2024 State of the Heat Pump Water Heater Market Report

Table of Contents

List of Tables

List of Figures

Executive Summary

Heat pump water heaters (HPWHs) have emerged as a key solution for reducing energy consumption, utility bills and decarbonizing the energy intensive water heating sector.

This “State of the Market Report” looks at the history of HPWH development and adoption, the current HPWH market size and growth rate, and forecasts future growth given the policy drivers propelling the industry. Included in this report is a product landscape highlighting the technological advancements of residential and commercial HPWHs. The research methodology comprises a thorough literature review, data collection from industry sources, interviews with key stakeholders, and quantitative market analysis. Research was conducted through the Advanced Water Heating Initiative and valuable insights are provided by key industry stakeholders.[1]

We explore the key remaining challenges hindering widespread adoption. These include lack of consumer awareness, high upfront costs, workforce shortages, the need for expanded product offerings, and product reliability. The report also identifies other related needs, such as providing information resources, continuing incentives and rebates, and building a strong collaboration between stakeholders, that include utilities, manufacturers, distributors, and contractors.

The HPWH market has experienced significant growth in the first 15 years since being certified as an ENERGY STAR product and is poised for unprecedented growth over the next 5-10 years as it looks to become the dominant water heating technology by the end of the decade. Collaboratively overcoming existing barriers is key to ensure successful market transformation for the policy drivers pushing this technology to new heights.

[1] For more information on AWHI please see www.advancedwaterheatinginitiative.org

Acknowledgements

New Buildings Institute (NBI) would like to express our gratitude to our sponsors of the Advance Water Heating Initiative, who have been instrumental in advancing energy-efficient HPWH technology through their vision, commitment, and collaboration. We greatly appreciate their support in the development of this report and contribution to sustainable solutions in the water heating sector.

AWHI's convening work is primarily funded by the U.S. Department of Energy (DOE). Additional supporting sponsors include:

- Bonneville Power Administration (BPA)
- Commonwealth Edison (ComEd)
- Northwest Energy Efficiency Alliance (NEEA)
- New York State Energy Research and Development Authority (NYSERDA)
- Southern California Edison (SCE)
- The McKnight Foundation

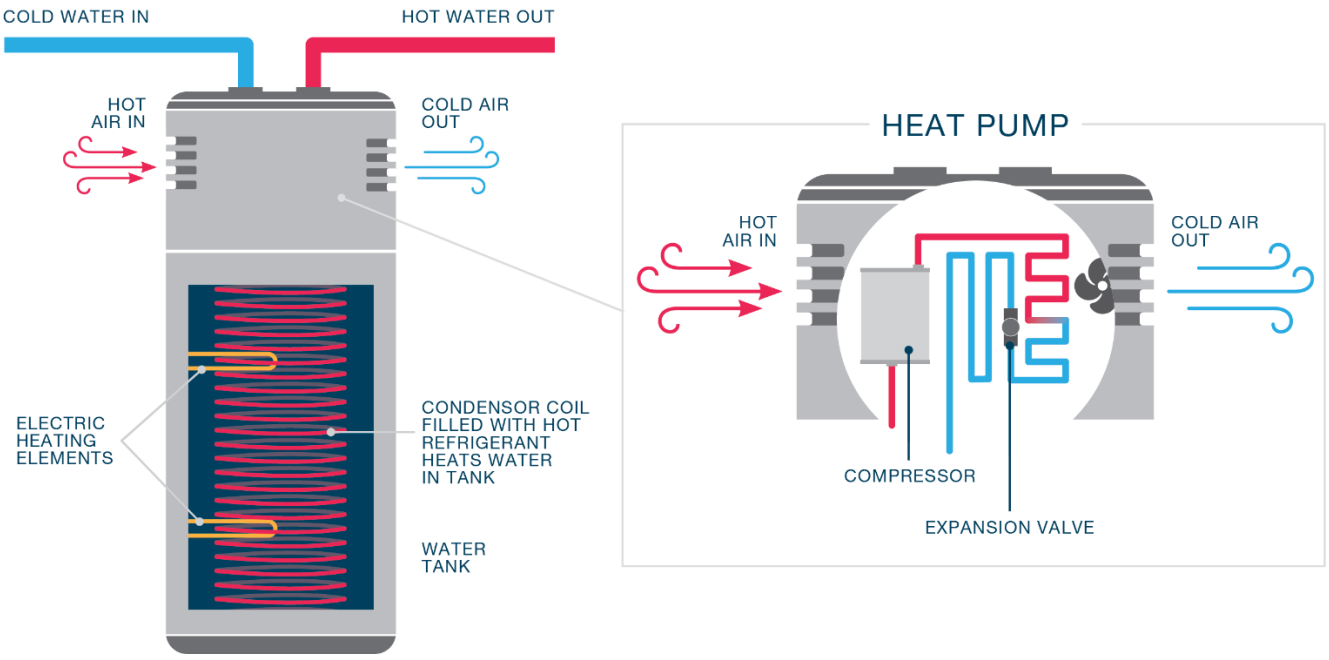
This report was led by Vidhisha Moopnar, Noah Gabriel, Joe Wachunas, Alexi Miller, and Susan Grant Harris from NBI. We also want to thank peer reviewers for this report—Kevin Carbonnier from Building Decarbonization Coalition, Joshua Butzbaugh from Pacific Northwest National Laboratory, Jon Heller from Ecotope, Frank Sandtner, and Tom Kabat.

Introduction

Overview of HPWHs and the market

Heat Pump Water Heaters (HPWHs) are a technological advancement and a smart investment in an energy efficient economy and sustainability. On average, each household in the U.S. uses about 64 gallons of water daily, spending approximately $400-$600 annually on water heating, which accounts for about 14-18% of their total energy bills.[2] Sometimes called hybrid electric water heaters, HPWHs draw heat from the ambient air to heat water and are considerably more efficient than a traditional gas or electric resistance water heater. An ENERGY STAR estimate suggests that if all electric water heaters in the U.S. were ENERGY STAR certified HPWHs, it could save about $8 billion in energy costs and prevent 150 billion pounds of greenhouse gas emissions annually, similar to the impact of over 14 million vehicles.[3]

FIGURE 1: PROCESS FLOW HEAT PUMP WATER HEATERS

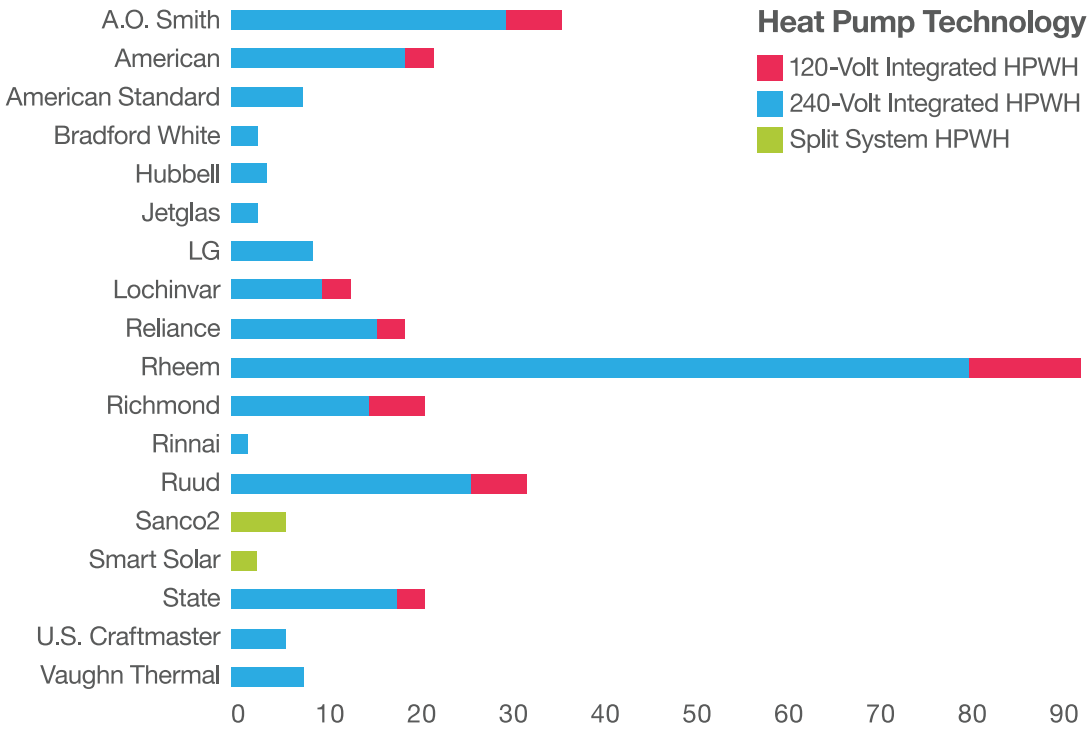


[2] U.S. Department of Energy. (2013, April 19). New infographic and projects to keep your energy bills out of hot water. Energy.gov. Retrieved December 30, 2024, from https://www.energy.gov/energysaver/articles/new-infographic-and-projects-keep-your-energy-bills-out-hot-water

[3] U.S. Environmental Protection Agency. (n.d.). *Benefits and savings of heat pump water heaters*. ENERGY STAR. https://www.energystar.gov/products/heat_pump_water_heaters/benefits-savings

FIGURE 2: ENERGY STAR CERTIFIED HPWH PRODUCTS 2019-2024

Source: ENERGY STAR data, May 2024,
https://www.energystar.gov/productfinder/product/certified-heat-pump-water-heaters/results



The HPWH market during 2019-2024 not only expanded its products but also diversified with 240-volt (V), 120V, and Split systems (see the 2024 Residential and Commercial HPWH Product Landscape section starting on page 24).

Purpose

The purpose of this report is to provide a comprehensive assessment of the current and projected market landscape for HPWHs both in the residential and commercial sectors. As energy efficiency and decarbonization have become goals nation-wide, HPWHs have emerged as the silver bullet solution to reduce energy consumption and greenhouse gas emissions while meeting hot water needs. This report aims to inform stakeholders—including manufacturers, policymakers, energy providers, and consumers—on market trends, technological advancements, challenges, and opportunities. By identifying growth opportunities and potential barriers, this report can inform strategic decision-making and policy formulation to achieve sustainable solutions for heating water.

Scope

This report encompasses a detailed examination of the current state of the HPWH market, focusing on the following key areas:

1. **Market Overview**: An analysis of the current market size, growth rate, and forecasts for future HPWH market transformation.
2. **Product Landscape**: Insights into the latest innovations in HPWH technology, including efficiency improvements, smart technology integration, and design enhancements.
3. **Challenges and Opportunities**: Identification of key challenges hindering the widespread adoption of HPWHs, including cost, consumer awareness, and installation issues.

Methodology

The methodology involves a combination of both qualitative and quantitative approaches to gather relevant data, offering insights into current market trends, the residential and commercial product landscape, challenges, opportunities, and potential solutions. Qualitative data collection and interviews were conducted between May 2024 and November 2024. Additionally, the residential product landscape is based on ENERGY STAR data from May 2024, while the commercial product landscape data was collected between September and October 2024.

The methodology employed to compile this report includes the following key steps:

1. **Literature Review**: A thorough review of current industry reports, market research studies, academic literature, and relevant publications to gather existing knowledge on HPWHs and market dynamics.
2. **Data Collection**: Comprehensive data is collected from multiple sources, including government databases, industry reports, product specification sheets, and market surveys.
3. **Interviews**: Conducting interviews with industry experts, manufacturers, contractors, homebuilders and other stakeholders to gain qualitative insights into market trends, challenges, and innovations.
4. **Market Analysis**: Utilizing quantitative methods to analyze collected data, including trend analysis, market sizing, and growth projections.

Market Overview

Early history of HPWHs

Mechanical water heating progressed through various stages of research and innovation, starting in the 18th century and leading to the current Heat Pump Water Heaters. Early discoveries, notably William Cullen's refrigerating machine (1748)[4] and Jacob Perkins' vapor compression system (1834),[5] laid the groundwork for all heat pump technology. Lord Kelvin established the principles of thermodynamics in 1852, which became the foundation for Peter Von Rittinger's first heat pump system (1855-57).[6] Heat pumps were first used for water heating in the 1920s with a patent by T.G.N. Haldane (1927)[7] and the creation of the first ground-source heat pump by Robert C. Webber.[8]

The market for HPWHs that emerged in the 1950s faced significant challenges. Market adoption was slow, primarily due to tough competition with the affordable coal and gas water heaters that were the predominant fuel choices at the time. However, there was renewed interest in HPWHs during the 1970s, driven by the energy crisis of that decade.[6] Spurred by the energy crisis and collaborative research work between manufacturers, government agencies and utilities, the development of heat pump water heaters gained traction in the 1980s with a high of 17 manufacturers[9] in the market and 11,000 units sold annually.[10] Yet the market collapsed due to lack of demand and many manufacturers exited during the 1990s[11] and early 2000s.[12,13] With the introduction of HWPHs as an ENERGY STAR certified product in 2009, several manufacturers returned to the market with new products, reintroducing HPWH technology to consumers.[14] As consumers have learned about HPWHs

---

[4] Heat from Air. (2023, December 20). *The history of heat pump technology*. Retrieved July 15, 2024, from https://heatfromair.co.uk/the-history-of-heat-pump-technology/

[5] Perkins, C. A. (1834). *Vapor-compression refrigeration*. American Society of Mechanical Engineers. Retrieved July 15, 2024, from https://www.asme.org/getmedia/cb9bea09-6d23-425e-bfe5-5f6d786919fb/274-perkins-vapor-comp-refrig.pdf

[6] Linden, S. (2023, February 28). *How heat pumps of the 1800s are becoming the technology of the future*. Yale Climate Connections. Retrieved July 15, 2024, from https://yaleclimateconnections.org/2023/02/how-heat-pumps-of-the-1800s-are-becoming-the-technology-of-the-future/

[7] Willem, H., Lin, Y., & Lekov, A. (2017). Review of energy efficiency and system performance of residential heat pump water heaters. *Energy and Buildings, 143*, 191-201. https://doi.org/10.1016/j.enbuild.2017.02.023

[8] Swiss Federal Office of Energy. (2023, July). *History of heat pumps*. European Heat Pump Association. Retrieved July 15, 2024, from https://www.ehpa.org/wp-content/uploads/2023/07/History-of-Heat-Pumps-Swiss-Federation.pdf, p33

[9] Calm, J. M. (1984). *Heat pump water heaters* (Report No. EM-3797). Electric Power Research Institute

[10] Gehring, K. C. (1986). The evolution of ventilating heat pump water heater. In *Proceedings of the 1986 ACEEE Summer Study on Energy Efficiency in Buildings* (pp. 1.62–1.75)

[11] Bodzin, S. (1997, July/August). Air-to-water heat pumps for the home. *Home Energy Magazine Online*. Retrieved from https://www.homeenergy.org

[12] AD Little. (1992). *Residential water heating* (pp. 18). Presentation

[13] Schoenbauer, B. (2015). *Heat pump water heaters: Savings potential in Minnesota* (pp. 33). Minnesota Department of Commerce

[14] U.S. Department of Energy. (2010, September). *ENERGY STAR water heater market profile*. ENERGY STAR

efficiency and potential for reducing greenhouse gas emissions and utility bills while meeting hot water needs, they have gained market share.

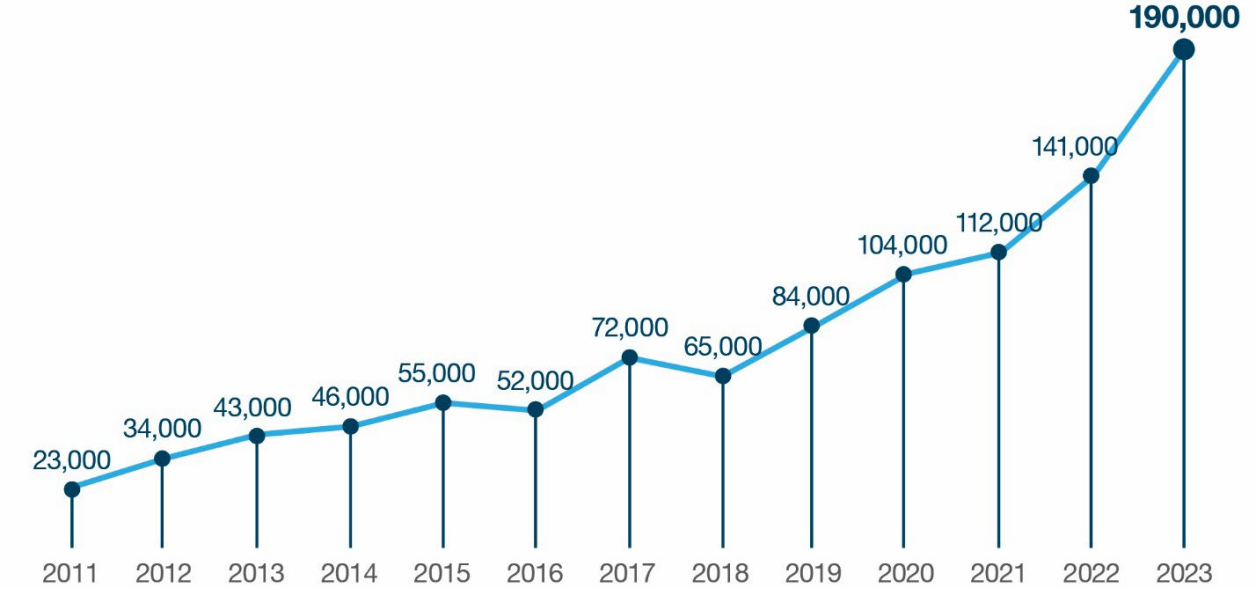
FIGURE 3: HISTORY OF HPWH 1937-2024

Current market status

The HPWH market has seen steady growth since first being certified as an ENERGY STAR product in 2009. Unit sales have grown by approximately 20% annually since 2011.[15] Heat pump water heater sales grew substantially in 2023. According to the data released by ENERGY STAR,[16] shipments of heat pump water heaters (HPWHs) grew 35% in 2023 (the last year of available shipment data) to 190,000 units, their largest increase (50,000 units) in history.

FIGURE 4: ENERGY STAR UNITS SHIPMENT 2011-2023

Source: ENERGY STAR Unit Shipment Data



Heat pump water heaters still make up a small percentage of overall water heater sales, 2.1% of all water heaters and 3.9% of electric water heater sales in 2023.

Currently no entity is tracking HPWH sales for Commercial HPWHs. AWHI is working with Northwest Energy Efficiency Alliance to encourage manufacturers to report anonymized data on unit shipments as part of future Advanced Water Heating Specification (AWHS) requirements[17].

[15] HPWH sales were 23,000 in 2011 and 190,000 in 2023 for compound annual growth rate of 19%

[16] https://www.energystar.gov/sites/default/files/2024-09/2023%20Unit%20Shipment%20Data%20Summary%20Report_508.pdf

[17] Northwest Energy Efficiency Alliance. (2024). *Advanced water heating specification v8.0*. https://neea.org/img/documents/advanced-water-heating-specification-v8.0.pdf

Drivers of growth for residential HPWHs

There was substantial market growth in HPWH's first fifteen years as an ENERGY STAR certified product. They are poised for even more significant and dramatic market growth this decade. Forces propelling the water heating market towards efficiency, smart grid integration, and decarbonization are coming together to produce a perfect storm that is poised to drive unprecedented growth in this sector. There are three key drivers:

Efficiency:

The U.S. Department of Energy (DOE), under the National Appliance Energy Conservation Act (NAECA), has the authority to set minimum appliance standards and does so for 60 categories of residential appliances. DOE issued its final rulemaking decision in April 2024 to update its water heating standards, and these will go into effect in 2029. Mandatory efficiency levels under this new standard for electric water heaters over 35 gallons will effectively phase out electric resistance in this product category and require the use of heat pumps. DOE estimates that 61% of electric water heaters will use heat pumps after this rule goes into effect.[18] The electric resistance water heater market had over 4.9 million unit sales in 2023.[19]

Grid Integration:

With their ability to use energy flexibly and act as small thermal batteries, HPWHs can help flatten peak demand curves while saving money for utilities and homeowners alike. Through load shifting signals, the HPWH can be told to run ("charge") when cleaner generation sources like solar are plentiful and grid strain is low. With a full tank of hot water, the HPWH can then coast through the high demand period without using the energy required to run the compressor. Because many electric utilities are switching to time of use rates (TOUs) by default, charging HPWHs during off-peak times with cheaper, cleaner electricity offers the potential for customers to decrease their electric bill. These benefits are already galvanizing incentive-based HPWH demand response programs, such as WatterSaver in California.[20]

Decarbonization:

Another driving force towards heat pump water heaters are air quality agencies across the U.S. Using well-defined and long-standing powers to regulate nitrogen oxide (NOx) pollution, regulators from California to the Northeast states are starting to set and study zero-emissions standards. Through these efforts, they are poised to phase out new sales of fossil-fueled heating equipment in their territories. The South Coast Air Quality Management District (South

---

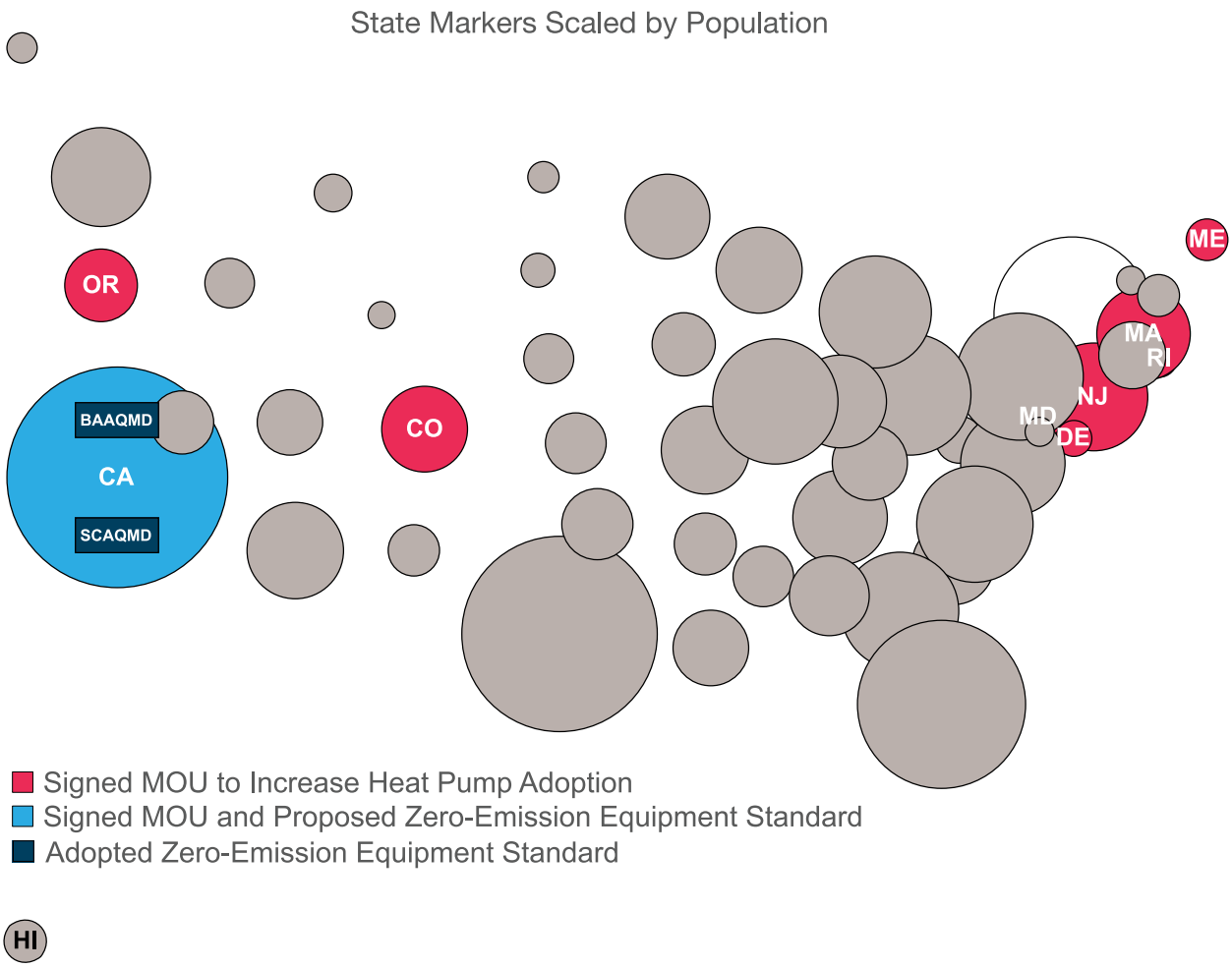
[18] Northwest Energy Efficiency Alliance. (n.d.). *NEEA-HWS-DOE info sheet: Installer*. Hot Water Solutions Northwest. Retrieved December 30, 2024, from https://partners.hotwatersolutionsnw.org/assets/img/documents/NEEA-HWS-DOE-Info-Sheet-Installer.pdf

[19] Air-Conditioning, Heating, and Refrigeration Institute. (n.d.). *Residential automatic storage water heaters: Historical data*. Air-Conditioning, Heating, and Refrigeration Institute. Retrieved December 30, 2024, from https://www.ahrinet.org/analytics/statistics/historical-data/residential-automatic-storage-water-heaters-historical-data

[20] Water Saver. (n.d.). *Home*. Water Saver. Retrieved December 30, 2024, from https://www.watter-saver.com/https://www.watter-saver.com/

Coast AQMD) Governing Board approved updates to Rule 1146.2, requiring new and existing buildings to switch to zero-emission water heaters. This policy applies to natural gas pool heaters, larger water heaters, small commercial heaters, boilers, and process heaters, aiming to reduce about 5.6 tons of NOx emissions per day.[21] While the policy goal of these new rules is to significantly reduce regional air pollution like smog and fine particulate matter (PM2.5), they could help transition communities away from fossil fuels and towards heat pumps and clean, healthy buildings in ways that electrification mandates have not. The map below shows states that have passed, drafted, or are exploring zero emission home heating equipment regulations along with states that have signed Memorandums of Understanding (MOUs) to increase heat pump adoption.

FIGURE 5: U.S. REGIONS EQUIPMENT MOUS AND EMISSION STANDARDS



[21] South Coast Air Quality Management District. (2024, June 7). *Updates to Rule 1146.2 – Zero-emission water heaters* [PDF]. South Coast AQMD. https://www.aqmd.gov/docs/default-source/news-archive/2024/1146-2-June-7-2024.pdf

With over 1/3 of Americans living in areas where air quality agencies are taking such actions, fossil fuel fired water heaters may transition to heat pump water heaters upon replacement in significant areas of the country before the end of this decade.[22]

Our HPWH growth projections

Based on the existing growth rates of HPWHs and the primary forces driving market transformation outlined above, AWHI created projections for growth of HPWHs in the American market through the end of the decade.

TABLE 1: PROJECTED HPWH SALES GROWTH SCENARIOS, 2024-2030

Year	High	Medium	Low
2024	260,000	240,000	220,000
2025	345,000	300,000	250,000
2026	465,000	370,000	290,000
2027	1,085,000	880,000	715,000
2028	1,300,000	1,015,000	790,000
2029	1,565,000	1,165,000	870,000
2030	4,485,000	3,915,000	2,980,000

To arrive at the “medium growth” projection, we assumed that HPWHs will continue to grow at a 25% annual growth rate (matching the average growth rate over the past five years) through 2026. In 2027, we assume that new sales of tanked fossil gas water heaters will be prohibited across California due to air quality regulations that are currently adopted or proposed and that approximately 70% of these (the rest we assume will be electric resistance and tankless gas water heater sales) will convert to HPWHs.

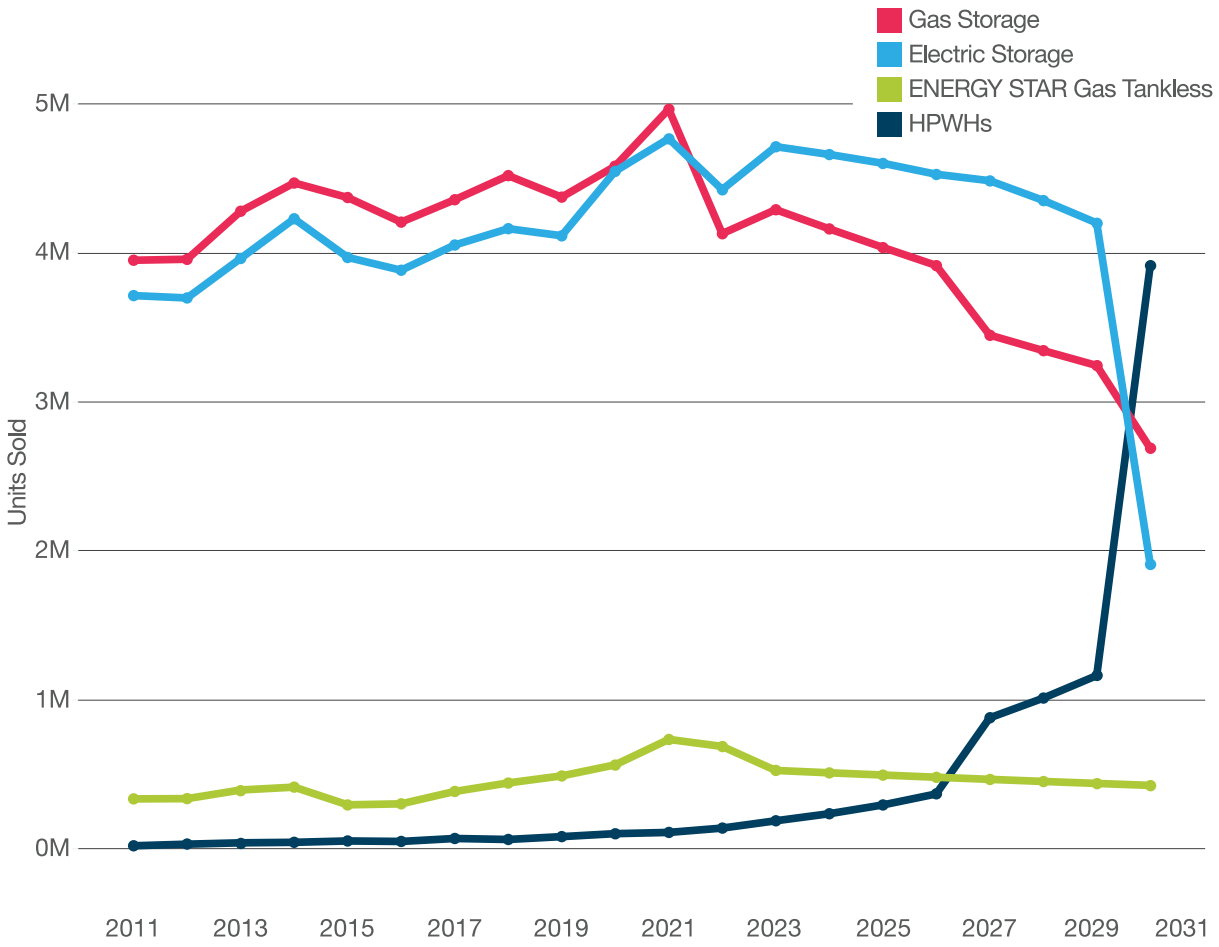
In 2030, we project a substantial jump in heat pump water heater sales due to the new DOE water heating standards going into effect. This was determined by using DOE’s assumption that 61% of the electric resistance market will transition to HPWHs. We also factor in the Northeast States for Coordinated Air Use Management led Memorandum of Understanding signed by nine Northeast and West Coast states to move to 65% heat pumps by 2030. Under these projections, heat pump water heaters would become the dominant water heater type sometime in 2029.[23]

---

[22] For more information check out AWHI’s November 2024 article on this topic - https://cleantechnica.com/2024/11/14/air-quality-becomes-major-lever-to-phase-out-fossil-fuels/

[23] Explore our projections in depth with this spreadsheet - https://docs.google.com/spreadsheets/d/1qU4gMtiIXJKSW9wBgaCdn0YXKBdmciH5/edit?usp=sharing&ouid=102588459608632489221&rtpof=true&sd=true

FIGURE 6: ACTUAL AND PROJECTED WATER HEATER SALES, 2011-2030



AWHI's forecast tracks manufacturer predictions for HPWH market growth. Rheem for example, predicts that HPWHs will account for 35-40% of the market by 2030[24] and our "medium growth" forecast has them at 40% of the market in 2030.

[24] See the 12-minute mark from this AWHI webinar on HPWH growth from September 2024 here - https://vimeo.com/1010748636?share=copy

Preparing the Market for The Upcoming Surge of Heat Pump Water Heaters

With policy goals largely in place due to the above-mentioned standards and regulations likely to drive unprecedented HPWH market growth, the Advanced Water Heating Initiative (AWHI) will turn its attention to the remaining needs in marketing and technology development. It is crucial to strategically prepare the market by addressing challenges with adoption. We list five key challenges facing HPWH adoption in the coming years along with efforts AWHI will take to help meet these challenges.

Challenge #1: Consumer and contractor awareness of heat pump water heaters

While Google search trends show a significant uptick in consumer interest for HPWHs over the past five years,[25] a lack of awareness across the supply chain continues to challenge their rapid market transformation. It's essential to increase consumer and contractor awareness and demand for HPWHs. In 2023, Northwest Energy Efficiency Alliance's "Boring but Efficient" downstream campaign reported that only 26% of Northwest consumers (n-333) surveyed were aware of at least one heat pump water heater brand.[26] A large percentage of consumers are thus unaware of HPWHs in a region with one of the highest adoption rates in the nation. Key tasks to meet this challenge are:

Consumer education:

Local, regional, and national level campaigns to educate consumers that emphasize the practical benefits of energy and cost-savings (lowering utility bills up to 70%). Utilities are key, trusted partners in advertising HPWHs and available rebates to consumers. Efficiency Maine sets the gold standard for consumer awareness and focuses on simplified messaging and 4 key benefits of HPWHs in their marketing; monetary savings ("save $500/year over electric water heaters"), fast recovery times ("lots of hot water"), customer testimonials ("tens of thousands of Mainers have installed HPWHs in their homes") and dehumidification ("HPWHs help dehumidify your basement").

Contractor education:

While HPWHs present a business opportunity for installers, advocates must also acknowledge the challenges; these include heavier equipment, additional installation requirements (condensate lines for example) and fear of callbacks due to problems. Leading incentive programs offer benefits for contractors installing HPWHs. Programs include utility program

---

[25] Google. (n.d.). *Heat pump water heater trends in the U.S.* Google Trends. Retrieved December 30, 2024, from https://trends.google.com/trends/explore?date=today%205-y&geo=US&q=heat%20pump%20water%20heater&hl=en

[26] Northwest Energy Efficiency Alliance. (2023). *Heat pump water heater market progress evaluation report 7*. Northwest Energy Efficiency Alliance. Retrieved December 6, 2024, from https://neea.org/resources/heat-pump-water-heater-market-progress-evaluation-report-7

advertising and lead generation (Ameren Illinois), rebates to ensure that HPWHs are cheaper to buy than standard electric or gas water heaters (Efficiency Maine) and workforce education.

Some organizations offer educational courses that help contractors better understand technology and best practices[27]. For example, PG&E Energy Training Centers provide over 400 free resources to help California clean energy workers and jobseekers improve their technical skills. Led by industry experts, these programs are available live as well as in curated online courses, covering advanced electric technologies such as heat pump water heating, induction cooking, and heat pump space conditioning[28]. Similarly, TECH Clean California and the ENERGY STAR Heat Pump Water Heater Manufacturers Action Council (ESMAC) offer information on clean energy technologies, ENERGY STAR-certified products, technology features, benefits, and suitable applications. These instructor-led courses also provide insights on best practices, installation and maintenance, troubleshooting, and selling strategies[29][30].

AWHI efforts to meet this challenge

- *Resources –* AWHI will outline and publicize a factsheet highlighting Efficiency Maine's "Four Quadrants of HPWH Customer Acquisition" based on their nation-leading consumer and contractor awareness programs. Anticipated resource publication date – June 2025.
- *Market outreach –* AWHI will continue to raise consumer and contractor HPWH awareness with educational resources and articles for consumers in CleanTechnica and contractors in PHCP Pros.
- *HPWH Day –* AWHI will grow and increase the reach of HPWH Day to rally the industry around HPWHs and amplify key messaging about efficient water heating.

Additional resources

- ENERGY STAR's HPWH Market Acceleration Guide
- AWHI HPWH Educational Resources 1 pager

---

[27] U.S. Department of Energy. (n.d.). *Heat pump water heater programs*. Building Energy Saving Codes. https://bsesc.energy.gov/recognition/heat-pump-water-heater-programs

[28] PG&E Corporation. (2022, June 13). *PG&E's Energy Training Centers offer free educational resources*. PG&E. https://investor.pgecorp.com/news-events/press-releases/press-release-details/2022/PGEs-Energy-Training-Centers-Offer-Free-Educational-Resources/default.aspx

[29] American Energy Association. (n.d). *TECH Clean California & ESMAC: Introduction to heat pump water heater education*. American Energy Association. https://aea.us.org/wp-content/uploads/2023/06/TECH-Clean-California-ESMAC-Introduction-to-Heat-Pump-Water-Heater-Education.pdf

[30] American Energy Association. (n.d.). *Catalog view*. American Energy Association. https://aea.docebosaas.com/learn/public/catalog/view/22

Challenge #2: Lowering upfront equipment and installation costs

Higher initial cost of HPWHs have been a point of concern for consumers, retailers, and contractors. To encourage market adoption ahead of policy driven mandates, financial support in the form of tax credits, rebates, financing programs, and equipment and installation cost compression will be pivotal.

Federal tax credit:[31]

A federal tax credit is available for HPWHs purchased between January 1, 2023, and December 31, 2032. With an annual limit of up to $2000 for HPWHs, this credit covers 30% of the purchase and installation costs. To qualify for the credit, the homeowner must be a taxpayer, and the HPWH must be ENERGY STAR certified. This incentive reduces the upfront cost making their upfront cost competitive with other types of water heaters. Additional incentives for electrical panel upgrades and wiring.

Rebates:

Based on household income, low- to moderate-income homeowners can benefit from government rebates. Local and state agencies may also cover a portion of the upfront cost and installation charges of HPWHs with rebate programs providing up to $1750 for HPWH.

Heat Pump Water Heater Rebates:[32]

- 100% rebate (up to $1,750) for low-income households
- 50% rebate for moderate-income households

Note: At the time of this report's publication (January 2025) there is uncertainty whether IRA tax credits and rebates for HPWHs will be continued by the incoming administration.

Utility Rebates:

Local utilities also provide important financial support to bring down the higher upfront costs of HPWHs. ENERGY STAR reports that there are currently, "198 active HPWH programs in the U.S., with an average incentive of $510 per unit, including eight programs with incentives of $900 or more per HPWH."[33] Incentives are key and ensuring that rebates are midstream and at

---

[31] U.S. Environmental Protection Agency. (n.d.). *Federal tax credits for heat pump water heaters*. ENERGY STAR. Retrieved November 27, 2024, from https://www.energystar.gov/about/federal-tax-credits/heat-pump-water-heaters
[32] U.S. Environmental Protection Agency. (n.d.). *Federal tax credits*. ENERGY STAR. Retrieved November 27, 2024, from https://www.energystar.gov/about/federal-tax-credits
[33] U.S. Environmental Protection Agency. (n.d.). *Understanding and addressing key market barriers*. ENERGY STAR. Retrieved December 30, 2024, from https://www.energystar.gov/partner-resources/products_partner_resources/retailer-resources/heat-pump-water-heater-guide/understanding-addressing-key-market-barriers#:~:text=198%20active%20HPWH%20programs%20in%20the%20US%2C,incentives%20of%20$900%20or%20more%20per%20HPWH

point of sale are also important as they lead to significantly higher HPWH sales when implemented.[34]

Utility incentive programs for Commercial HPWH (CHPHW) systems are less well developed than Residential systems. That said, there are several California utilities that have robust programs. The TECH Clean California program allocated $50M to support CHPWHs in multifamily buildings, however that budget was quickly allocated, and new applications are being put on a waiting list. The Regional Technical Forum in the Pacific NW is developing a default measure based on the Advanced Water Heater Specification Qualified Products List which will be available to be adopted into regional efficiency programs in 2025. CEE is also in the process of developing a Qualified Products List (QPL) which could be used by their member utilities as the basis for program development.

Cost compression:

Cost compression refers to strategic efforts to reduce both the equipment and installation costs of HPWHs, ensuring they are both affordable for consumers and profitable for all market actors.

Equipment costs - HPWHs are advanced systems that include components like refrigerants, heat pumps, and compressors, which increase equipment costs. A report by Northeast Energy Efficiency Partnerships highlighted the cost comparison between HPWH and standard electric resistance water heaters with HPWHs averaging between $1,000 to $2,500 more expensive than conventional models[35].

Mature HPWH markets such as Maine or the Pacific Northwest (where building codes strongly incentivize HPWHs) have seen equipment price declines. There is hope that scaling HPWH sales from thousands to millions per year will lead to further declines nationally. The Department of Energy's 2029 water heater standard requires only a 2.3 Uniform Energy Factor (UEF)[36] (HPWHs currently have an average UEF of 3.5 to 4) which may allow for models with slightly lower efficiency at lower price points.

Installation costs – HPWHs are newer and more complex than their gas or electric resistance counterparts. Therefore, they take longer to install and often require dual-certified contractors or both a plumber and an electrician. In fuel switching scenarios, switching from gas to electric,

---

[34] U.S. Environmental Protection Agency. (n.d.). *Understanding and addressing key market barriers*. ENERGY STAR. Retrieved December 30, 2024, from https://www.energystar.gov/partner-resources/products_partner_resources/retailer-resources/heat-pump-water-heater-guide/understanding-addressing-key-market-barriers#:~:text=198%20active%20HPWH%20programs%20in%20the%20US%2C,incentives%20of%20$900%20or%20more%20per%20HPWH

[35] Northeast Energy Efficiency Partnerships. (2012, December). *Northeast and Mid-Atlantic heat pump water heater market strategies report*. Northeast Energy Efficiency Partnerships.

[36] Northwest Energy Efficiency Alliance. (n.d.). *NEEA-HWS-DOE info sheet: Installer*. Hot Water Solutions Northwest. Retrieved December 30, 2024, from https://partners.hotwatersolutionsnw.org/assets/img/documents/NEEA-HWS-DOE-Info-Sheet-Installer.pdf

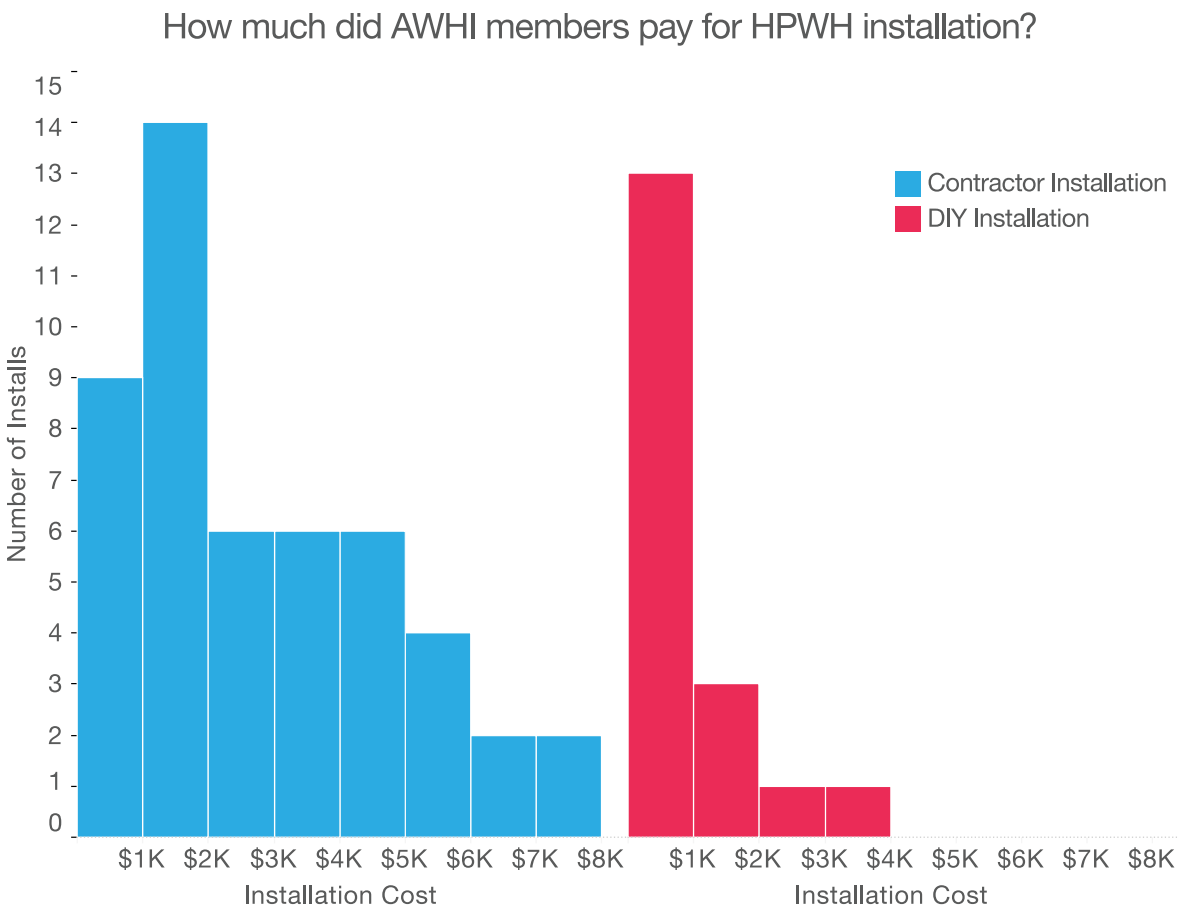
HPWHs can also necessitate an electrical panel or service upgrade. These factors combine to create high first-costs that hinder widespread adoption.

To better understand how HPWH installation costs could be reduced, NBI staff interviewed several plumbers across the West Coast and Midwest. Potential cost reduction pathways include packaged installation rates, which prevent costs from ballooning; plumber-to-homeowner interface applications like Plunjr; cheaper lead generation through Google, Reddit, and social media; Do It Yourself (DIY) training courses; and large workforce development programs to increase the number of HPWH installers. Similar to equipment costs above, mature markets have seen installation costs decline.

In addition to contractor interviews, NBI collected data on average HPWH installation costs, not including the equipment itself. This was done with a short Microsoft Forms survey asking for the HPWH installation price and where and when it was installed. NBI leveraged AWHI channels and CleanTechnica to collect homeowner responses. Figure 7 below displays the range of installation prices across 68 responses.

FIGURE 7: HPWH INSTALLATION COST

Not including HPWH equipment



DIY installations are another avenue that reduces HPWH installation costs. In leading HPWHs markets, like the Northwest, as many as half of all HPWH installations are DIY jobs,[37] meaning many consumers are quietly doing this already. DIY installations make HPWHs more accessible by reducing installation costs to simply the cost of parts.

Commercial HPWH installation and equipment cost compression – Since CHPWH systems are still new to many designers and installers, costs for CHPWH system installations have varied widely. There is still a need for general knowledge and expertise of these systems. High levels of perceived risk have driven up the costs of these systems. The AWHS QPL is attempting to drive down these costs by standardizing system designs to remove complexity and reduce risk from these systems. Several products are now on the market which provide all of the parts and pieces of a complete CHPWH system pre-assembled on a skid. This removes the need for any specialized knowledge or expertise and dramatically simplifies field installation to a few water and power connections. Further research is underway to reduce the cost of the thermal storage component of these systems by using unpressurized non-potable storage vessels or through use of high-capacity phase change thermal storage to dramatically reduce the size and weight of these systems and to reduce the required electrical capacity.

AWHI efforts to meet this challenge

- *HPWH cost compression report –* AWHI will report on HPWH installation costs, drivers, and strategies for reductions in the first quarter (Q1) of 2025.
- *DIY educational resource –* AWHI filmed a DIY HPWH installation in October 2024 and has edited the videos into short segments. In early 2025, AWHI will use them to create a new resource for DIY HPWH installations.
- *Task Group –* In 2025 AWHI will launch a task group for utilities and focus on highlighting programmatic best practices for HPWH rebates.

Additional resources

- ENERGY STAR information on federal tax credits and incentives.
- Hot Water Solutions DIY Installation Guide

[37] Northwest Energy Efficiency Alliance. (2023). *Heat pump water heater market progress evaluation report 7*. Northwest Energy Efficiency Alliance. Retrieved December 6, 2024, from https://neea.org/resources/heat-pump-water-heater-market-progress-evaluation-report-7

Challenge #3: Scaling, upskilling and empowering the workforce

Another challenge to widespread market adoption of HPWH is the need for more workforce skilled in HPWH installations. As the market for HPWHs continues to surge, increasing the number of HPWH installers is a primary focus area. In addition to incentivizing contractors to install HPWHs (discussed above under challenge #1), these three solutions can help expand the pool of HPWH contractors.

- *Specialty Plumbers License –* Oregon has a "limited specialty plumbers license"[38] that allows tradespeople to train and certify in water heater installations specifically without necessarily becoming a journeyman plumber. Helping other states offer similar pathways could lower the barrier of entry to the field and increase the pipeline of HPWH installers.
- *Outreach to HVAC contractors –* HVAC contractors are experienced in upselling heating equipment and encouraging proactive over emergency replacements which is a crucial skill in the transition to HPWHs. They also have experience with refrigerants and ducting. Encouraging HVAC contractors to expand their offerings to include HPWHs could drive an expansion of needed workforce.
- *Encouraging the next generation:* Plumbers are retiring at a high rate[39] and a new generation of installers need to be recruited. Marketing campaigns should target recent high school and college graduates, emphasizing the current earning potential and future benefits of clean energy and energy-efficient technologies, particularly with HPWH installation.

AWHI efforts to meet this challenge

- *Resource –* AWHI will create an educational factsheet explaining Oregon's specialty water heater license for other jurisdictions in 2025.
- *Webinar –* AWHI will offer a webinar on HVAC contractors installing heat pump water heaters in 2025 to highlight the opportunities and challenges facing all-in-one electrification contractors.
- *Task Group –* AWHI launched an installer focused task group in 2024 to stay informed on issues facing contractors installing HPWHs and collectively create and highlight solutions.

[38] Oregon Building Codes Division. (n.d.). *Plumbing specifications and application*. Oregon.gov. Retrieved December 30, 2024, from https://www.oregon.gov/bcd/licensing/pages/spec-plumbing-apply.aspx
[39] LIXIL. (n.d.). *Stories: 32*. LIXIL. Retrieved December 30, 2024, from https://www.lixil.com/en/stories/stories_32/

Challenge #4: Additional HPWH form factors are needed

Various residential HPWHs are currently offered by manufacturers, they include unitary 240-volt, and 120-volt plug-in models (see Residential HPWH product landscape on page 24). For commercial HPWHs, products have come onto the market in recent years and there are products at various stages of readiness (see Commercial HPWH product landscape below).

Building types still lack adequate HPWH form factor[40] options and additional product development is required. For example, multi-family buildings may struggle to replace in-unit water heaters with market available HPWHs due to space and air space constraints. For these applications, products such as split HPWHs (separate water tank and heat pump), wall-hung units (small and mounted on the wall), combi space and water heaters, and smaller unitary HPWHs which are available internationally, should be developed for the American market.[41] It is important to expand and diversify the product range.

Commercial systems for large buildings can require a significant amount of space and can be extremely heavy. This can place additional structural requirements on the building, particularly if installed on the roof. As noted above, research is underway by several manufacturers to integrate high density thermal storage materials in place of potable water to shrink the thermal storage component by a factor of about three. Products currently on the market are from Nyle, Pyroclast[42],and from HTEC, Medusa.

AWHI efforts to meet this challenge

- *Multi-family form factors report -* In Q1, 2025, AWHI will release a summary of different equipment types available internationally that could help with multi-family HPWH replacements. This summary will also include configurations of market-available equipment that could allow for easier low-rise multi-family HPWH replacements.
- *Small Commercial HPWH Study -* AWHI is currently conducting a first in the nation study to analyse different small commercial HPHW form factors, applications, and building types. Completion is expected in 2026.
- *MAGIC and Scaling Up projects –* AWHI is conducting several DOE funded field studies into Commercial HPWHs helping to refine and demonstrate emerging and existing products and increase the overall availability of the equipment in the market.
- *Technical Advisory Committee –* In 2025, AWHI will launch a technical advisory committee to help develop specifications for a unitary HPWH that can work on both 120 and 240 volts of electricity. This product type has been indicated by installers as a

[40] Form factor is a hardware design aspect that defines and prescribes the size, shape, and other physical specifications of components, particularly in electronics.
[41] Please note that there are currently no wall-mounted HPWH products available in the U.S. market. However, there are a few manufacturers offering Split Systems (such as SANCO2, Solar Thermal), and the scope for combi systems is being explored.
[42]Heatwater. (n.d.). *Pyroclast*. Heatwater. Retrieved December 30, 2024, from https://heatwater.com/pyroclast/

crucial missing tool to allow for emergency water heater replacements that can then be upgraded to run on 240V of electricity when electrical work is completed.

Challenge #5: Product reliability

As HPWHs radically transform water heating from combustion and electric resistance to dependable and efficient heat pumps, growing pains are to be expected. Consumers and installers have reported that some HPWHs have experienced higher failure and replacement rates than desirable as the product aims for full market transformation. The HPWH industry wants to strongly avoid embarrassing bad press from issues with product failures and consumer backlash as policy mandates begin requiring the equipment in consumer homes in the near future. Yet, currently no comprehensive, publicly available data or analysis exists to understand HPWH reliability. Also, 10-year manufacturer warranties don't cover costs for labor after the first year, and labor rates paid during the first year fall short of the typical cost for a plumber to complete the repair. This means consumers can be left with a repair bill if the failure occurs a year after installation.

AWHI efforts to meet this challenge

- *Task Group -* Convene a task group to compile statistics on HPWH reliability and make the data publicly available. Our goal is to form this task group early in 2025 and offer a preliminary report by the end of the year.
- *Extended HPWH Warranty -* Support the development of extended warranty product offerings to ensure comprehensive coverage of all costs related to warranty and maintenance for HPWHs, benefiting both contractors and consumers.

2024 Residential and Commercial HPWH Product Landscape

AWHI created this product landscape to highlight the many available brands and products available on the market.

The current market for residential and commercial heat pump water heaters (HPWHs) features a dynamic and rapidly evolving energy-efficient residential and commercial appliance technology in the water heating space. These HPWHs are available in multiple configurations, including 240V and 120V models, and innovative split system designs, and are excellent sustainable solutions for installation in new construction as well as effective replacements for traditional water heaters in retrofit scenarios. Some key technological features include increased first-hour rating, faster recovery rates, wider operational temperature range, varying capacities and tank dimensions, enhanced smart technology, quieter operation, and annual energy savings.

Image courtesy of Northwest Energy Efficiency Alliance (NEEA).

Residential HPWHs

With over 300 HPWH models currently certified by ENERGY STAR (as of May 2024), we have summarized the main brands of residential and commercial HPWHs below.

TABLE 2: RESIDENTIAL UNITARY HPWH TECHNOLOGY-240V

Brand	A.O. Smith	American Standard Water Heaters	LG	Rinnai
				
Type/ Model Number	Electric/ HPTU-50CTA	Electric/ASHPWH-65-B	Electric/APHWC502M	Electric/ REHP65
Electric Resistance Backup	✓	✓	✓	✓
Gallons Size/Rated Storage Capacity (Available Size)	50/46 (40,50,66,80)	65/62 (40,50,65,80)	50/53 (50,80)	65 /60 (50,80)
First Hour Rating (gallons) (FHR for other storage size)	66 (66-79-86)	79 (66-68-79-87)	76 (66-76-94)	80 (73-91)
Tank Diameter (inches) (Min-Max range)	22 (22-27)	20.2 18-20	19.7 (No range)	21.8 (22- 26)
Tank Height (inches) (Min-Max range)	63 (61-69)	50 38-59	47.6 (48-63)	45.5 (66-74)
Input Voltage for HPWH (V)	240	240	240	240
Max. Amp	22	21	24	24
Lower Compressor Cut Off Temperature °F (degrees Fahrenheit)	37	35	23	37.4
Refrigerant Type	R134a	R134a	R134a	R134a
Connected Capable	✓	✓		✓
Water Connection	Side	Side	Side	Side
Uniform Energy Factor (UEF)	3.45	3.68	3.93	3.9
Electric Usage (kWh/yr)		1348	1262	1240
Noise Level (dB)		49.1	42 (Auto mode)	49
Market Available	2024	04/15/2024	03/01/2024	09/13/2024
ENERGY STAR Specification Sheet Link	HPTU-50CTA	ASHPWH-65-B	APHWC502M	REHP65

TABLE 3: RESIDENTIAL UNITARY HPWH TECHNOLOGY-240V

Brand	Stiebel Eltron	Bradford White	Rheem	Vaughn Thermal
				
Type/ Model Number	Electric/ Accelera® 300 E	Electric/RE2H50S10-CON	PROPH40 T2 RH400-30	Electric/ ME120HPT-CN
Electric Resistance Backup		✓	✓	✓
Gallons Size/ Rated Storage Capacity (Available Size)	80/79.8 (60-80)	50/45 (50-65-80)	40/36 (40-50-65-80)	120/90 (50-65-80-120)
First Hour Rating (gallons)	74.2 (50.3-74.2)	65 (65-79-88)	60 (60-67-76-87)	105 (58-70-86-105)
Tank Diameter (inches) (Min-Max range)	27.16 (No range)	18 (18-21)	20 (20-24)	30 (28-30)
Tank Height (inches) (Min-Max range)	75.13 (61-75)	45.3 (45-57)	47 (47-59)	84.5 (58-84)
Input Voltage for HPWH (V)	240	240	240	240
Max Amp.		19	21	23
Lower Compressor Temperature °F (degrees Fahrenheit)		35	37	35
Refrigerant Type	R134a	R134a	R134a	R134a
Connected Capable (wi-fi)		✓	✓	✓
Water Connection Location	Side	Top	Top & Side	Top
Uniform Energy Factor (UEF)	3.39	3.44	4.07	3.38
Electric Usage (kWh/yr)	1289	944	1213	1467
Noise Level (dB)	52 (@ 1m)	55		54
Market Available		12/2/2022	2024	5/1/2024
ENERGY STAR Specification Sheet Link	Electric/ Accelera® 300 E	Electric/RE2H50S10-CON	PROPH40 T2 RH400-30	ME120HPT-CN

TABLE 4: RESIDENTIAL UNITARY HPWH TECHNOLOGY-240V

Brand	Midea	Bosch	Eco-Logical LLC
			
Type/ Model Number	Electric /US3-RSJ-15/300RDVN3-L3	Electric /TR7000T-80US	Electric/ ECO-65HPM1A
Electric Resistance Backup	✓	✓	
Gallons Size/ Rated Storage Capacity (Available Size)	80/74 (50-80)	80/74 (50-80)	65/60 (50-65-80)
First Hour Rating (gallons)	91 (69-91)	92 (72-92)	80 (69-91)
Tank Diameter (inches) (Min-Max range)	21.8 (18-22)	21.8 (18-22)	21.8 (18-22)
Tank Height (inches) (Min-Max range)	41.7 (42-48)	41.7 (41-48)	45.5 (41-48)
Input Voltage for HPWH (V)	240	240	240
Max Amp.	24	24	24
Lower Compressor Temperature °F (degrees Fahrenheit)	37.4	37.4	37.4
Refrigerant Type	R-134a	R-134a	R-134a
Connected Capable (wi-fi)	✓	✓	✓
Water Connection Location	Side	Side	Side
Uniform Energy Factor (UEF)	4.0	4	3.90
Electric Usage (kWh/yr)	1240	1240	1240
Noise Level (dB)	49	49	49
Market Available	11/30/2023	5/30/2024	10/15/2024
ENERGY STAR Specification Sheet Link	US3-RSJ-15/300RDVN3-L3	TR7000T-80US	Electric/ ECO-65HPM1A

TABLE 5: RESIDENTIAL UNITARY HPWH TECHNOLOGY-120V

Brand	A.O. Smith 	Rheem 
Type/ Model Number	Electric/ HPTV-80 200	Electric/XE50T10HM00U0
Gallons Size /Rated Storage Capacity (Available size)	80/82 (50-66-80)	50/46 (40-50-65-80)
First Hour Rating (gallons) (For other storage capacities)	93 (52-76-93)	55 (45-51-55-84)
Tank Diameter (inches) (For other storage capacities)	27 (15-23-27)	22.25
Tank Height (inches) (For other storage capacities)	92	61.7
Input Voltage for HPWH (V)	120	120
Max. Amp	15.0	
Lower Compressor Cut Off Temperature °F (degrees Fahrenheit)	37	37
Shared Circuit	✓	✓
Dedicated Circuit		✓
Refrigerant Type	R513A	R134a
Connected Capable (wi-fi)	✓	✓
Water Connection Location	Top	Side
Uniform Energy Factor (UEF)	3	3.46
Electric Usage (kWh/yr)	1550	1072
Noise Level (db)	45	
Market Available	7/10/2023	04/21/2022
ENERGY STAR Specification Sheet Link	HPTV-80 200	XE50T10HM00U0
Notes	Electric resistance: Only 900 watts elements	

TABLE 6: RESIDENTIAL SPLIT SYSTEM HPWH TECHNOLOGY

Brand	SANCO2 	Smart Solar 
Type/ Model Number	Electric/GS4-45HPC-D + SAN-119GLBK	Electric/SSG2-ES 120
Electric Resistance Backup	✓	✓
Gallons Size (Available Sizes)	119 (43,83,119)	120 (65,80,120)
First Hour Rating (gallons) **(For other storage capacities)**	135 (69,115,135)	83 (46,55,83)
Tank Diameter (inches) **(For other storage capacities)**	28 (24.5-28)	28 (22-24-28)
Tank Height (inches) **(For other storage capacities)**	63.4 (38.1-63.4-68.9)	64 (59-64)
Input Voltage for HPWH (V)	230	120
Max Amp	15	15 (link)
Lower Compressor Cut Off Temperature	-26	-20
Ambient Temp Range (°F)	-26 to 114	-10F TO 110 (link)
Refrigerant Type	R-744 (CO2)	R134a
Connected Capable (wi-fi)		
Uniform Energy Factor (UEF)	3.4	2.85
Electric Usage (kWh/yr)	1491	1714
Noise Level (db)	37	48
Market Available	11/01/2022	01/08/2024
ENERGY STAR Specification Sheet Link	GS4-45HPC-D + SAN-119GLBK	SSG2-ES 120

Manufacturers and other associated brands

TABLE 7: ENERGY STAR PARTNERS, ASSOCIATED BRANDS, AND HPWH PRODUCTS, 2019-2024

Numbers are based on May 2024 Energy Star Dataset

ENERGY STAR Partner	Brand Name	240V	120V
A.O Smith	American	19	22
	Lochinvar	9	13
	Reliance Water Heaters	16	3
	State	18	3
	U.S. Craftmaster	6	
Bradford White	Jetglas	3	
Rheem	Friedrich	24	6
	Richmond	28	10
	Rudd	38	10
Vaughn Thermal Corp.	Hubbell	4	

Commercial HPWHs

The three tables below provide specifications for the currently or soon-to-be available heat pump products designed for central DHW systems. This table does not include named packaged systems, which use heat pumps among other pre-specified components.

TABLE 8: COMMERCIAL HPWH: CENTRAL PART 1

Brand	Colmac 	Colmac 	Intellihot 	Intellihot 
Series	WaterHeat	WaterHeat	Electron	Electron
Model	CxA	CxV	iE1	iE6
Nominal Capacity (kBTU/hr)	104, 136, 200, 238, 271	63, 120	90	300
Min. Dwelling Units	50	20	40	125
Ambient Design Temp.	23F	10F	-10F	-10F
Refrigerant	R513a	R410A, R454B	CO2 (R744)	CO2 (R744)
Refrigerant GWP	631	2088, 466	1	1
CTA-2045 Port			✓	✓

TABLE 9: COMMERCIAL HPWH: CENTRAL PART 2

Brand	Lync	Lochinvar	Mestek/Transom	Mitsubishi
				
Series	Aegis	Veritus	Simcoe	QAHV
Model	A (250, 350, 500)	AHP (60, 140, 200, 280, 350)	CWV (350, 700)	QAHV-N560YA-HPB
Nominal Capacity (kBTU/hr)	210, 329, 494	60, 140, 200, 280, 350	320, 640	136
Min. Dwelling Units	75	20	125	50
Ambient Design Temp.	-4F	23F	0F	-13F
Refrigerant	CO2 (R744)	R513a	CO2 (R744)	CO2 (R744)
Refrigerant GWP	1	631	1	1
CTA-2045 Port			Pending	

TABLE 10: COMMERCIAL HPWH: CENTRAL PART 3

Brand	Nyle	Nyle	ECO2 Systems	Laars
				
Series	C-Series	E-Series	SanCO2	E-Therm
Model	C (90A, 185A, 250A)	E360	GS3-45HPA-US-SP	E-Therm
Nominal Capacity (kBTU/hr)	111, 225, 272	360	15	322
Min. Dwelling Units	50	150	10	125
Ambient Design Temp.	35F	10F	-25F	0F
Refrigerant	R134a	R513a	CO2 (R744)	CO2 (R744)
Refrigerant GWP	1430	631	1	1
CTA-2045 Port		✅	✅	✅

Conclusion

With growing urgency around a clean energy transition, the market for HPWHs is experiencing significant growth and has potential for dramatic market transformation over the next few years. This State of the Market Report highlights the transformation of heat pump water heaters, which had its beginnings as far back as the 1950s and continues today.

Manufacturers have developed a wide range of ENERGY STAR certified products with improved efficiency, quieter operation, and smart features, including 240V, 120V, and split systems. Supportive policies, such as building energy codes, standards, and air quality mandates, along with favorable market conditions, are helping this technology gain recognition and acceptance. Government incentives, rebates, and proactive efforts by utilities and distributors in some regions have further accelerated market growth, making HPWHs more affordable and appealing to consumers

However, significant challenges remain that must be addressed to sustain and amplify the anticipated momentum. Overcoming the knowledge gap with increased educational outreach about HPWH technology to consumers and contractors is crucial for acceptance and adoption of HPWHs. The higher upfront costs of HPWHs continue to be a barrier for many consumers, necessitating continued efforts regarding cost compression for both installation and equipment. Furthermore, the need to incentivize contractors, strengthen and expand the skilled workforce is critical to support widespread adoption. Additionally, evaluating concerns on product reliability, and diversifying the product line to meet growing consumer demand are important tasks for the years ahead.

This report identifies key opportunities and strategies for overcoming these barriers, including emphasizing collaboration across stakeholders, amplifying educational initiatives, expanding strategic marketing efforts, and working to resolve product availability and reliability issues that will be pivotal in driving the future success of HPWHs. Heat pump water heaters are a proven, energy-efficient solution and as the market continues to expand, it is imperative that stakeholder engagement and collaboration continue to support the broader market transformation needed for a clean energy future.

Appendix

Federal policy and regulatory uncertainty

In January 2025, a new presidential administration started under President Donald Trump. This administration has stated significantly different priorities than the prior Biden administration on climate change and energy efficiency. At the time of this report's publication, it remains unclear what this will mean for the future of the HPWH market in 2025 and beyond. AWHI will continue to monitor and provide periodic updates.

Upcoming HPWH products to look out for in 2025

In 2025, several new heat pump water heater products are expected to make a significant impact. GE is launching the GeoSpring Series, featuring the GE Profile™ GeoSpring™ Smart Hybrid Heat Pump Water Heater, which offers high efficiency and smart connectivity. Embertec is introducing its new split system, the Embro H2O, while Bradford White's new AeroTherm will bring innovative design and advanced features for high-efficiency performance in residential settings. These products showcase the industry's ongoing commitment to sustainability and innovation in water heating technology.

New Buildings Institute (NBI) is a nonprofit organization driving better energy performance in buildings. We work collaboratively with industry market players—governments, utilities, energy efficiency advocates, and building professionals—to promote advanced design practices, innovative technologies, public policies, and programs that improve energy efficiency and reduce carbon emissions. We also develop and offer guidance and tools to support the design and construction of energy-efficient buildings.

The Advanced Water Heating Initiative (AWHI)® is a member-funded collaborative of building owners, utilities, federal agencies, state and local governments, manufacturers, engineers, installers, advocates, researchers, and building industry professionals from across the U.S.

Learn more at newbuildings.org and advancedwaterheatinginitiative.org.