

**In Progress**

A Big Idea for Small Spaces

BPA's Emerging Technologies team is funding an exciting field-testing project, in collaboration with New Buildings Institute (NBI) and Northwest Energy Efficiency Alliance's (NEEA's), to evaluate the performance of innovative, split-system heat pump water heaters (HPWHs). Northwest regional utilities are at the heart of this research, including Cowlitz County Public Utility District (representing west-side weather conditions) and Central Electric Cooperative (representing east-side weather conditions).

Currently, residential integrated HPWHs require significant indoor physical space and air volume to operate. This has historically disqualified residents of apartments, condominiums, and manufactured homes from this energy-saving technology due to indoor ambient space constraints. By splitting the water tank from the outdoor heat pump compressor, the split-system operates in a much smaller indoor footprint. This allows the equipment to fit into tight spaces like utility closets or under sinks and offers more flexible, highly efficient water heating options to a wider range of utility customers. Positioning the compressor and heat exchanger coils outdoors allows the split-systems to eliminate the indoor space "air conditioning" effect that traditional, integrated units produce.

The field study scope includes installing 12 units from Ecological and A.O. Smith and will measure total system in-home operation and real-world efficiency (effective coefficient of performance, or COP). NEEA is donating four units of the recently-recognized, Hot Water Innovation Prize-winning Midea split-system HPWH to bring total unit count to 16 homes being metered, enhancing the robustness of the study.

NBI is working independently with utilities outside the Northwest to demonstrate these split HPWHs in other regions, installing split-system HPWHs (Eco-Logical OMNI, 50 gallon) in a manufactured housing community in Virginia as a part of their study to evaluate the energy savings associated with transitioning to more efficient technology. In addition, a market characterization study is underway in the Midwest to help the utility assess the feasibility of deploying split-system HPWHs in multifamily apartments and determine opportunities to incorporate them into future incentive and electrification programs. By collaborating with NBI and leveraging their parallel research, BPA maximizes the overall impact of the study and its research budget.

Over the next 12-months (October 2026 to September 2027) this field-measurement phase aims to provide BPA, NBI, NEEA, and participating utilities with verified, localized performance data. Ultimately, this effort seeks to confirm if these space-saving systems can reliably cut energy costs for consumers, helping utilities pave the way for broader energy efficiency programs that benefit all housing types across the Northwest. The project will also address the cost effectiveness and complexity of the installation.

Learn more at neea.org. **Meet** the Hot Water Innovation Prize winner and learn about [what comes next](#).

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