

# State and Regional Activities to Limit Greenhouse Gas Emissions

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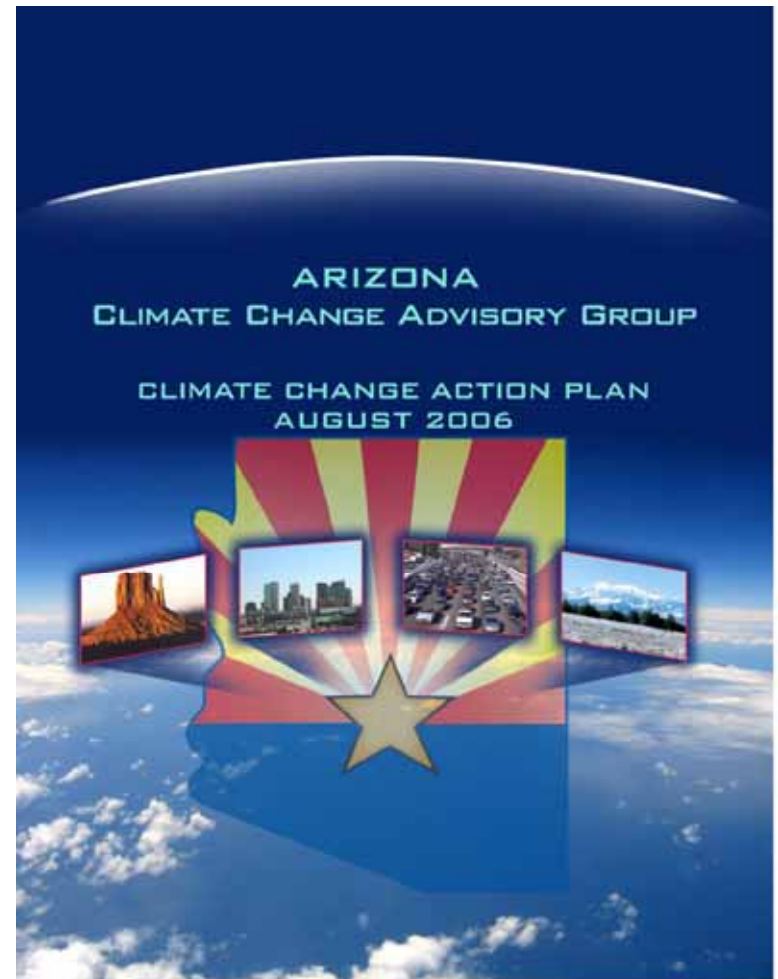
# Overview of State Activities

- Climate Change Action Plan
- Executive Order 2006-13
- GHG Emissions Reporting
- Clean Car Program
- Participating in Western Climate Initiative and national dialogues

[www.azclimatechange.gov](http://www.azclimatechange.gov)

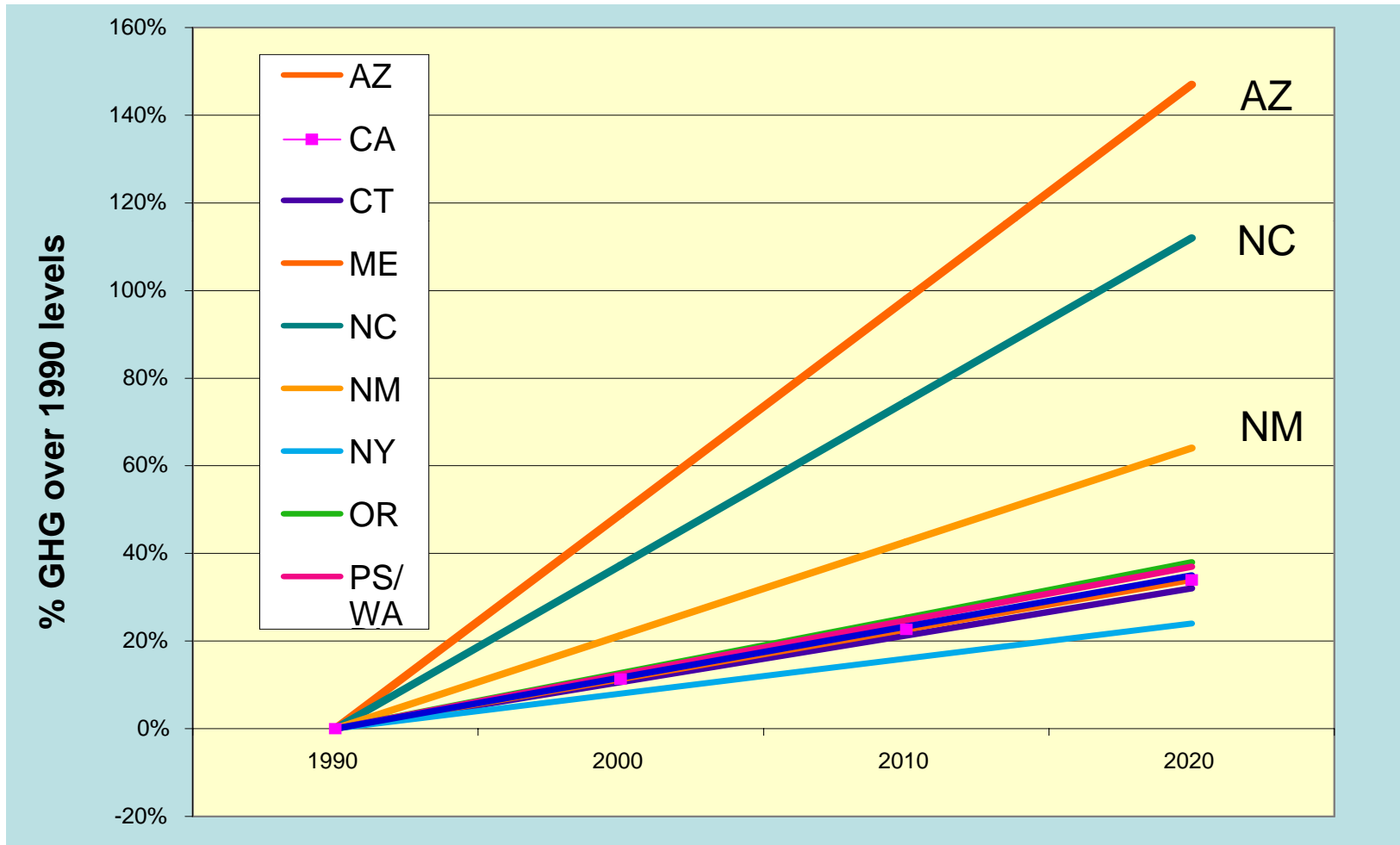
# AZ Climate Change Action Plan

- Initiated by Governor Napolitano
  - Executive Order 2005-02
- 36-member Climate Change Advisory Group (CCAG)
- CCAG to produce a Climate Change Action Plan
  - Greenhouse gas emissions inventory and forecast
  - Recommendations for reducing GHGs in AZ



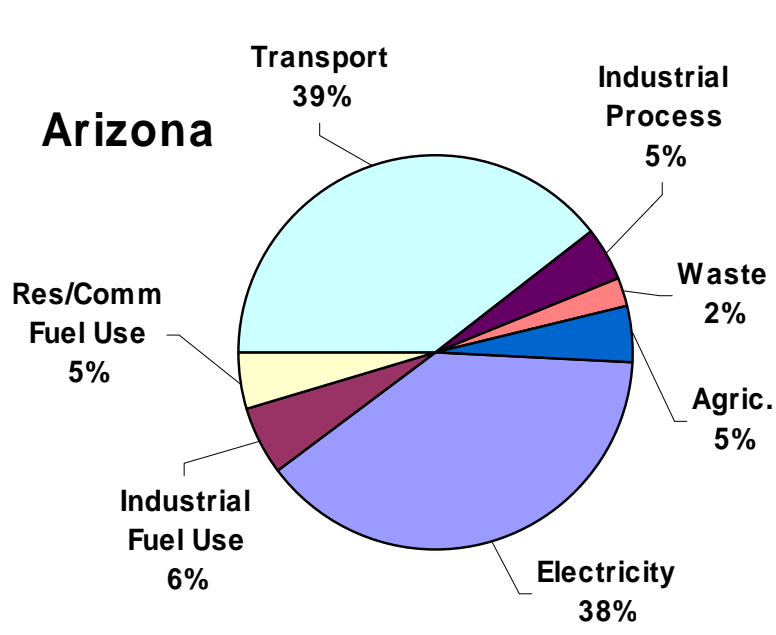
# AZ Climate Change Action Plan

## GHG Emissions Growth for States with Climate Plans

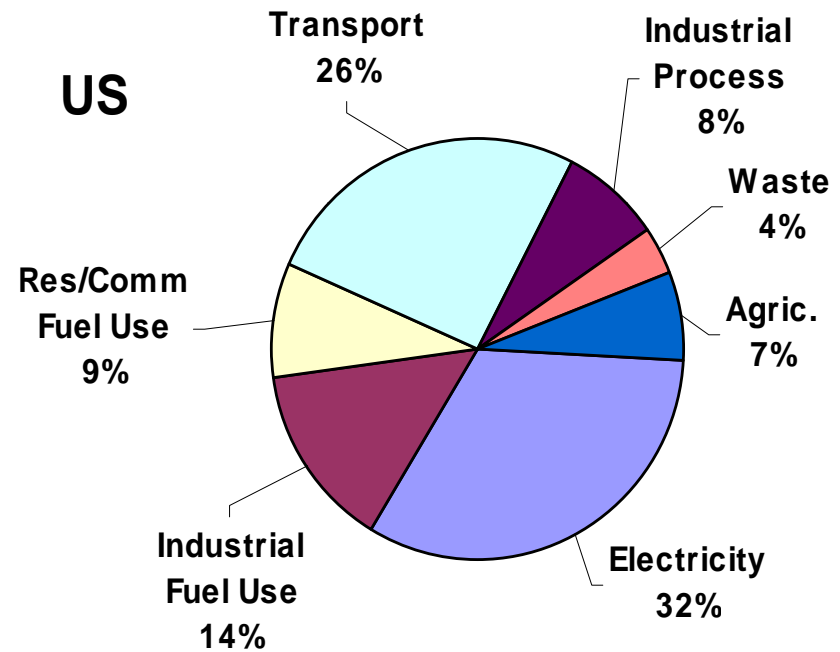


# AZ Climate Change Action Plan

GHG Emissions by Sector, 2000



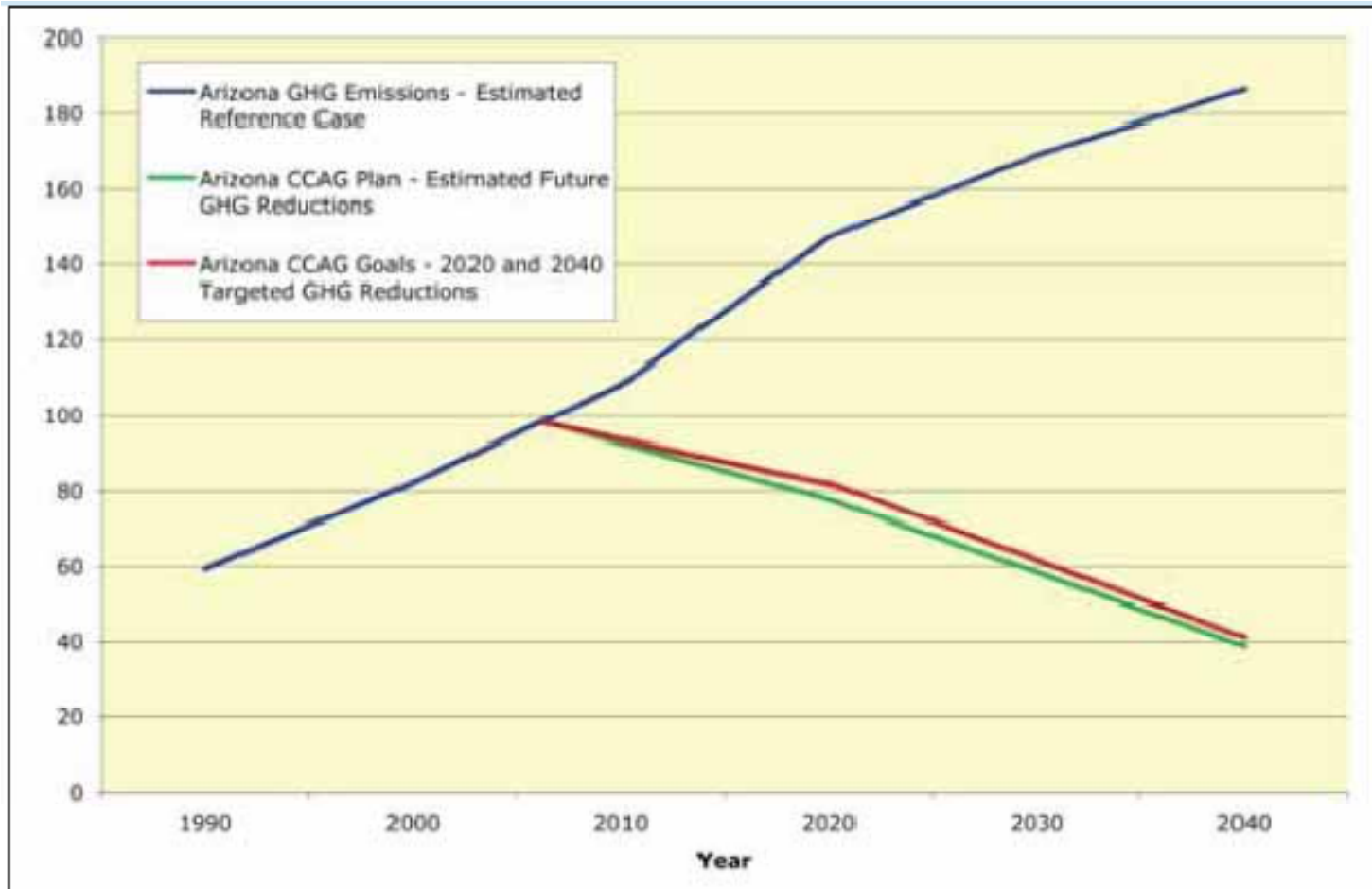
100 MMt CO<sub>2</sub>e



7,100 MMt CO<sub>2</sub>e

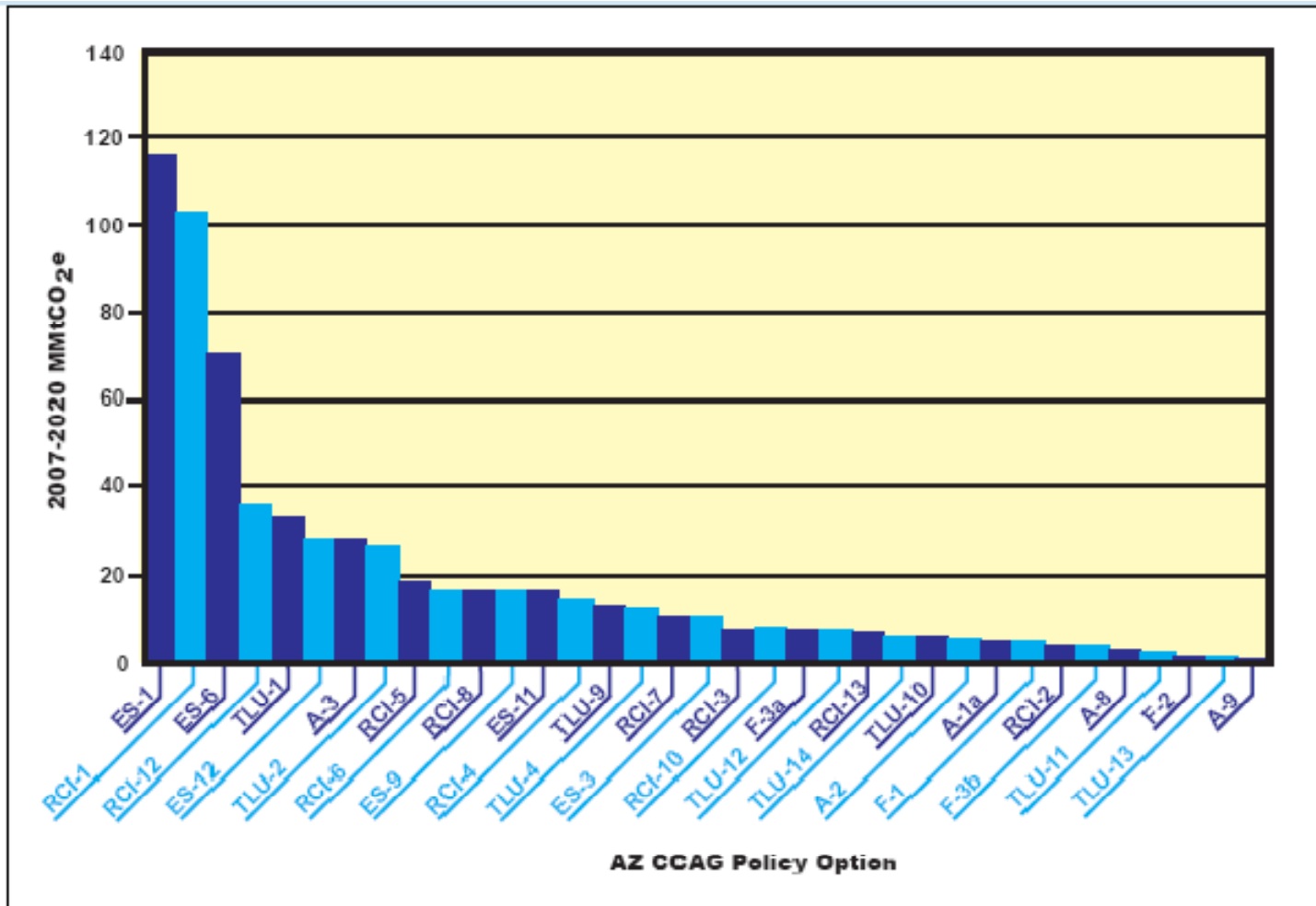
# AZ Climate Change Action Plan

State Goal: Reduce GHG emissions in AZ to its 2000 level by 2020 and to 50% below its 2000 level by 2040.



# AZ Climate Change Action Plan

Comprehensive Set of 49 Policy Options



# AZ Climate Change Action Plan

<b>Policy Option</b>	<b>MMtCO<sub>2</sub>e</b>
Environmental Portfolio Standard/Renewable Energy Standard and Tariff (ES-1)	116.00
Demand-Side Efficiency Goals, Funds, Incentives, and Programs (RCI-1)	103.00
Carbon Intensity Targets (ES-6)	70.40
Solid Waste Management (RCI-12)	36.00
State Clean Car Program (TLU-1)	32.50
Integrated Resource Planning (ES-12)	28.00
Ethanol Production and Use (A-3)	28.00
Smart Growth Bundle of Options (TLU-2)	26.70
“Beyond Code” Building Design Incentives and Programs for Smart Growth (RCI-5)	18.00
Distributed Generation/Combined Heat and Power (RCI-6)	16.00
Electricity Pricing Strategies (RCI-8)	16.00
Reduce Barriers to Renewables and Clean Distributed Generation (ES-9)	16.00
Pricing Strategies (ES-11)	16.00
Building Standards/Codes for Smart Growth (RCI-4)	14.00

# Executive Order 2006-13

- Adopts the state goal recommended in the CCAP
- Establishes an executive committee to recommend strategies to implement CCAP
- Develop a GHG reporting mechanism and work with other Western states on a GHG registry
- Adopt and implement a Clean Car Program
- Develop standards for biodiesel and ethanol
- Pilot program for hybrids to use HOV lanes
- By 2010, all state vehicles shall be hybrids, meet low-GHG emission standards, or low-GHG fuels



# The Climate Registry

## Registry's Voluntary Reporting Program:

- General Reporting Protocol (GRP)
- General Verification Protocol (GVP)
- Climate Registry Information System (CRIS)

## Planned Future Developments:

- Support of mandatory GHG programs
- Industry specific protocols
- Metrics for industrial sectors

# GHG Reporting Rules

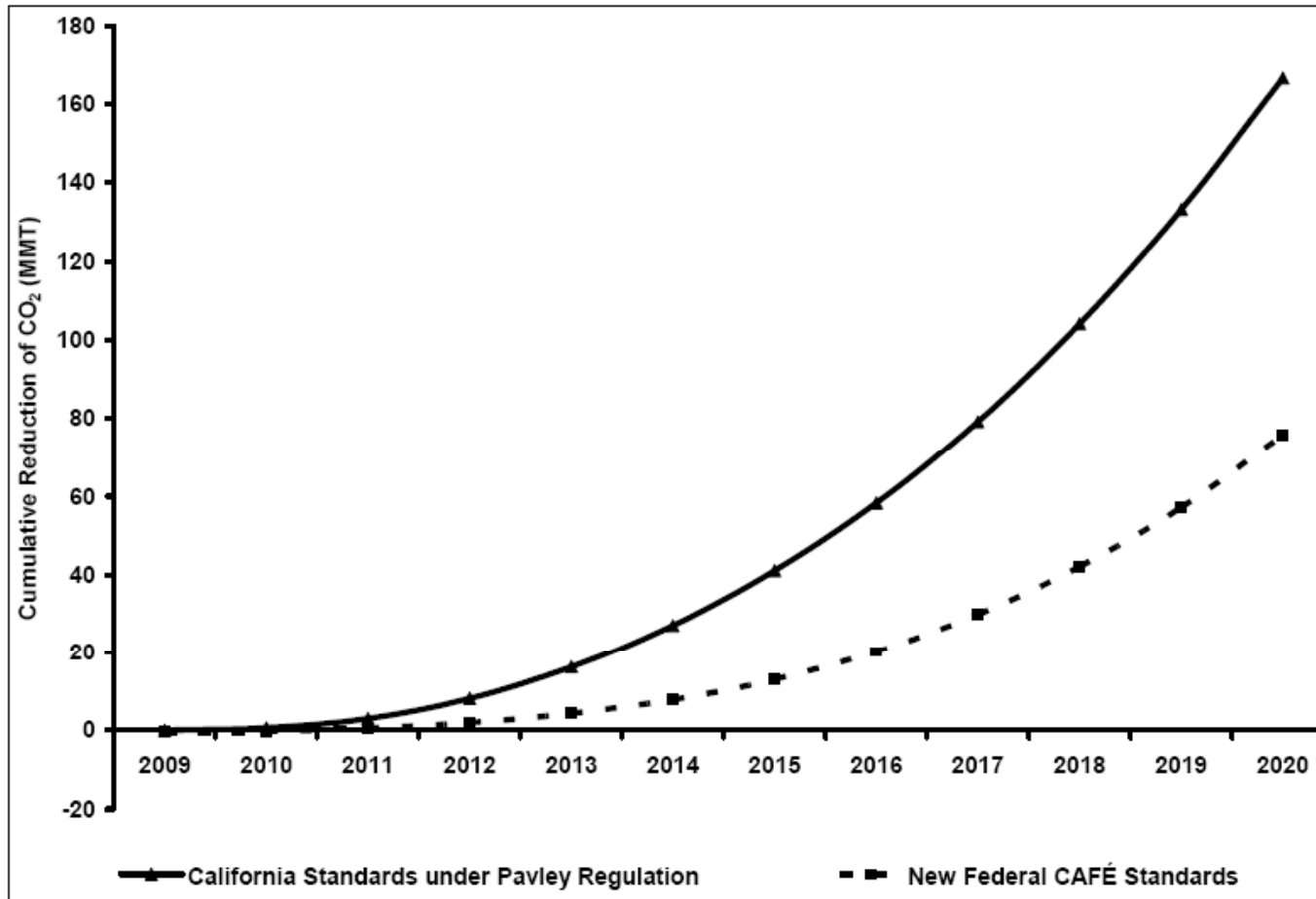
- Purpose
  - Improve knowledge of GHG emissions, help assess progress meeting economy-wide goal, and facilitate implementation of a cap-and-trade program.
- Western states with mandatory GHG reporting rules:
  - CA, NM, OR, WA
- Western Climate Initiative developing essential reporting elements which could serve as a model rule for AZ and other jurisdictions

# Clean Car Program

- Would adopt and implement CA LEV program, recently amended to include GHG standards
- Would phase in over 2012-16 model years
- Provides credit for early action
- Allows banking and trading of credits
- 12 other states have adopted the program
  - CO, FL, UT announced intentions as well
- AZ clean car rule approved May 6, 2008
- CA (with 15 state interveners) is suing EPA over its denial of CA's waiver request

# Clean Car Program

Figure 1. Comparison of Cumulative CO<sub>2</sub> Benefits of Pavley Regulation and New Federal Fuel Economy Standards if Implemented in California



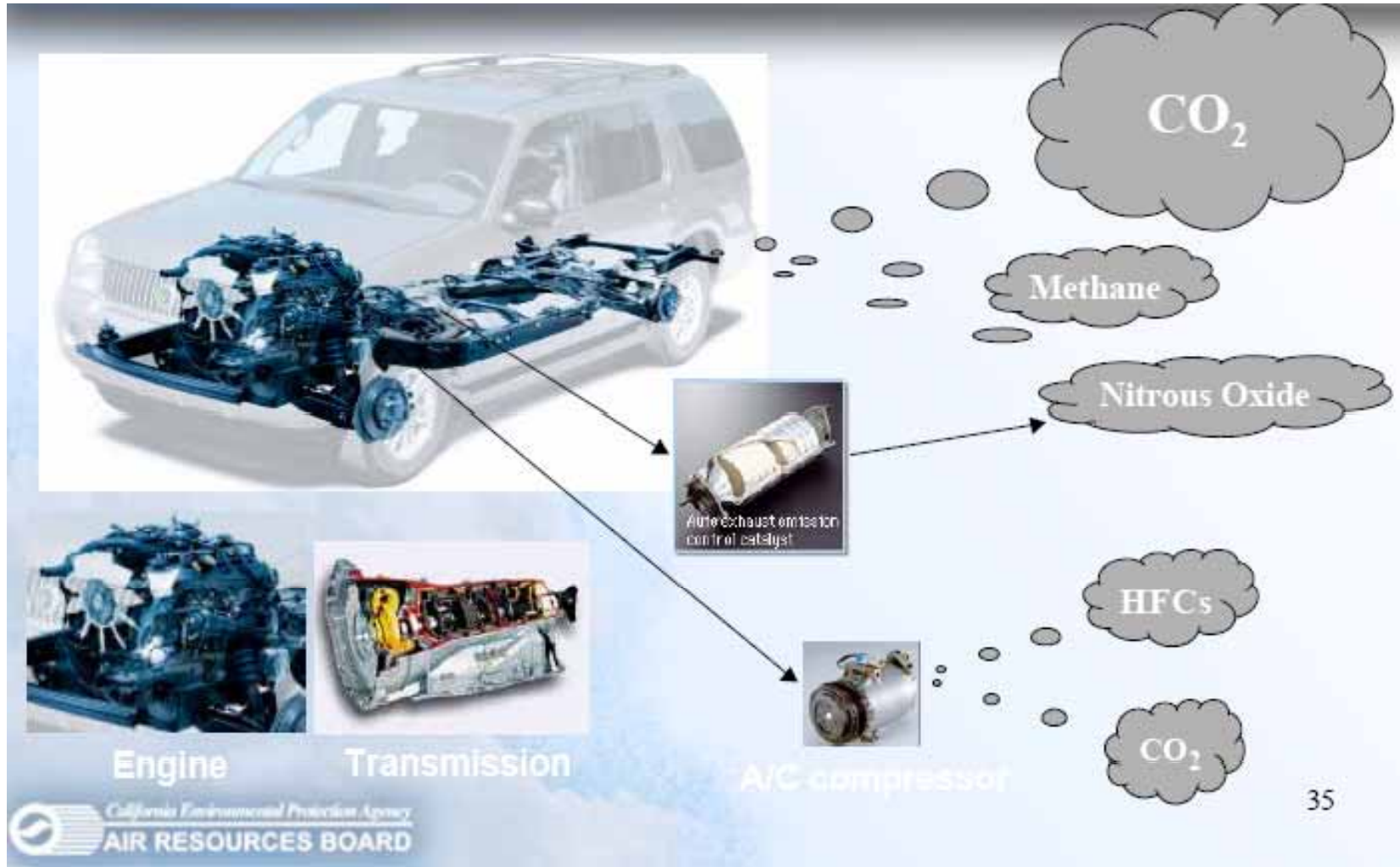
Source: California Air Resources Board, Technical Assessment, January 2, 2008.

# Clean Car Program

- The program does not:
  - Impose fees or taxes on vehicles or fuel
  - Ban the sale of any vehicle category
  - Place reductions on vehicle weight
  - Restrict speed limits
  - Restrict VMT

# Clean Car Program

Vehicle greenhouse gas sources



# Clean Car Program

- Available technologies that could be widely used by 2012
  - Gasoline direct injection (stoichiometric)
  - Variable valve timing and lift
  - Turbocharging
  - Cylinder deactivation
  - 6 speed automatic transmission
  - Electric power steering
  - Improved alternator
  - More efficient, low-leak air conditioning

# Clean Car Program

- Technologies available but not necessary to meet proposed standards
  - Alternative fuel engines
  - Mild or strong gasoline hybrid electric vehicles
  - Weight reduction
  - Diesel

# Clean Car Program

Fleet average emission standards

Tier	Year	CO <sub>2</sub> -equivalent emission standards (g/mi)	
		PC/LDT1	LDT2
Near-term	2009	323	439
	2010	301	420
	2011	287	399
	2012	233	361
	2013	227	355
Mid-term	2014	222	350
	2015	213	341
	2016	205	332

~22% reduction  
in 2012

~30% reduction  
in 2016

# Clean Car Program

Average price increase of new vehicles

	Retail Vehicle Price Increase	
	Passenger Cars Light Trucks/SUVs	Large Trucks/SUVs
Near Term 2012	<b>\$367</b>	<b>\$277</b>
Mid Term 2016	<b>\$1064</b>	<b>\$1029</b>

# Clean Car Program

Net savings for vehicle purchasers  
*Assumes only \$1.74 per gallon of gasoline*

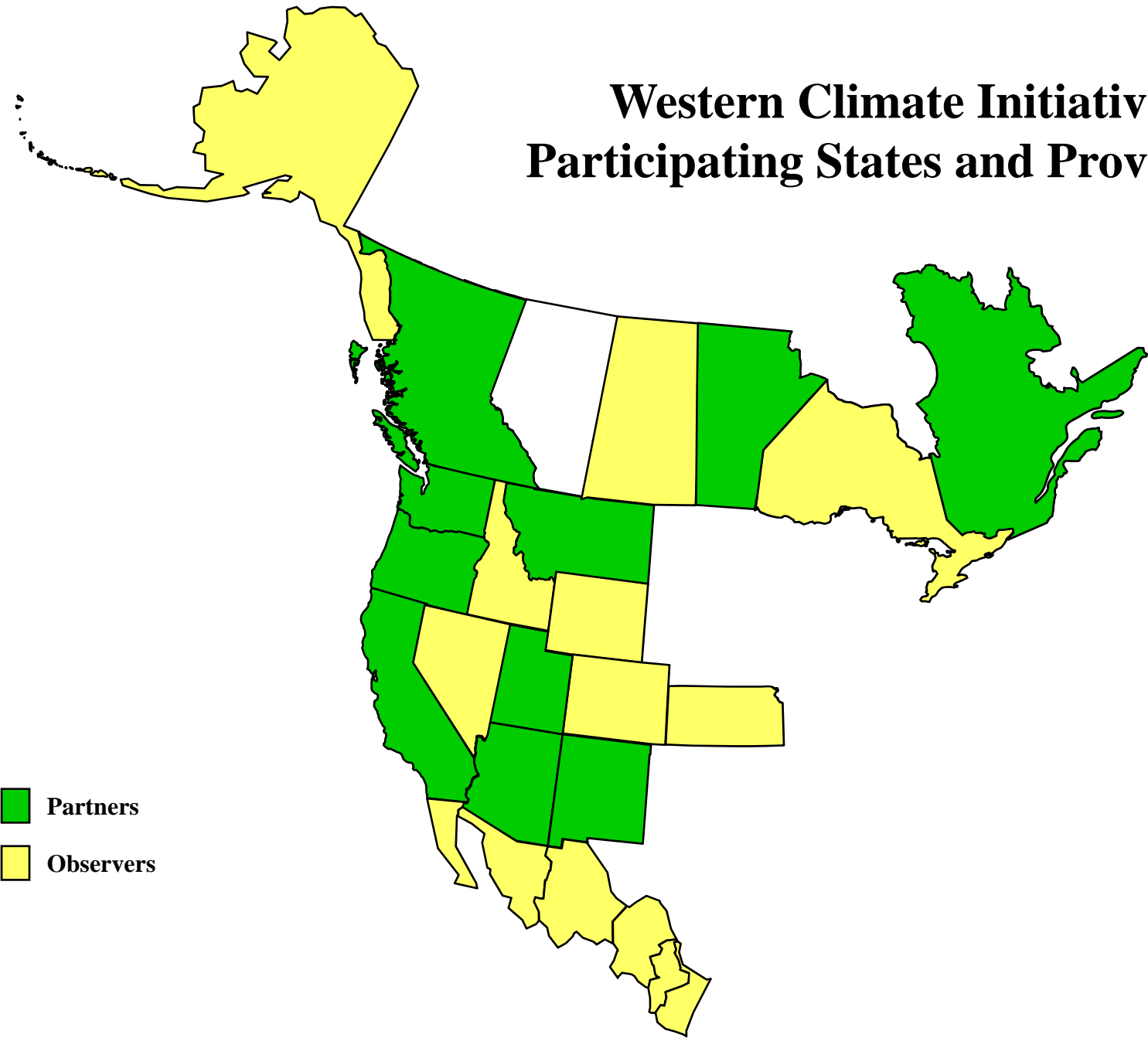
	Near Term (2012)	Mid Term (2016)
Monthly Payment Increase	\$7	\$20
Monthly Operating Cost Savings	\$18	\$23
Monthly Net Savings	\$11	\$3


# Western Climate Initiative

- Initiated via Memorandum of Understanding among governors
  - February 2007
  - Initially 5 U.S. states
  - Currently 7 U.S. states, 3 Canadian provinces, and 14 observers in U.S., Canada, and Mexico

<http://www.westernclimateinitiative.org/>

# Western Climate Initiative Participating States and Provinces



-  Partners
-  Observers

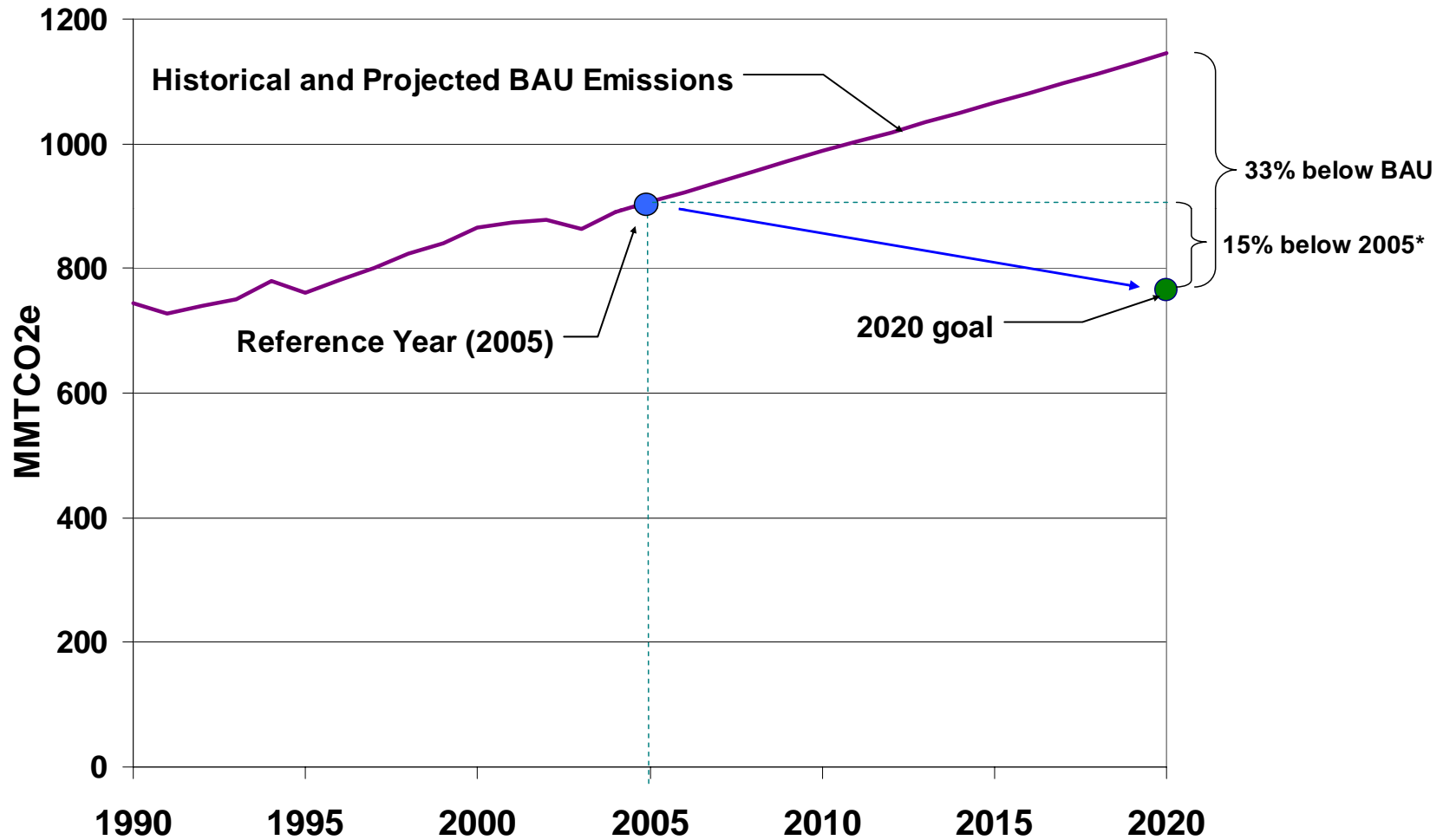
# Western Climate Initiative

- WCI Partners agree to
  - Join The Climate Registry
  - By August 2007, establish a regional GHG emission reduction goal consistent with Partner goals
  - By August 2008, develop a design for a “market-based multi-sector mechanism” to help achieve the regional emissions goal
- Regional Goal
  - Reduce greenhouse gas emissions in the WCI region to 15 percent below 2005 levels by 202
  - The WCI regional goal does not replace the existing state or provincial goals of the WCI partners

# Western Climate Initiative

## Regional Goal

(based on participation as of August 2007)



# Western Climate Initiative

- 5 Subcommittees + Economic Modeling Team
  - Scope
  - Electricity
  - Reporting
  - Allocations
  - Offsets
- Stakeholder input process
  - 4 workshops, 10 webinars, periodic calls, written comments on draft material, WCI website
  - Partners administering their own processes as well
- Timeline
  - July 2008: Draft program design recommendations
  - Aug 2008: Final program design recommendations
  - Much more work anticipated post August