

Staying Out of Hot Water: Best Practices in Implementing Electric and Gas Water Heating Programs

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2010 ACEEE Summer Study on Energy Efficiency in Buildings

Overview

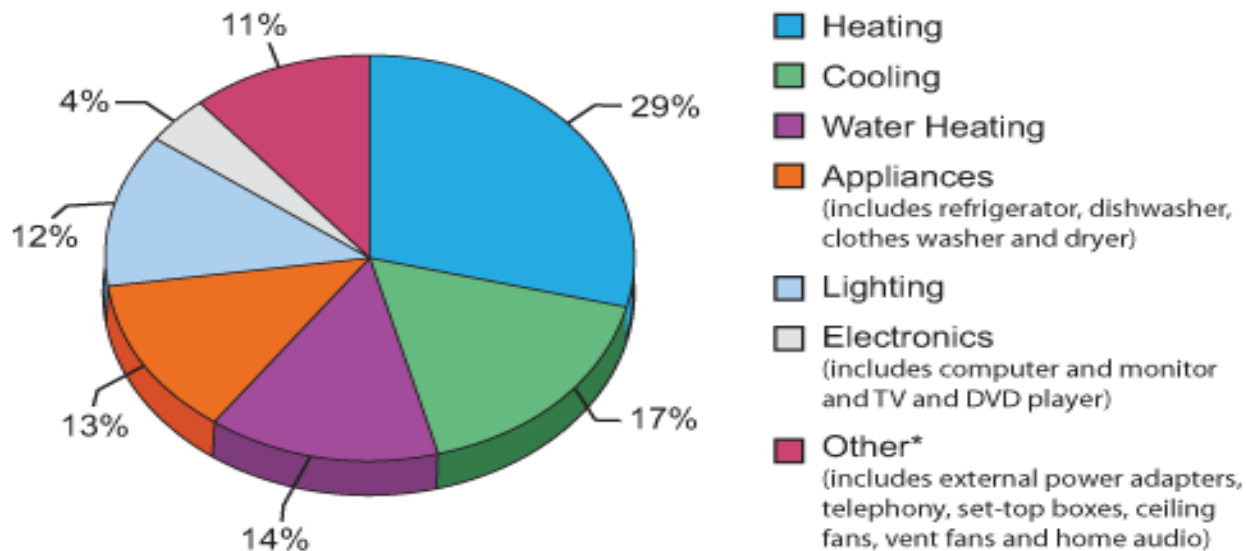
- Examines the best practices drawn from innovative electric and gas utility water heater programs coast to coast including:
 - Georgia Power
 - Great River Energy
 - Hawaiian Electric Company
 - Missouri Gas Energy
 - Portland General Electric
- Combines the lessons learned from program evaluations and case studies including:
 - Strategies to address both tank and tankless water heaters
 - Developing a strong and engaged contractor network
 - Gaining traction for solar water heaters

Energy Breakdown- Water Heating

- 15-20% of Residential Energy Use
- The “Forgotten” Appliance

Where Does My Money Go?

Annual Energy Bill for a typical Single Family Home is approximately \$2,200.



Georgia Power



- Serves 2.25 million customers throughout Georgia
- Largest of four electric utilities that make up Southern Company



Strategy:

- Position electric storage water heaters as an energy efficient alternative to tankless water heaters
- Promoted as part of the Save Money and Energy campaign
www.georgiapower.com/save.

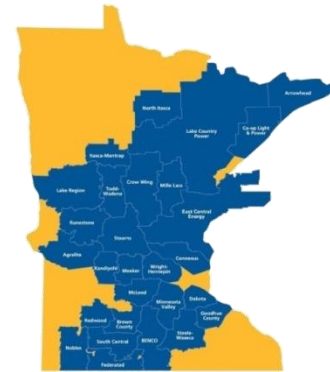
Great River Energy



GREAT RIVER
ENERGY®

A Touchstone Energy® Cooperative 

- Nearly 850 employees (in MN and ND)
- 800 MW of generation
- 4,500 miles of transmission lines
- Revenue: \$776 million
- Most significant expenses:
 - Rising fuel
 - Purchased Power
 - Costs
 - Uncertainty around climate change



Hawaiian Electric Company



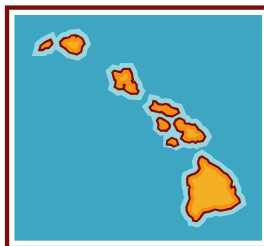
Hawaiian Electric Company has provided the energy that fuelled the islands' development from a Hawaiian kingdom to a modern state.

– Subsidiaries include:

- Hawaiian Electric Company, Inc. (HECO),
- Maui Electric Company, Ltd. (MECO), and
- Hawaii Electric Light Company, Inc. (HELCO)



- Provides electricity for 95% of Hawaii's residents (300,000+)
- Established in 1891, Hawaiian Electric remains one of the few locally-owned and operated major companies in the state



Missouri Gas Energy



- Headquartered in Kansas City, MO
- Serves about 500,000 residential customers across the state
- Developed its energy efficiency program to promote installations of premium efficient water heaters, furnaces, and appliances.



Portland General Electric

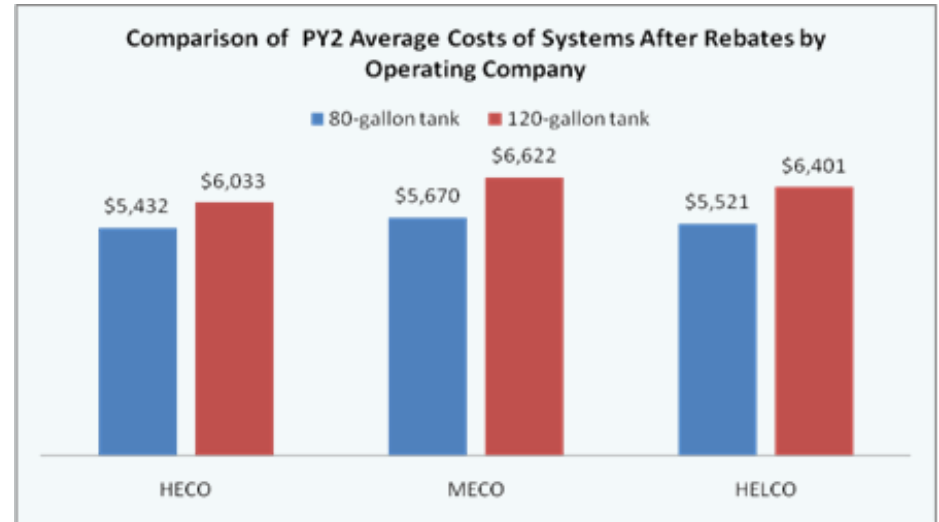


- PGE serves 680,000 households in Oregon
- Customer base with high market penetration for clean energy products and services
- Energy Trust of Oregon delivers energy efficiency programs on behalf of PGE to residential and business since 2001 customers
- PGE connects residential and business customers to energy efficiency programs, products and services
- Water heaters had not been promoted for 10+ years prior to 2008



Best Practice #1: Reduce First Cost Barrier

- All five programs offered incentives ranging from \$50 to more than \$5000. The most generous program was HECO's SSP which eliminated the entire up-front cost of the solar water heater through its on-the-bill financing program.
- HECO also had fairly lenient credit requirements to encourage low income households and renters (rather than just landlords) to install this equipment.



More Strategies to Reduce First Cost

- PGE and Georgia Power offered a fixed-fee installation of the premium efficiency water heaters of \$940.
- PGE worked with Energy Trust of Oregon to establish an incentive level based on its cost-benefit analysis. Based on the analysis, Energy Trust of Oregon was able to offer PGE customers a \$75 dollar incentive.
- Total installed cost for water heater was \$765- 20% below cost

Best Practice #2: Nurture Local Contractors

- These programs illustrated successful teaming practices with both local and national firms
 - GA Power and PGE teamed with Roto-Rooter and negotiated a flat rate for installations that covered about 95% of all jobs
 - GA Power also teamed with local electricians to help with conversions
 - Because of its relationship with Roto-Rooter, Georgia Power was able to expand its installer network to now include more than 20 qualified plumbers across Georgia- a significant factor in achieving its 1,400 installations the first year.
- Several utilities also “pre-stacked” the inventory to ensure an adequate supply of qualifying equipment before the program begins.



Other Strategies to Nurture Local Contractors

- Tap into existing contractor networks
 - HECO leveraged its existing contractor network participating in its standard Residential Electric Water Heater Program.
 - HECO promoted this program to the Solar Industries Association and local builders
- Make sure contractors understand the “value” of the energy efficient equipment
 - This was difficult for MGE in recruiting contractors who were interested in installing tanked water heaters.
 - The plumbers were not convinced of the value of the energy savings for qualified equipment for the tanked systems.
 - This lack of “contractor commitment” led to lower level of installations of tanked water heaters, despite the utility’s promotional efforts.



Best Practice #3: Promote Early Replacement

- PGE's goal was to educate about the importance of selecting an energy efficient water heater before they actually needed to replace it.
- PGE's promotional philosophy focused on "preventative medicine" and make this purchase much easier and transparent for PGE customers.
- This was also reinforced in MGE's process evaluation (Johnson 2009).
- A key recommendation for MGE's program as a way to increase installations of tanked water heaters, was to promote the value of early replacement to customers.



Best Practice #4: Promote Non-Energy Benefits

- PGE promoted long-lasting water heaters as a way to minimize black mold, a major concern in the Portland area and a way to reduce landlord liability
- GA Power promoted the benefits of conserving landfill space because the water heater is designed to last forever
- The utility modeled these benefits into its program
 - Using an average 9-year gas water heater life and a 36-year life for Marathon, the landfill space avoided per Marathon Water Heater is 28.8 cubic feet. This is equivalent to 50 full dump truck loads of heaters saved from the landfill for every 1,000 Marathon water heaters that are installed.
- Durability was also a major selling point to multi-family property managers who did not have to worry about service calls or water damage from leaking units.

**NOTHING LASTS FOREVER.
EXCEPT A MARATHON.**

Get a \$525 rebate when you replace your existing gas water heater with an all-electric Marathon® water heater.*

- Every Marathon water heater comes with a manufacturer's lifetime tank warranty. A Marathon will last a lifetime in your home — not in a landfill.
- A Marathon water heater is one of the most energy-efficient water heaters on the market today. Thick EnviroTanium™ insulation maintains a consistent hot water temperature.
- A Marathon is tough on the outside with an inner tank that won't rust, corrode or leak — ever!

Call 1-800-524-2421, ext. 975 now for rebate details and installer recommendations.

*Rebate is not available in all states. See website for details by 12/31/2009. ©2009 Marathon Water Heater Co. All rights reserved.

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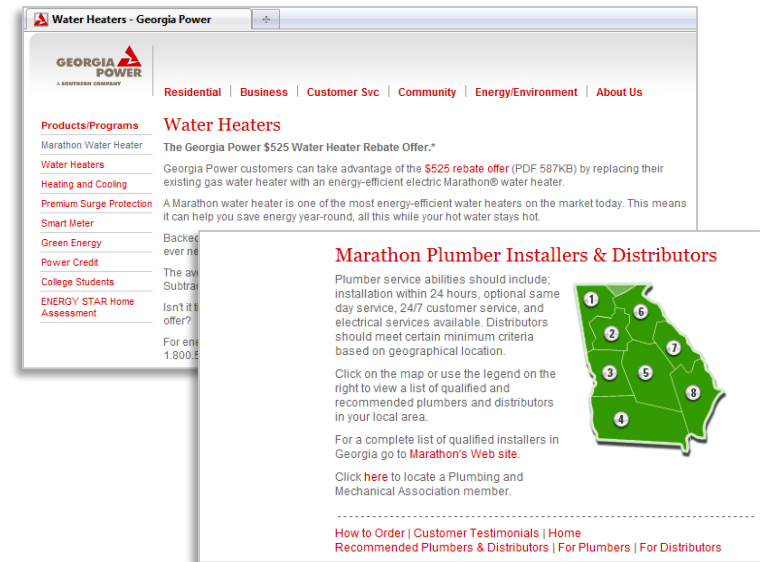
GEORGIA POWER
A SOUTHERN COMPANY

Best Practice #5: Make It Easy for Customers and Contractors

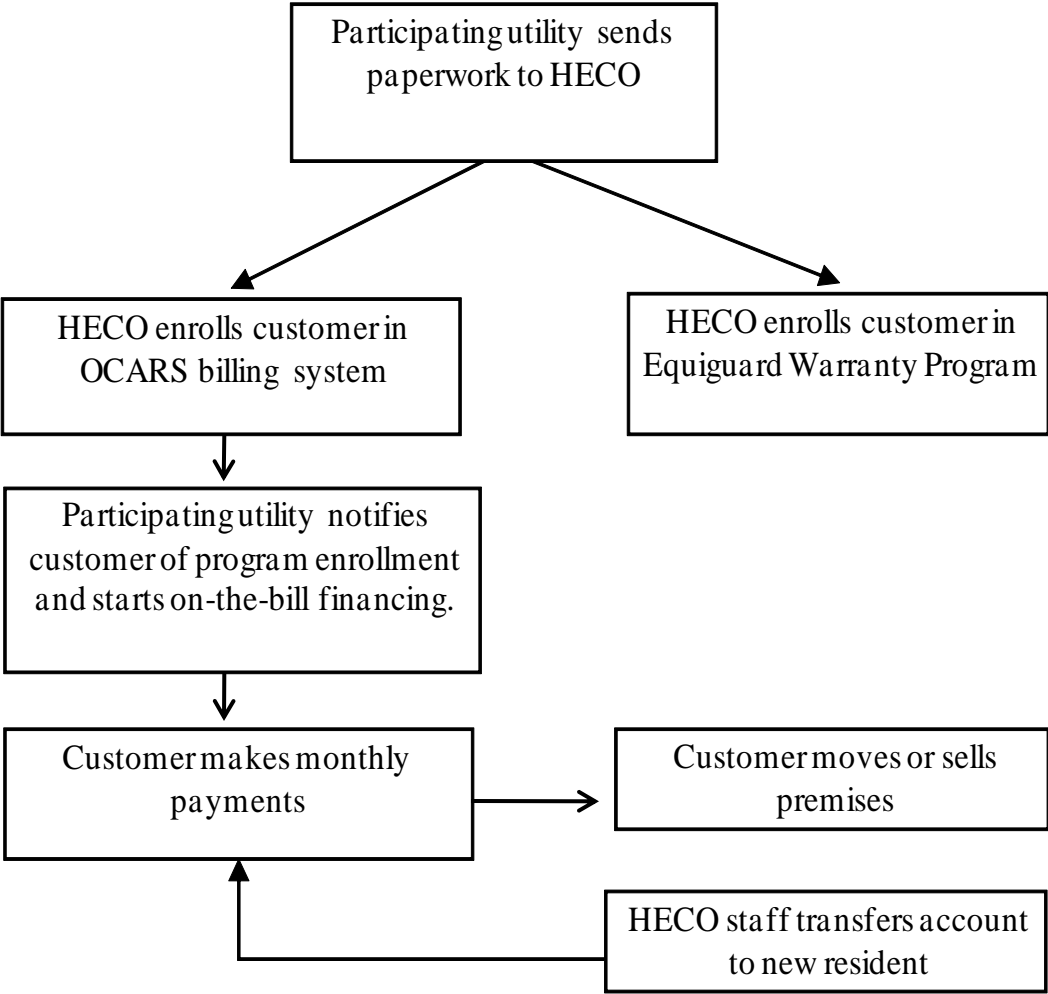
- For water heating programs that involve load control, the event is must be “invisible” to the customer.
- GRE sends out load control events for up to eight hours and water heaters may be shut off to reduce peak demand during the hours of 4 to 10 p.m., especially in the summer and controls approximately 55,000 water heaters accounting for 2,500 MW
- By using a reinforced water heater that can store energy, customers never notice when the water heater is under load control.
- In fact, this program has been so successful that it has reduced the need to build additional generation facilities - which amounts to significant cost savings for these rural co-ops.

Other Ways to Make it Easy

- In PGE's Program, Energy Trust of Oregon agreed to allow for an instant rebate instead of a mail-in rebate (less paperwork)
- GA Power developed a dedicated program website that includes:
 - a statewide map of recommended installers,
 - an interactive Marathon water heater graphic illustrating all the benefits
 - customer testimonials
 - www.georgiapower.com/marathon



INTERNAL SSP PROGRAM PAPER WORK FLOW

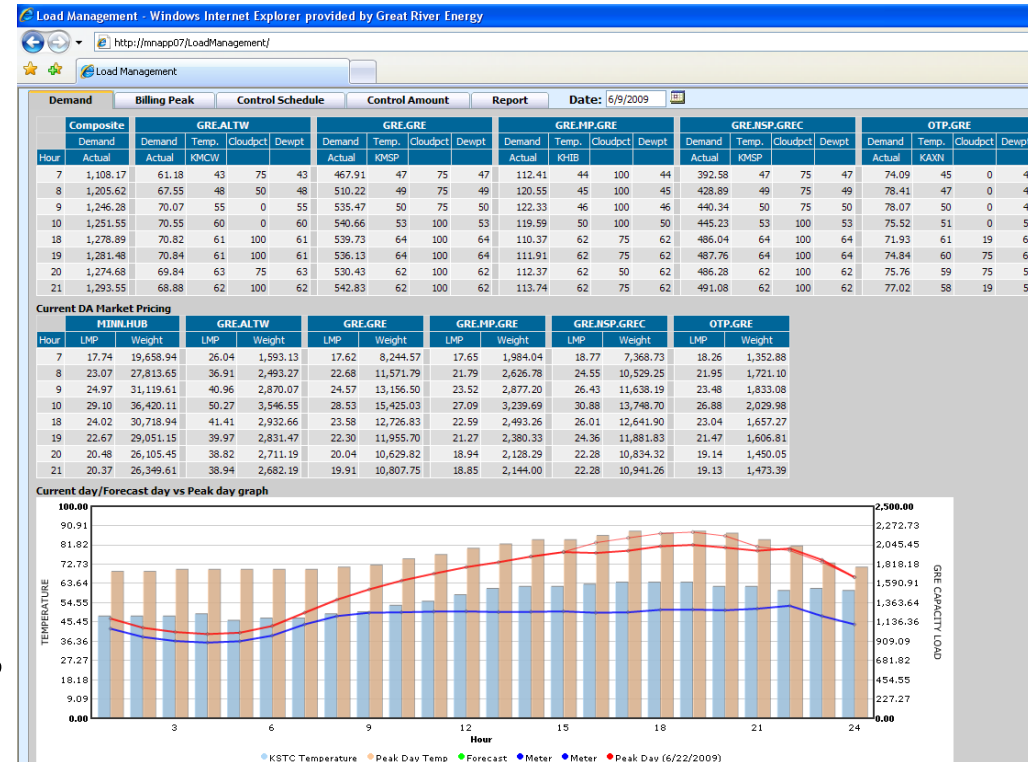


Best Practice #6: Measure Results Carefully

- MGE and GRE demonstrated the value of measuring program results and impacts carefully and comprehensively.
- MGE wanted to be responsive to any possible requests from the Missouri Public Service Commission as well as utility senior management and developed a dedicated database called WHAM which tracks all critical program benchmarks.
 - program installation numbers and contractors and
 - includes tracking responses to monitor self-reported free ridership, fuel switching and key demographics such as home ownership.
 - It can automatically generate documents and statistics as needed to respond to both the utility staff or Commission requests (MGE Process Evaluation Report 2009).

Ways to Measure Results Carefully

- GRE modernized its load management and tracking tools to make it easier to both measure savings from the load control events as well as “true up” the results.
- It was a challenge for the utility to compare the savings without the load event.
- GRE developed and implemented a new load management software package that summarizes all critical information for each event, compares it to previous years, and accounts for weather conditions.



Summary of Best Practices

Best Practice	Georgia Power	Great River Energy	Hawaiian Electric	Missouri Gas Energy	Portland General Electric
Reduce first cost barrier	✓	✓	✓	✓	✓
Nurture local contractors	✓		✓		✓
Promote early replacement	✓	✓		✓	✓
Promote non energy benefits	✓	✓	✓		✓
Make it easy for customers & contractors	✓			✓	✓
Measure results carefully		✓	✓	✓	

Questions and More Information

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