

Residential Heat Pump Water Heater - Logic Model Draft

Barriers / Opportunities

Customer value proposition and demand result in limited supply chain business case

Some California housing characteristics are less than ideal for Heat Pump Water Heaters (HPWH)

Complex product requirements that customers do not value

Complex and inconsistent California program landscape and requirements for supply chain and customers

High first cost (equipment & installation costs)

Federal Standard requiring HPWH for electric tanks > 20 gallon <120 gallon

California 2030 Heat Pump Goal (and CA Heat Pump Partnership work)

Strategic Interventions

Interventions with a focus on equity considerations



Influence Product Development & Match Tech. to Housing Stock

- Use research tools to assess California's housing segments
- Match housing segments with existing equipment types and identify gaps
- Support split-system technology development and adoption
- Leverage existing training efforts to help installers confidently select the right equipment
- Collaborate with manufacturers and EE programs to develop a product roadmap with pathways for lower GWP refrigerant options and solutions for equipment gaps



Aggregate Statewide Buying Power to Attract Market Partners & Build Momentum in Scalable Submarkets

- Coordinate with existing EE/ESJ programs on outreach, training, marketing, and incentives, using collective buying power to reduce equipment and installation costs and drive additional sales
- In near term prioritize easy-to-install markets (e.g. electric, solar, propane, new const., retail) to build installer confidence, strengthen business case, and drive sales
- Partner with manufacturers to decrease cost and engage supply chain leaders to champion HPWH adoption
- Apply lessons learned and market experience to enable market actors to confidently expand into additional submarkets

Develop, Support and Coordinate Statewide Operational Infrastructure

- Develop/support a coordinated, statewide system for water heater sales and data collection with supply chain and program partners
- Share anonymized data with market and EE partners to inform resource allocation and program design
- Collaborate with programs to create consistent, accessible marketing tools and messaging
- Align supply chain messaging to ensure a consistent customer experience
- Coordinate with EE programs to align on and conduct research

Outputs

Product Roadmap
Mapping existing and future technologies to housing types to identify optimal applications and integrate pathways for low-refrigerant and load-flex solutions

Scale-Up Plan by Market Segment
Customized scale-up plans for each submarket, outlining strategies, key partners, and coordination approaches for building market scale

Market Segment Opportunity Assessment Tool
Tool that identifies submarkets by opportunity size and ease of transformation to inform prioritization and activity planning

Program Support Roadmap
Mapping current and future program support roles for CalMTA and partners to create a collective roadmap that can be replicated across additional submarkets

Shared California Program HPWH Product Criteria
Shared definition of qualifying HPWHs, including criteria for lower GWP refrigerants and load-flex capability

Shared Research Plan for HPWH in California
Aligning with partners on research needs, research execution, and approach to sharing findings/results

Messaging and Marketing Tools
Aimed at creating consistency for end customers and installers in how HPWHs are marketed, explained, and valued

Statewide Market Intelligence Hub
Creating a data platform to share HPWH sales data in California with market partners and programs

Outcomes

Short-Term (1-2 yrs)

Manufacturers and programs partner with CalMTA on Scale-Up Plans

Increased HPWH installations in early MTI identified submarkets

Increased installer confidence and acceptance of HPWH technology

Total installed cost decreases for MTI identified submarkets

California program partners align on a shared definition of qualified HPWH products, creating consistency for market partners and end customers

Installer market partners and programs utilize shared messaging and research to educate and accelerate HPWH adoption

Market and program partners leverage and participate in Market Intelligence Data Hub creating quid pro quo data relationships

Med-Term (3-5 yrs)

Greater diversity in products with alternative form factors installed in California homes to meet needs of California housing stock

Retail channel sees an increase in HPWH sales and is competitive with distributor channel

Increased California program consistency strengthens market and supply chain business case

Energy efficiency partner organizations/programs include greater diversity of HPWH product tiers/program offerings to meet market needs

Data is leveraged by California programs and market actors and create additional value streams to support California's Heat Pump goals

Long-Term (6-10+ yrs)

HPWHs reach a technology adoption tipping point in existing residential homes

HPWHs newly installed in California utilize lower GWP refrigerants and include load-flex capabilities

IMPACT

California meets Statewide Heat Pump Goal and the majority of water heaters installed are HPWHs