

# ENERGY STAR<sup>®</sup>

## Water Heaters

**Draft 1 Version 2.0**  
**Stakeholder Webinar**  
**August 23, 2011**

Abigail Daken, U.S. EPA



Learn more at [energystar.gov](http://energystar.gov)

# Webinar Goals

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- Highlight key changes in Version 2.0.
- Solicit stakeholder feedback on proposal and outstanding issues.
- Address stakeholder questions about process and/or changes.
- Identify next steps and timeline.

# Key Areas for Discussion

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- Technology Neutrality
  - Product Categories
- Add-On Heat Pump Warranty Requirements
- Labeling Solar Water Heaters

# Revision Drivers

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- Technology Neutrality
- Specific small issues with specification
- Expansion to cover more products
  
- New federal standards in 2015 will be addressed by Version 3.0

# Technology Neutrality



- Product Categories
  - Distinguished by Fuel Source
    - Electric
    - Gas
    - Solar
  - Further Distinguished by Use
    - Whole-home
    - Point-of-Use (POU)
- Distinctions also affected by test methods

# Proposal Summary



Fuel	Product type	Requirements
Electric	Whole home storage	EF $\geq$ 2.0, FHR $\geq$ 50
	Point of use	EF $\geq$ .97, min flow $\leq$ .3 GPM
Gas	Whole home storage	EF $\geq$ .67, FHR $\geq$ 67
	Whole home tankless	EF $\geq$ .82, GPM $\geq$ 2.5
Solar	Electric or gas backup	SF $\geq$ .5

- All categories have additional warranty and safety requirements
- Solar unchanged pending resolution of larger questions

# Whole-home Electric



- Includes both integrated and add-on Heat Pumps: Removed language requiring “integrated/drop-in” units
- $EF \geq 2.0$
- Warranty Requirement Issues (for add-on)
  - Differences in how a tank manufacturer handles the warranty
  - Consumer placed in awkward situation between manufacturers

# Whole-home Electric Contd.



- Options for warranty
  - Add-on heat pump manufacturer assumes the remaining warranty of the tank up to a maximum of 6 years (current proposal)
  - Limit warranty responsibility by defining what constitutes a void in warranty, or by defining “alterations to the tank”.
  - Other options?
    - Fair for manufacturers (all designs not equal)
    - Ensure the consumer is protected



# Poll



- What is the best option for warranty requirements for add-on heat pumps?
  - All add-ons required to assume warranty, as in Draft 1
  - Limit warranty responsibility of add-on manufacturer in some way
  - I have an idea you didn't mention

# POU Electric



- Defined by input and physical dimensions
  - 36x25x24 (LxWxH)
  - Limit to less than or equal to 12kW
    - Larger units not covered by NAECA, so manufacturers reluctant to make EF claims
    - Larger units (and hybrid units) may be considered for a commercial specification, or the next revision (before 2015) by which time the test method landscape may be different

# POU Electric Contd.



- Qualification requirements proposed
  - $EF \geq 0.97$
  - Low-Flow Rate Requirement
  - Allow user to adjust temperature
  - Capable for use as booster or alone
  - Flicker requirement
  - Warranty
  - Safety

# POU Electric Contd.

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- 12 kW units have limited applicability (single sink fixture)
- Cost effective to serve single fixture addition
- Can be used to improve HW system without increasing energy use
- Energy savings dependent on situation

# Whole-home Gas



- Includes high efficiency gas storage and gas condensing water heaters
- $EF \geq 0.67$
- Warranty  $\geq 8$  years
  - Needed to reconcile varying warranties in previous categories
  - Longer warranty necessary to support longer payback periods
- Gas Storage vs. Gas Tankless

# Labeling Solar Water Heaters



- Goal: To effectively promote the adoption of energy efficient technologies.
- Question: What role does ENERGY STAR play in a consumer's decision to purchase a solar water heater?

# Poll



- What are the primary market barriers to broader adoption of solar water heating?
  - Education/consumer knowledge
  - Education/contractor knowledge
  - Initial cost
  - Lifetime cost/benefit
  - Social issues (e.g. my neighbors will think I'm a hippie, my HOA won't allow it)
  - Other

# Key SWH Questions



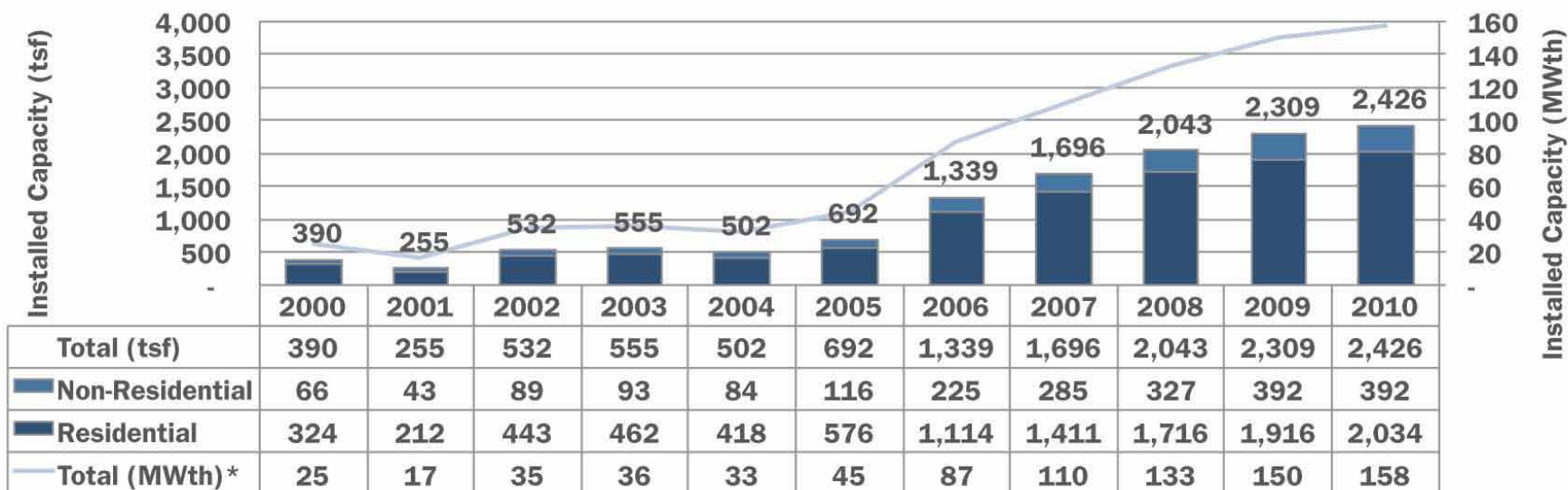
- Do utilities rely on ENERGY STAR for their solar water heating programs?
- Market changed since the ENERGY STAR program took effect?
  - More sales? More confidence in SWH?
- Does ENERGY STAR change consumers' performance or payback expectations?
  - Are expectations met? If not, market impact?



# Solar Thermal Growth



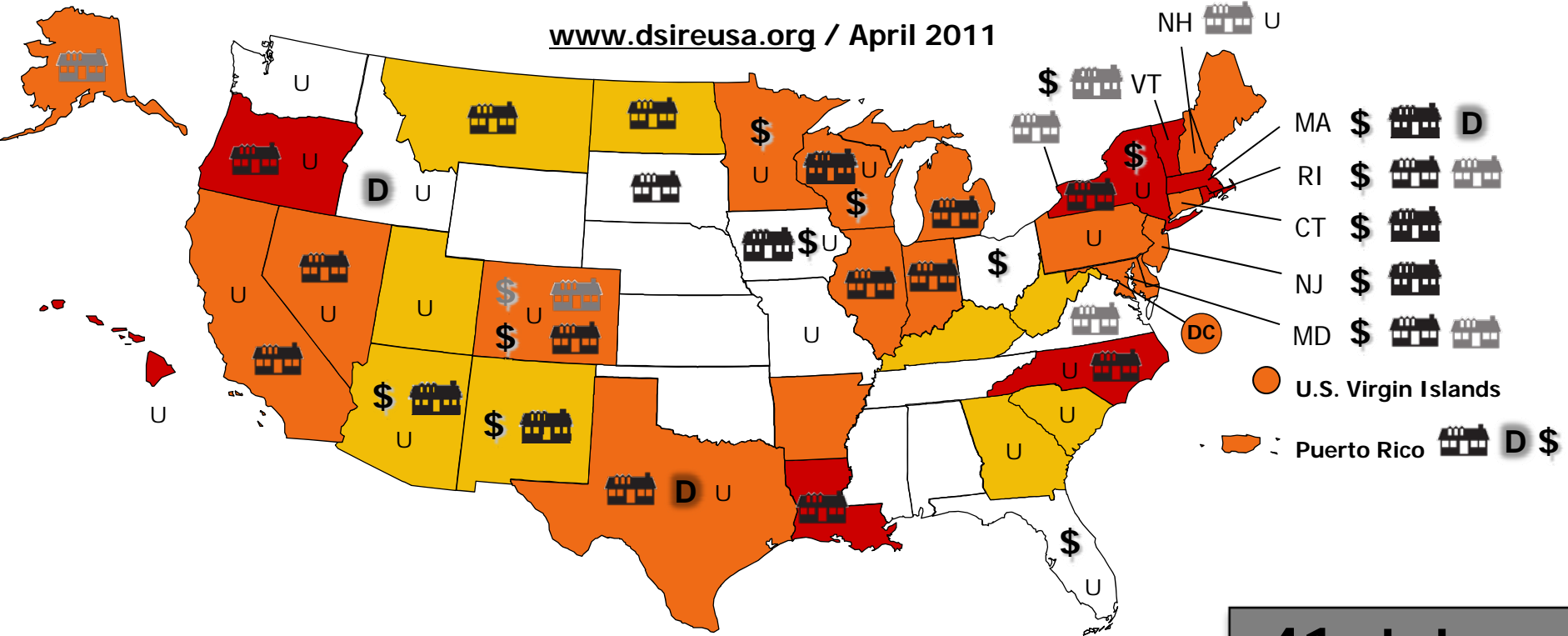
SWH: Annual Installed Capacity by Market Segment, 2000-2010



U.S. Solar Market Insight™  
 2010 Year in Review Executive Summary  
 GTM Research for SEIA

## Financial Incentives for Solar Water Heating

[www.dsireusa.org](http://www.dsireusa.org) / April 2011



- Direct Cash Incentive
- Tax Credit
- Direct Cash Incentive and Tax Credit
- Tax Deduction
- Sales Tax Incentive
- Property Tax Incentive
- Utility Direct Cash Incentive(s)
- Local option to provide sales tax incentive
- Local option to provide property tax incentive

**41 states + DC, PR & USVI offer financial incentives for solar water heating**

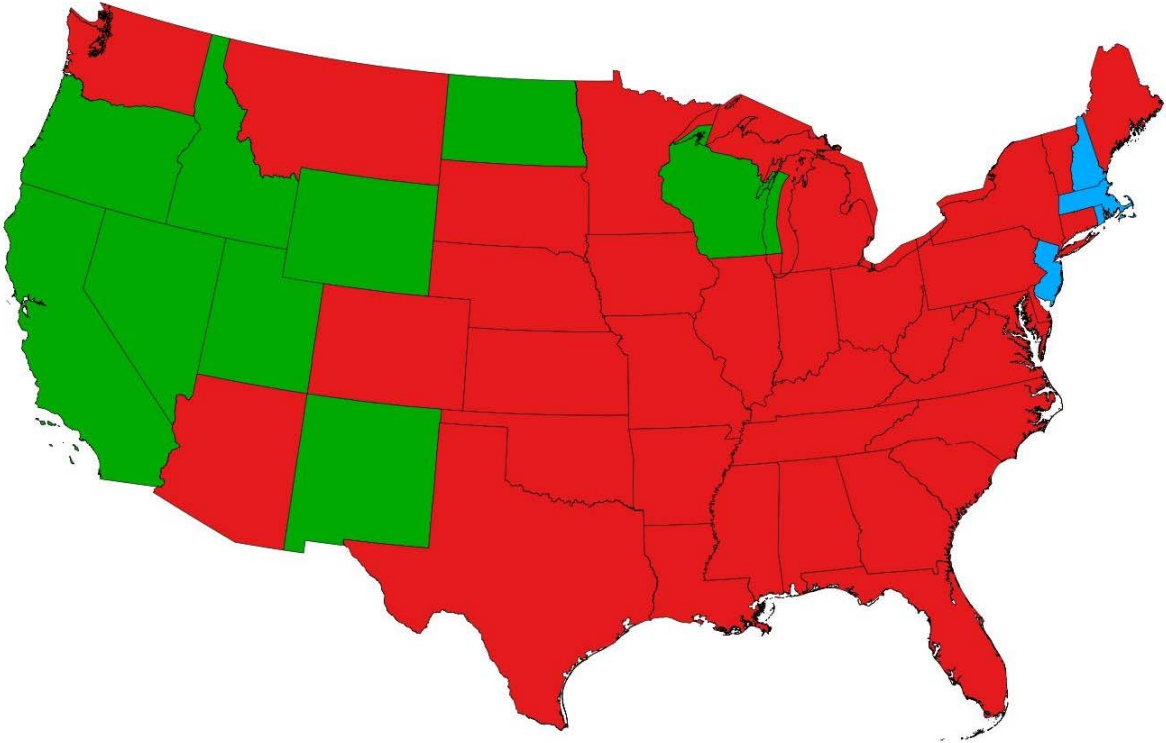


# Utility Use of ES



## Use of ENERGY STAR in Solar Water Heater Rebate Programs

- Legend
- Solar Water Heater Rebates
  - No Rebate
  - Utility Rebate Program
  - ENERGY STAR used in rebate



# Key SWH Questions



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# Other SWH Programs



- Solar Rating and Certification Corporation (SRCC)
  - Does the ENERGY STAR label add significant value to this?
- EPA
  - [EPA Emerging Tech Awards](#)
  - Building scale energy efficiency programs

# Other SWH Programs, cont.



- DOE:
  - Utility Solar Water Heating Initiative
    - Partnership program that helps facilitate utility implementation of solar water heating initiatives
- State Programs:
  - CA Solar Initiative, Florida Solar ratings program, Wisconsin solar rating program
    - Rating systems based on specific regions or climates.
    - Additional focus on installation and system design

# Other SWH Programs, cont.



- **Federal Incentives/Policies for Renewables & Efficiency**
  - Residential Energy Conservation Subsidy Exclusion
    - Subsidies provided to customers by public utilities are non-taxable.
  - Residential Renewable Energy Tax Credit
    - Up to 30% tax credit on solar water heaters. Expires 12/31/2016.
  - Energy-Efficient Mortgages (EEM)
    - FHA backed homeowner EEM.
  - Energy Standards for Public Buildings
    - Requires adopting renewable technologies such as solar water heaters for public buildings.

# Revision Timeline



- Aug. 23<sup>th</sup> Draft 1 Stakeholder Webinar
- Sept. 9th Draft 1 comment period closes
- Oct. 2011 Draft 2, webinar and comment period
- Nov. 10<sup>th</sup> Stakeholder meeting at ENERGY STAR Partner Meeting
- Nov. 2011 Draft final, comment period
- Dec. 2011 Final specification published
- Sep. 2012 Effective date



# Contact information

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At EPA...

Abigail Daken

[daken.abigail@epa.gov](mailto:daken.abigail@epa.gov)

202-343-9375

At D&R International...

Craig Haglund

[chaglund@drintl.com](mailto:chaglund@drintl.com)

301-628-2045