



The Climate Challenge: Sharing The Responsibility and the Solutions

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Chairman
California Energy Commission***

**National Climate Protection Summit: Accelerating Local Leadership
Seattle, Washington
November 1-2, 2007**



Where We Are Going Today

- Cost Imperative
- The Challenge
- Importance of Land Use
- Role of the Region
- What To Do





Stern Report



HM TREASURY

- ... the overall costs and risks of climate change...at least 5% of global GDP
...could rise to 20% of GDP or more.
- ... the costs of action.....can be limited to around 1% of global GDP each year.
- ... global emissions will need to be reduced to less than 5 GtCO₂e, **over 80% below current annual emissions**, to maintain stabilization.
- ... **next 10-20 years will have a profound effect on the climate.**





Executive Order S-3-05

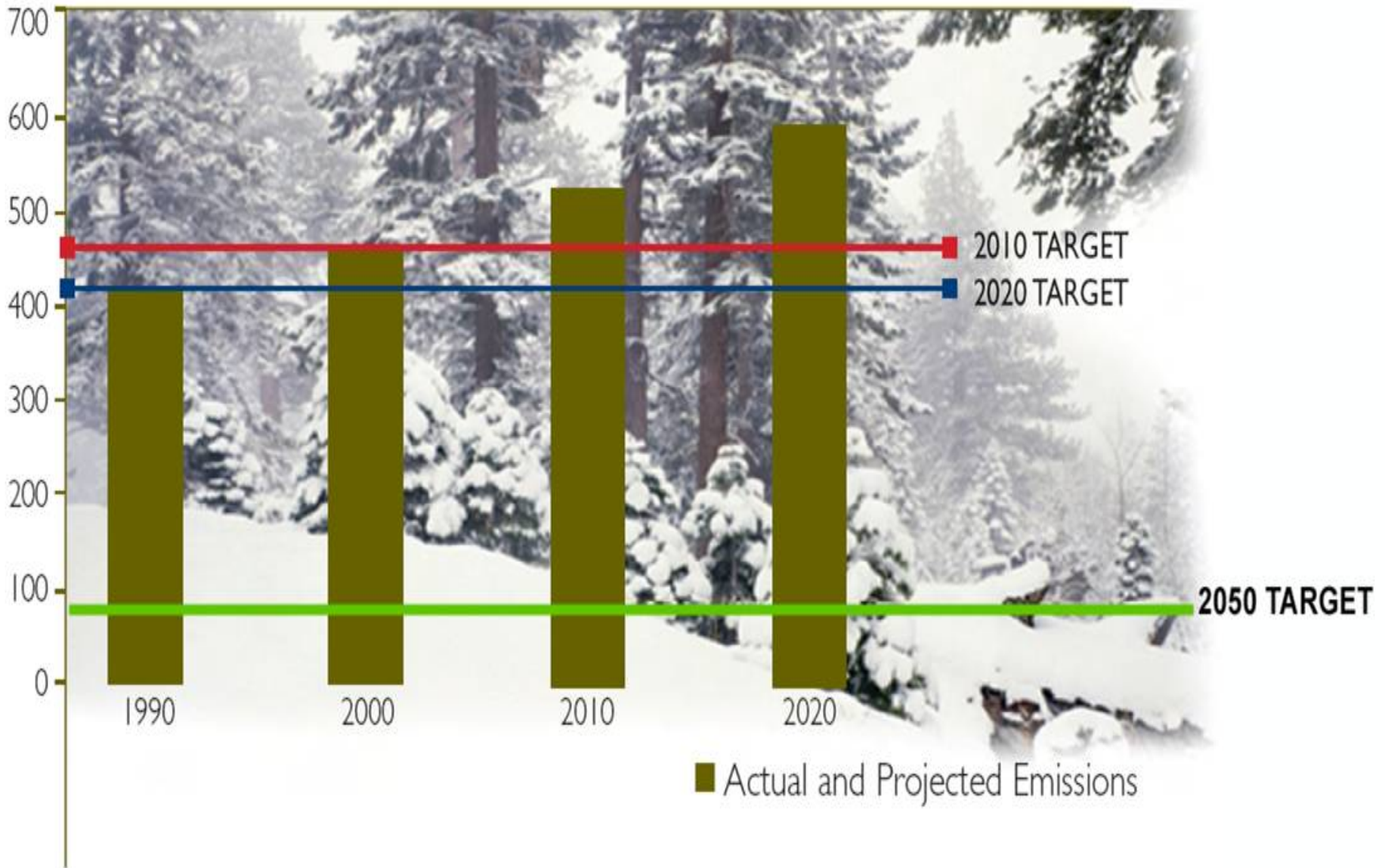
June 1, 2005

CA will reduce
Greenhouse Gases to:

- 2000 levels by 2010
- 1990 levels by 2020
- **80% below 1990
levels by 2050**

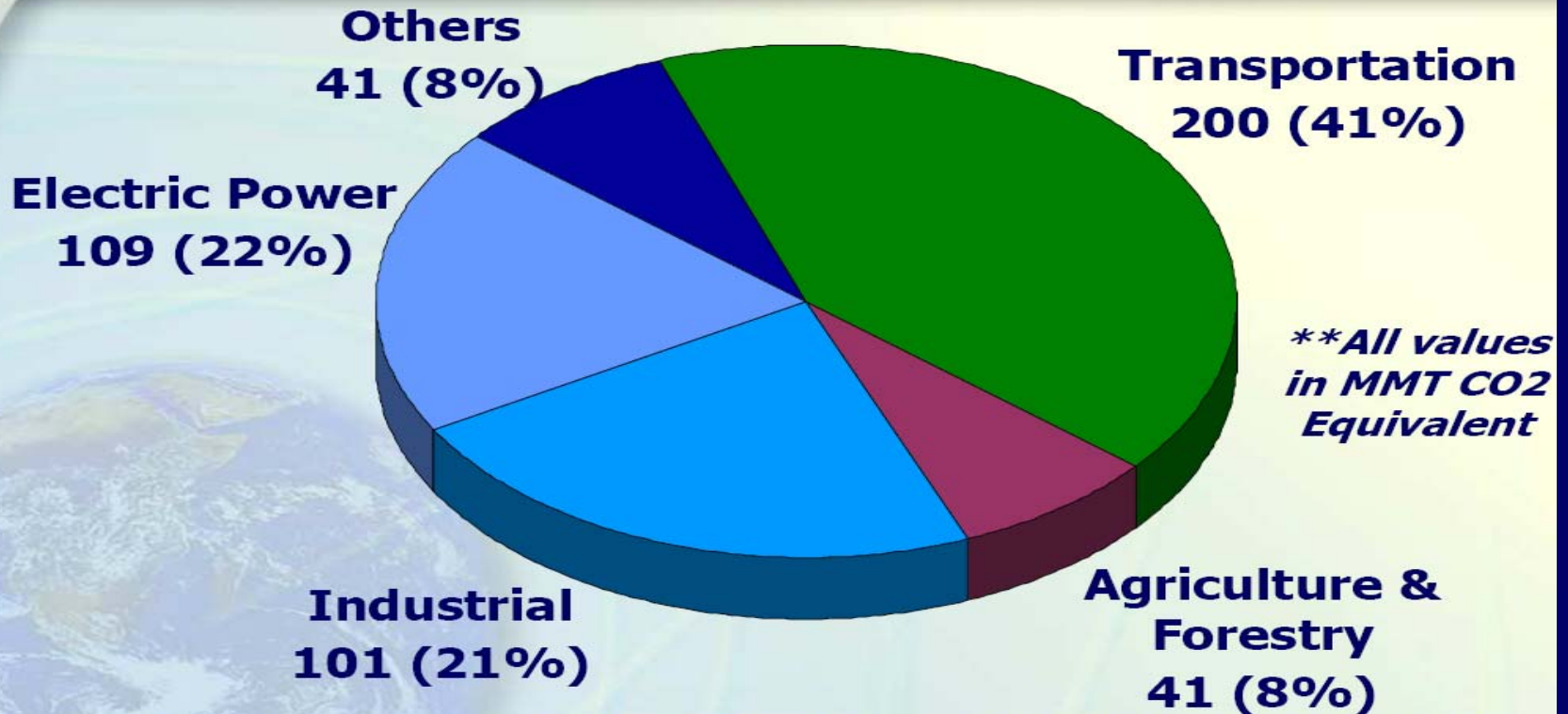


GHG Emissions Reduction Targets





Sources of California's Climate Change Emissions in 2004

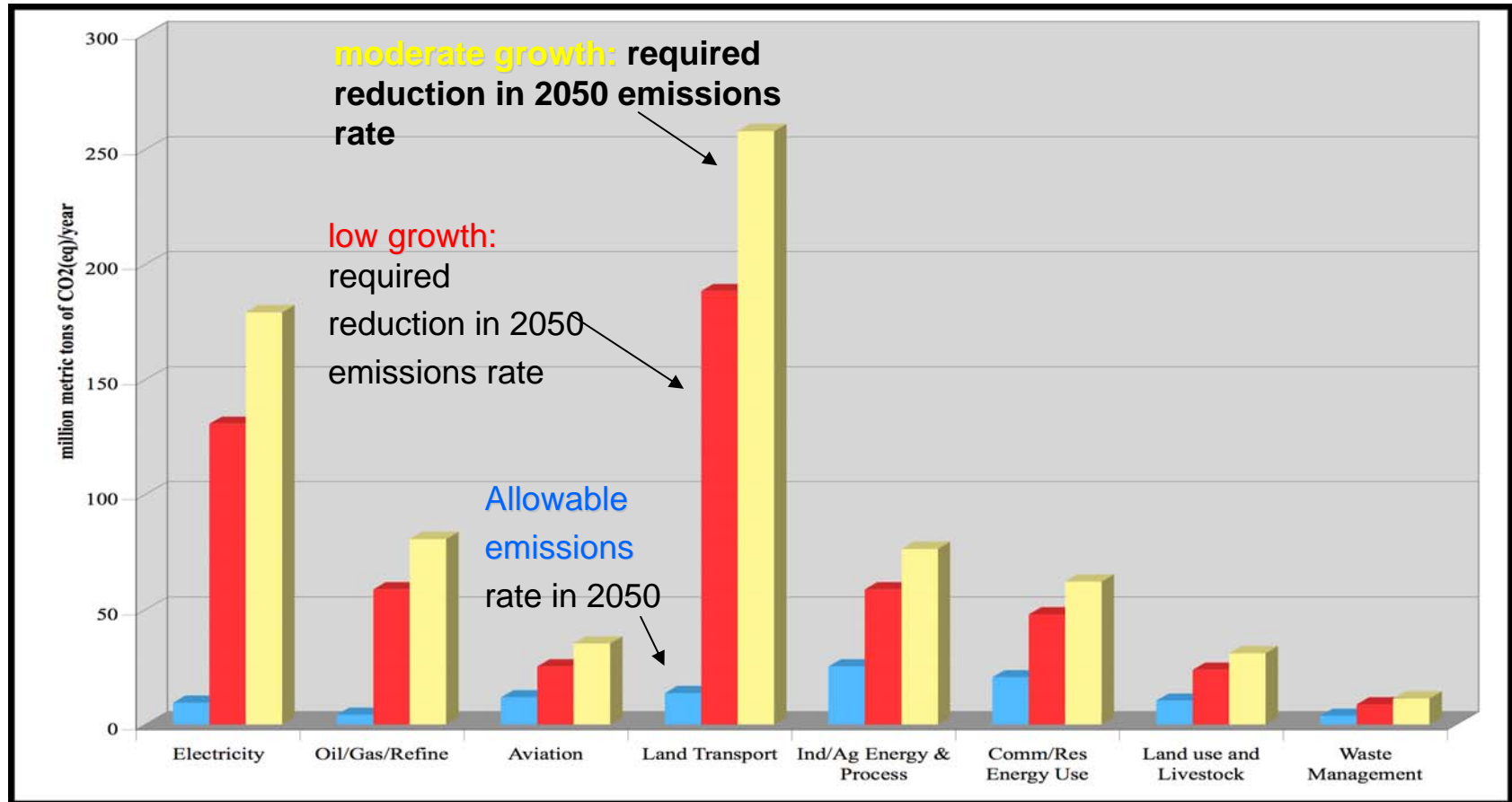


Source: California Energy Commission; Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004



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Reductions Needed to Reach 2050 Targets





Focus on the transportation sector

- Improve vehicle fuel efficiency
- Reduce carbon content of the fuel
- Reduce the miles of travel





Tail Pipe Standards

AB 1493, Statutes 2002

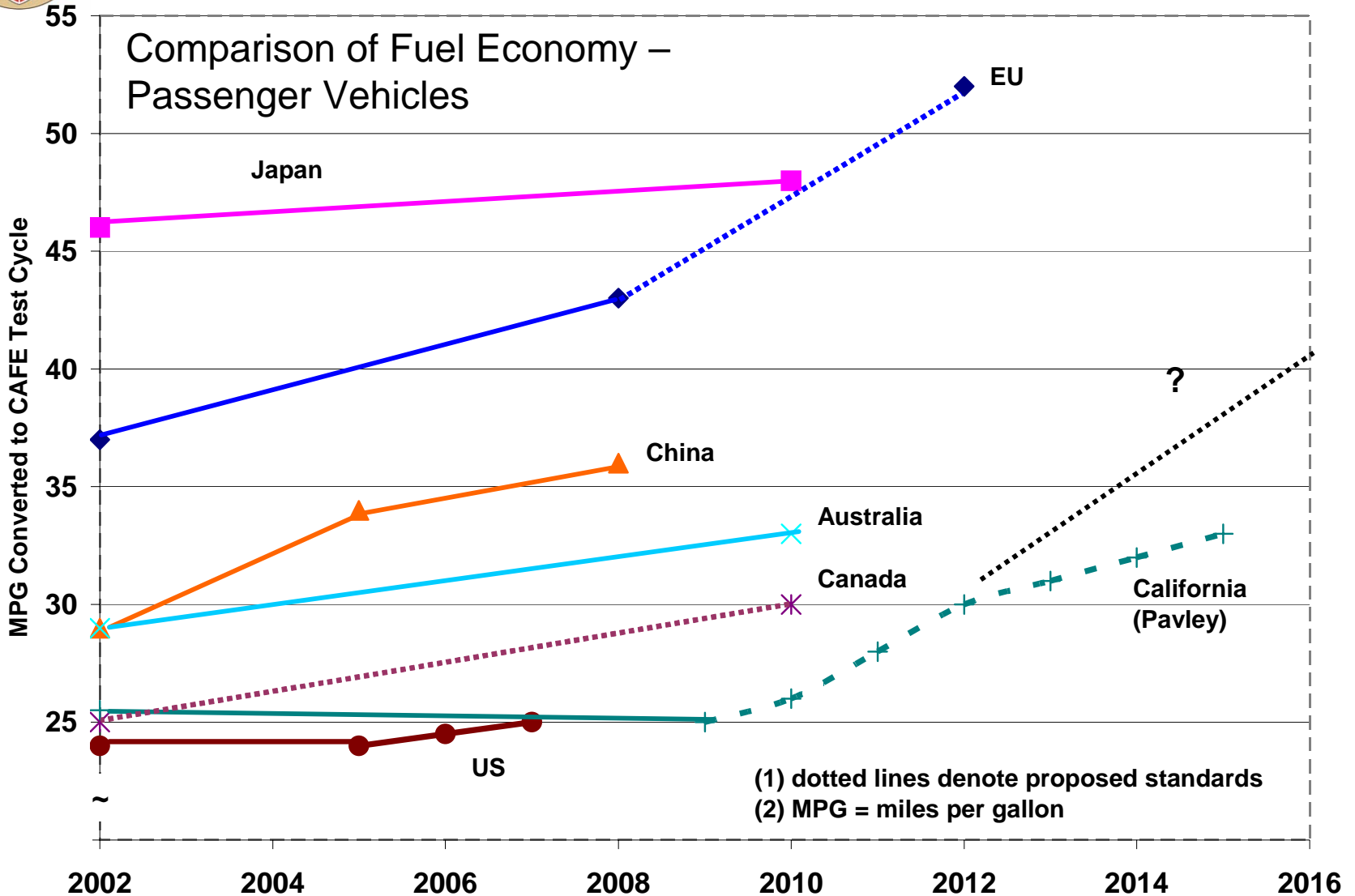
“...regulations that achieve the maximum feasible and cost effective reduction in greenhouse gas emissions from motor vehicles.”

- **Near term (2009-2012) standards will result in about a 22% reduction as compared to the 2002**
- **Mid-term (2013-2016) standards will result in about a 30% reduction.**





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Low Carbon Fuel Standard

Executive Order S-1-07

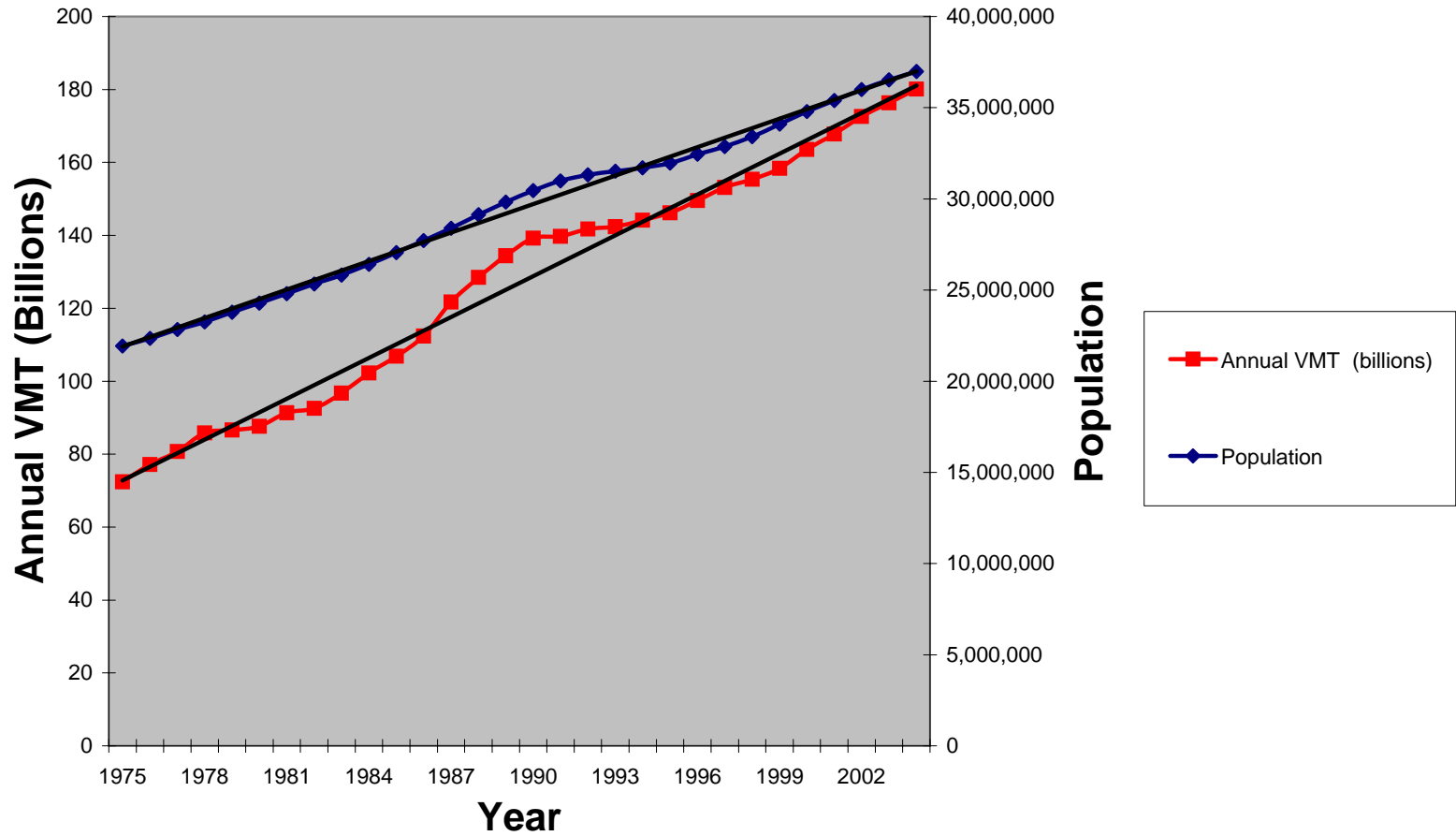
- Reduce GHG impacts in CA's transportation fuels 10% below 2007 levels by 2020.
- CEC just completed (10/31/07):
 - Comprehensive study on 12 alternative fuels: Full Fuel-Cycle Analysis
 - State plan to increase use of alternative transportation fuels.
 - 9 percent in 2012
 - 11 percent in 2017
 - 26 percent in 2022





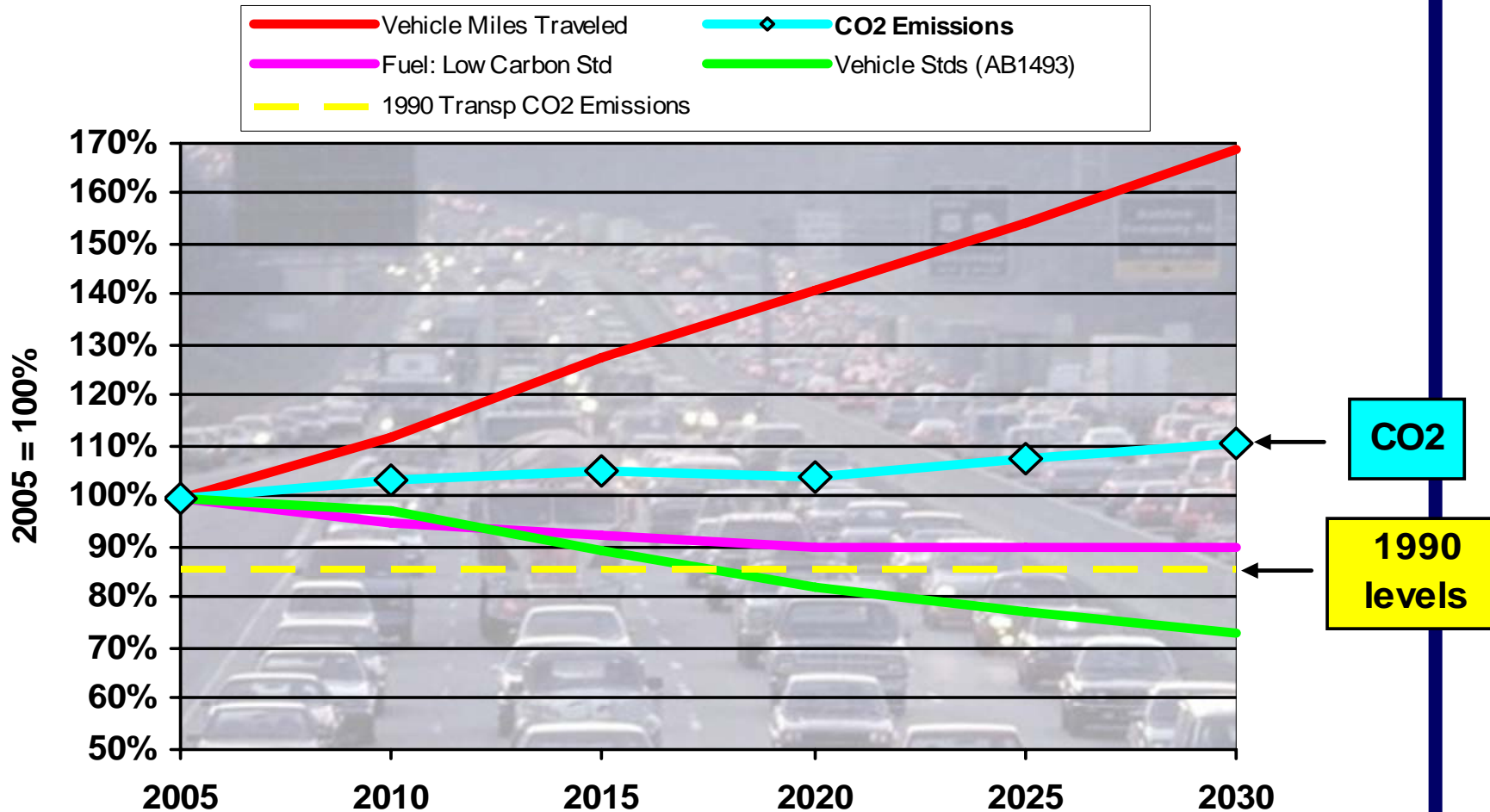
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VMT and Population in CA 1975-2004





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Center for
Clean Air Policy

Based on CEC, CARB and CALTRANS data



California's State Flower





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Land Use Patterns and VMT

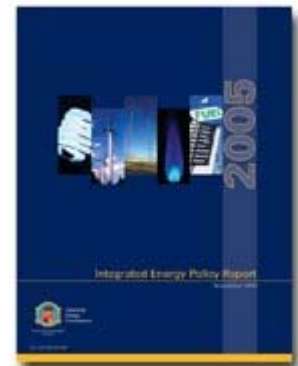
Ewing and Cervero, 2001:

- **Density may have the most significant relationship to travel and transportation outcomes: doubling density led to 5% reduction in VMT .**
- **Difference between low and high density U.S. metropolitan areas is more than 40 percent daily per capita VMT**
- **Trip frequencies depend mostly on socioeconomic and demographic factors**
- **Overall, VMT and VT declined as accessibility, density, and/or land-use mixing increased.**



Integrated Energy Policy Report

- CEC conducts assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices.
- Analysis forms basis for recommendations to the Governor and Legislature.
- The CEC adopts an IEPR every two years and an update every other year.





Land Use Recommendations

from the

2006 and 2007 Integrated Energy Policy Reports

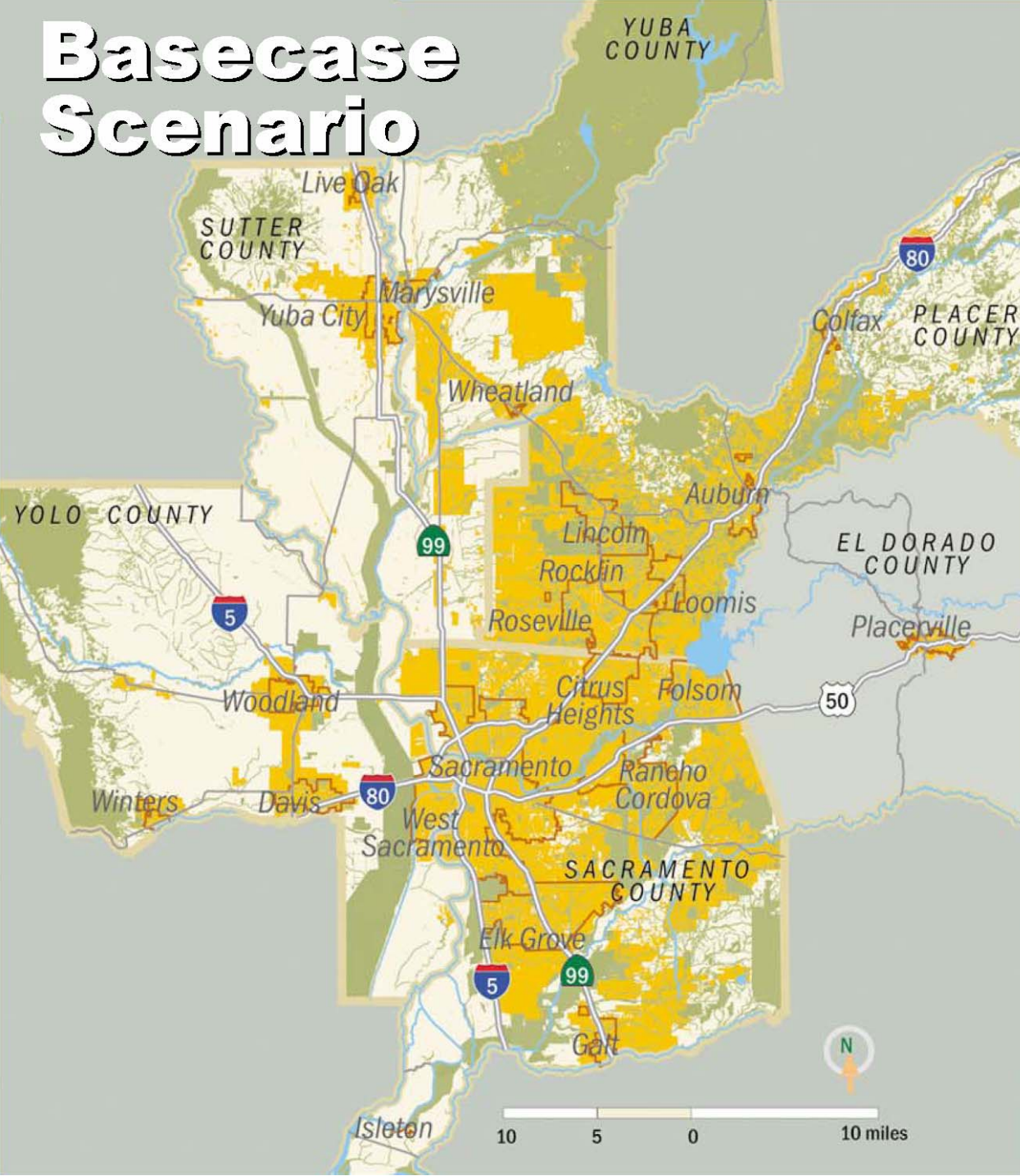
- State government should be a model for climate friendly and energy efficient development.
- ...develop criteria for smart growth development and prioritize infrastructure funding toward development that meets those criteria.
- ... require local governments to include an energy element in their general plans.
- ... require regional agencies to develop growth management plans and prioritize infrastructure funding.



California Blueprint Planning Program

- Regional approach to congestion, housing, economic development, GHG emission mitigation
- Fosters a more efficient land use pattern that
 - (a) supports improved mobility and reduced dependency on single-occupant vehicle trips,
 - (b) accommodates an adequate supply of housing for all incomes,
 - (c) reduces impacts on valuable habitat, productive farmland, and air quality,
 - (d) increases resource use efficiency, and
 - (e) results in safe and vibrant neighborhoods.

Basecase Scenario

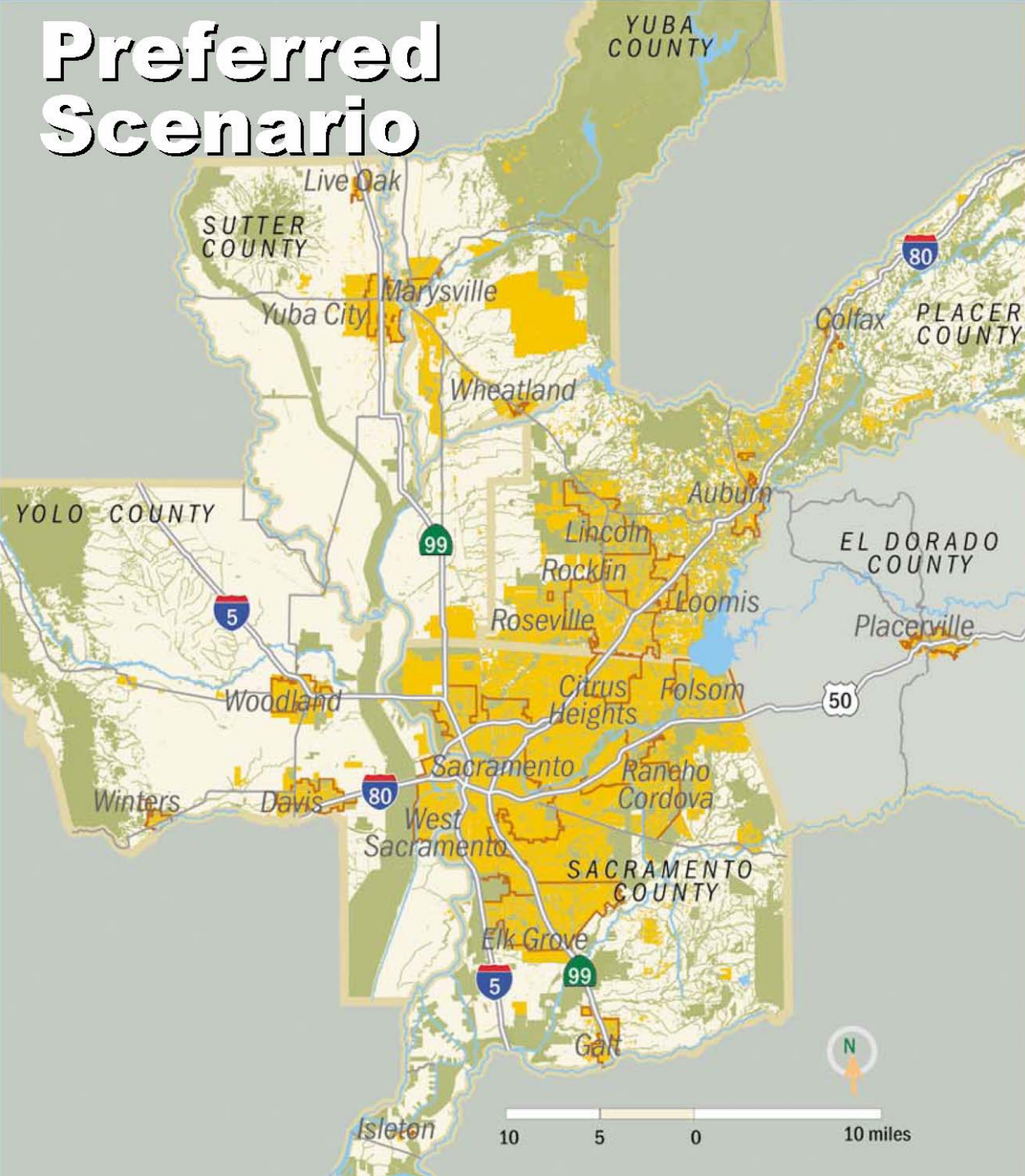


SACRAMENTO REGION
Blueprint
TRANSPORTATION/LAND USE STUDY

Key to the Map

-  areas of existing and future development
-  green areas (e.g. open space, parks, wetlands, vernal pools, stream corridors, hardwood stands)
-  agriculture and other undeveloped lands
-  rivers, streams and lakes
-  city boundaries
-  highways
-  county boundaries

Preferred Scenario



SACRAMENTO REGION
Blueprint
TRANSPORTATION LAND USE STUDY

Key to the Map

-  areas of existing and future development
-  green areas (e.g. open space, parks, wetlands, vernal pools, stream corridors, hardwood stands)
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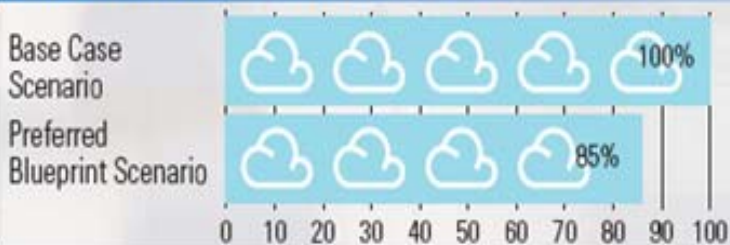
Sample Results from Sacramento Blueprint Plans

GROWTH NEAR TRANSIT

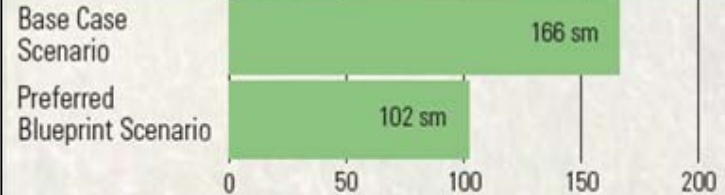
Within walking distance of 15-minute or better transit service



PER CAPITA CARBON DIOXIDE AND SMALL PARTICULATES EMISSIONS

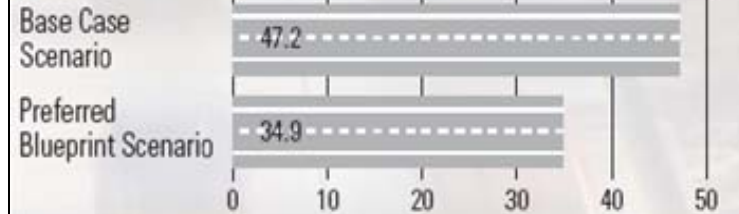


AGRICULTURAL LAND CONVERTED TO URBAN USES

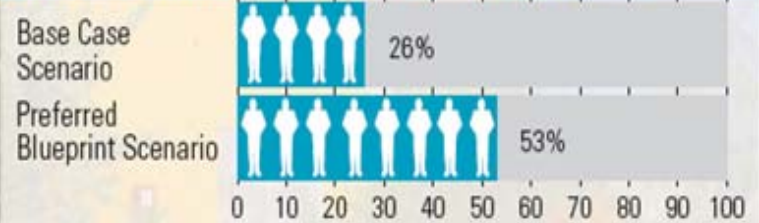


VEHICLE MILES TRAVELED

(per household per day)



PEOPLE LIVING IN AREAS WITH GOOD MIX OF JOBS AND HOUSING

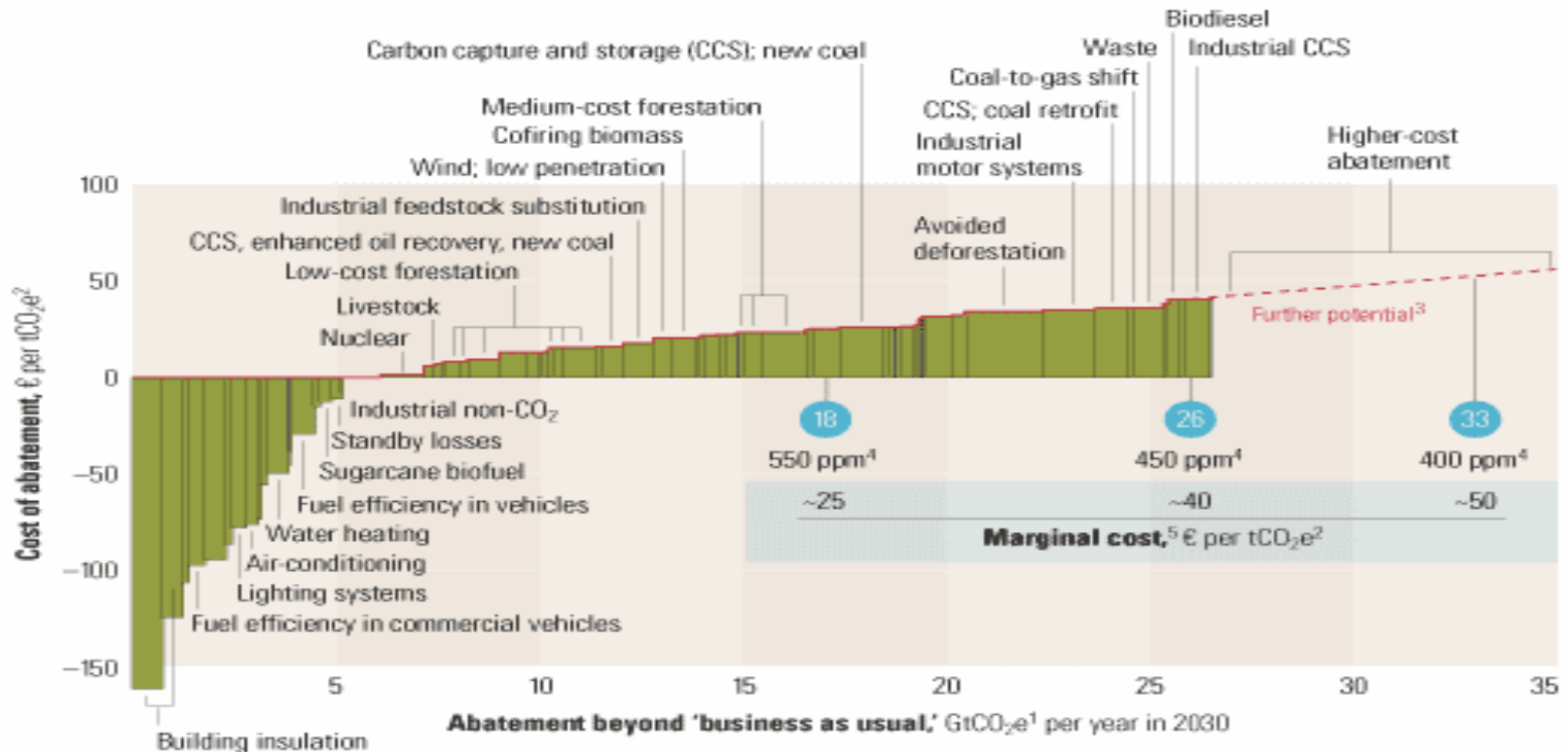




Global Cost Curve for GHG Reduction

Global cost curve for greenhouse gas abatement measures beyond 'business as usual'; greenhouse gases measured in GtCO₂e¹

- Approximate abatement required beyond 'business as usual,' 2030



¹GtCO₂e = gigaton of carbon dioxide equivalent; "business as usual" based on emissions growth driven mainly by increasing demand for energy and transport around the world and by tropical deforestation.

²tCO₂e = ton of carbon dioxide equivalent.

³Measures costing more than €40 a ton were not the focus of this study.

⁴Atmospheric concentration of all greenhouse gases recalculated into CO₂ equivalents; ppm = parts per million.

⁵Marginal cost of avoiding emissions of 1 ton of CO₂ equivalents in each abatement demand scenario.



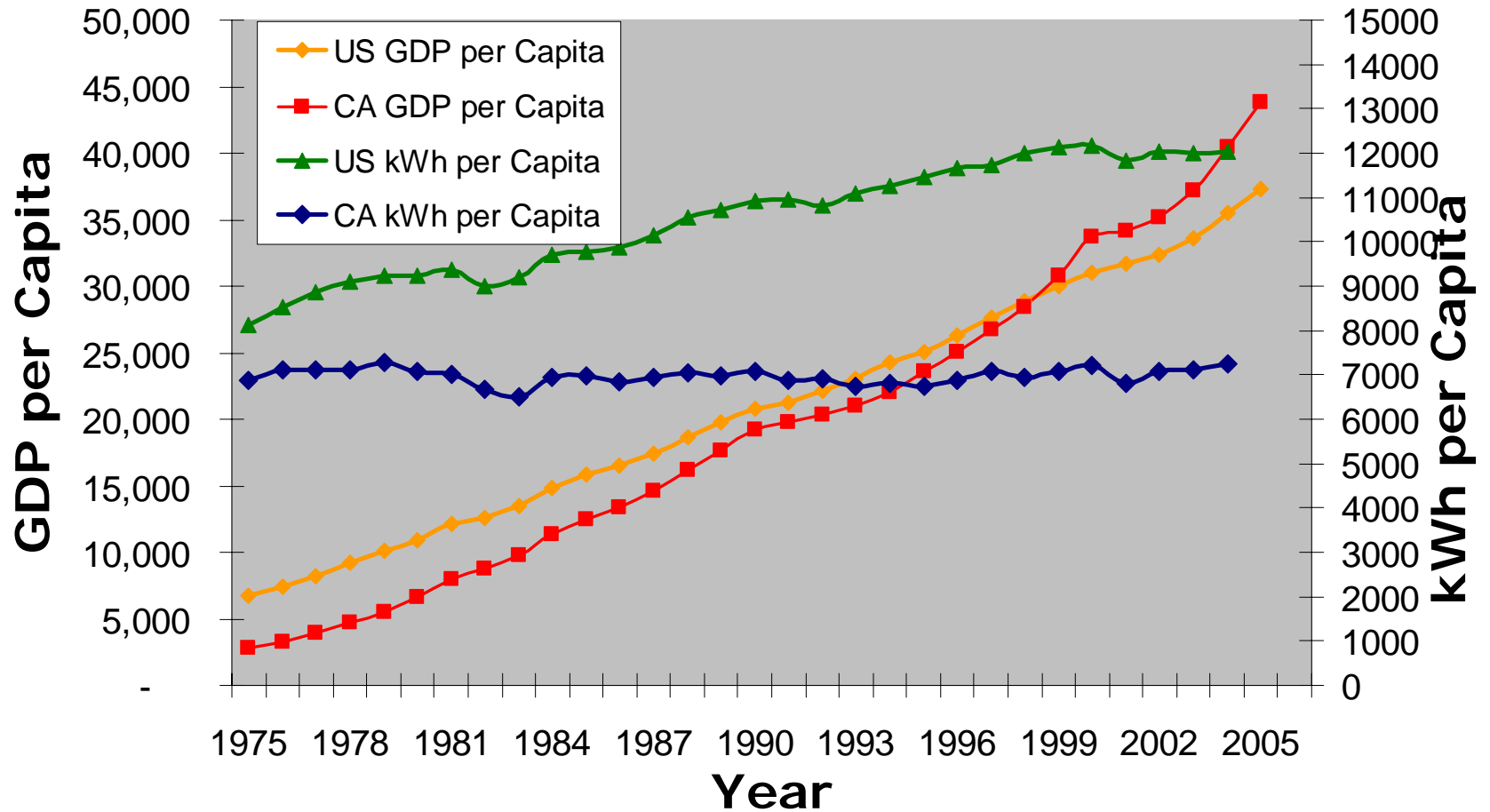
Smart Growth Includes Energy Efficient Buildings

- Point-of-sale requirement for existing buildings
- Property assessment financing for EE and renewables
- Green Building incentives for private sector and requirements for city-financing
(www.builditgreen.org)
- Adoption of energy efficiency code for new construction



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Energy Efficiency and Economic Growth 1975-2005





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Thank You!

