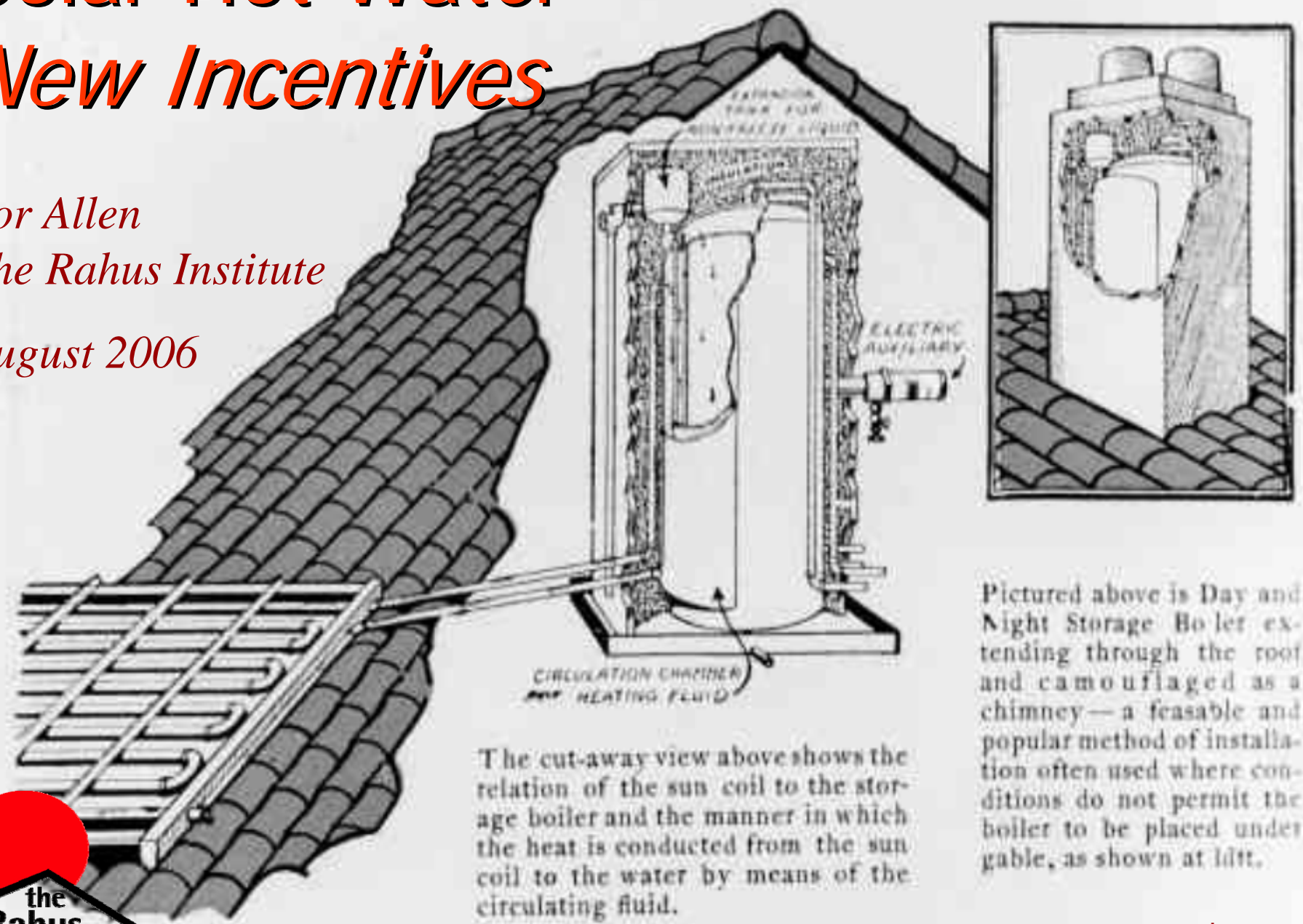


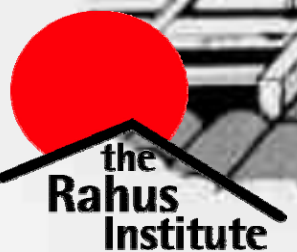
# Solar Hot Water *New Incentives*

*Tor Allen  
The Rahus Institute  
August 2006*



The cut-away view above shows the relation of the sun coil to the storage boiler and the manner in which the heat is conducted from the sun coil to the water by means of the circulating fluid.

Pictured above is Day and Night Storage Boiler extending through the roof and camouflaged as a chimney—a feasible and popular method of installation often used where conditions do not permit the boiler to be placed under gable, as shown at left.



# Topics

- Energy Saving potential
- Federal Tax Credit - current
- San Diego Pilot program
- Federal tax credit extension
- EE utility program integration
- potential of cost reduction



# Natural Gas Saving Potential

- Kema/Pg&E study (4/03) showing that SHW has the greatest potential over any other residential energy efficiency measure for natural gas savings
- Estimated at > 200 MTh/yr

# Federal Tax Credit

- Energy Policy Act of 2005 (EPAAct 2005)
- Effective 1/1/06, through 12/31/07
- Residential – 30% of cost, up to \$2000
- Commercial – 30%, no cap
- solar hot tub or pool heaters not eligible
- Must be placed in service before 12/31/07



# Tax Credit Extension

- SEIA and others working to extend the tax credit for solar hot water and PV out an extended period of time. Up to 10 years.

# San Diego Pilot Program (proposed)

- Timeline
- Who's eligible
- Incentive structure
- Quality assurance activities
- Potential cost cutting measures
- Minimizing lost opportunities
- Project example
- Important dates

*Slides courtesy of San Diego Regional Energy Office*



# Program Timeline

- 18 month reservation period beginning January 1<sup>st</sup>, 2007 and ending June 31<sup>st</sup>, 2008
- All final claim documentation to be submitted by December 31<sup>st</sup>, 2008
- Pilot program evaluation period to begin 12 months after program start date

# Eligibility

- Must be a customer of SDG&E
- Residential, commercial and industrial SWH systems that offset energy used by an existing natural gas or electric water heater or boiler are eligible.
- Residential pools excluded
  - Industry input strongly suggest the systems are cost effective w/o incentives
- Large solar pool heaters will be limited to public entities. The economics of such an installation are unclear.

# Incentive Options

- **Prescriptive Approach**
  - Target market: Single Family Residences
  - Easiest method, no metering
  - MUST use an OG300 rated system
  - \$1,500 or less

# Incentive Options

## ■ Area Method

- Target market: Larger Innovative systems
- Requires at least one month of post installation metering
- Collectors must be OG100 or FSEC rated
- \$15/sqft of open loop, \$20/sqft of closed loop, \$5/sqft pools
- Max \$75,000 buildings, \$30,000 for large pools

# Quality Assurance

- Why is it needed?
- Contractor training
- Incentives to contractors
- Installation cost tracking
- 100% of systems inspected
- Metering of all area method systems
- First three prescriptive systems installed by a given contractor will be metered

# Cost Cutting Measures

- Possible purchasing initiatives
- Building department express lane
- Website sharing with SDG&E, Mfg'rs, others
- Marketing do's and don't will be worked out during the pilot program

# Minimizing Lost Opportunities

- Energy efficiency program awareness packets
- Free energy assessments for commercial entities
- Website with SWH info also has energy efficiency components

# Residential Example

## ■ Residential

- Typical system has 40-120 sq ft of collector and 30-120 gallons of storage
- System cost range from \$3,500 to \$6,000
- Tax credit not guaranteed



# Residential Example

- **Example: Zone 15 @ rated savings**
  - 60 square feet of solar collector,
  - 60 gallon tank,
  - Cost: \$5,500 retail
  - Energy savings: 150 Therms @ \$1.39/Therm
  - Savings of \$208 Annually , or \$17 per month
  - Payback w/o incentives: 26 years
  - Proposed incentive: \$1,406
  - Payback w/ incentive: 19 yr
  - Payback w/ Fed Tax Credit: 13 yr



# Where is the Proposal Now?

- SWH following CSI
  - August 24: Target date for CPUC final decision
  - January 2007: Implementation of Phase 1 (SWH is included in this) of California Solar Initiative



# Other Incentive opportunities

- Expanding SHW incentives through all Utilities via CSI
- Integrating SHW measures in Energy Efficiency programs (ref. CPUC declares SHW a DSM measure – eligible for EE funding – April 2005)
  - Status: ongoing evaluation

# Technology innovations

- Flexible insulated copper piping
- Non-glass glazing for flat plat collectors
  - Eg. Solarroofs.com
- Evacuated tubes – potential for combi cooling/heating

