



# Overview of the Scenarios Project

Guido Franco  
Public Interest Energy Research (PIER) Program  
California Energy Commission

Scenario Analysis Subgroup  
December 13, 2005

Cal EPA Headquarters, Coastal Hearing Room  
1001 I Street  
Sacramento





## Background Information

- The Governor's June 1<sup>st</sup> Executive Order requires that the Secretary of the Environment submits a science assessment report by January 2006
- Future reports must be submitted to the Governor and the Legislature every other year



## Scenarios Project

- Partially based on the work that the California Climate Change Center has been conducting for the last two years
- Funded by the Energy Commission and CalEPA

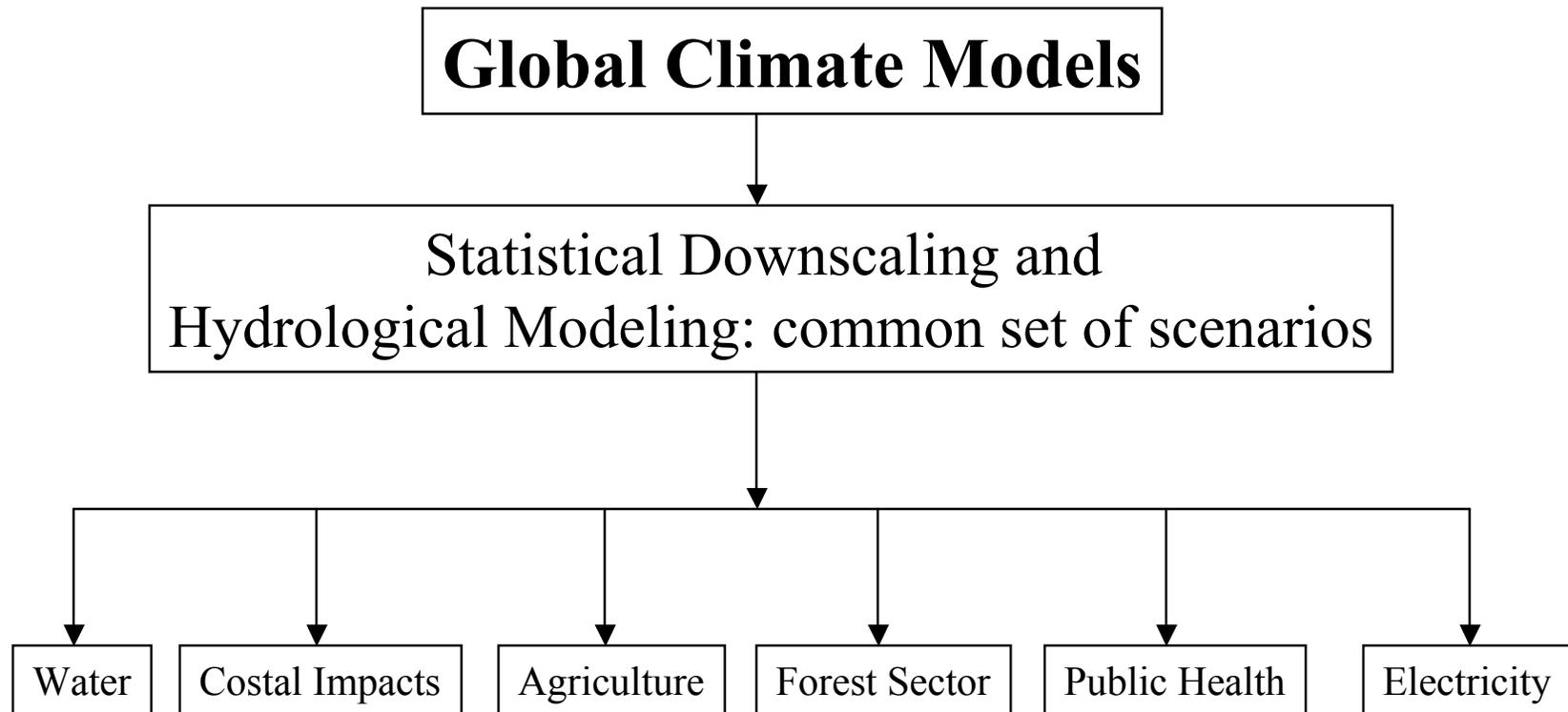


## Studies

- Eighteen draft papers have been released involving researchers from Scripps Institution of Oceanography, UC Berkeley, UC Davis, Santa Clara University, LBNL, LLNL, US Forest Service, Oregon State University, ATMOS Research and Consulting, Union of Concerned Scientists, ARB, DWR, CDF, and CEC.
- The draft paper entitled “Possible Scenarios of Climate Change in California: Summary and Recommendations” summarizes and integrates the 18 papers



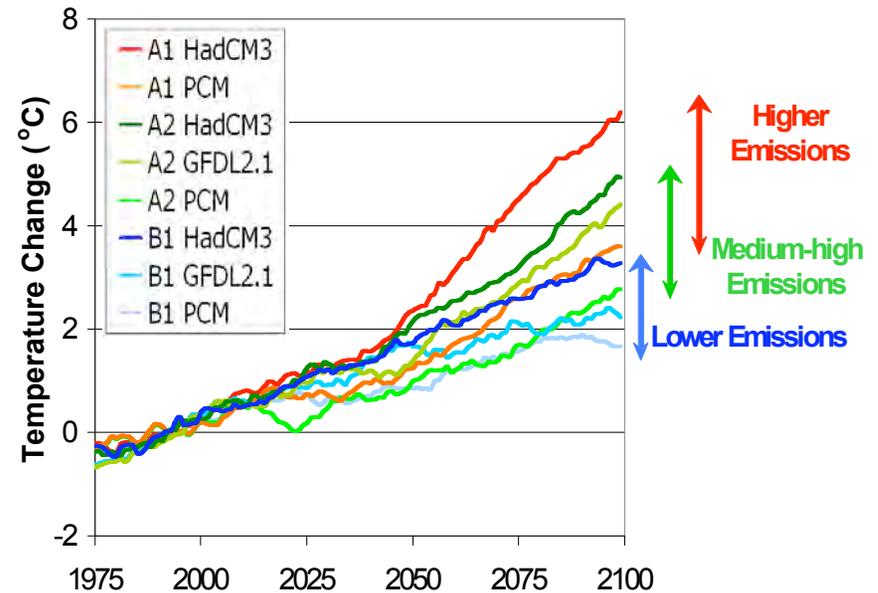
# Structure of the Overall Study





# Overall Theme

- Effect of emissions on projected temperatures
- Effect of temperatures on level of impacts



Projected Annual Mean Temperatures In California



# Overall Findings

Emissions Scenarios  
(End of Century Atmospheric CO<sub>2</sub> Concentration)

Statewide  
Temperature Rise (°C)  
2070-2099

Emissions Scenarios (End of Century Atmospheric CO <sub>2</sub> Concentration)	Statewide Temperature Rise (°C) 2070-2099
<p>Higher Emissions A1fi (970 ppm)</p> <p>90% loss in Sierra snow pack 55-75 cm (22-30 inches) of Sea level rise 3-4 times as many heatwave days in major urban centers 4-10 times as many heat-related deaths projected for some urban centers 2.5 times the number critically dry years 20 % increase in electricity demand Increase in Forest yields not evaluated for this scenario Increase in Fire risk not evaluated for this scenario Increase in days meteorologically conducive to ozone formation</p>	<p>4.4 – 5.8 °C (8-10.4 °F)</p>
<p>Medium-High Emissions A2 (830 ppm)</p> <p>70- 80 % loss in Sierra snow pack 35-55 cm (14-22 inches) of Sea level rise 1-2 times as many heatwave days in major urban centers 2.5-5.5 times as many heat-related deaths projected for some urban centers 2-2.5 times the number critically dry years 75-85% increase in days meteorologically conducive to ozone 11% increase in electricity demand 30% decrease in forest yields (Pine) 55% increase in the expected risk of large fires</p>	<p>3.1 -4.4 °C (5.5-7.9 °F)</p>
<p>Lower Emissions B1 (550 ppm)</p> <p>30-60 % loss in Sierra snow pack 15-35 cm (6-14 inches) of Sea level rise 2-2.5 times as many heatwave days in major urban centers 2-4 times as many heat-related deaths projected for some urban centers Upto 1-1.5 times the number critically dry years 25-35% increase in days meteorologically conducive to ozone formation<sup>6</sup> 3- 6 % increase in electricity demand 7-14% decrease in forest yields (Pine) 10-35% increase in the risk of large fires</p>	<p>1.7 -3.0 °C (3.0-5.4 °F)</p>



## Overall Conclusions

- Higher emissions increase the severity of the impacts. Emission reductions reduce the likelihood of severe adverse impacts
- Past emissions and the high thermal inertia of Earth, mostly due to the oceans, mean that some changes in climate are going to occur. Coping and adaptation strategies are also needed.