

WHITE PAPER

Rethinking Heat Pump Water Heater Programs

Why Split Systems Need Their Own Incentive Path

Prepared for utility, state, and weatherization program staff · August 2026



1. Executive summary

Most residential heat pump water heater (HPWH) programs were written around the integrated tower: one cabinet, one SKU, commodity pricing, a single rebate. That design worked when the only product in the market was a 50- or 80-gallon unit that had to stand in a basement or garage and pull 400–700 cfm of room air.

The market has changed. Split-system HPWHs put the compressor outdoors and the tank indoors. They serve the homes that towers cannot — manufactured housing, ADUs, apartments, and any dwelling without a mechanical room that meets airflow and clearance rules. Performance is in the same band as a good integrated unit. Cost is not. A split uses two cabinets, a line set, and sometimes more labor. Treating it as the same measure, at the same incentive, leaves a structural gap between what programs pay and what the job costs.

Two states have started to correct this. Mass Save pays \$750 for an integrated ENERGY STAR HPWH and \$1,500 for a qualifying split. California's equity and TECH pathways have begun to pay more where the equipment and the housing stock require it. That is the right instinct. This paper argues programs should go further: a formal split-system track, with its own incentive, qualified-product rules, and a space-constrained use case — while still allowing any home to choose a split.

2. How programs were built — and why that structure is now the problem

Integrated towers became the default measure for two simple reasons. That is what the large manufacturers put into the market, and those units looked like a replacement electric water heater. Distributors already stocked them. TRMs could copy an ENERGY STAR UEF and a deemed kWh savings number. Midstream markdowns at big-box retail trained the market to a price between roughly \$1,400 and \$3,800 before install.

When split systems appeared on qualified-product lists, most programs did three things and stopped:

- Added “split-system HPWH” as an eligible equipment type.
- Kept the same rebate dollar amount as the tower.
- Kept the same UEF screen, often written for 240 V integrated products, and ignored Seasonal Coefficient of Performance (SCOP), which all split systems must be tested for (recommend a minimum of 3.0).

The missing piece is the housing constraint. An integrated tower is not a universal appliance. It needs volume, makeup air, condensate routing and a pump, and a place where 45–55 dB of compressor noise is acceptable. Manufactured homes, many small single-family houses, and stacked multi-units do not have that room. In those dwellings, the “choice” between tower and split is fictional. The tower is not a failed bid. It is an ineligible install.

Programs that pay the tower rebate on a split job are asking the contractor or the low-income program to eat the difference in equipment and labor. Or, in reality, installers are putting towers where they should not go, which hurts efficiency and customer satisfaction. That is why splits stall in weatherization and LMI-style pipelines even when the technical fit is obvious.

3. Split systems span a wide cost range — do not treat them as one SKU

Inside “split HPWH” sit product families with a wide range of equipment and install costs. That spread is mostly materials and labor: a second outdoor chassis, a connecting line (refrigerant or water), wall penetration, an outdoor pad or brackets, and more field time. Programs that flatten every split into one measure sized off a retail tower will leave most of that range underfunded.

	Refrigerant-through-the-wall split	Hydronic / CO2 split
What moves between boxes	Refrigerant (pre-charged or field lines)	Water / potable loop; outdoor unit is a heat pump making hot water or heating a loop
Typical installer	HVAC Tech/ Licensed plumber; many designs use quick-connect line sets and do not require HVAC recovery tools	HVAC / hydronic contractor; more like a mini-split or boiler job – but also usually do not require any HVAC recovery tools
Street price (equip.)	About \$2,450–\$4,500 for residential 50–80 gal class	Often \$5,000–\$9,000+ before install
Energy	UEF / COP / SCOP highest in class and the same range as a strong integrated HPWH; outdoor compressor designed for cold-climate operation. No concerns in freezing climate due to design and equipped with back up electric elements.	Performs in the middle of the integrated tower pack. Outdoor unit produces hot water or heats a loop. Often specified where a project already includes hydronic work. Heat Pump designed to work down to -26f and usually is not equipped with back up elements, additional powered freeze protection in cold climates (potable water lines run outside)
Best fit	Any home as it eliminates the comfort issues associated with integrated towers. Designed for mobile homes, ADUs, apartments, and any large home that needs the tank inside and the noise outside. Any climate and has no requirement for freeze protection	Any home as it eliminates the comfort issues associated with integrated towers. Multiple tank sizes and can accommodate combo DHW + space heat, or projects already paying hydronic labor. Any climate – cold climates require electronic freeze protection

The program problem is the width of that cost band. Refrigerant-through-the-wall splits typically sit in the lower half of the split market — still cost is above a retail tower — because they add a second cabinet and a line set rather than a full hydronic plant. Hydronic and CO2 splits sit higher because of the robust Co2 components and design along with requiring a built-in water pump and freeze protection in cold climate. Both are legitimate split products. If the rebate is sized off the \$1,400–\$2,200 Home Depot tower SKU, even the lower-cost split never clears a low-income screen. If the rebate is sized only off the highest-cost split, administrators may hesitate to fund the category at all.

A better design is an incentive that accommodates split systems additional cost to allow both split types to pencil in programs — without using either price point as a reason to keep all split rebates at tower money. Larger split incentives help the whole category; the lower-cost products are the ones that can convert first in space-constrained and income-qualified homes. Simply put, a little more investment for splits will eliminate a lot of customer call backs due to forcing integrated towers into spaces that hurt performance and cause comfort issues on the homes you invest in.

4. Cost reality versus commodity pricing

Product class	Typical equipment range	What the program usually pays
Integrated tower HPWH	\$1,400–\$3,800	One rebate, often \$300–\$1,000 (Mass Save \$750)
Refrigerant-through-the-wall split	\$2,450–\$4,500	Usually the same rebate as the tower
Hydronic / CO2 split	\$5,000–\$9,000+	Same rebate, or a poorly fitting central/AWHP measure

The extra cost on a split is not margin theater. It is a second heat-pump chassis, a line set, wall penetration, outdoor pad or brackets, and more field time. Integrated towers are cheaper because they are fewer pounds of metal in one box, built on a water-heater production line, and sold as a retail commodity. Big-box models are known to be inferior to professional models. Split systems are all professional models.

A program that equalizes the customer incentive therefore unequalizes the contractor's willingness to bid the hard house — and, in low-income cases, the most economically challenged homes. The easy basement gets the measure. The single-wide does not.

5. What leading programs are already doing

Massachusetts — Mass Save, 2026

Mass Save now publishes two HPWH lines: \$750 for an ENERGY STAR integrated unit (UEF 3.30, or UEF 2.20 for 120 V / 15 A) and \$1,500 for a split-system HPWH (ENERGY STAR, UEF 2.20). That is a clean doubling of the customer-facing rebate for splits. It is the clearest retail signal in the Northeast that a split is not the same SKU.

California — equity and TECH pathways

California's Equitable Building Decarbonization and TECH Clean California pathways have raised HPWH incentives in equity and multifamily settings and have begun to treat form-factor and housing type as program variables, not afterthoughts. Manufactured homes are explicitly eligible in EBD direct-install. That is the right housing screen. The next step is to stop paying a tower-derived unit incentive when the only legal, livable install is a split.

These two markets prove administrators can differentiate without rewriting the entire water-heating TRM. They have not yet built a full split track (separate QPL notes, airflow waiver, midstream adder, low-income stack). That is the opening.

6. Recommended program structure

Keep the existing integrated measure. Add a split-system path. Do not force every home onto a split, and do not hide the split behind a hardship waiver that contractors will not fill out.

Track A — Integrated tower (keep as-is)

- Homes with a mechanical room, basement, or garage that meets manufacturer airflow, volume, and clearance.

- Current rebate, current UEF screen, retail midstream intact.

Track B — Split system (new or rebuilt measure)

- Open to any dwelling. A split is quieter and does not steal heat from the living space. It is a legitimate whole-market product, not only a hardship device.
- Priority / enhanced incentive when the home fails tower siting rules: manufactured housing, ADU, interior volume too small, no acceptable condensate path, or occupied space where tower noise is not permitted.
- Two equipment cost bands so programs can fund both lower-cost refrigerant-through-the-wall jobs and higher-material hydronic or CO2 jobs without collapsing the rebate to tower money.
- Focus on UEF and SCOP for QPLs.

Suggested incentive architecture

Measure	Market-rate incentive	Income-qualified / direct-install
Integrated tower	Current program amount (e.g., \$500–\$750)	Current stack; no change required
Split — refrigerant-through-the-wall	2× the tower rebate (Mass Save model: \$1,500 vs. \$750)	Tower stack plus a split adder of \$750–\$1,500 so net customer cost matches a tower job
Split — hydronic / CO2	Separate cap, or air-to-water measure, so the higher material cost of this class does not set the only split rebate	Case-by-case / custom if the project is combo heat + DHW
Space-constrained adder	Optional +\$850–\$1,500 when a siting checklist shows a tower will not fit	Automatic in manufactured housing, ADUs, and mechanical rooms under X cu ft

The design goal is simple: after incentives, a plumber should be indifferent between bidding a tower in a basement and bidding a split in a single-wide. Until that is true, programs will keep counting “HPWH opportunities” that never convert in the housing stock that needs them most.

7. Rules that have to change with the money

- Qualified Product List. List splits as their own rows. Use current UEF thresholds of 3.3 to 3.5, and consider a kicker for any HPWH above a 4.0 UEF. (ENERGY STAR’s 2.2 UEF for splits is too low and needs to be revisited.)
- Split systems go through a Seasonal Coefficient of Performance test with the outdoor unit at five different temperature thresholds. The higher the SCOP, the better suited the product is for a wide range of climates. Suggest 2.9 to 3.1 as a minimum.
- Siting checklist. One page: indoor volume less than 700 cubic feet of unobstructed airflow space, louver/airflow, condensate, noise, and manufactured-home / wall constraints. If the tower fails two items, Track B is the default, not an exception.
- Installer credential. Licensed HVAC technician or plumber for split systems that do not require an EPA 608 license. This includes all split systems currently available.
- TRM savings. Deem split savings at least equal to a same-size integrated unit in mixed and cold climates. Outdoor compressors do not cool the basement or living space in January. That is a benefit, not a penalty.
- Refrigerant policy. Use federal Global Warming Potential targets of 700 GWP or less.

- Midstream. If towers get a retail markdown, splits need a distributor markdown of similar depth plus the higher downstream rebate. One without the other leaves the product on the warehouse floor.

8. Who this is for

A split-first rule for every home is not necessary. A split-available rule for every home is. The specialized path is for dwellings that fail integrated siting. That list is not a niche:

- HUD-code manufactured homes and many modular homes.
- ADUs, in-law apartments, and small infill houses.
- Multifamily units with the water heater in a closet or on an exterior wall.
- Any single-family house whose only water-heater location is a finished living space.

Those are also the buildings overrepresented in low-income, LIHEAP-adjacent, and weatherization pipelines. Paying a commodity tower rebate into that pipeline is how programs miss their equity targets while hitting their “HPWH units” score on easier houses.

9. Ask of program administrators

Pilot now, or offer in the next program cycle:

- Create a named split-system HPWH measure with its own incentive, not a footnote on the tower measure.
- Set the market-rate split rebate at approximately 2× the integrated rebate, consistent with Mass Save 2026.
- Add a space-constrained or manufactured-housing adder so income-qualified jobs pencil.
- Split the QPL between refrigerant-through-the-wall products and hydronic/CO2 products.
- Publish a one-page siting test so contractors know when the tower is not the measure.

Splits are not a luxury upgrade. They are how a heat pump water heater gets into the houses the last generation of programs could not reach. The technology is already in the same performance band as the tower. The program design is not.

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Price ranges are representative 2026 street equipment prices for residential products, not quotes. Mass Save amounts are published 2026 residential rebates. Incentive recommendations are illustrative for program design and should be calibrated to local avoided cost and income-qualified budgets. Prepared by Carl Uthe, experienced in program design as a consultant and contractor who designed and implemented energy efficiency programs for Northeast Utilities and is Vice President of Eco-Logical, which offers both an integrated tower and a split-system HPWH.