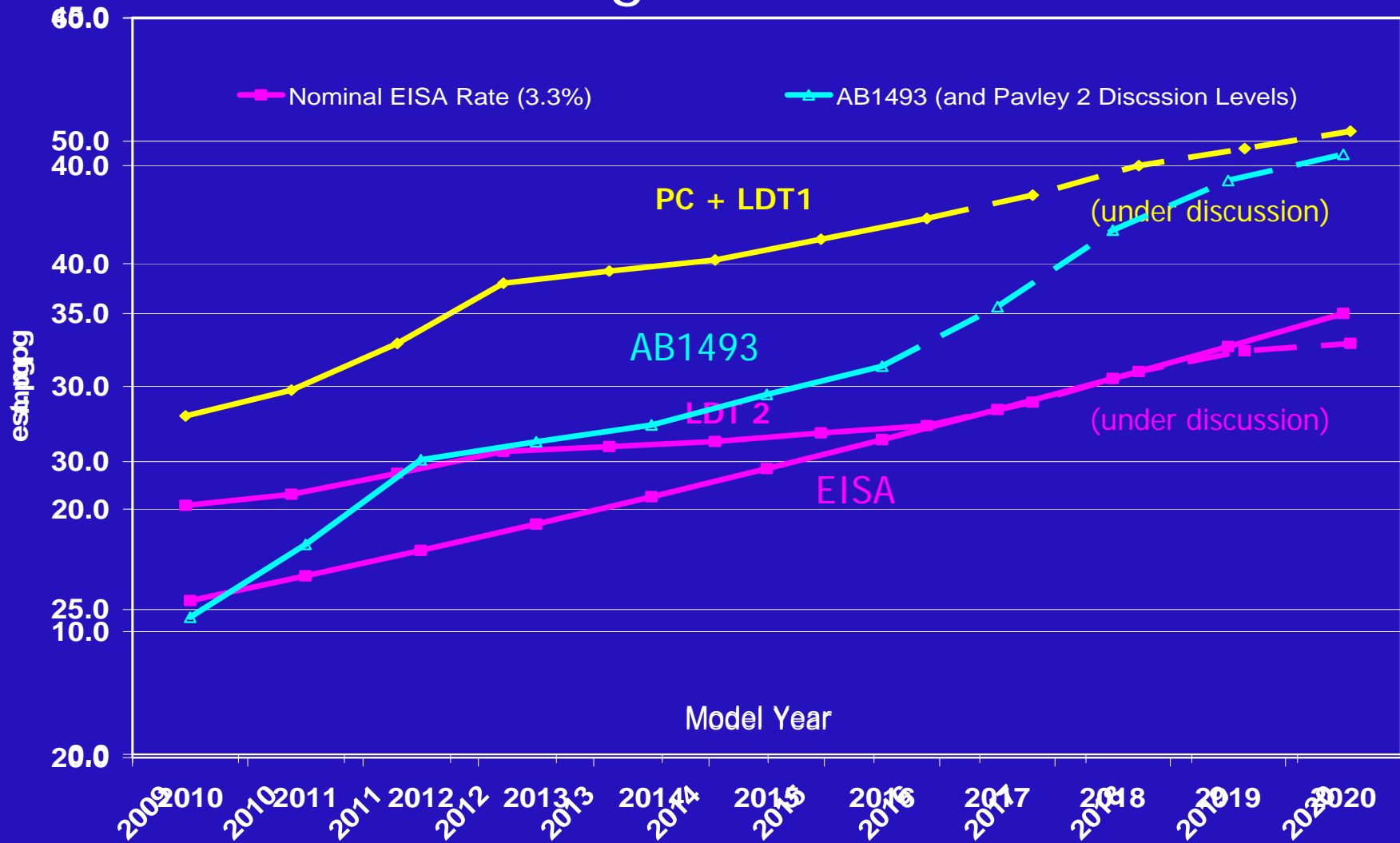
- Adopted in 2002 (regulations adopted in 2004)
- Vehicle ghg standards (not attribute-based)
- Requires waiver of federal pre-emption
 - EPA has thus far denied CA a waiver
 - Both Obama and McCain have expressed support for a waiver
- CA beginning to discuss “Pavley II” for 2017 and beyond



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CA AB1493 Single Number Standards

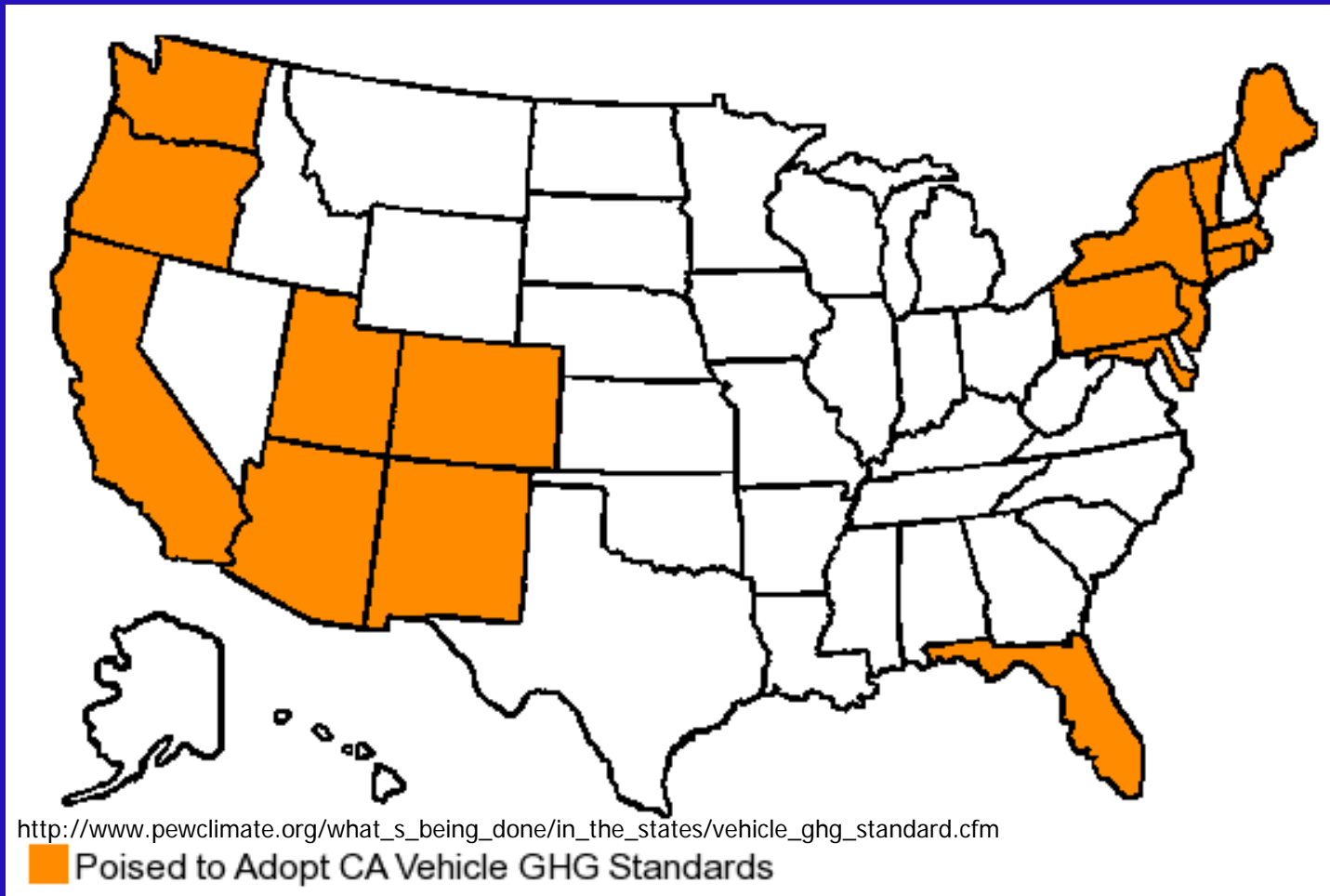




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States Adopting/Considering CA Standards





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State-by-State Compliance Challenge

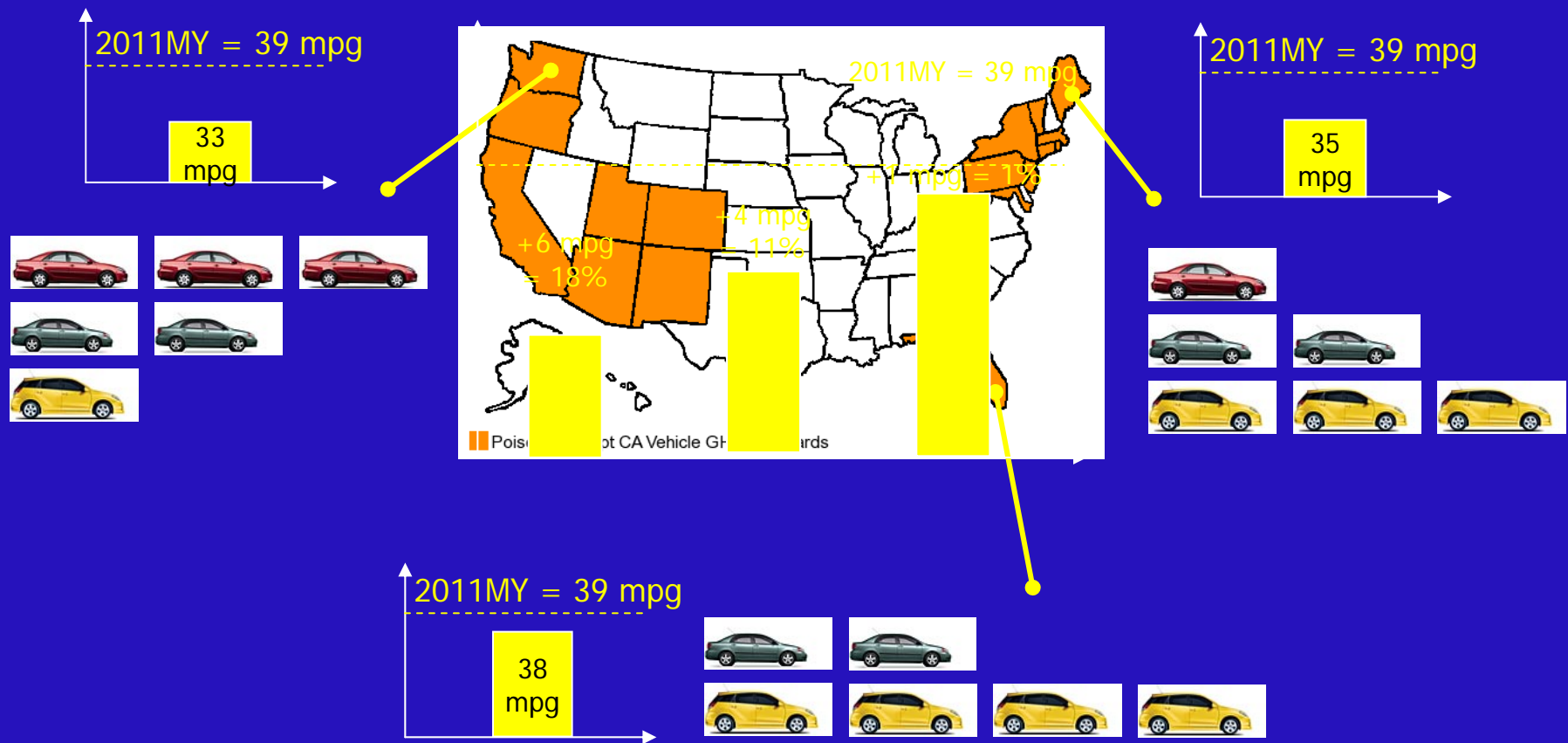
- Fleet mix varies by state
- For various reasons, consumers in some states purchase smaller or larger cars/trucks than in other states
- Toyota's new fleet fuel economy can vary by over 5 mpg from state to state
- This can cause the stringency of the standard to vary significantly state-by-state
- Compliance could require technology application on some models in certain states that would not be needed for compliance in other states



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Hypothetical Example – State-by-State Compliance





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EPA Adv. Notice of Proposed Rulemaking

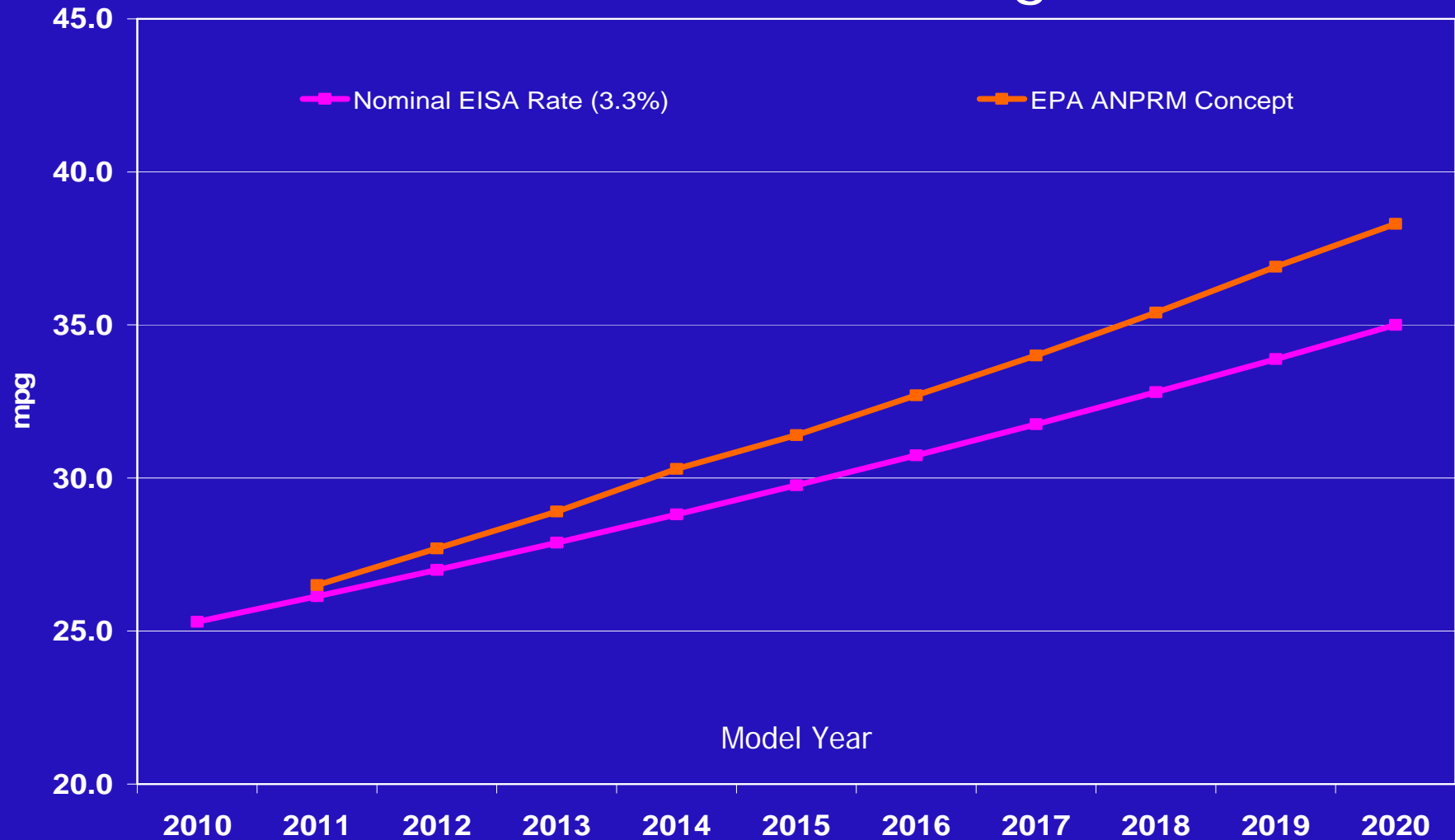
- Supreme Court – EPA has authority to regulate GHG under the Clean Air Act
- EPA must make an “endangerment finding”
- Could trigger mobile source and stationary source regulation
- Seeking public comment (by late November)
- Possible mobile source regulation
 - Vehicle ghg limits
 - Fuel carbon limits
 - Cap-and-trade
 - Etc.



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EPA Greenhouse Gas Regulation





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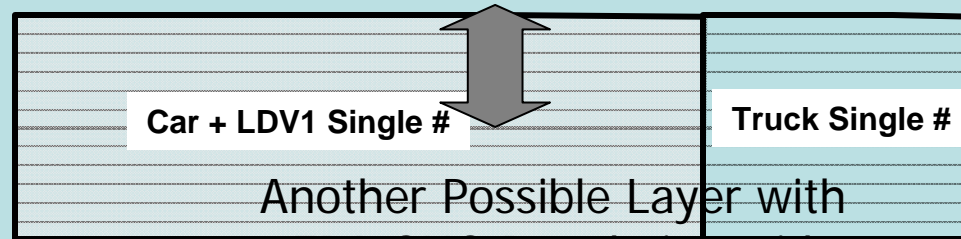
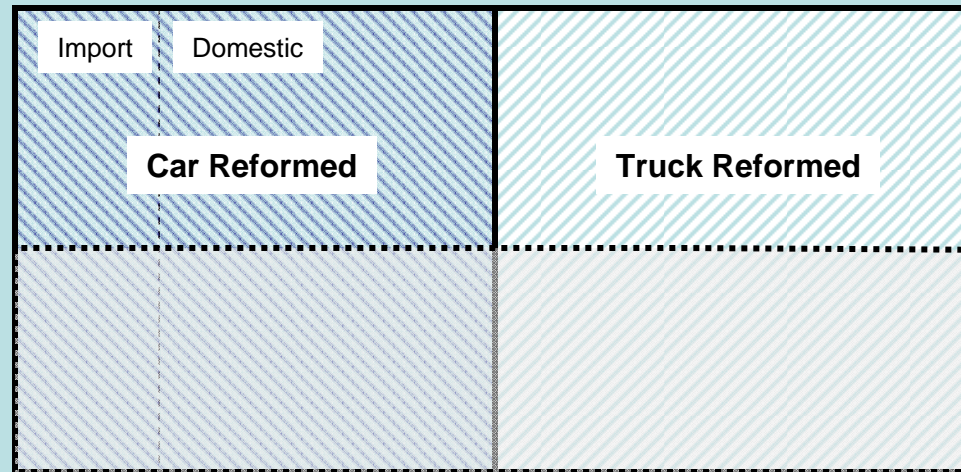
The Net Result – Myriad Levels





The Net Result – Myriad Structures/Compliance Plans

- Federal Program:
(nationwide requirements)
- 3 Separate Fleets:
 - Dom. Car Anti-Backsliding
 - Reformed Structure
 - FFV Credits
 - Inter-fleet Credits
- CA + CA Adopters:
(~40% of nationwide fleet)
- 2 Separate Fleets
- Single # Structure
- FFV Credits if Fuel Used
- No Inter-fleet credits



Another Possible Layer with
EPA GHG Regulation with

- Reformed system?
- Single # system?
- Cap-and-trade?

Separate
Compliance in
Multiple States



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Conclusions

- Toyota will continue to aggressively pursue deployment of conventional and advanced technology vehicles to reduce emissions and improve fuel economy
- Toyota favors a single national program
 - A single set of requirements for technology planning
 - With over 60 vehicle configurations and products on various different redesign cycles, we have discrete and limited opportunities to deploy new technology
- Planning for multiple programs, with multiple structures, with various compliance levels, with different flexibility provisions, and administered by various federal and state agencies with different statutory obligations, is an unmanageable situation



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Thank You!



Questions?