

# Water & Energy Symposium

## The Regulatory Challenge Linking Water & Energy

### Opportunities for Water Agencies Through an Integrated Approach to Energy Management

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# Water is Unique

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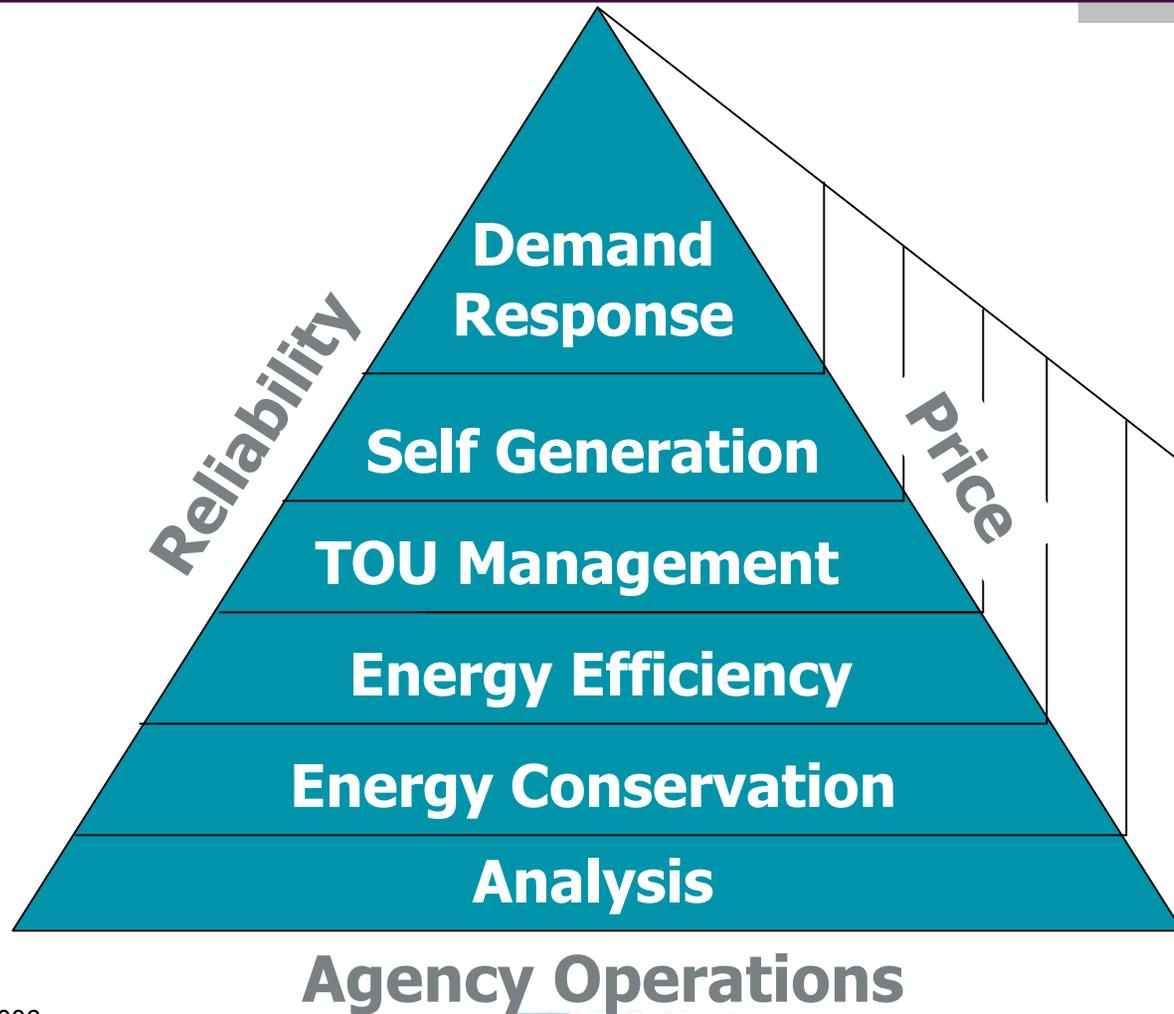
- 6000 MW statewide and growing
- Critical commodity supplier
- Must provide fail safe service
- Tremendous potential for improving energy management practices *and* meeting service requirements

# What Should Water Agencies Do?

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- Opportunity abounds--actively position for success
  - Understand the issues
  - Be willing to try new things & adapt
  - Share experiences & opinions to help shape the future
- Build a robust energy strategy based on an **Integrated Energy Management Plan**

# Integrated Energy Management Plan



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# Success Stories

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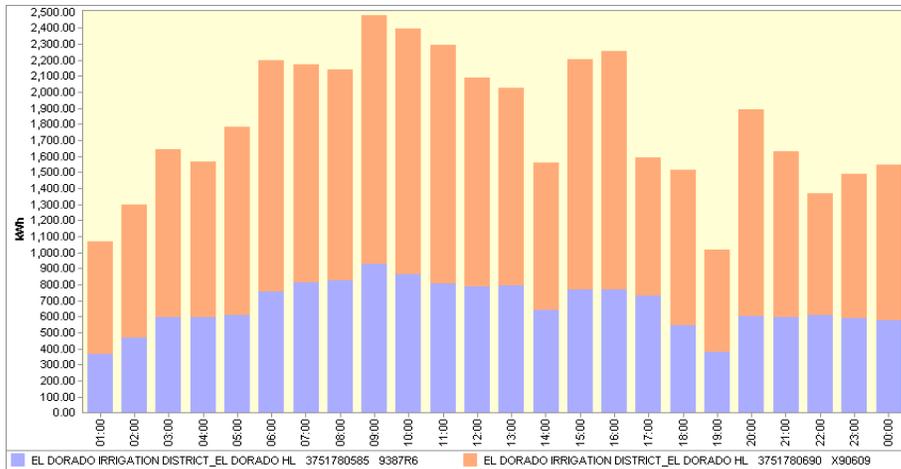
- A Tale of Three Agencies:
  - El Dorado Irrigation District: success achieved in existing facilities
  - San Jose Wastewater Treatment Plant: success achieved in new construction
  - Humboldt Bay Municipal Water District: success in the making

# El Dorado Irrigation District

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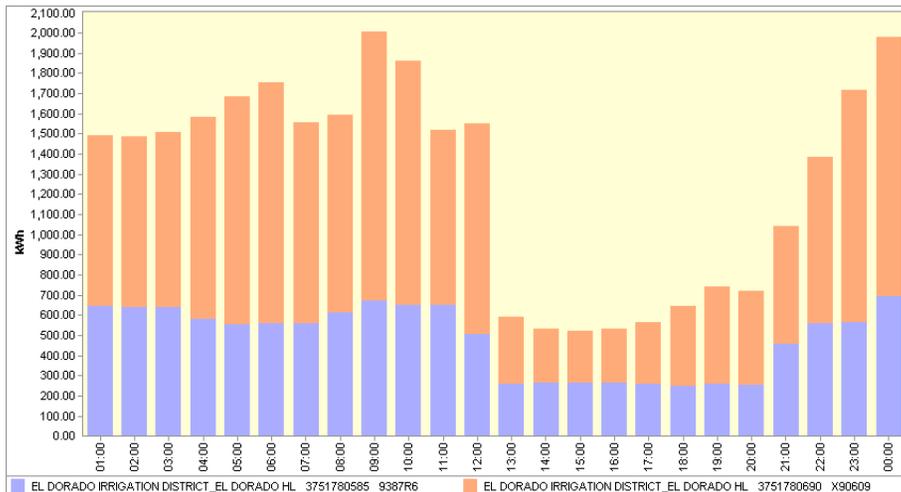
- Achieved a reduction in peak demand in excess of 1 MW—almost 50% of their peak usage
- Done initially for demand response
- Experience leads to confidence: implemented reductions on a routine operational basis

# Success story: El Dorado Irrigation District



Pre Demand Response  
June 14, 2004

11.56 Million Gallons



Demand Response  
Measures Implemented  
June 14, 2005

11.03 Million Gallons

- Raw water pump station
- Water treatment plant

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# El Dorado Irrigation District

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## ■ Key elements success

- Participation of all stakeholders from operators to senior management
- Willingness to accelerate expansion of water storage project
- Willingness to accept changes to operating criteria & procedures
- Addressed risk management

# El Dorado Irrigation District

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- Optimization of energy opportunities requires looking beyond end use hardware
  - Shifting the paradigm: operating policies & procedures
  - Making it work: system controls and software
  - Critical alliance: finance and operations--meeting of the minds

# San Jose Wastewater Treatment Plant

- San Jose WWT Expansion Project
  - Fine bubble diffusers for aeration, premium efficiency motors, VSDs and secondary system oxygen recovery
  - Projected total energy savings
    - 11 million kWh
    - 1 million therms
  - Incremental cost = \$1 million approx
  - Pay-back period of < 3 months
  - PG&E incentives \$300,000 (program max)

# Perspective

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- What would Leonardo Di Vinci have accomplished if his only choice was to paint by the numbers?

# Humboldt Bay Municipal Water District

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- Eight separate districts, one wholesale supplier
- Opportunity exists but only through unique collaboration of agencies, wholesaler, utility and regulators
- The prize for success? A 2 MW reduction

# Humboldt Bay Municipal Water District

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- The challenge? Doesn't "fit the mold."
  - Load reductions exist with one agency while operational solutions reside with another
  - Opportunity transcends utility program design
  - Challenges exist for inter-agency cooperation

# Humboldt Bay Municipal Water District

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- The solution?
  - Willingness to color outside the lines from a programmatic, regulatory perspective
  - Willingness among all parties to collaborate, be flexible & achieve great things
  - First and foremost focus on results--keep the eye on the prize

# Unrealized Opportunity Knocks

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- Current programs address only direct energy savings
- Imagine the possibilities if electric & water utilities shared with customers the value of indirect energy savings associated with reduced water consumption.
- Do problems exist with this? Of course!
- Let's not get stuck painting by the numbers...as long as we can deliver!



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**When You Think About:**

**Demand Response,**

**Energy Efficiency,**

**or Distributed Generation**

**...Think Integrated Energy Management!**