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Title:

Development and Validation of Quasi-Steady-State Heat Pump Water Heater Model Having Stratified Water Tank and Wrapped-Tank Condenser

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Keywords: Heat Pump Water Heater; Wrap-tank condenser coil; modelling; stratified water tank; Energy Factor

Highlights

- Calibration method to match water stratification.
- Couple a detailed vapor compression system model with a stratified water tank.
- Simulate varied condenser heat distribution to water nodes.

## **ABSTRACT**

Heat pump water heater systems (HPWH) introduce new challenges for design and modeling tools, because they require vapor compression system balanced with a water storage tank. In addition, a wrapped-tank condenser coil has strong coupling with a stratified water tank, which leads HPWH simulation a transient process. To tackle these challenges and deliver an effective,

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