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mass save

Heat Pump Incentive Study

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Agenda

- Study Overview
- Study Methodology
- Findings – By DPU Objective

Study Overview

As part of the 3 Year Plan Order, the Department directed the PAs to conduct an expedited study to "ensure program incentive levels for [residential] electrification measures are well targeted and do not exceed what is needed to drive customer electrification." Order at 89. The PAs engaged Guidehouse to help perform this analysis.

Timing: August 2025 – March 2026 (study is now complete)

The Department outlined four key areas to be addressed as part of this expedited study:

- Customer price sensitivity to heat pump incentives
- The minimum Mass Save incentive levels needed to drive electrification among various customer groups
- Any evidence of program induced effects on the price of heat pumps in Massachusetts
- Any other factors that can reduce heat pump equipment and installation costs, and program incentives needed to convince customers to install heat pumps and use them for heating

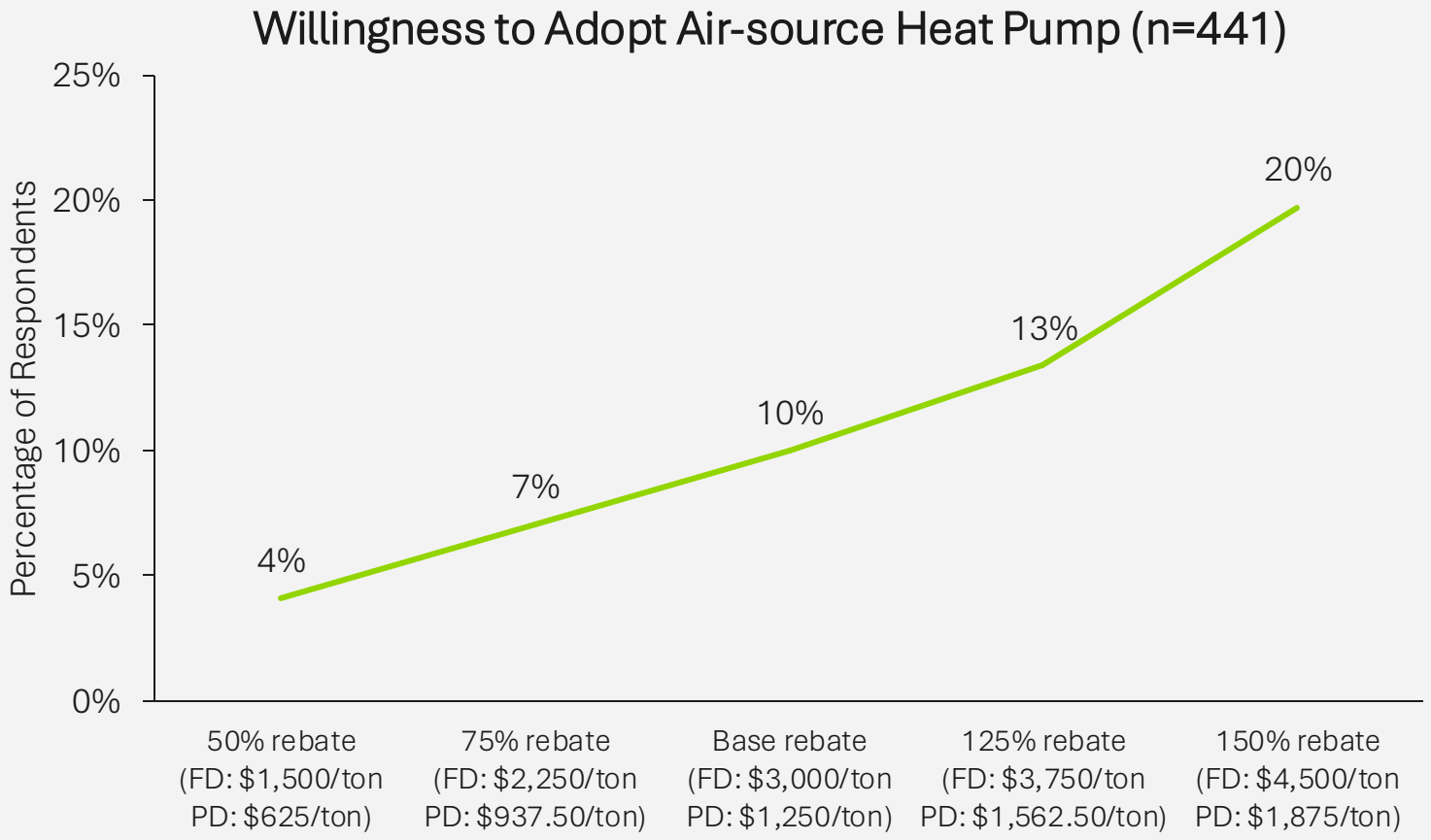
To address the DPU objectives, the team completed three key tasks

Objectives

- Customer Price Sensitivity to Heat Pump Incentives
- Minimum Incentives to Drive Electrification
- Program Induced Effects on Prices
- Factors Driving Installation & Equipment Costs

Task	Description				
Leveraging Existing & Ongoing Studies	Reviewed 22 completed and ongoing studies since 2018, including the MA HP Market Effects Study and the MA HP Invoice Cost Analysis. Reviewed the 2022-24 MA heat pump installation data.	✓	✓	✓	✓
Survey	Surveyed 2022-2023 Mass Save rebate participants who installed non-heat pump heating equipment to assess willingness to adopt heat pumps under varying rebate levels, financing, and other factors.	✓			
Economic Analysis	Modeled heat pump economics across representative single-family homes calibrated to MA conditions to assess the economic viability of heat pump adoption among various customer types.		✓		

Customers who bought non-heat pump equipment in 2022 or 2023 show measurable but limited sensitivity to changes in rebate levels



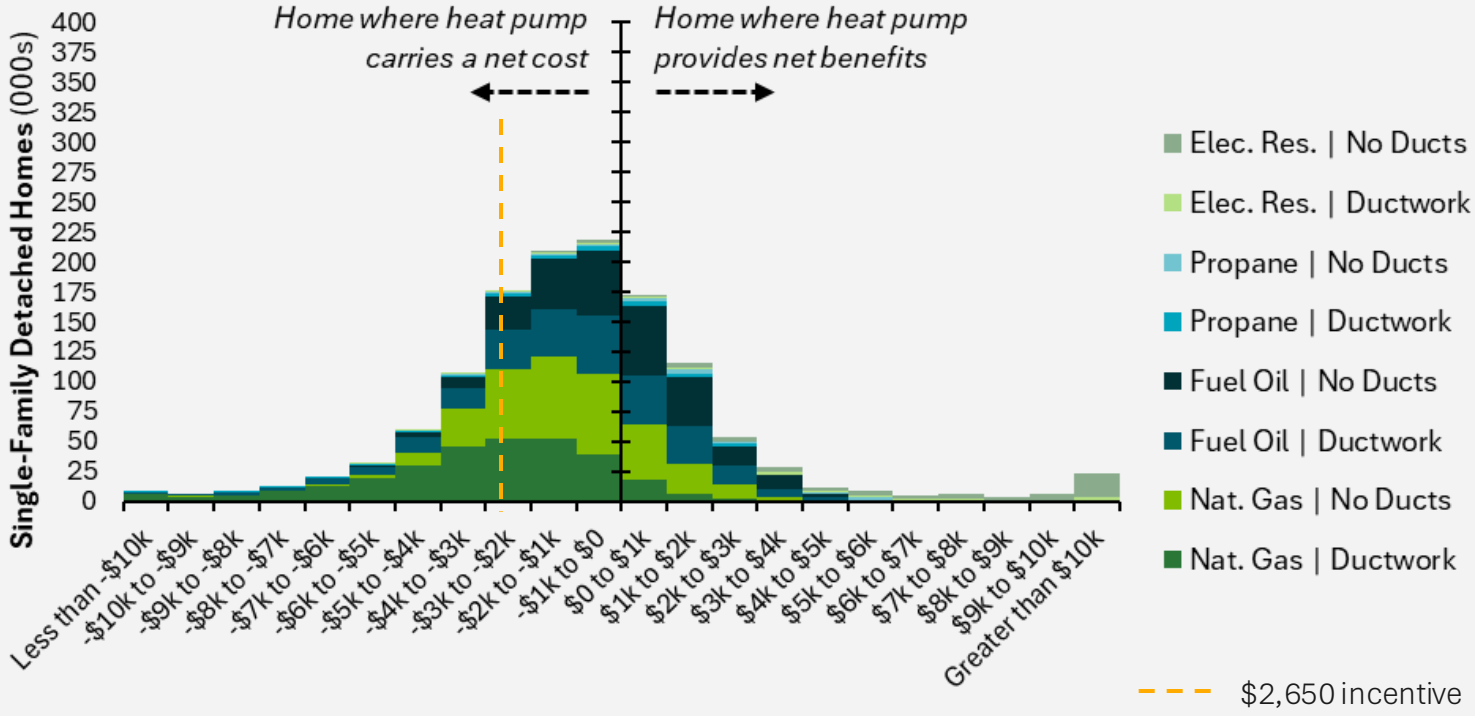
Note: FD: Full displacement PD: Partial displacement

- Almost all respondents were at least slightly familiar with heat pumps (94%).
- Willingness to adopt (WTA) a heat pump **doubled from the base rebate level* to a 50% higher rebate (10% WTA → 20% WTA)** .
- The average out-of-pocket cost that customers were willing to pay across rebate levels was **$11,300**.

* Base rebate refers to the per ton incentives offered by Mass Save from 2022-2024.

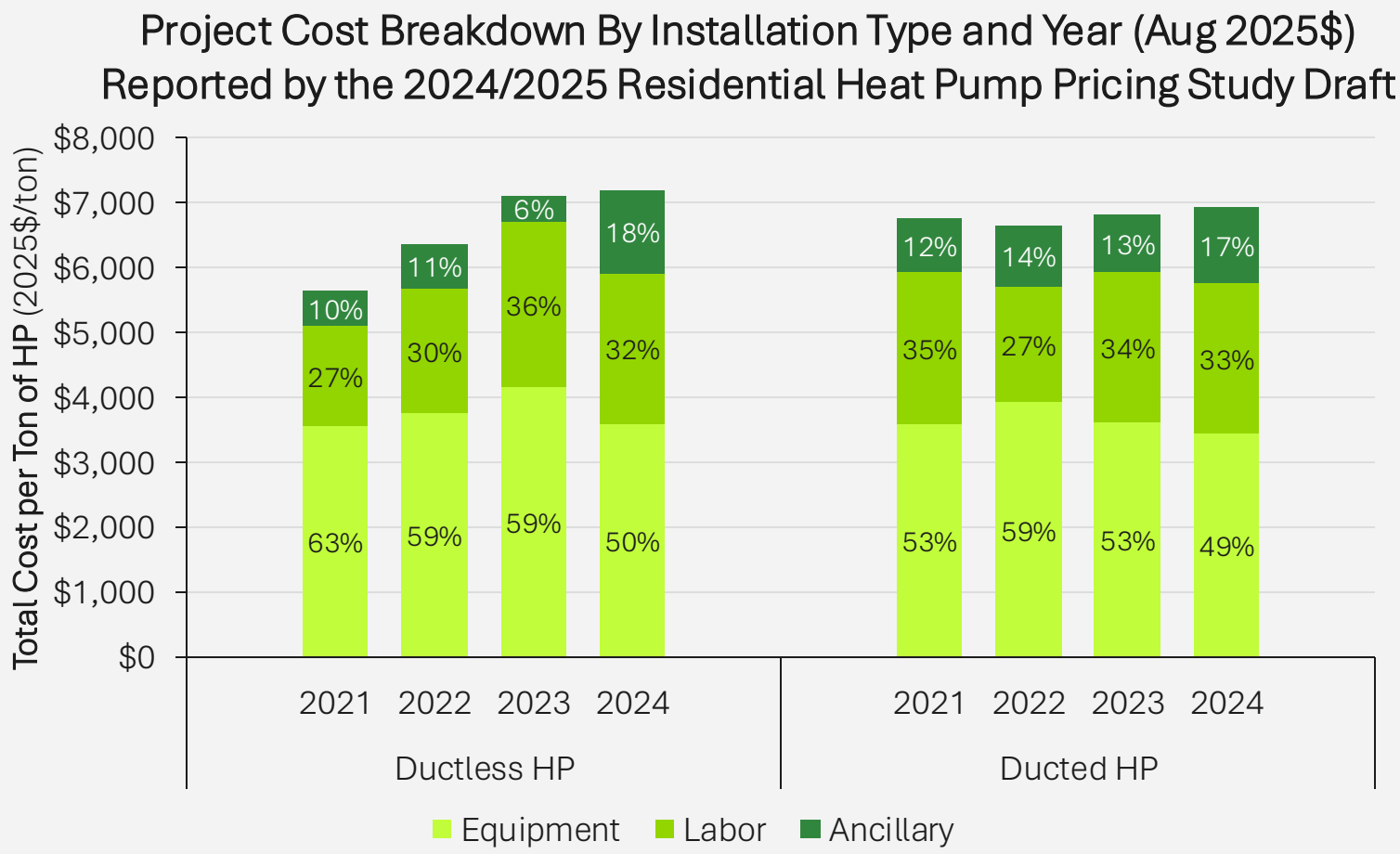
Absent incentives, most customers face negative net present values for heat pumps

Aggregated NPV per Ton of Full Displacement with High Efficiency HP across Population of Single-Family Homes in MA
(Excluding Current Incentives, Including Heat Pump Rates)



- The economic viability of heat pump adoption **varies significantly by baseline fuel, heat pump efficiency, location, and other factors.**
- A $2,650/ton incentive and MA heat pump electricity rates make **heat pumps financially viable for more than half of single-family homes.**
- Even for homes where the future bill savings exceed the incentivized upfront cost of a heat pump, **other factors will impact a customer's decision** to adopt a heat pump.

Heat pump installation costs appear to be rising, particularly for ductless heat pumps, though drivers require further investigation



- The latest HP Pricing Study found that while installed costs for ductless heat pumps increased in recent years, so did average project complexity (2.3 zones/compressor → 2.9 zones/compressor), which may explain some of the increase in labor and ancillary costs.
- MA is implementing strategies to ensure fair pricing, including through Decarbonization Consultations and the Heating Comparison Calculator.

Findings reported here rely on the *Heat Pump Pricing Study (MA25X05-BR-RHPINV2)* and the *Heat Pump Market Effects Indicator Update (PY2024/2025)*, which were draft at the time of the HP Incentive Report finalization.