This presentation premiered at WaterSmart Innovations

watersmartinnovations.com
Energy Efficiency Improvements

![Graph showing annual electricity use in kWh per person from 1960 to 2010 for Rest of the U.S. and California. The Rest of the U.S. line shows a steady increase, while California shows a slight decrease in the late 1990s and early 2000s.]
Standards and Codes

Electricity Savings, 1990-2012

- Building Standards: 21%
- Appliance Standards: 35%
- Program, price, and other effects: 44%

Natural Gas Savings, 1990-2012

- Building Standards: 39%
- Appliance Standards: 33%
- Program, price, and other effects: 28%
Pricing Policies

80% of wastewater utilities in California using flat rates

Rate Structures of Surveyed California Water Utilities

80% of wastewater utilities in California using flat rates

Declining Block Rate 1%
Other 9%
Uniform 23%
Tiered 67%
Efficiency Targets

• 2004: CPUC adopted explicit goals for four largest IOUs
• Initial goals set from 2004 – 2013 and included savings from utility efficiency programs
• Savings must persist and shortfalls must be made up in future years
• Goals have been updated several times
• As of 2006, POUs must set efficiency targets
## Efficiency Targets

<table>
<thead>
<tr>
<th>Energy Sector</th>
<th>Water Sector</th>
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<tbody>
<tr>
<td>Targets established through regulatory process with periodic updates</td>
<td>Targets established through legislative process; updates uncertain</td>
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<tr>
<td>Targets based on analysis of efficiency potential for each utility</td>
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<tr>
<td>One compliance option</td>
<td>Several compliance options</td>
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<tr>
<td>Target based on absolute number</td>
<td>Target as a percent savings; depends on weather, economic activity, etc.</td>
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<tr>
<td>Savings integrated into future statewide demand forecasts</td>
<td>Savings are NOT integrated into state or even local demand forecasts</td>
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Efficiency as a Resource

- Clean, Efficient Fossil Fuels
- Renewables and Distributed Generation
- Energy Efficiency and Demand Response
Efficiency as a Resource

- Traditional Supplies
- Alternative Supplies (Reuse, Stormwater, Rainwater, GW Cleanup)
- Water Conservation and Efficiency
Utility Efficiency Program Expenditure ($ millions)

- POUs
- IOUs

Conclusions

• California faces a number of major water management challenges but they can be solved

• Many lessons from the energy sector can be applied to the water sector
  – Continuously update standards and codes
  – Adopt pricing policies that promote efficiency
  – Improve efficiency targets
  – Adopt a loading order for water
  – Increase efficiency investments
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