

Water Energy Update

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Outline



- Water Energy Relationship
- Who's Interested
- Efforts
- Implications

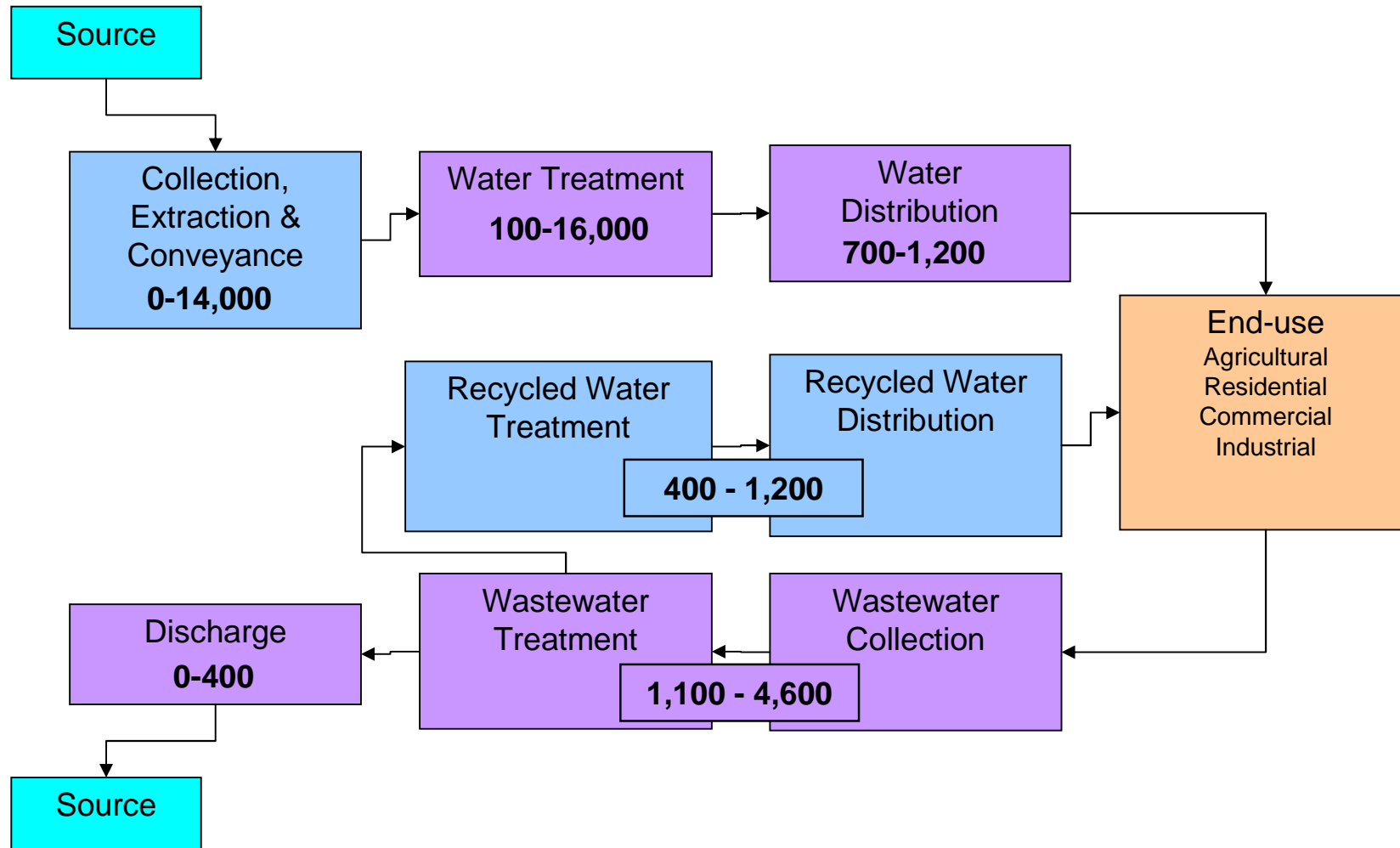
Water Energy Relationship



	Electricity (GWh)	Natural Gas (MM Therms)
Water Supply & Treatment		
Urban	7,554	19
Agricultural	3,188	
End Uses		
Agricultural	7,372	18
Residential		
Commercial	27,887	4,220
Industrial		
Wastewater Treatment	2,012	27
Water Related TOTAL	48,013	4,284
2001 State Consumption Total	250,494	13,571
Percent of Statewide Energy Use	19%	32%

Source: CEC http://energy.ca.gov/process/water/2006-03-28_symposium/WHITE_CEC.PDF

Water Energy Relationship



Water Energy Relationship



Northern California	Southern California
kWh/MG	kWh/MG

Conveyance	150	8,900
Treatment	100	100
Distribution	1,200	1,200
Wastewater Treatment	<u>2,500</u>	<u>2,500</u>
Regional Total	3,950	12,700

Source: CEC http://energy.ca.gov/process/water/2006-03-28_symposium/WHITE_CEC.PDF

Who's Interested



- CEC
- Water Utilities
- Energy Utilities
- Green Interest Groups
 - LEED
 - Conservation (Water / Energy)
 - GHG Emissions
- State Legislature (AB 2515)
- CPUC

Efforts

- Define actual embedded energy levels
- Effective and fair policy

- “California’s Water - Energy Relationship” report, November 2005*
- California Water and Energy Systems Symposium, March 28, 2006
- “Water Related Electricity Demand in California” report near completion
- New research portfolio developed

* <http://energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF>

- Water Action Plan (Dec. 15, 2005 report)*
 - *“Strengthen Water Conservation Programs to a Level Comparable to those of Energy Utilities”*
 - *“Consider energy usage as an important outcome of all water policy decisions and work toward a 10% reduction in energy...”*
- July 17 Water Energy Workshop, ERC, Downey
- Commissioner Dian Grueneich set goal of establishing initial policy steps by 2007

* http://www.cpuc.ca.gov/static/hottopics/3water/water_action_plan_final_12_27_05.pdf

- AB 2515, written by Ira Ruskin*
- Passed Assembly May 31 (47 to 32)
- Now in Senate
- *“...would require the Energy Commission to prescribe...building and construction standards that increase the efficiency in the use of water...and water conservation design standards for new...buildings .”*

* http://info.sen.ca.gov/pub/bill/asm/ab_2501-2550/ab_2515_bill_20060526_amended_asm.pdf

PG&E Study



- Research specific Embedded Energy
- Research specific conservation opportunities
- Research potential for Water and Energy utilities to work together
- Serve as source material for state efforts

Current Water Energy Programs



- Clothes Washers
 - 75,000 Energy Star Units sold in 2004
 - Current \$35-\$75 PG&E Incentive
- Pre-Rinse Spray Nozzles
 - Save > 50,000 gal/yr
 - Save >1 Therm / day
- Industrial Heat Recovery

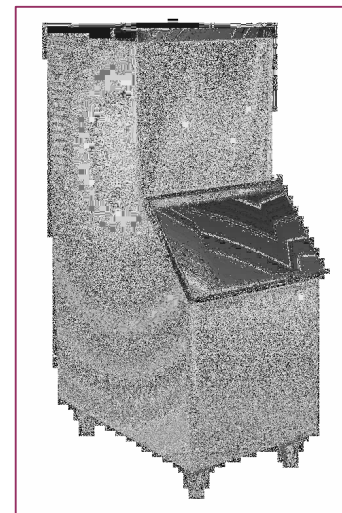


Potential Water Energy Programs



Pacific Gas and
Electric Company®

- Ultra Low Flow Toilets
 - Save 15,000 gal/yr
- Waterless Urinals
 - Save 30,000 gal/yr
- Clothes Washers
 - Save 6,000 gal/yr
- Commercial Dishwashers
 - Save 90,000 gal/yr
- Ice Machines
 - Savings under study at FSTC



Potential Water Energy Programs



Pacific Gas and
Electric Company®

- Cooling Towers
- Boilers
- Sterilizers
- X-ray developers

**Save up to 1 Million
Gallons per year!**



Implications



- Water District Incentives
 - Vary by region
 - EBMUD: \$50-\$250 (Clothes Washer), \$125 (Toilet)
 - SFPUC: \$150-\$200 (Clothes Washer), \$25-\$125 (Toilet)
 - SJWC: \$100-\$350 (Clothes Washer), \$125 (Toilet)
- Energy Utilities
 - No Embedded Energy savings programs yet
 - “Other” savings have been worth \$0.08/kWh and \$0.80/therm

Additional Resources



- California Urban Water Conservation Council
(www.cuwcc.org)
- Association of California Water Agencies
(www.acwanet.com)
- Natural Resources Defense Council
(www.nrdc.org)
 - *Energy Down the Drain: The Hidden Costs of California's Water Supply*

Thank you!

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