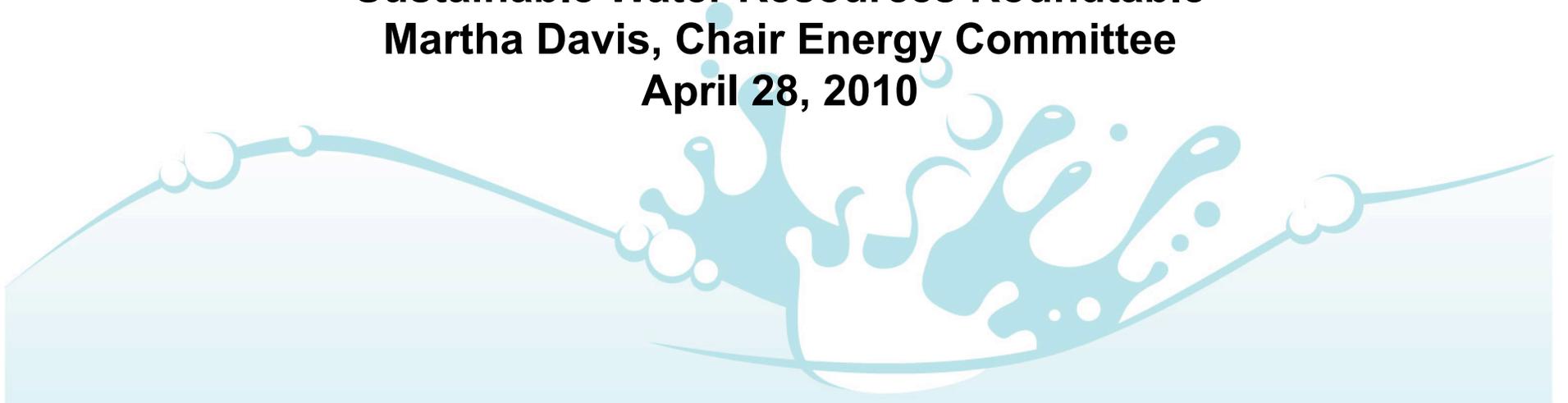


Energy Water Nexus



Sustainable Water Resources Roundtable
Martha Davis, Chair Energy Committee
April 28, 2010



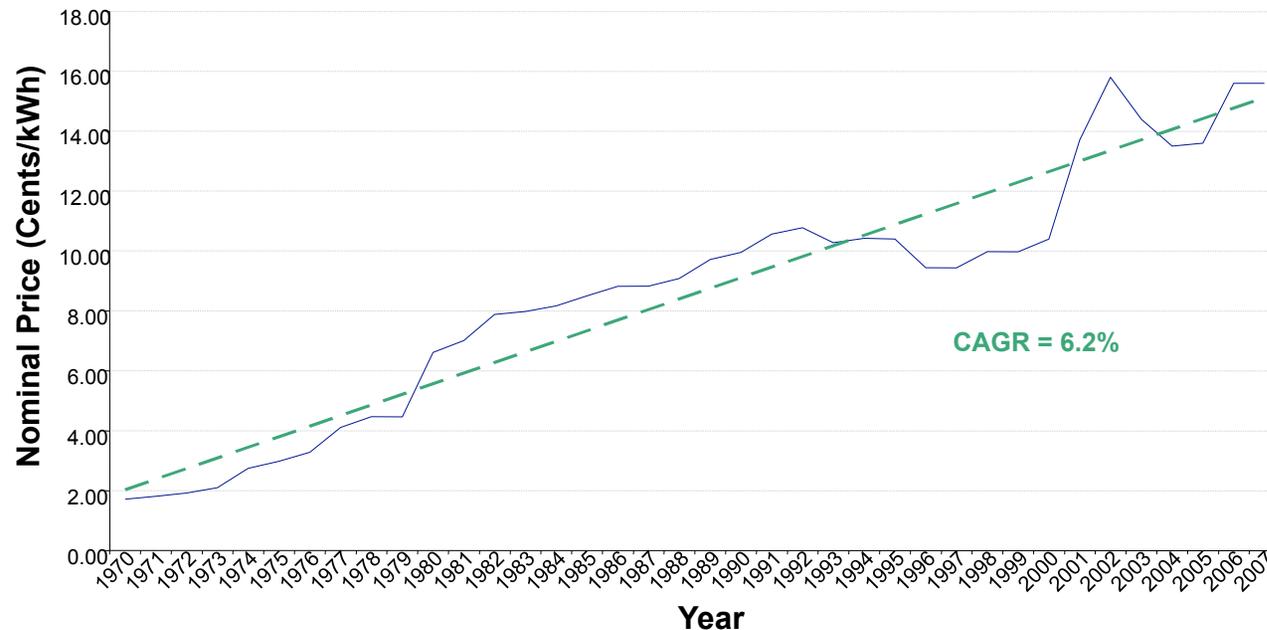
Presentation Overview

- Water Agencies' Perspective “Incoming”
- Water Agencies' Perspective “Opportunity”
- Obstacles/Challenges
- What is needed?

Why is ACWA Discussing Energy?



**Energy represents the largest controllable cost for water and wastewater agencies* --
And these costs are rising**



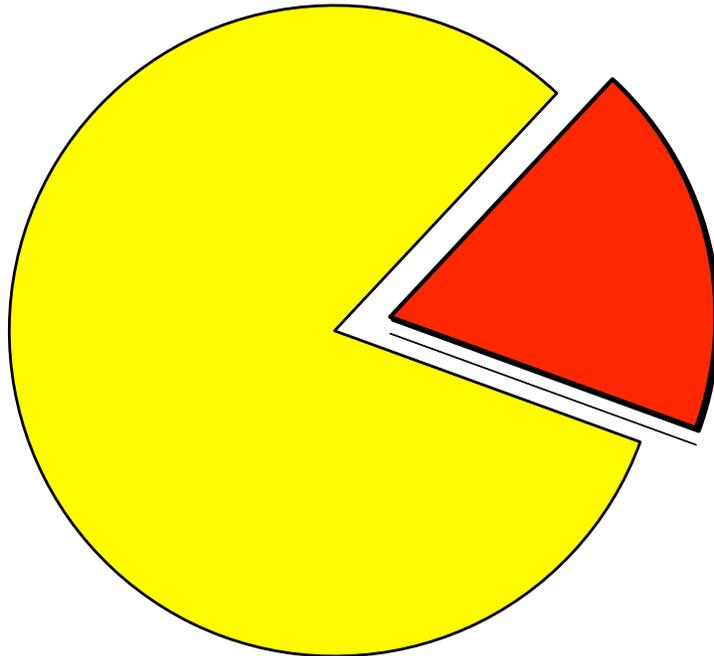
***Energy Costs for water and wastewater can be 1/3 of a municipality's total energy bill**

EPA, 2008 "Ensuring a Sustainable Future: An Energy Management Guidebook for Water and Wastewater Agencies"

Why is ACWA Discussing Energy?



Water and wastewater sectors are
MAJOR users of energy – and our load is growing



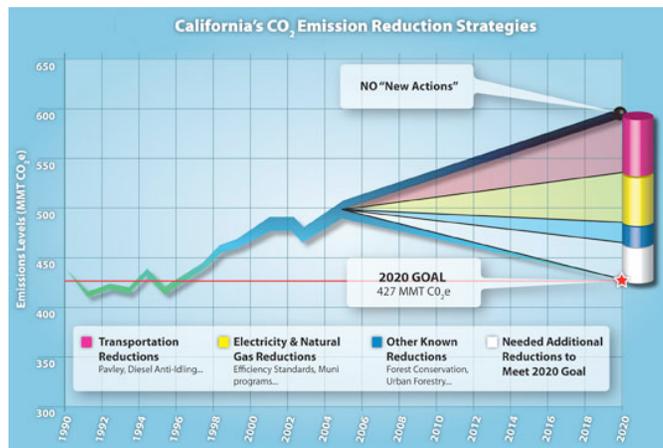
**19% of electricity
consumption in
California is related to
water use***

***Roughly ½ used by water management agencies –
remainder by end-user**

Why is ACWA Discussing Energy?



Energy generation used in the water sector (coal, natural gas, diesel) emits large amounts of greenhouse gases



Overall, electricity generation is the third highest emitter of greenhouse gases in California*

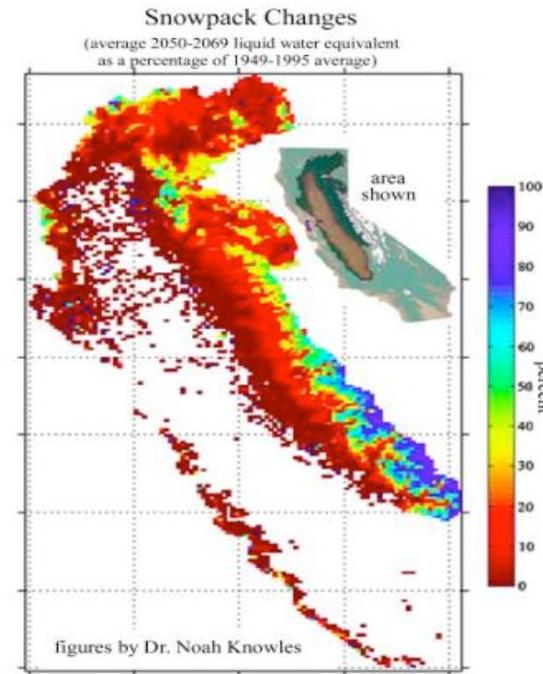
*Under AB 32, the water sector is expected to provide 4.8 MMTCO₂ of emissions reductions by 2020 through water use efficiency, water recycling, water system energy efficiency, reuse of urban runoff, and increased renewable energy generation

Why Is ACWA Discussing Energy?



Climate Change is having a MAJOR impact on water and wastewater agencies

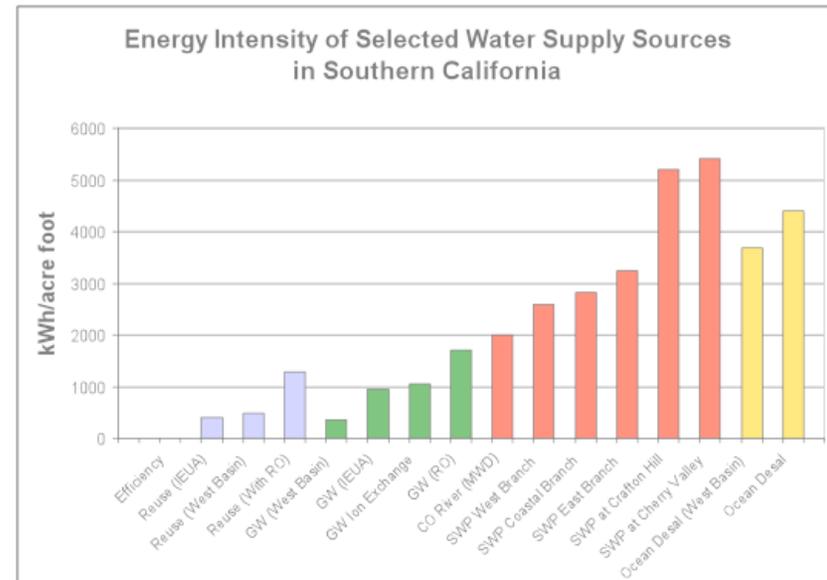
Reliability of SWP, CVP and local surface supplies are expected to be reduced as will hydroelectric power generation*



***Actions by water and wastewater agencies to be more efficient and to generate renewable energy are simultaneous climate change “mitigation” and “adaptation” strategies**

Water Agency Opportunities

- Water and Energy Efficiency Programs
 - Production Efficiency (Pumps, process energy savings)
 - End User Efficiency (Sonoma County Program)
- Development and use of less-energy intensive water supplies
 - Conservation
 - Recycled Water
 - Groundwater/Conjunctive Management
 - Stormwater Capture



Water Agency Opportunities= Renewable Generation

- *Solar
- Wind
- In Conduit Hydro
- Biogas
- Fuel Cells
- Combined Heat and Power



Obstacles/Challenges

Is Distributive Generation Really Just “Nuisance” Power?

- Funding – Tipping Point
 - SGIP, California Solar Initiative Rebates
 - Green Infrastructure Grants/SRF
 - Tax Credits
 - Emerging RPS/GHG Emission Reduction Credits
- Value of Generation = Opportunity to oversize or install projects that feed power into grid
 - Net Metering (various)
 - Feed In Tariff (1-3 MW, possibly up to 20 MW)
 - Market Referent Price vs. Reverse Auction
 - ?? Reduced Transmission Costs
 - Value of using less intensive water supplies?
- “Market Entry Issues”
 - Rules of the Game for developing projects/accessing credits
 - Interconnection
 - Cross media regulatory conflicts

What Is Needed

- Understanding of potential value of engaging the water/wastewater sector in efficiency/generation
 - Efficiency Potential
 - Generation Potential
 - Climate change mitigation/adaptation Potential
 - Reduce new energy-related infrastructure needs
 - Timing and shared investments in infrastructure development
 - Jobs, economic development, national energy independence
- Demonstration Projects and Funding!!!
 - Water/Wastewater Renewable Generation Initiative

IEUA Actions

- Completed assessment by RAND of impacts of climate change on IEUA's water supplies
- Developing local water supplies to reduce overall energy footprint
 - Expect to save 225,000 MWh/Yr by 2020
 - Case studies underway to evaluate energy savings in recycled water use
- Developing Renewable Energy
 - 3 MW biogas on line
 - 3 MW of solar installed
 - Wind, Fuel Cell projects under development
 - Goal to “Go Gridless” by 2020
- Constructed Platinum-rated LEED Headquarters – first public agency in nation to achieve Platinum level
- Completed Carbon Footprint Assessment
- Participating in REC and Carbon Markets



Questions?