

**BPA Energy Efficiency Announcement:****BPA makes strides with utility partners on heat pump water heater demonstration**

Bonneville Power Administration is partnering with the Electric Power Research Institute (EPRI) and Snohomish County PUD to be part of a national demonstration pilot for integrated heat pump water heaters (HPWH). 11 public utilities were selected to participate in this field test.

**HPWH background**

Water heating accounts for 15 to 20% percent of electric energy use in homes with electric water heat. New HPWH have an energy-savings potential of 50% or more. While HPWH have some great cooling benefits in other regions of the country and are included in the Northwest Power and Conservation Council's Sixth Power Plan, there are questions about their effectiveness in cold climates and their savings potential in the Pacific Northwest.

**Demonstration project background**

The demonstration project began in April 2010 and runs through December 2011. EPRI furnished the HPWH and metering equipment which is currently being installed in 40 single-family homes (treatment sites). Additionally, metering equipment on existing electric storage water heaters in an additional 10 single family homes (control sites) will be installed throughout the Pacific Northwest.

Utilities participating in this demonstration project are contributing to research that will provide documented performance feedback on HPWH to all utilities, manufacturers and stakeholders in the region. This work will help inform program planning and future generations of HPWH technology. Usage data will be collected for each HPWH and control site water heaters over the course of the demonstration testing period.

This field demonstration will allow BPA and EPRI to gather impact data specific to the Pacific Northwest region through the selected "treatment sites" and "control sites" and assess the impact of various factors that may affect HPWH performance and customer satisfaction in a variety of regional climate zones. This field demonstration is part of a nationwide test of 200+ residential HPWH's. Once the demonstration project is complete, EPRI will release a final report to be delivered to the region.

**Demonstration project details****40 TREATMENT SITES** (*single-family residential homes*)

- Provided with new HPWH
- Instrumented and monitored for up to two years
- Daily uploads of data to EPRI via internet
- Occupant observations before and after installation
- Occupants permitted to adjust water temperature and operating modes as desired
- Occupants instructed to operate HPWH normally, year-round

**10 CONTROL SITES** (*single-family residential homes*)

- Instrumented and monitored for up to two years
- Provides baseline for comparison with treatment sites

**CRITERIA FOR SITE SELECTION**

- Single-family homes
- Wireless internet access
- Residence is owned by the occupants
- Residence has only one water heater
- Residence is likely to be occupied by the same family members during the entire demonstration test period
- Diversity of location (field pilot is seeking sites throughout the region)

*(Note: final selection of test sites is at the discretion of EPRI pilot lead.)*

**Projected timeline**

|                |  |
|----------------|--|
| April 2010     | BPA to identify (cities/utilities) where HPWH may be installed   |
| April 2010     | BPA, utility and contractor to identify treatment and control sites  |
| June 2010      | Begin installation of HPWHs and/or metering equipment in homes   |
| Dec. 2011      | Metering ends, equipment removal begins  |
| Jan./Feb. 2012 | Metering equipment removed (homeowner may acquire HPWH or replace with an efficient electric storage water heater) |



## Participating Utilities

- City of Ashland
- City of Bonners Ferry
- Clark Public Utilities
- Eugene Water & Electric Board
- Hood River Electric Cooperative
- McMinnville Water & Light
- Missoula Electric Cooperative
- Ravalli Electric Co-op
- Snohomish PUD
- Springfield Utility Board
- Wahkiakum PUD

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## Regional and National Efforts

In the Northwest, NEEA has drafted a Northern Tier specification for manufacturers. This specification gained widespread support from Northwest utilities and other northern partners across the U.S., including the Midwest Energy Efficiency Alliance (MEEA) and the Northeast Energy Efficiency Partnership (NEEP). To learn more read [NEEA's Specification for Residential Heat Pump Water Heaters Installed in Northern Climates Version 3.0](#).

Additionally, the ENERGY STAR program has developed specifications for qualifying high efficiency heat pump water heaters. For more details, visit the [ENERGY STAR website](#).