

# Solar Water Heating for Energy Star

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# Solar Thermal Industry

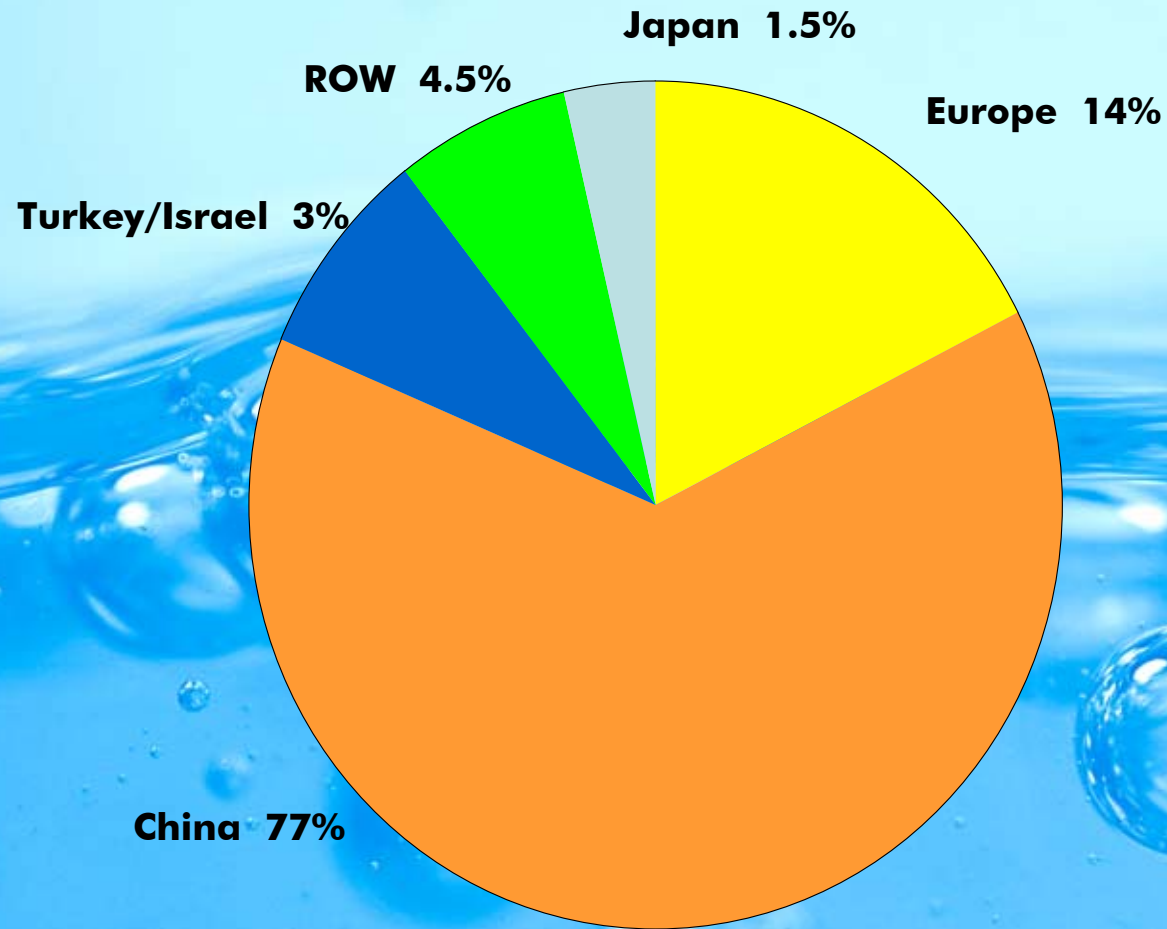
- SEIA
  - Incorporated 1978
  - Approximately 500 members
- SRCC
  - Incorporated in 1980
  - ~150 Solar Collectors certified
  - Over 600 systems certified
  - Certification by SRCC required by EPact 2005
  - Products tested/certified by independent, accredited 3<sup>rd</sup> party laboratories

# Solar Water Heating

- Used extensively throughout the world
- Can be paired with any type of conventional water heater
- System designs for entire US
- Provides 50% to 70% of energy required for water heating
- In use in the US since late 1800s

# Solar Thermal Collectors – mid-temp - installed world wide in 2005

Estimated Total : ~ 18,750,000 m<sup>2</sup> - US: 75,500 m<sup>2</sup> – 0.4 %



# Emissions Reduction

- For natural gas – solar fraction equals emission reduction
- Based on 11.85 lb. CO<sub>2</sub> per therm, 30% gas consumption reduction = 850 pounds per year
- Electric based on generation mix
- Increased interest by general public in “doing their part” on global warming – cost is not the only consideration

# Worldwide Solar Water Heating

- Example: Austria, with a population of 8 million, installs nearly 10 times more solar thermal systems than in the US, with a climate similar to Minnesota
- Major European companies entering US market
- China is 800 lb. gorilla – 14,500,000 square meters in 2006 – equivalent to 2.4 million systems
- Numerous states introducing SWH programs

# Draft Criteria Comments

- Development of renewables in general, solar in particular, strongly encouraged by DOE
- Observation: solar is the only renewable energy source of all technologies contemplated – decreases energy use not by saving energy, but by producing energy

# Draft Criteria Comments

- Warranty requirements for other ES products:

*“...must offer a warranty that is equal in all material respects to the standard industry warranty for comparable ... products”*

And

*“The exact terms of the limited warranty shall be determined by the partner.”*



# System Energy Production

- 30% Conventional Energy Savings (not 50%)
- OG-300 System energy production rating generated for ~ 1,400 US locations
- Annual energy production expressed in both kWh<sub>thermal</sub> and BTU/therms of natural gas
- Includes all system losses (conventional and solar gains and losses)

# 50% Solar Fraction

- Alternative interpretation of EPA Act 2005 language
- Language on the Energy Star website:  
*“At least half of the energy generated by the “qualifying property” must come from the sun. Homeowners may only claim spending on the solar water heating system property, not the entire water heating system of the household.”*
- With this interpretation, no need for 50%

# Conclusion

- SEIA began advocating for ES in 1998
- SEIA and SRCC strongly support
- Solar should not be held to a higher standard
- If consensus for ES criteria cannot be reached, ES for solar water heaters alone should be pursued