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"Energy and Climate Change Policy: Synergy and Co-Benefits"

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Presentation Outline

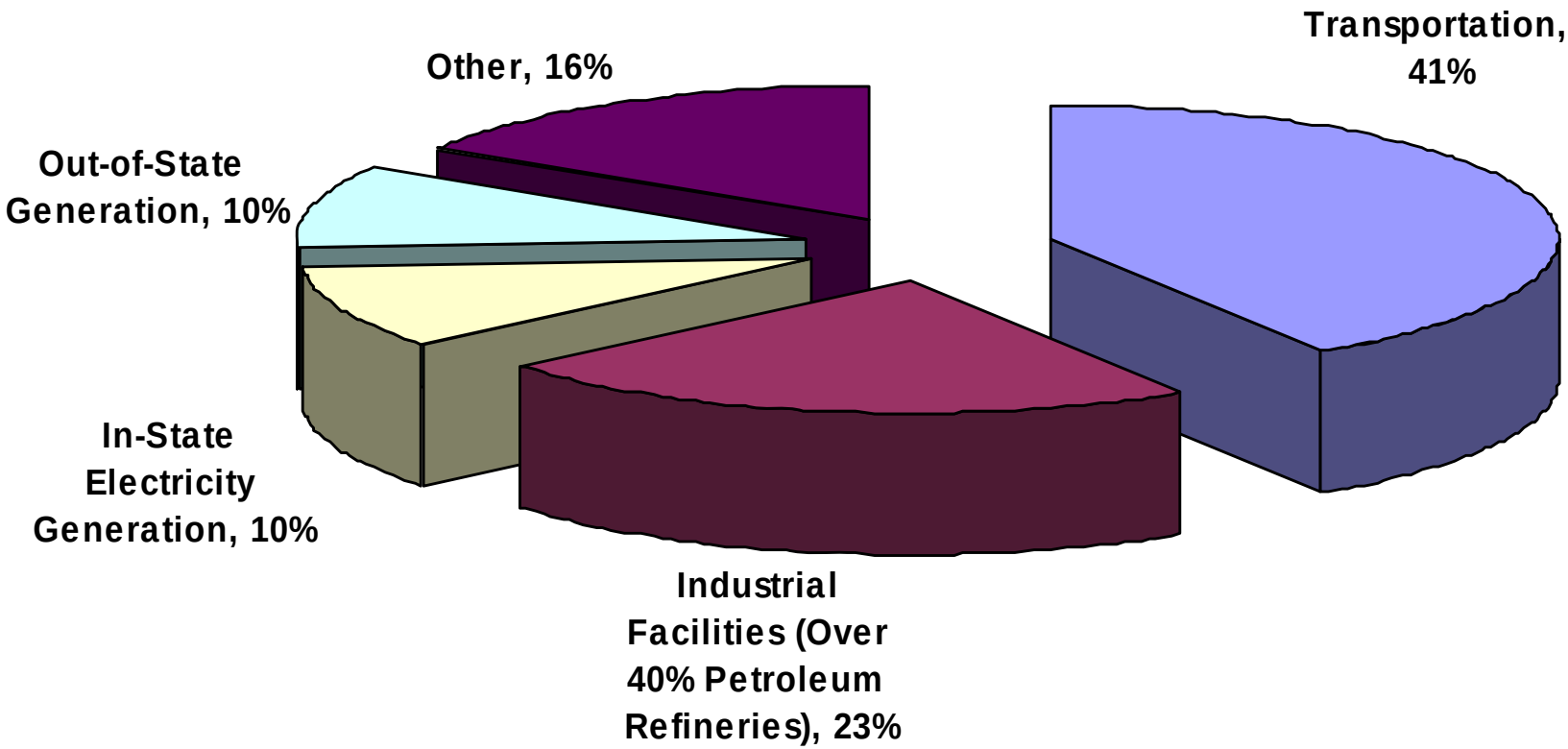
- Background and Policy Context
- California's History of Involvement in Climate Change
- California Energy Commission Activities on Climate Change
- West Coast Governors' Global Warming Initiative
- 2005 Integrated Energy Policy Report

Background and Policy Context

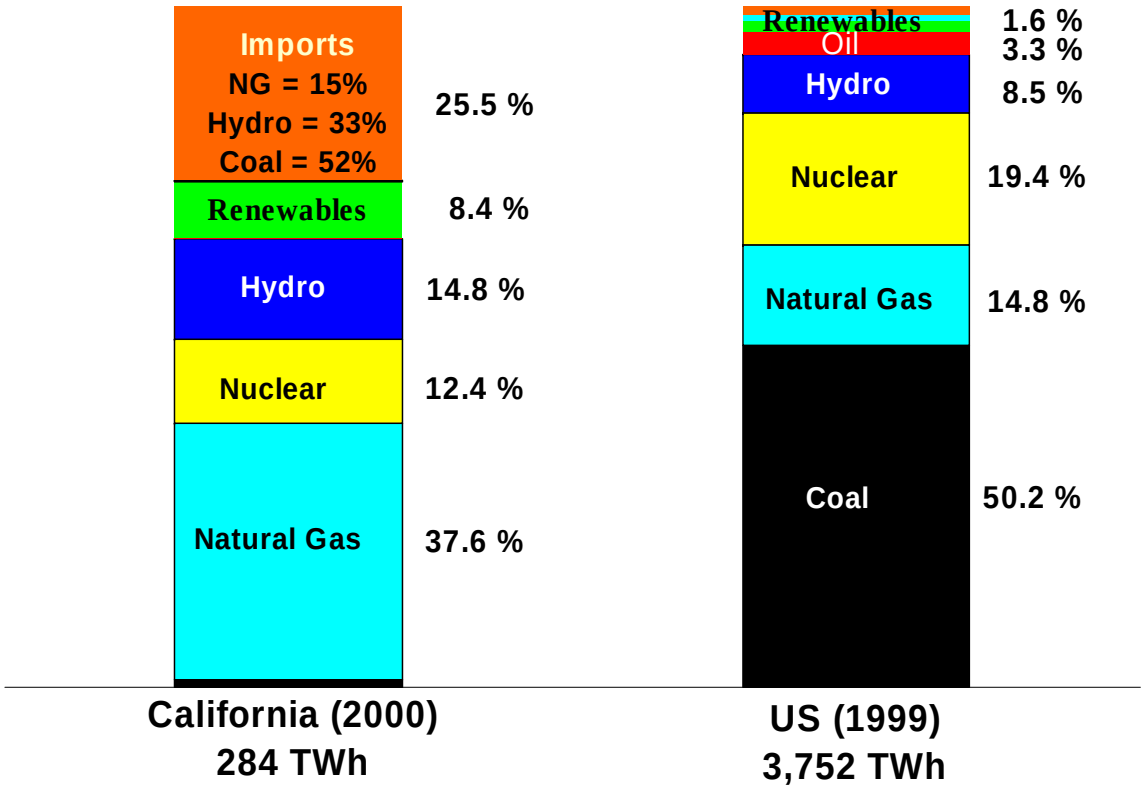
California ranks high in emissions of greenhouse gases

- California has the eighth largest economy in the world, and is the seventeenth largest emitter of greenhouse gas emissions, in total emissions, with more GHG emissions than any U. S. state but Texas. On a per capita basis, California ranks twelfth in the world in GHG emissions.
- As a nation state, California has a population of nearly 37 million people and over 25 million motor vehicles. Gross State Product approaches $1.5 trillion, or 13 percent of national output.
- Annually, California emits over 500 million metric tons of carbon dioxide equivalent gases.
- Emissions of greenhouse gases are large and growing, due to population and economic growth.
- Transportation sector is the single largest source of greenhouse gas emissions in California.

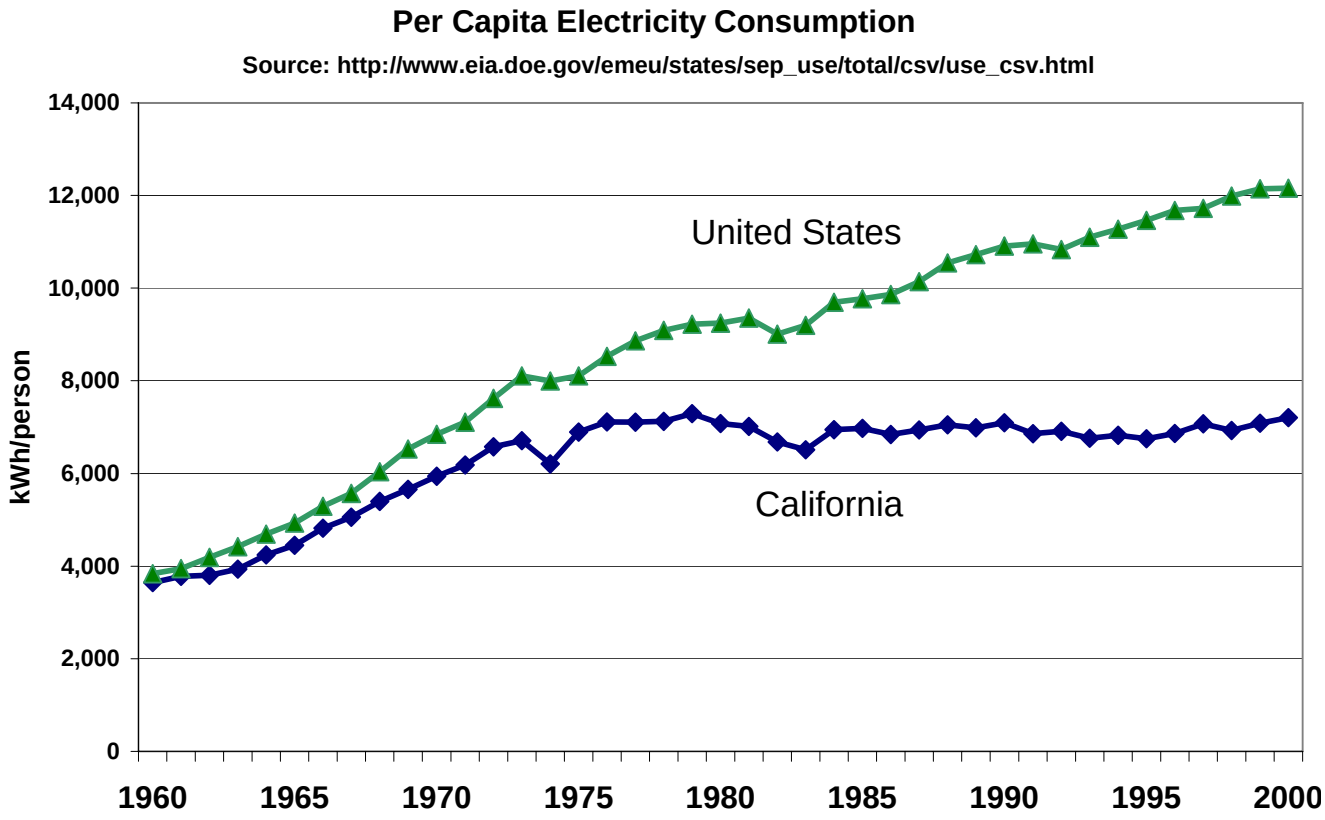
California's Greenhouse Gas Emissions



California versus U. S. Electricity Supply



California versus U. S. Electricity Consumption



History of California's Involvement in Climate Change

California has a long history of involvement in climate change, dating back to 1988.

- State legislation in 1988 directed the Energy Commission to study global warming trends and impacts on energy, water, agriculture, the economy and the environment.
- The first statewide inventory of greenhouse gas emissions was published in 1997 and updated every 5 years thereafter.
- State legislation in 2000 created the California Climate Action Registry, which the Energy Commission supports, through reporting protocols and third-party certifiers. The Energy Commission is a charter member.

Energy Commission Activities on Climate Change

- The Energy Commission is a member of the Governor's Climate Action Team.
- State climate change energy policy is recommended through the biennial Integrated Energy Policy Report.
- The Energy Commission coordinates state input for the West Coast Governors' Global Warming Initiative.
- Climate Change Advisory Committee was established in July 2004 to advise the 2005 IEPR.
- Statewide greenhouse gas emissions inventory was updated in 2005.
- Climate change science: $4 million annual research budget.

State Energy Policy and Climate Change

California has advocated energy policies that have significant climate change co-benefits.

- Promoting energy efficiency through standards and other programs
- Accelerating the State Renewable Portfolio Standard in concert with the California Public Utilities Commission
- Expanding markets for low-carbon and renewable transportation fuels
- Supporting R D &D for high-efficiency gas generation and carbon sequestration.
- Realizing the climate change benefits of bio-energy, bio-fuels and bio-based products

Transportation Fuels Policy and Climate Change

Reducing California's petroleum dependence has climate change co-benefits.

- Diversify the state's transportation fuels with low-carbon and renewable fuel alternatives
- Increase vehicle efficiency through a multi-state campaign for stronger Federal Corporate Average Fuel Economy standards
- Reduce demand through integrated land use, transportation and energy planning (e.g. mode shifts, alternative fuels, fleet purchases of hybrids, transportation system efficiency).

Governor's Direction on Transportation Fuels

Governor Schwarzenegger has directed the Energy Commission to take the lead in crafting a workable long-term transportation fuels plan that will:

- result in the significant reduction of gasoline and diesel use
- increase the use of alternative fuels
- establish a set of realistic, achievable objectives with identifiable and measurable milestones

The first phase of this long-term plan is under development, with focus on the role of bio-fuels.

Governor's Direction on Biomass and Climate Change

The Governor has directed the Energy Commission to develop an integrated and comprehensive state policy on biomass:

- Support for the California Biomass Collaborative;
- Reinvigorate the Bio-Energy Interagency Working Group;
- Include in this policy electricity, natural gas and petroleum substitution.
- Reflect the substantial environmental and economic benefits of reducing municipal solid waste and agricultural and forestry residues to fuels, chemicals and other products.

On June 1, 2005, the Governor issued an Executive Order establishing statewide greenhouse gas reduction targets. Bio-energy is one of several strategies that are underway to achieve the Governor's targets.

Ongoing Research Activities on Climate Change

California annually funds climate change scientific research aimed at:

- Understanding California-specific mitigation strategies for CO2 and non-C02 gases
- Improving our understanding of California greenhouse gas emissions and trends
- Demonstrating carbon sequestration technology, e.g. carbon storage in geologic formations, such as enhanced oil recovery
- Building advanced macroeconomic models for policy-relevant research and analysis
- Supporting scenario analysis of the scientific impacts of climate change for the Climate Action Team.

West Coast Governors' Global Warming Initiative

States are showing leadership in addressing global climate change through regional and state level actions.

- California, Oregon and Washington Governors called for regional actions to address global warming in September 2003.
- Staff recommendations to the three Governors were submitted in November 2004.
- Three states have successfully worked together during 2005 to:
  - Develop and adopt appliance efficiency standards, based on California's leadership example
  - Adopt common motor vehicle standards to limit greenhouse gas emissions
  - Examine market-based approaches to limiting carbon, including cap-and-trade design options.
  - Establish state level climate change goals.

2005 Integrated Energy Policy Report
Key Findings on Climate Change

- The primary source of greenhouse gases is the burning of fossil fuels in motor vehicles, refineries, industrial facilities, and power plants.
- Climate change can significantly affect energy supply in California, i.e. increased warming causes early snow melts which reduce water flows for hydropower.
- Climate change can significantly affect energy demand by increasing cooling demand in residential and commercial buildings.
- Reductions in greenhouse gases are needed from multiple sectors of the California economy to achieve the Governor's targets.

2005 Integrated Energy Policy Report
Key Recommendations on Climate Change

- All California utilities and load serving entities should take actions to address climate change, including increasing investments in renewable energy and energy efficiency.
- California should pursue a program to track and measure greenhouse gas emissions in concert with other Western states.
- California should include both instate and out-of-state emissions in any program to limit greenhouse gases.
- A greenhouse gas performance standard for electric utility procurement should be set–at a level no higher than emission levels from new combined cycle natural gas turbines.