

Opportunities to Reduce Energy Consumption and Save Water in California



Abby Schneider
Federal Legislative Representative

California's Water System

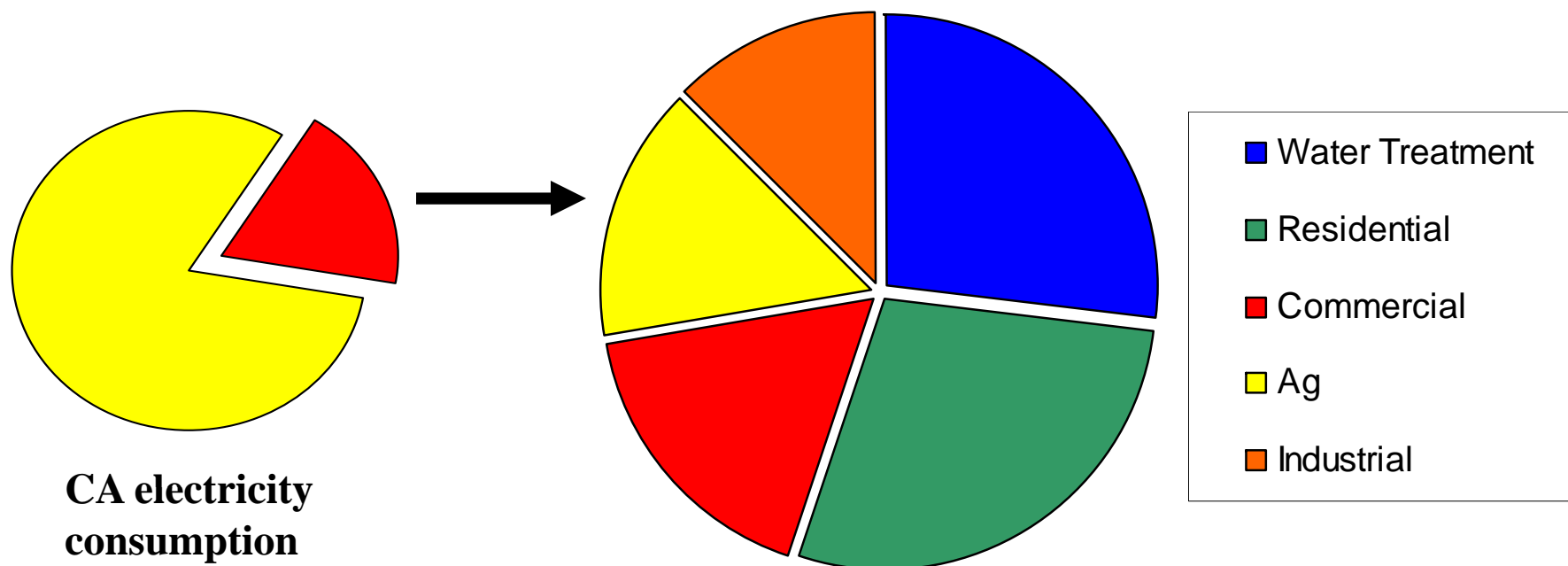


CA water distribution system is energy intensive

19% of electricity consumption related to water use

Data from "California's Water-Energy Relationship", CEC in 2005

Water Related Electricity Consumption



To save electricity, water utilities can reduce embedded energy, promote conservation, and generate renewable energy.

Data from "California's Water-Energy Relationship", CEC in 2005

Embedded Energy Savings



- Conveyance
 - Conservation
 - Water recycling
- Treatment and Distribution
 - High Efficiency Pumps
 - Better chemical controls
 - Improve leak detection
 - Peak electric demand/demand response

Residential Savings



- ACWA partnership with DWR
- Website promotes conservation
 - links to appliance rebates offered by water agencies
 - tips for how to save water
 - 20 gallons per day for 20 day challenge
 - information on CA water shortage
- State Fair Exhibit



Renewable Energy Generation



- Water systems unique position
 - Electrical load
 - Resource availability
 - Technical Knowledge
- 2005 CEC report estimated over 3000 MW of power
 - Santa Clara Valley Water District: 200 KW solar power system provides 20% energy needs
- EPA Greenpower Partnership
 - In August, 3 of the top 5 on-site generators were CA water and wastewater agencies

The Sticks



- Energy crisis of 2001: rolling blackouts and spiking prices
- AB 32: water sector must reduce CO₂ emissions by 4.8 mmt by 2020
 - Water use efficiency
 - Water recycling
 - Water system energy efficiency
 - Increased Renewable Energy Generation

State Carrots

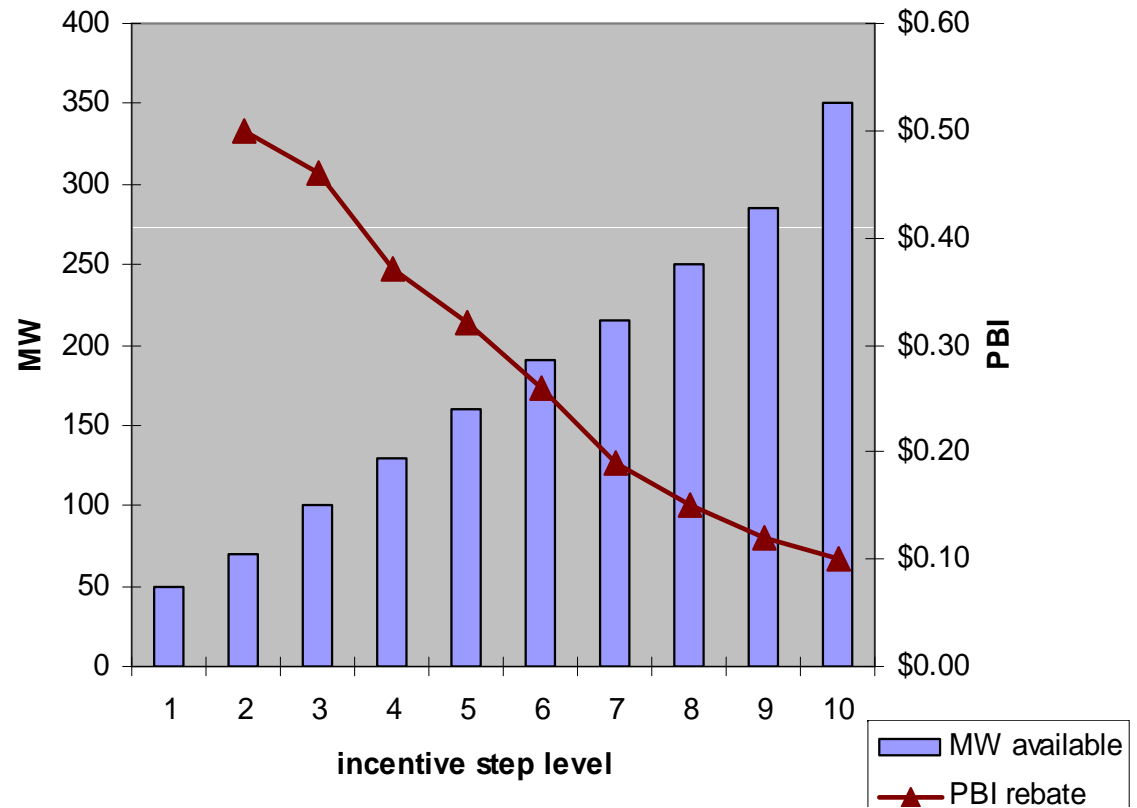


- CA Solar Initiative
- CA Renewable Portfolio Standard

State Carrot: CA Solar Initiative



- Goal 1750 MW
- Incentives offered in 10 declining steps
- Steps apply separately to states 3 big IOU
- Rebate offered varies by size of project and customer class



State Carrot: Renewable Portfolio Standard



Goal: 20% by 2010

- End of 2008 at 13% on track meet goal in 2013-14
- Tradable renewable energy credits
 - 1 MW/Hr generated and delivered including all environmental attributes.
- A variety of programs available to water agencies.
 - Net Metering: Meter runs backwards; Customer retains most RECs
 - Feed in Tariffs: Buy off grid, sell to grid; customer sells most RECs

Federal Carrots



Promoted in the ARRA and other legislation

Funding Sources in ARRA



- EPA
 - SRF Green Reserve
- DOE
 - State Energy Program
 - Energy Efficiency and Conservation Grants
- US Treasury
 - Qualified Energy Conservation Bonds
 - Clean Renewable Energy Conservation Bonds

State Revolving Fund Background



- Two separate environmental infrastructure funds that provide low interest loans and grants for drinking water and wastewater projects
 - \$4.0 billion Clean Water SRF
 - \$2.0 billion Drinking Water SRF
- Green Reserve, 20% carve out created in ARRA
 - CA Clean water SRF, \$280 million total, \$56 million “green reserve”
 - CA Drinking water SRF, \$160 million total, \$32 million “green reserve”

SRF Green Reserve: Project Focus



- Energy Efficiency
- Water Efficiency
- Green Infrastructure and Design
- Environmentally Innovated Projects

Future of SRF Green Funding



- President Obama's FY 2010 Budget
 - \$2.4 billion for clean water SRF
 - \$1.5 billion for drinking water SRF
 - 20% for “green infrastructure and water and energy efficiency projects”
- S.1005 SRF Reauthorization Bill
 - \$20 billion over 5 years for clean water SRF
 - \$15 billion over 5 years for drinking water SRF
 - Includes “sustainability criteria” such as water and energy efficiency

ARRA Funding Sources



- EPA
 - SRF Green Reserve
- DOE
 - State Energy Program
 - Energy Efficiency and Conservation Grants
- US Treasury
 - Qualified Energy Conservation Bonds
 - Clean Renewable Energy Conservation Bonds

State Energy Program



- National ARRA funding: \$3.1 billion; CA allotment: \$226 million
- Purpose: to design and carry out renewable energy projects and energy efficiency programs.
- Energy/Water nexus largely absent from CEC guidelines.
 - “water efficiency measures can be deployed, however they must meet stated energy efficiency measures.”
 - \$25 million low interest loans can be used for water/wastewater efficiency upgrades

Energy Efficiency and Conservation Block Grants



- Nationally \$3.2 billion, CA allotment:
 - \$302 million directly to large cities and counties
 - \$49.6 million to CEC, ~\$30 million for small cities
- Purpose: development of energy efficiency programs including projects to install renewable energy generation at government buildings
- CEC Guidance: Water/wastewater system process and control retrofits specifically listed as eligible and cost effective project.

ARRA Funding Sources



- EPA
 - SRF Green Reserve
- DOE
 - State Energy Program
 - Energy Efficiency and Conservation Grants
- US Treasury
 - Qualified Energy Conservation Bonds
 - Clean Renewable Energy Conservation Bonds

Tax Credit Bonds



- Purpose: To finance renewable energy generation projects and other energy efficiency initiatives.
 - \$1.6 billion for CREBs in ARRA
 - \$ 3.2 billion for QECBs in ARRA, \$381 million to CA
- Essentially 0% interest bonds
 - Borrower pays back bond principal
 - Bondholder receives federal tax credits in lieu of the traditional interest.
 - Tax credits treated as taxable income for the bondholder

New Legislation



- Energy and Water Integration Act, S 531
 - Energy/water Nexus study and roadmap
 - Water Conservation and Energy Study
 - Brackish Desalination Study
 - Water Related Energy Consumption Study
- Water System Adaptation Partnership Act
 - EPA grant program for water systems to adapt to climate change
 - Includes increase water use efficiency, energy efficiency, or the use of renewable energy in eligibility criteria

More Questions



Contact: Abby Schneider

aschneider@sso.org

202-434-4760