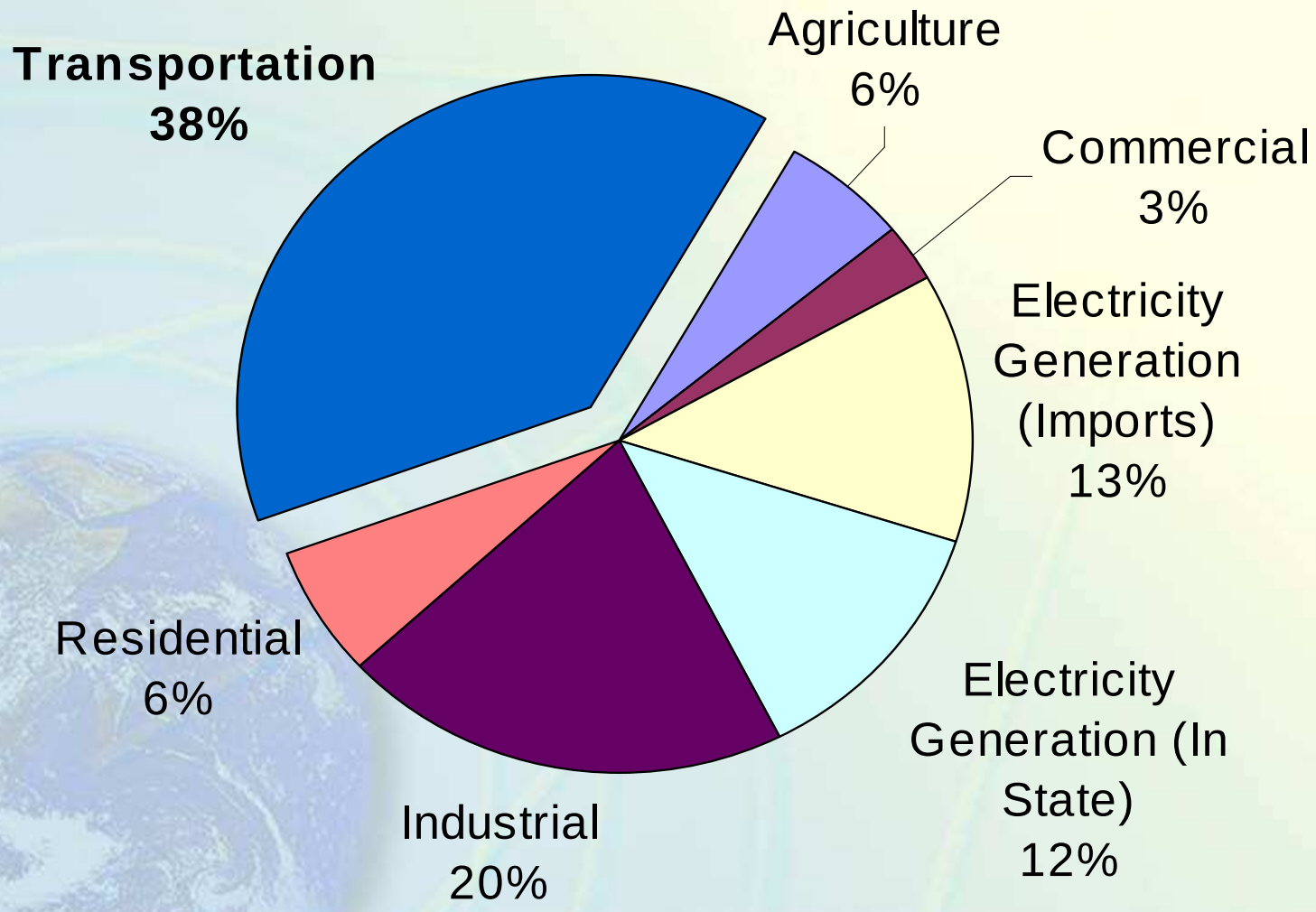
# AB 32 Implementation Update: Transportation

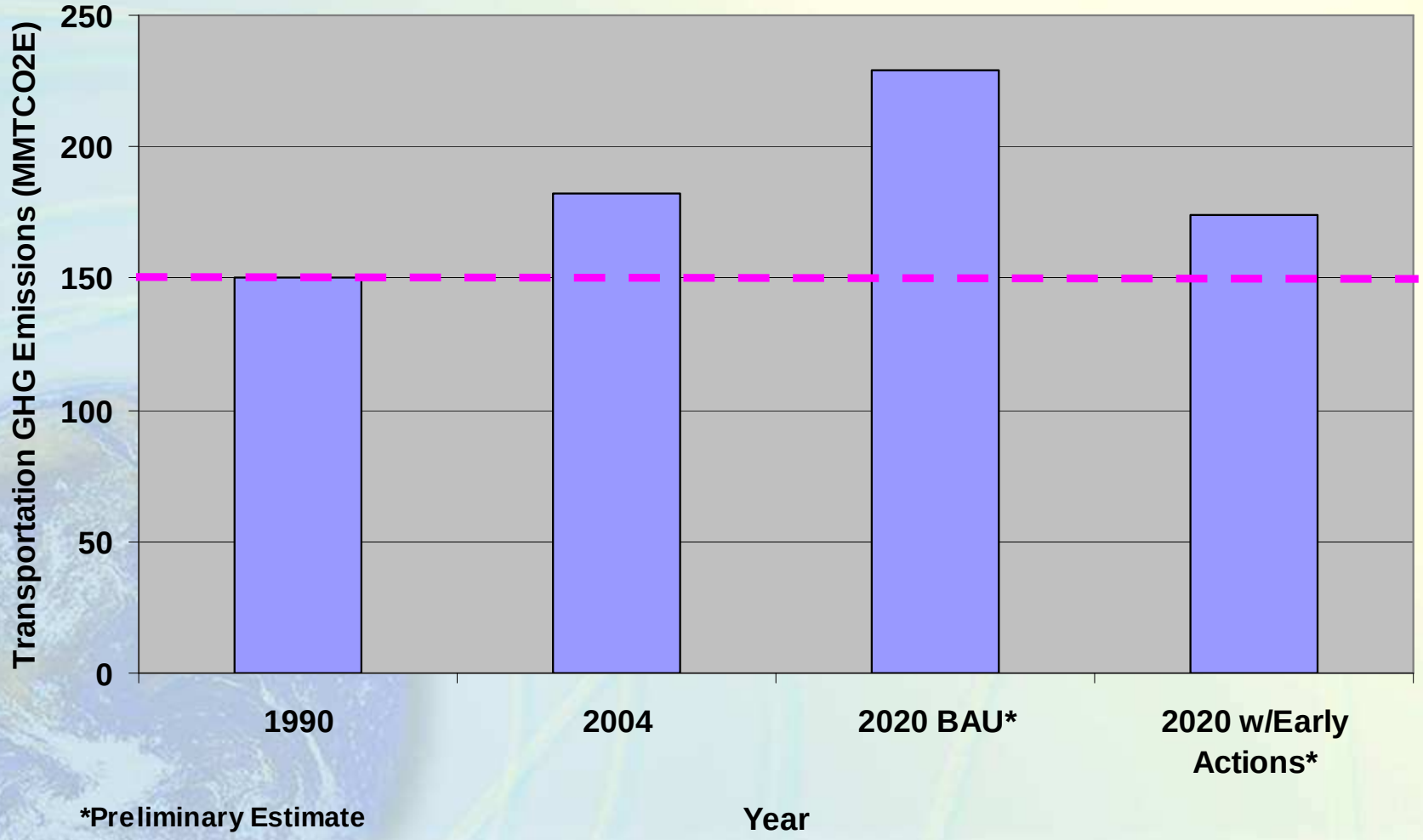
**California Air Resources Board**

**February 28, 2008**

# California 2004 GHG Emissions (480 MMTCO$_2$E)



# Transportation Sector Emissions ($MMTCO_2E$)




*Preliminary Estimate

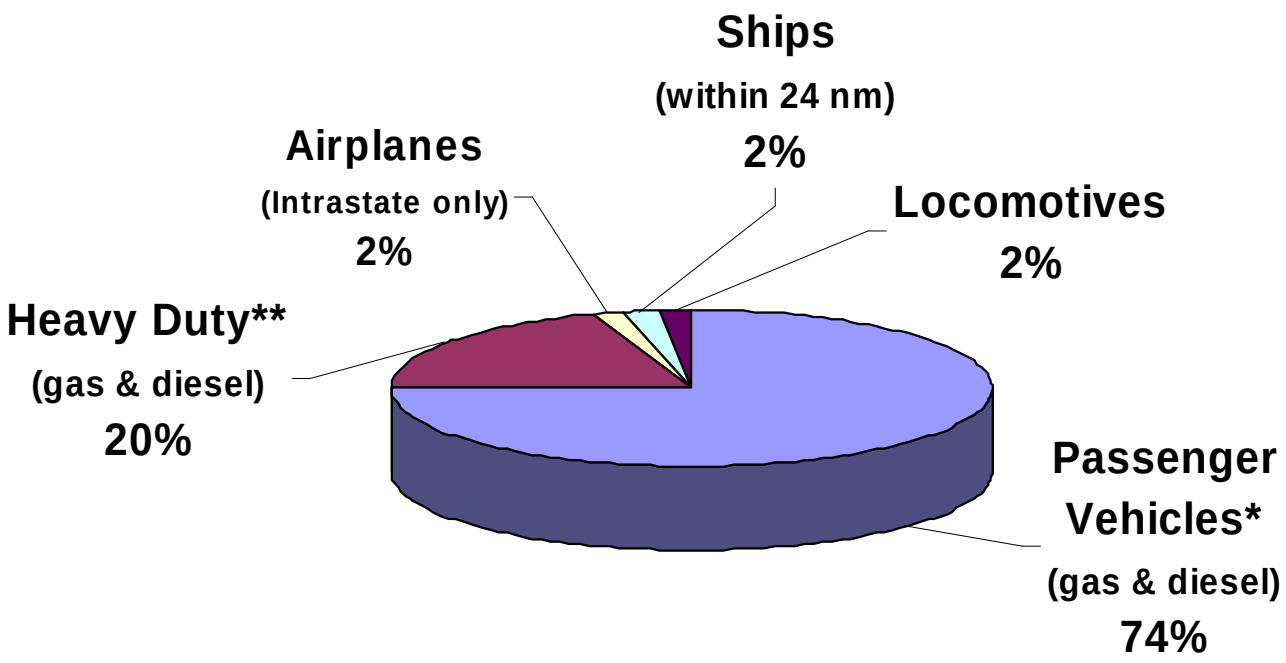
# Increase in Vehicle Use

- Growth in Statewide Vehicle Miles Traveled (VMT )
  - Increased 35% between 1990 and 2007
  - Expect 20% increase between now and 2020
  - Expect 50% increase between now and 2040
- VMT increase due to population growth and more per capita driving
- VMT trend must be slowed, ultimately reversed

# Overarching Strategies

| | | Vehicle Technology | | Fuels | | Vehicle Use |
|---|---|---|---|---|---|---|
| Transp. GHG | ≈ | $\left( \frac{\text{GHG}}{\text{Mile}} \right.$ | + | $\frac{\text{GHG}}{\text{Gallon}}$ | + | $\left. \text{VMT} \right)$ |
| | | ⇧ | | ⇧ | | ⇧ |
| | | AB 1493 Regulation | | Low-Carbon Fuel Standard | | Transp. & Land Use Strategies |

# Cars and Trucks—Biggest Source




182 MMTCO2E (2004)

# Scoping Plan Vehicle Measures

- Adopted measures
  - AB 1493 (Pavley)
- Early Actions
  - Strengthening the Pavley regulation
  - Cool Paints
  - Truck Efficiency
  - Additional Early Actions:
    Tire Inflation, Enforcement, Hybridization of Urban Trucks, TRUs (electric standby)

# AB 1493 Status

- GHG standards adopted in 2004
  - Applicable to light duty vehicles beginning model year 2009; phased-in through 2016
- Adopted by 12 other states
- U.S. EPA denied waiver
  - U.S. EPA decision challenged in court by California and other states

# Vehicle Technology Symposium

- April symposium to explore additional ways to reduce GHG emissions from passenger vehicles
  - Current technologies
  - Advanced technologies
  - Pricing mechanisms
  - Fuels
  - Driving behavior
- Focus on 2020 and 2050

# Low Carbon Fuel Standard (LCFS)

- Achieve 10 percent reduction in carbon intensity by 2020
- Estimated reduction of 10–20 $MMTCO_2E$ by 2020
- Reduce dependency on petroleum-based fuels
- Diversify CA's options for transportation fuels

# Reducing VMT

- Land Use Sub-Group of the Climate Action Team (LUSCAT)
  - Multi-agency planning effort
- Local leadership
- Topic of 2008 Haagen-Smit Symposium
- Topic of Board update in May

# Summary

- Transportation Sector has opportunity for significant GHG reductions
  - Cleaner engines
  - Lower carbon fuels
  - Reduction in VMT
- Reductions from this sector are essential to meeting the GHG emission reduction targets

# Comparison of GHG Reductions Achievable Under New Federal Fuel Economy Standards Versus Under CA's GHG Standards

# Recent Events

- CA GHG regulations
  - Adopted - 2004
  - Waiver request to EPA - 2005
  - Two auto industry lawsuits uphold CA's regulation - 2007
  - EPA denies waiver – Dec.19, 2007
- Federal energy bill signed – Dec 19, 2007
  - Sets 35 mpg fuel economy (CAFÉ) std. for 2020 models
  - NHTSA to decide interim standards, beginning with 2011 models

# EPA Waiver Denial

- EPA Administrator Johnson stated:
  - CA does not have a "need to meet compelling and extraordinary conditions" (*condition to receive waiver*)
  - Climate change is a national problem
    - National solution (i.e. CAFÉ) more effective
  - New federal legislation more stringent than CA regulation
- No written support for his position

# ARB Analysis

- Evaluated impact of federal fuel economy standards (CAFÉ) on GHG emissions
  - Compared to CA GHG standards
    - In California
    - In other States and Provinces
  - Compared by calendar year, and cumulatively from now to 2016 and 2020

# Conclusion of ARB Analysis

- ARB GHG standards reduce more GHG emissions than new federal fuel economy standards
  - In CA, and other states
  - In short term, and in long term
- Results at: http://www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf

# Comparison for California

| Calendar Year | GHG Emissions Reduced* | |
|---|---|---|
| | CA GHG standard | Fed. Fuel Economy Std. |
| 2016 | 16.4 | 7.5 |
| | | |

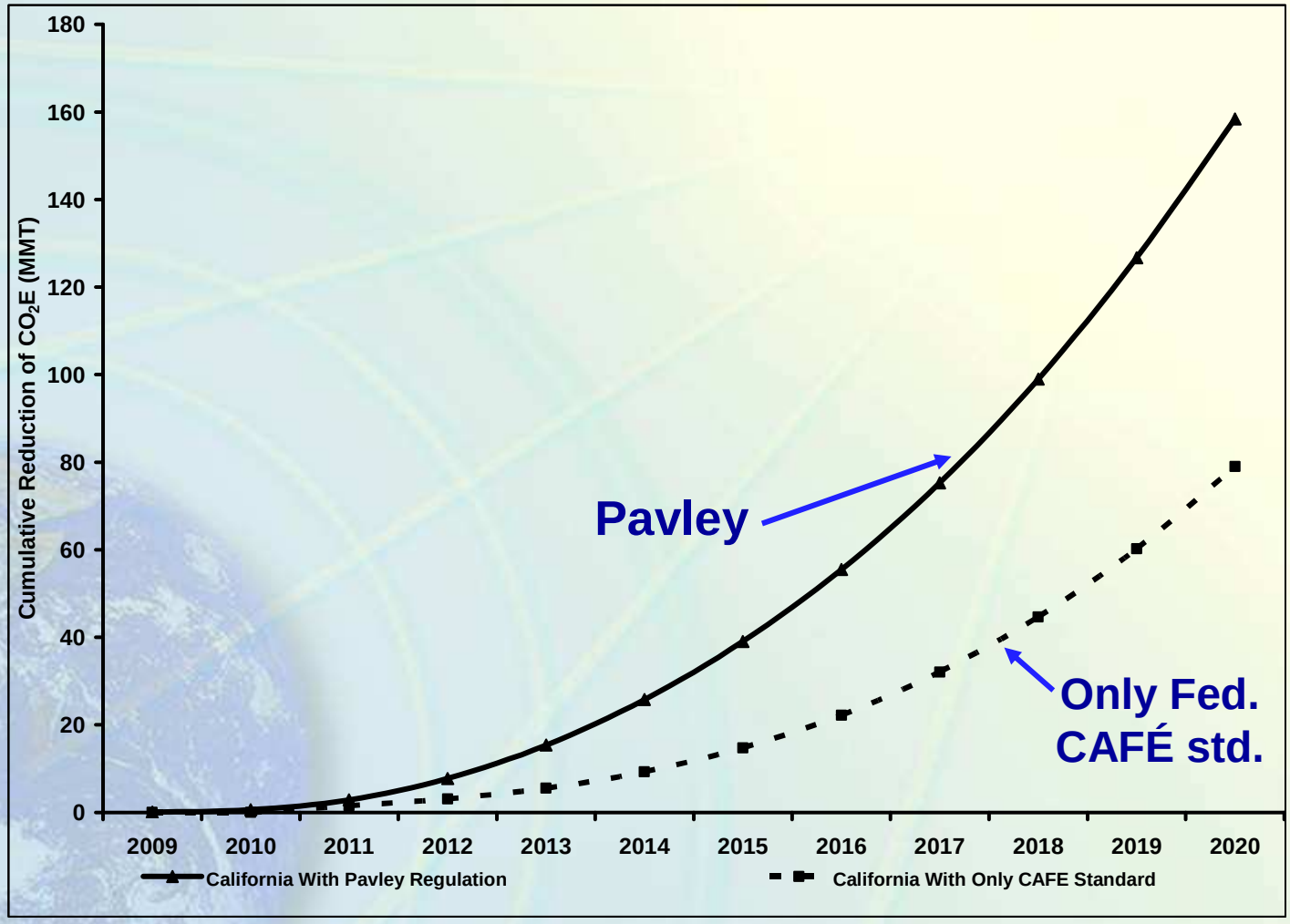
* MMT CO2E/year

# Comparison for California

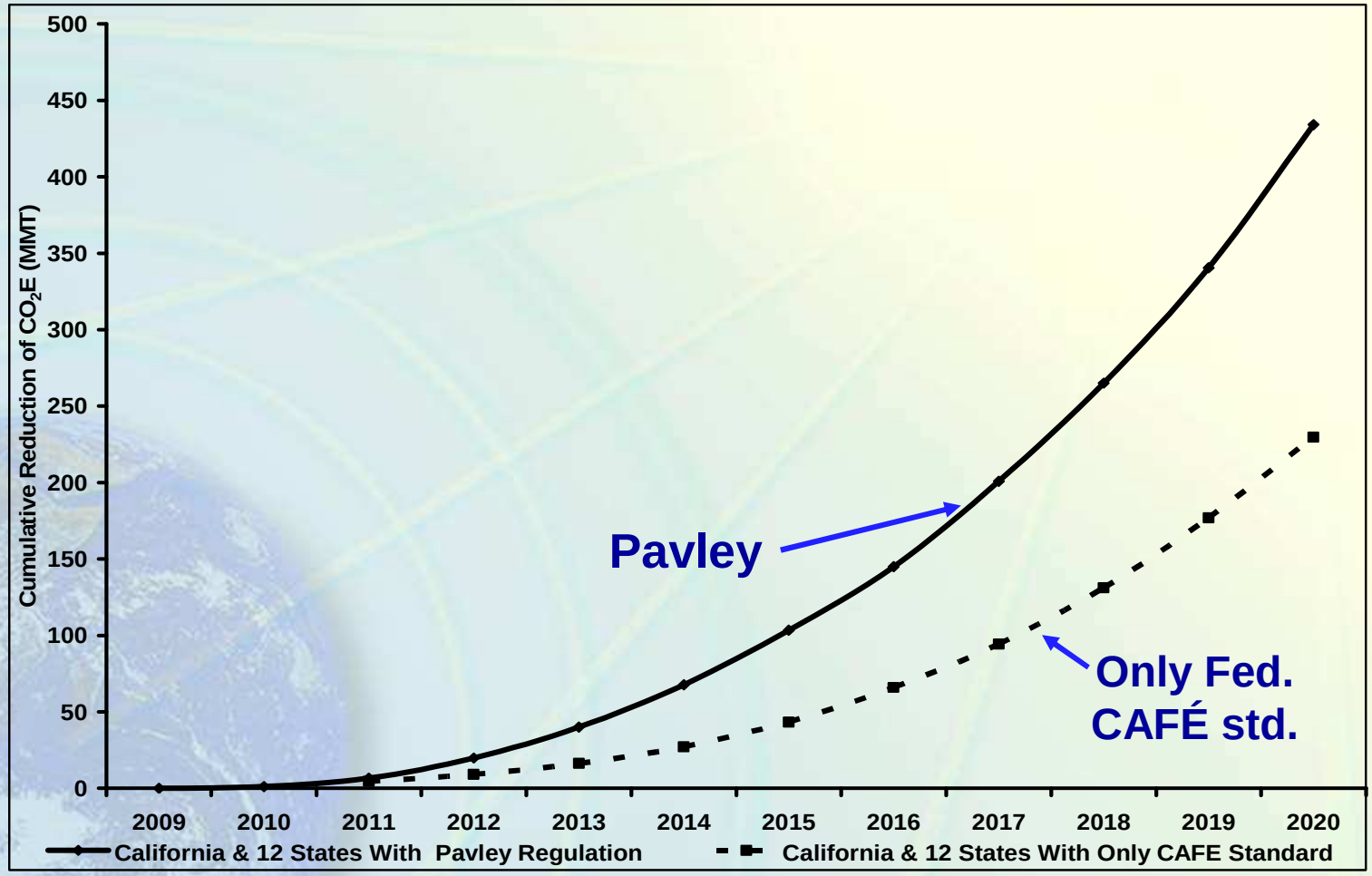
| Calendar Year | GHG Emissions Reduced* | |
|---|---|---|
| | CA GHG standard | Fed. Fuel Economy Std. |
| 2016 | 16.4 | 7.5 |
| 2020 | 31.7 | 18.8 |

* MMT CO2E/year

# Cumulative GHG Reductions In California



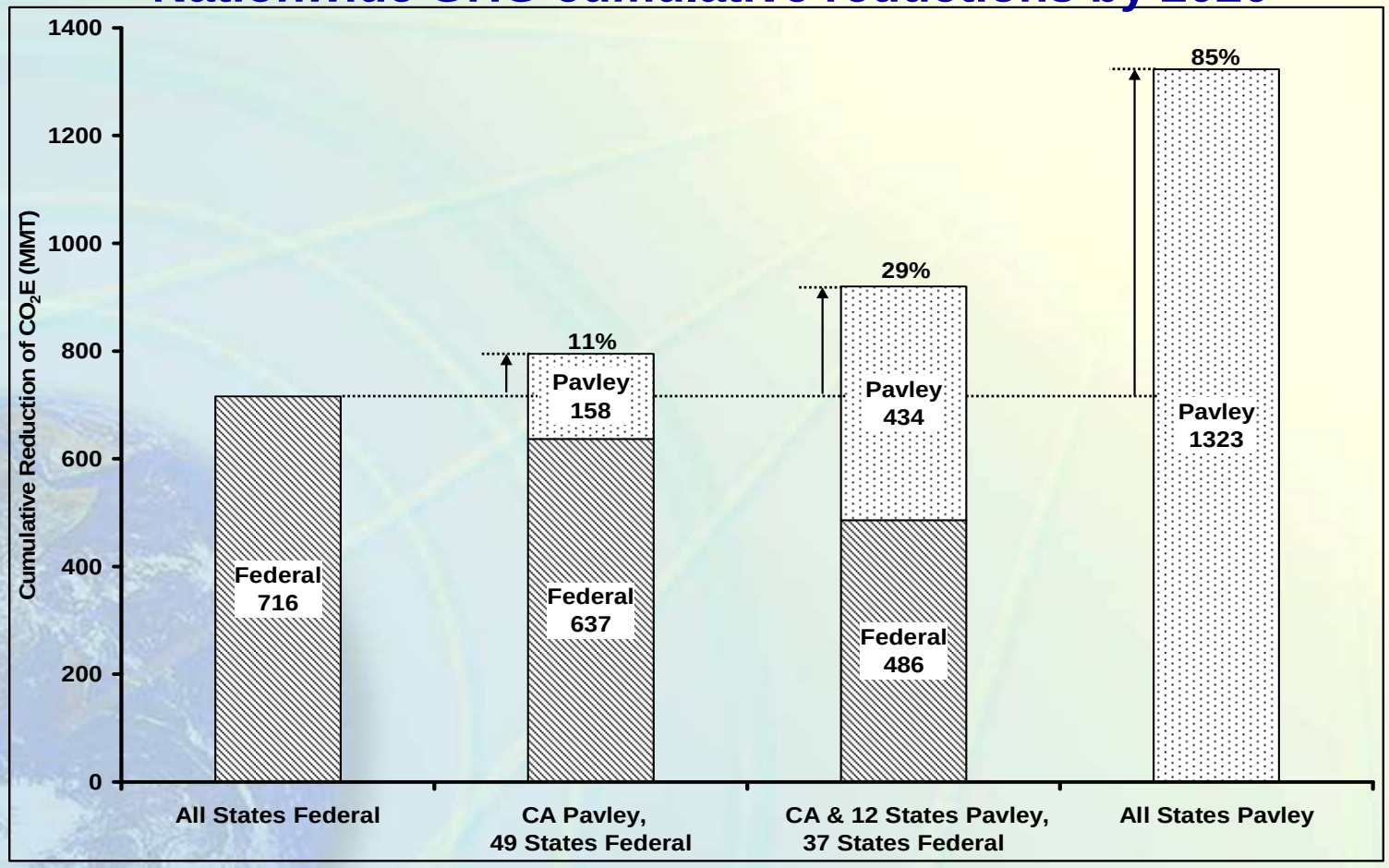
# Cumulative GHG Reductions in Other States*




* CA + 12 states that adopted Pavley stds.

# CA GHG Standards More Effective Nationally

## Nationwide GHG cumulative reductions by 2020



# Comparison Based on Fuel Savings in Other States*

| | Ave. Fuel Economy, mpg New Vehicles | |
|---|---|---|
| Model Year | CA GHG Standards** | Fed. CAFÉ Standards |
| 2016 | 32.3 | 29.7 |
| | | |

* Assumes PC/LDT1 and LDT2 sales split 50%/50%

** Based on CO2 portion of GHG emissions reduced

# Comparison Based on Fuel Savings in Other States*

| | Ave. Fuel Economy, mpg New Vehicles | |
|---|---|---|
| Model Year | CA GHG Standards** | Fed. CAFÉ Standards |
| 2016 | 32.3 | 29.7 |
| 2020 | 39.2 | 35.0 |

* Assumes PC/LDT1 and LDT2 sales split 50%/50%

** Based on CO2 portion of GHG emissions reduced

# Why Are CA GHG Standards More Effective?

- Start earlier
- Ramp up quicker
- Address the problem – GHG – directly
- No loopholes (e.g. FFV credit)
- Will become more stringent post-2016
  - “Pavley 2”

# Pavley 2 Standards

- Planned for adoption in 2010
  - Effective with 2017 models
- Based on technologies now becoming mainstream
  - HEVs, PHEVs, Diesel
- GHG reduction increase to 40+% (from 30% of Pavley 1)
  - 4 MMT CO2E additional benefit in 2020
  - Much more by 2030

# Summary

- CA GHG standards are more effective*
  - In reducing GHG emissions
    - In any individual year
    - Cumulatively
  - In saving fuel
  - In CA alone
  - In other 12 “Pavley” states
  - Nationwide
- Pavley 2 will put us on path to 2050 goal
  - 80% reduction in GHG

*** Compared to federal CAFE**