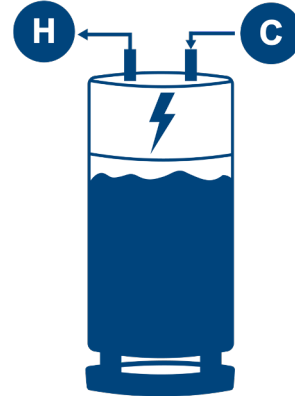


Heat Pump Water Heaters for the Southeast



**Advanced Ready
Workforce Southeast**



Presenter: Arlene Stewart, President/Energy Code Circuit Rider for Florida
 AZS Consulting, Inc.
azstewart@azsconsultinginc.com | 352-219-7770 (cell)
 Website: www.azsconsultinginc.com | Twitter: @ArleneonEnergy

Terminology

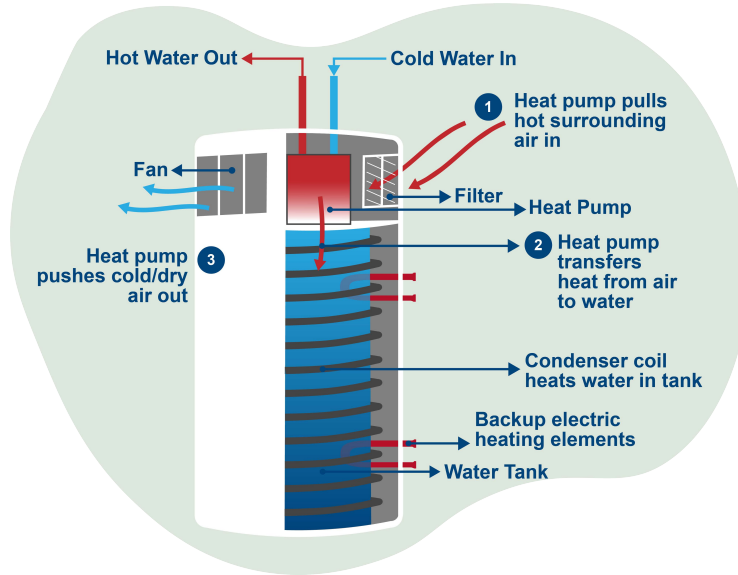
UEF - uniform energy factor

FHR - first hour rating

Bin	Bin Daily Usage (Gallons)	First Hour Rating (Tank-Type)	Max GPM (Tankless)
Very Small	10	< 18 Gallons	< 1.7
Low	38	18 - 51 Gallons	1.7 - 2.8
Medium	55	51 - 75 Gallons	2.8 - 4.0
High	84	> 75 Gallons	> 4.0

<https://www.energy.gov/energysaver/estimating-costs-and-efficiency-storage-demand-and-heat-pump-water-heaters>

How a HPWH Works



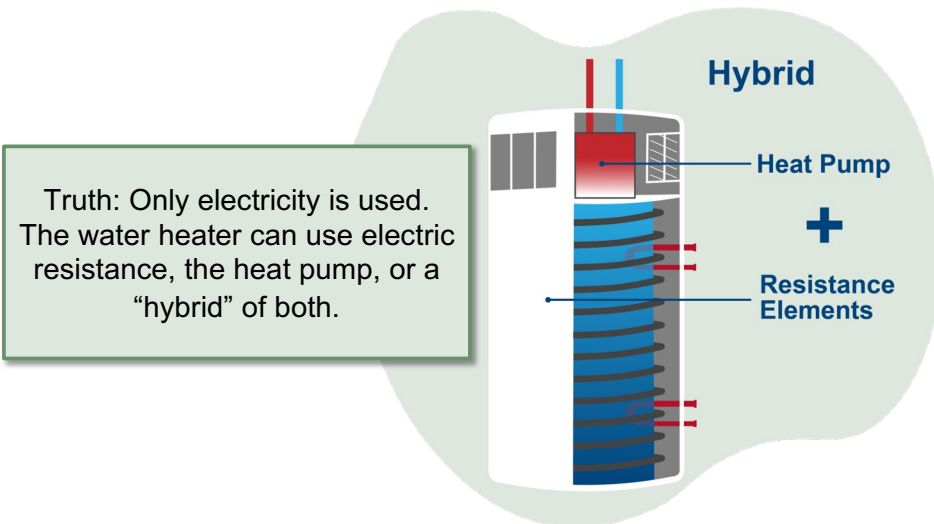
Myth: “They’re too big”

Truth: They are taller and heavier but they have the same footprint as a standard water heater with the same capacity.



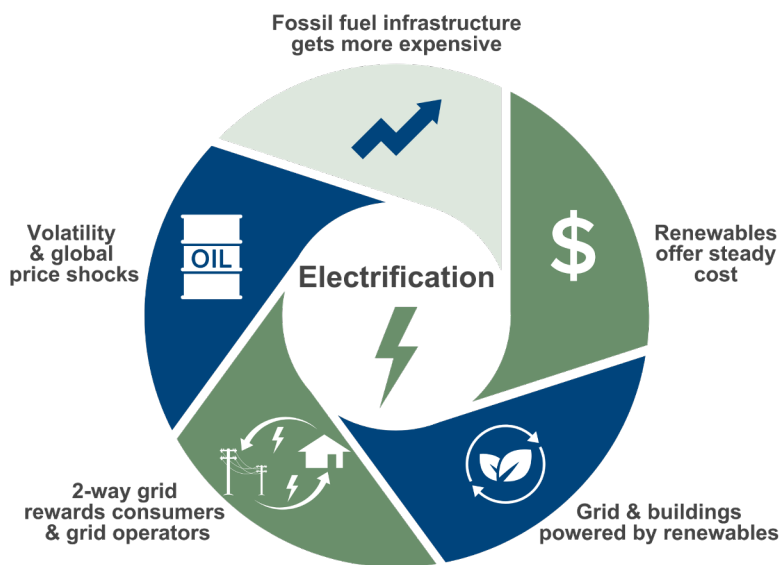
Source: <https://www.smallplanetssupply.com/sanc02>

Myth: “Hybrid means it uses gas”



Truth: Only electricity is used. The water heater can use electric resistance, the heat pump, or a “hybrid” of both.

Drivers of Electrification

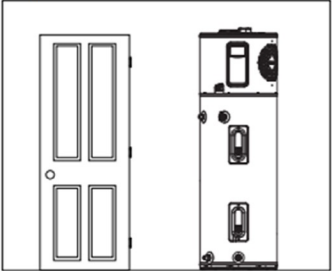
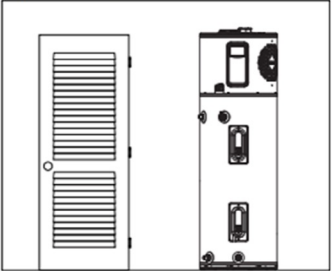
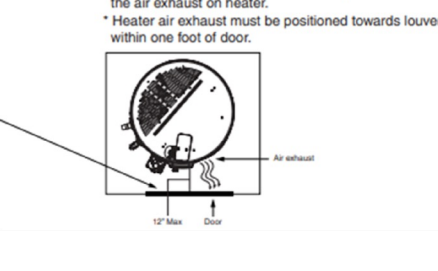


Prepare for the Future

1% Current share of annual electric water heater sales	If HPWHs reached 15% of the installed base* every year, we could save 15.6 billion kWh The avoided greenhouse gas emissions would be the equivalent of removing 2.3 million cars from the roads each year.
<1% Current share of installed base of electric water heaters	
180+ Number of HPWH models available in the U.S.	
*37 million households with electric water heaters of 31 gallons or larger.	

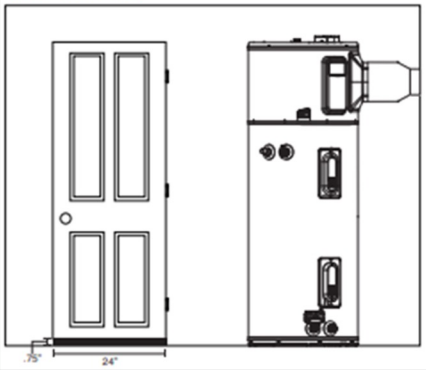
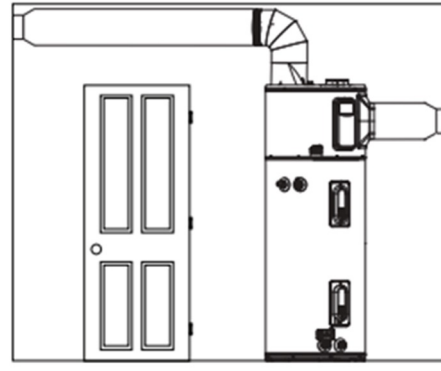
Source: US national data from Department of Energy Residential Program Guide

Ideal Installation Scenarios for HPWH

<p>Heater: Not Ducted Room size: Larger than 700 ft³ (e.g. 7' x 10' x 10'). Requirements: No additional ventilation needed.</p> 	<p>Heater: Not Ducted Room size: Smaller than 700 ft³ (e.g. 7' x 10' x 10'). Requirements: Full louvered door OR two louvers top and bottom. See below.</p> 	<p>Heater: Not ducted Room: Small Closet Requirements: * Air gap under door equal to 18 in² (0.75" clearance). * Louver must be located the same height on door as the air exhaust on heater. * Heater air exhaust must be positioned towards louver within one foot of door.</p> 
---	---	--

Source: <https://images.thdstatic.com/catalog/pdfImages/6d/6d277c0f-ad7f-4753-b3e1-a55fa917dedf.pdf>

Ideal Installation Scenarios for HPWH

<p>Heater: Ducted with inlet OR outlet duct Room size: Any size room Requirements: Air gap under door equal to 18 in² (0.75" clearance)</p>  <p>The diagram shows a side view of a door and a water heater unit. A duct is connected to the top of the water heater. Dimension lines at the bottom of the door indicate a width of 24 inches and a clearance of 0.75 inches (labeled as .75") under the door.</p>	<p>Heater: Ducted with inlet AND outlet duct Room size: Any size room Requirements: No additional ventilation needed.</p>  <p>The diagram shows a side view of a door and a water heater unit. Two ducts are connected to the top of the water heater: one for inlet and one for outlet. The outlet duct is shown exiting through the roof of the room.</p>
--	--

Source: <https://images.thdstatic.com/catalog/pdfImages/6d/6d277c0f-ad7f-4753-b3e1-a55fa917dedf.pdf>