NORTHWEST ENERGY EFFICIENCY ALLIANCE

May 29, 2007

Richard H. Karney, P.E.
ENERGY STAR Products Manager
U.S. Department of Energy
Washington, D.C. 20585

Dear Rich,

The Northwest Energy Efficiency Alliance ("NEEA") applauds the Department of Energy for seeking to establish ENERGY STAR® criteria for residential water heaters and respectfully submits comments contained herein. NEEA is a non-profit corporation supported by electric utilities, public benefits administrators, state governments, public interest groups and energy efficiency industry representatives.

NEEA's approach to energy efficiency is to work together with these entities and employ a "market transformation" approach to encourage manufacturers, distributors and service providers to make available and promote affordable, energy-efficient products and services in the marketplace. Market transformation program elements work to remove barriers—such as high price, low demand or inadequate availability—that prevent energy-efficient products or services from being manufactured and sold. By working directly with market actors, NEEA's programs have proven effective in creating broad, lasting marketplace change.

NEEA's comments on the ENERGY STAR Residential Water Heater Draft Criteria Analysis are largely based on this market transformation perspective and experience, and on market research performed by NEEA. Due to the nature of NEEA and our supporting stakeholders, our comments focus primarily on the electric heat pump water heater technology, although we include a general comment and touch on one of the other proposed criteria. The comments are as follows:

1. **NEEA appreciates DOE's willingness to re-engage stakeholders on ENERGY STAR water heaters and plans to consider potential programs and program elements designed to advance heat pump water heaters.** Based on NEEA's market research, there is no differentiation in the water heater market around energy efficiency. Both manufacturers and consumers have indicated that they need clear differentiation to select higher efficient models, and ENERGY STAR provides that mechanism. DOE correctly identifies water heating as one of the next biggest efficiency opportunities. The market penetration of electric water heating in the Northwest exceeds 60% making heat pump water heater a key efficiency measure for our region. NEEA is convinced that the ENERGY STAR label would be helpful as part of any market intervention strategy.

2. **NEEA emphatically agrees with DOE's objective establishing meaningful differentiation between ENERGY STAR qualified products and those that just meet the Federal standard.** NEEA's experience suggests that promoting significant increases in efficiency is critical to efficiently changing consumer behavior and markets. While targeting intermediate levels of efficiency may seem helpful to "ease" into technology improvements, we believe that setting "the bar" sufficiently high helps clearly differentiate the attributes of the advanced products to the consumers and market actors, thereby reducing confusion and ultimately speeding adoption.

   This comment is relevant for both the proposed heat pump water heater and advanced non-condensing gas storage water heater criteria. NEEA strongly supports the 2.0 EF heat pump water heater criteria proposed in the Draft Criteria Analysis. While a lower EF heat pump may result in a lower price premium and reasonable economics, this would definitely be an interim efficiency level given the potential of vapor compression technology. Furthermore, and perhaps more importantly, our analysis suggests that a heat pump water heater EF of approximately 2.0 mitigates the discussions regarding source fuel efficiency and may reduce fuel market competition issues.

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NEEA also encourages DOE to remove the 0.7 EF gas storage water heaters from consideration as an ENERGY STAR product option. The economics for the more advanced condensing gas storage water heaters are compelling and the technology is further differentiated from standard tanks. The economics of the advanced non-condensing units appear to suggest that 0.7 EF may be better suited as a potential new Federal minimum standard than as an ENERGY STAR qualified product.

3. **In addition to the Energy Factor, NEEA is convinced that the heat pump water heater technology configuration matters.** Although add-on and advance split systems may be viable in select market segments, NEEA believes that an integral/drop-in heat pump water heater design will be needed to address the large emergency replacement market and ultimately lead any significant market transformation. Furthermore, field experience in the Northwest and New England suggests that designs that require water circulators and coaxial heat exchangers may exhibit decreased system reliability and performance degradation over time.

4. **For heat pump water heaters, reliability demonstration will be needed to gain the confidence of stakeholders and consumers.** The warranty requirements proposed by the Draft Criteria will be an important part of overcoming market skepticism that exists from previous experience with heat pump water heaters.

5. **An $850 price premium seems high.** At that price and the EF level proposed, heat pump water heaters will be marginally cost-effective in some regions and may be deemed a marginal investment by consumers. Using a component pricing approach, NEEA believes and is hopeful that the price premium will be closer to $500 at increased volume.

Again, thank you for considering ENERGY STAR water heater criteria and for allowing NEEA to participate in the review and comment process. NEEA is very much looking forward to participating in the remainder of the process and plans to support DOE's efforts in this area wherever and however possible.

Sincerely,

Marci Sanders, Senior Manager Residential Sector
Northwest Energy Efficiency Alliance