

# Tehachapi and State GHG Reduction Goals

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Collaborative Forum

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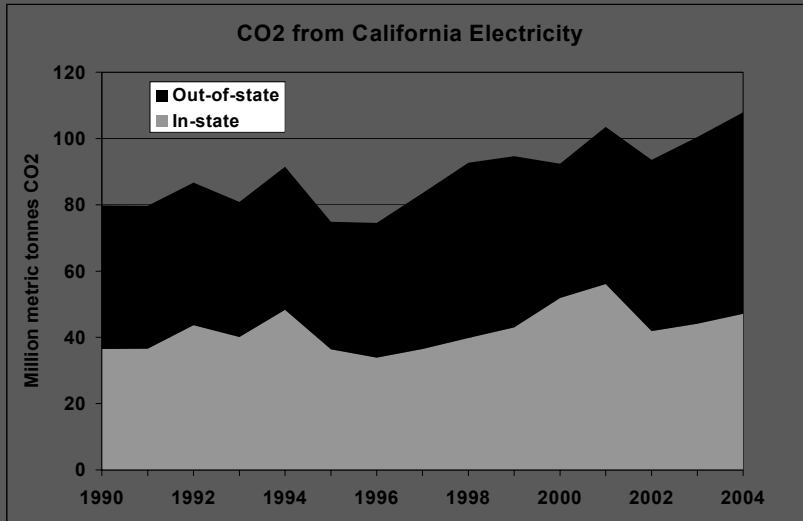
## Greenhouse Gas Reduction Target

“By January 1, 2008, the state board [CARB] shall  
.... determine what the statewide greenhouse gas  
emissions level was in 1990, and approve .... a  
statewide greenhouse gas emissions limit that is  
equivalent to that level, to be achieved by 2020.”

Part 3, §38550 (Division 25.5, CA Health and Safety Code)

- Industrial, Commercial, Residential emissions flat
- Transport sector reductions more difficult
- We know how to achieve electric sector reductions

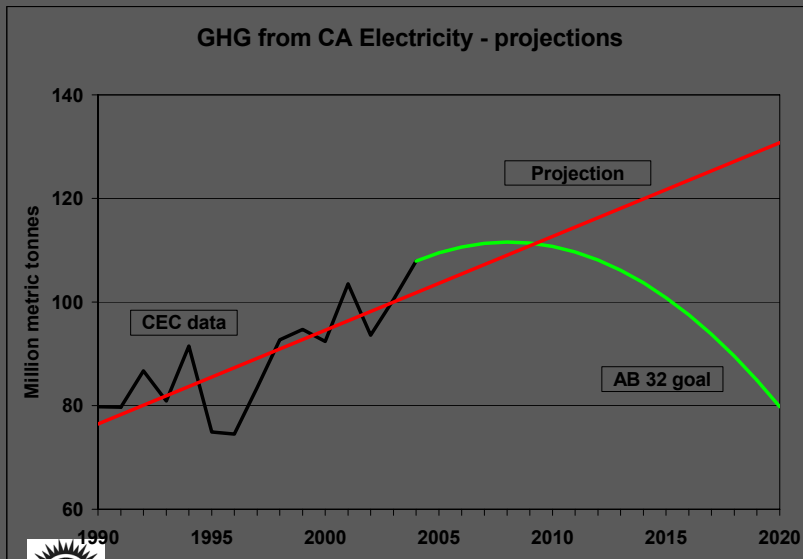




Source = California Energy Commission



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## Meeting Load Growth

	<u>2005</u>	<u>2020</u>
Population (millions)	37	44
Electricity (TWh/yr)	288	341

Annual increase needed by 2020  $\approx$  53 TWh  
(18%)

Population estimates – CA Department of Finance  
2005 Electricity data – CA Energy Commission  
Per capita consumption assumed flat



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## Renewable Energy Needed

- Displace 28 mmtCO<sub>2</sub>, e.g., by displacing ~28 TWh/yr coal with non-fossil: 28 TWh/yr
- Meet load growth to 2020: 53 TWh/yr
- New renewables, 2020: 81 TWh/yr
- Renewables output, 2005: 25 TWh
- 2020 total renewables output: 106 TWh



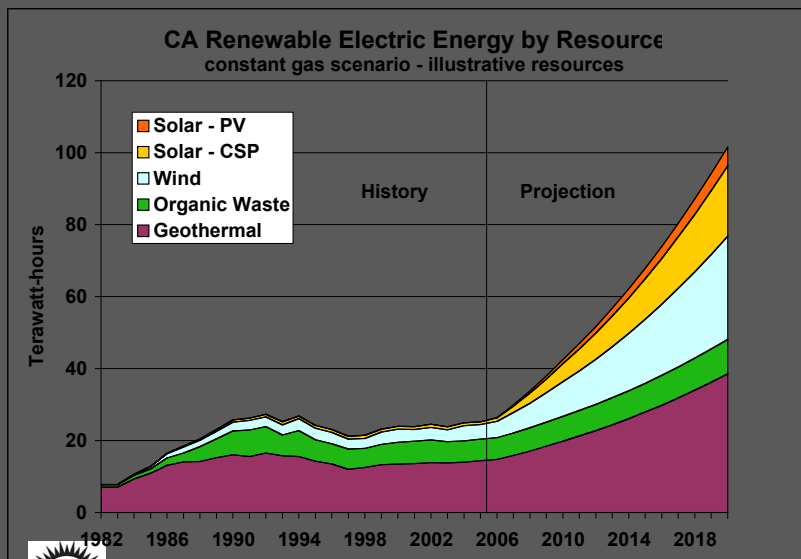
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# 4,500 MW Tehachapi Project

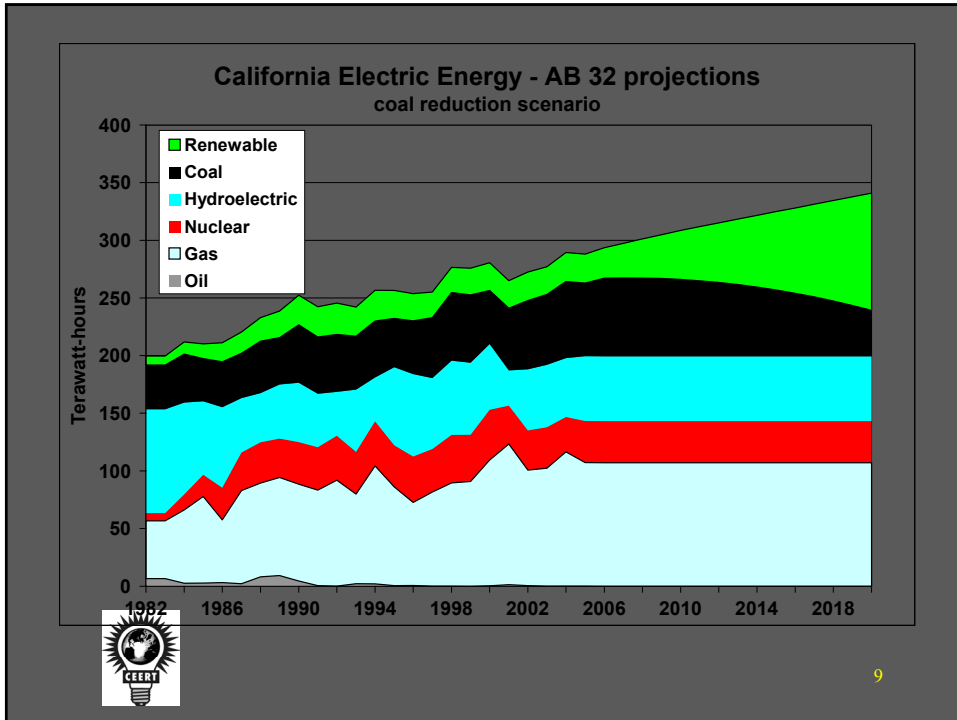
- 14 TWh/yr  $\approx$  Diablo Canyon
- Save 121 billion ft<sup>3</sup>/\$1 billion natural gas cost/yr
- Reduce WECC production cost  $\sim$ \$600 million/yr
- AB 32 => Triple renewable generation in 14 years
  - 2005: 25 TWh/year (10% of total)
  - 2020: 106 TWh/year (31% of projected total)
- Need 5-6 Tehachapi projects



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## AB 32 Electric Sector Scenario

1. Reduce per capita load growth with conservation/efficiency;
2. Keep gas consumption from growing;
3. Displace coal-electric imports;
4. Triple renewable generation, next 14 years.

**=> almost all procurement = renewables**

