



*Utility Solar Water  
Heating Initiative*

# **Utility Solar Thermal Initiatives and USH<sub>2</sub>O**

U.S. DOE Solar Water Heating  
Expansion Workshop  
January 18-19, 2006



## Overview

- Background
  - Utility Partnership Advantages
  - Barriers & Drivers
- Current U.S. Utility Programs
- USH<sub>2</sub>O – Utility Solar Water Heating Initiative
  - Mission & Membership
  - Current Initiatives



**Got an energy question?  
Who ya' gonna call?**

- Who is “ideal” partner for introducing unfamiliar energy technology?
  - Local energy player
  - Long-term commitment to serve customers
    - Customer trust
    - Unbiased information
  - Access to capital and financing
  - Metering and billing infrastructure
  - Energy program management experience
    - Vendor and builder networks
    - Communication channels
    - Installation standards and verification
    - Data collection and analysis
- Utilities can add value!



## Utility Barriers to Solar Thermal

- *"Brick Walls"* – Difficult to Get Over
  - Solar thermal (low-temperature) does not generate electricity
  - Solar thermal is more expensive than "conventional" sources
    - Externalities are not monetized
    - Solar thermal is non-dispatchable
  - Utilities uncertain about role with distributed resources
    - Central plant mentality
    - Ownership concerns





# Utility Barriers to Solar Thermal

- *"Locked Doors"* – Potential Openings
  - Renewable Portfolio Standards (RPS) do not include solar thermal
    - Exceptions: HI, NV, AZ, PA
  - Renewable Energy Credits (RECs) programs exclude solar thermal
  - Lack of information
    - Technology advances
    - Performance & reliability
    - Economics
    - Industry support organizations
      - DOE, National Labs, SEIA, SRCC, NABCEP, ASES, ISO, ESTIF
    - Other utilities' experiences
  - Lack of industry infrastructure





## Utility Drivers for Solar Thermal

- Rising cost of conventional power
  - Rising and volatile fuel prices
- RPS mandates
  - Solar thermal is the low-cost renewable option
- Regulatory approval of generation plans
- Global climate change
- Customer interest
- Environmental stewardship
  - Community image
  - Relationships with advocacy groups
- Demand reduction
- Profit



# 33 Utility Programs in 10 States

## Hawaii

- Hawaiian Electric Company
- Kaua`i Island Utility Cooperative

## California

- SMUD
- City of Santa Clara

## Florida

- Lakeland Electric
- JEA - Jacksonville Electric Authority
- Clay Electric Cooperative
- City of Tallahassee
- Gainesville Regional Utilities
- Progress Energy Florida

## Arizona

- Arizona Public Service
- Salt River Project
- Tucson Electric

## Texas

- Austin Energy

## Missouri

- Columbia Water & Light

## Oregon

- Eugene Water & Electric Board
- Ashland Electric Utility
- Emerald People's Utility District
- Central Electric Cooperative
- Portland General Electric
- Pacific Power
- Northwest Natural

## Washington

- Clallam County Public Utility District
- Clark Public Utilities
- Franklin County Public Utility District
- Gray's Harbor Public Utility District
- Pacific County PUD #2
- Okanogan PUD

## Massachusetts

- KeySpan Energy
- NSTAR Gas and Electric
- Western Massachusetts Electric Co.

## Wisconsin

- Wisconsin Public Power
- Alliant Energy



## Three Pending Programs

- Florida
  - Orlando Utilities Commission
- Nevada
  - Sierra Pacific Power
  - Valley Electric Association







# Utility Solar Water Heating Initiative

- Mission: To facilitate successful launch and implementation of utility solar water heating programs





# Membership

**117** members

**37** Utility

**14** IOU's

**21** Muni's

**2** Coop.

**60** Industry

**32** Solar Businesses

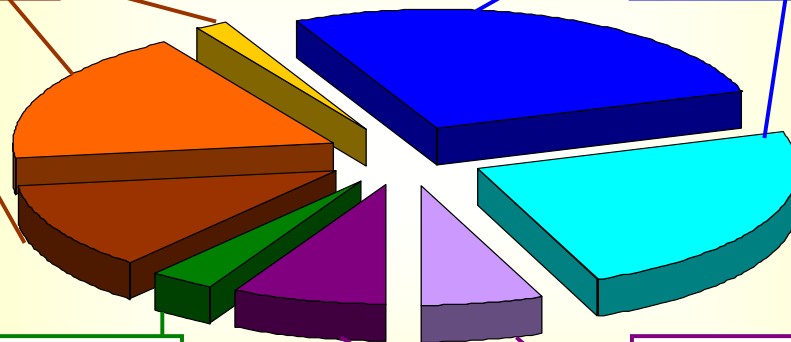
**28** Industry Support

**4** Environmental

**16** Government

**7** DOE, NREL, Other

**9** State



- Technical Assistance for utilities
  - Information
  - Experienced program managers
  - Financial model
- Forum for information exchange
  - Monthly conference calls
  - Utility, industry and government stakeholders
- Advocacy for solar thermal issues
  - Input to legislation and rules on RPS, REC's
  - Partnerships to promote solar thermal
    - SRCC, SEIA, NABCEP, ASES, Solar America Initiative
- Education and Outreach
  - Presentations
  - Publications
  - Web site



## Input to RECs Programs

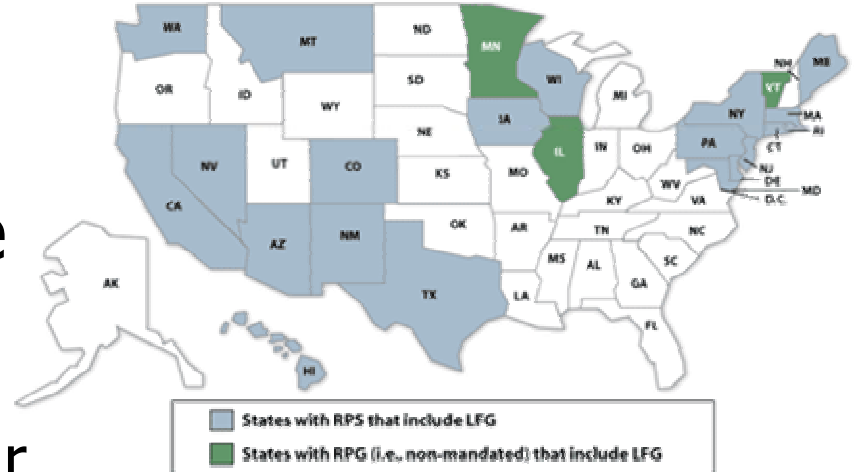
- Energy Resources Trust modified definition of “solar energy” to include solar thermal
  - Electric offset only
  - Metered systems
- Green-e considering USH2O proposal
  - Electric and natural gas offset
  - Metered systems





## Input to Rules & Legislation

- Support for proposed RPS legislation and programs
- Input to Union of Concerned Scientists
- Input to FEMP Renewable Energy Purchase Guidelines
  - Resulted in addition of solar thermal





## **Presentations & Workshops**

- Presentations at ASES conferences 2004 – 2007
- ASES 2005 – USH2O information booth (along with Lakeland Electric)
- Solar Power Conference 2005
  - One-day “Solar Thermal RECs” workshop



# Publications

- USH<sub>2</sub>O web site
  - “Utility Success Stories”
  - “Solar Thermal Business Prospectus for Utilities”
  - Other papers & presentations





## Conclusions

- Utilities can be key partners in expanding solar thermal market
- Mix of barriers, drivers and opportunities
- USH<sub>2</sub>O offers assistance
  - Open to all stakeholders
  - No membership fee







## More Information

- USH<sub>2</sub>O web site
  - <http://www1.eere.energy.gov/solar/ush2o/>
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