



CALNEXT: HEAT PUMP CUSTOMER QUESTIONS STUDY

# From Forums to Findings: What Customers **Really Want to Know** About Heat Pumps

Presented by:  
Eli Alston-Stepnitz, Ph.D.

Market Transformation Research Program  
Western Cooling Efficiency Center  
University of California, Davis



# California needs six million heat pumps by 2030

Heat pumps are a keystone of building decarbonization, but adoption is far behind the Governor's target.



## 5%

of CA homes use a heat pump for space heating (2% for water)



## 3×

annual sales must more than triple — from 151K to 472K per year



## \$21K+

median CA install cost — the highest in the nation, ~2× a furnace + AC

# We've been hearing *about* customers — *not* from them



## The usual evidence

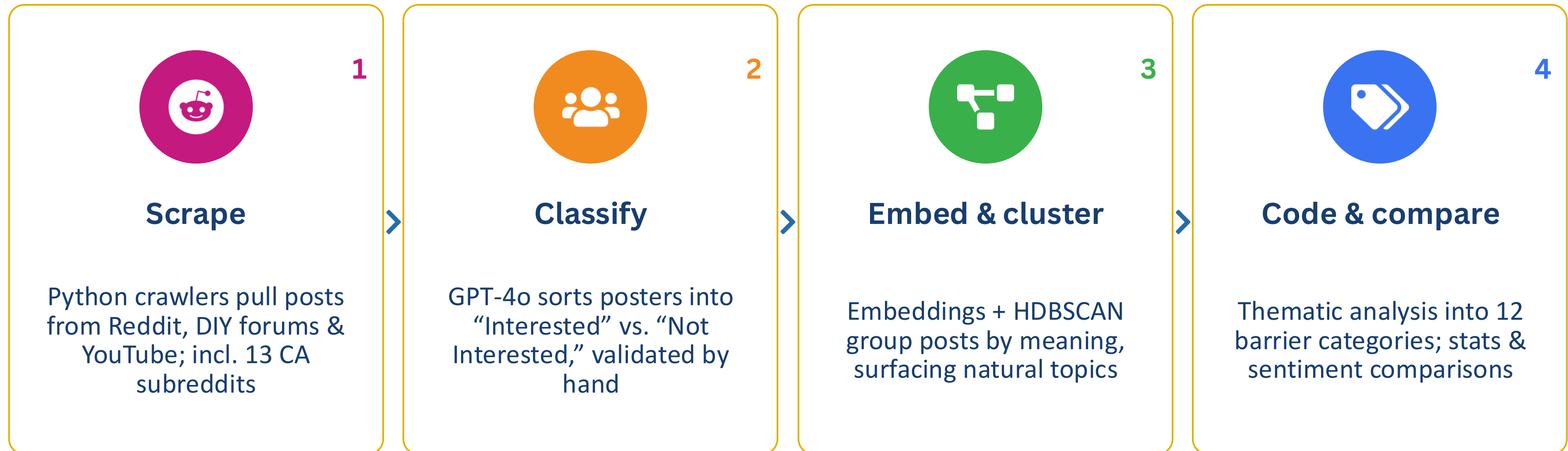
- Surveys filtered through contractors and program administrators
- Data drawn mostly from early adopters — motivated, informed, atypical
- Most direct-from-customer studies were done outside California



## This study

- Goes straight to the next wave of buyers, unprompted and unfiltered
- Captures real questions in real online conversations
- California-specific — climate, rates, and policy all shape the worries

# From messy forum threads to a clean map of concerns



*Manual review of 1-in-4 posts confirmed the AI labels, and found no signs of fake or marketing content.*

# Real people, real conversations.

**8,414**

total posts analyzed

**1,966**

from Californians

**95%**

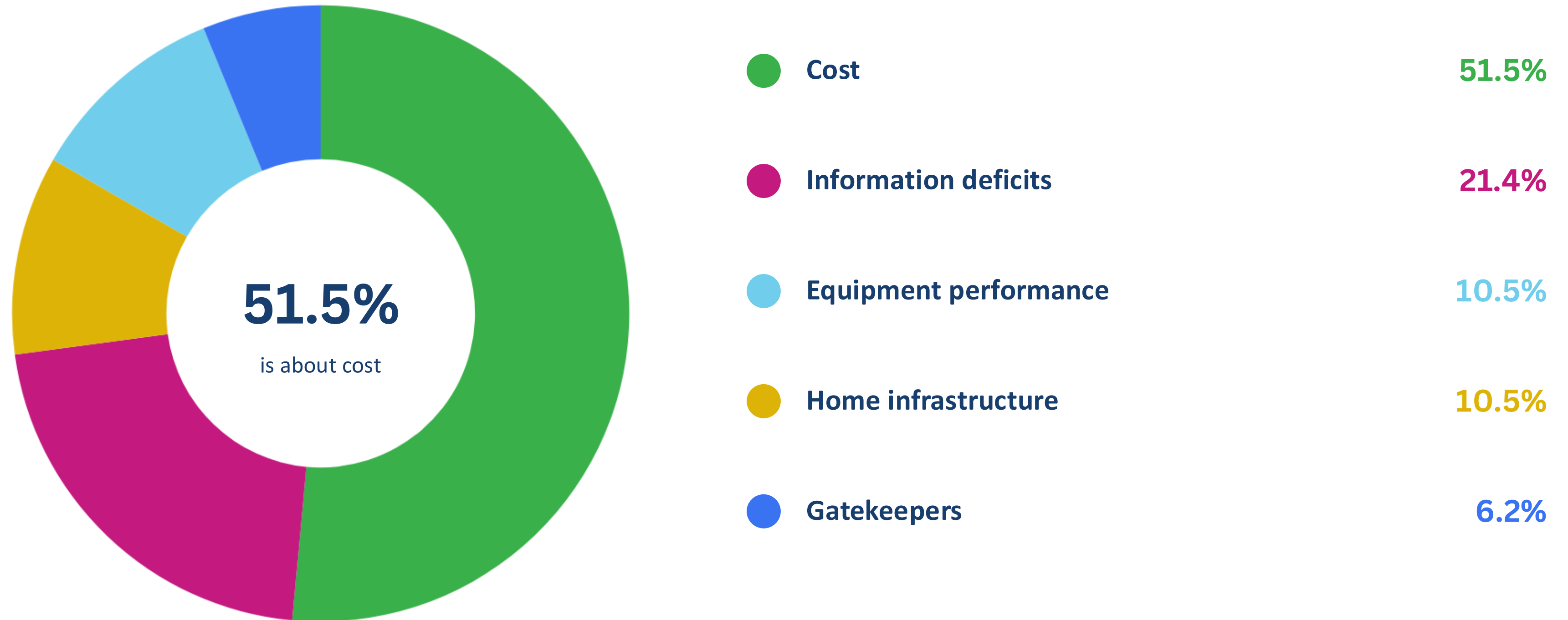
of CA data came from  
Reddit

**12**

barrier categories coded

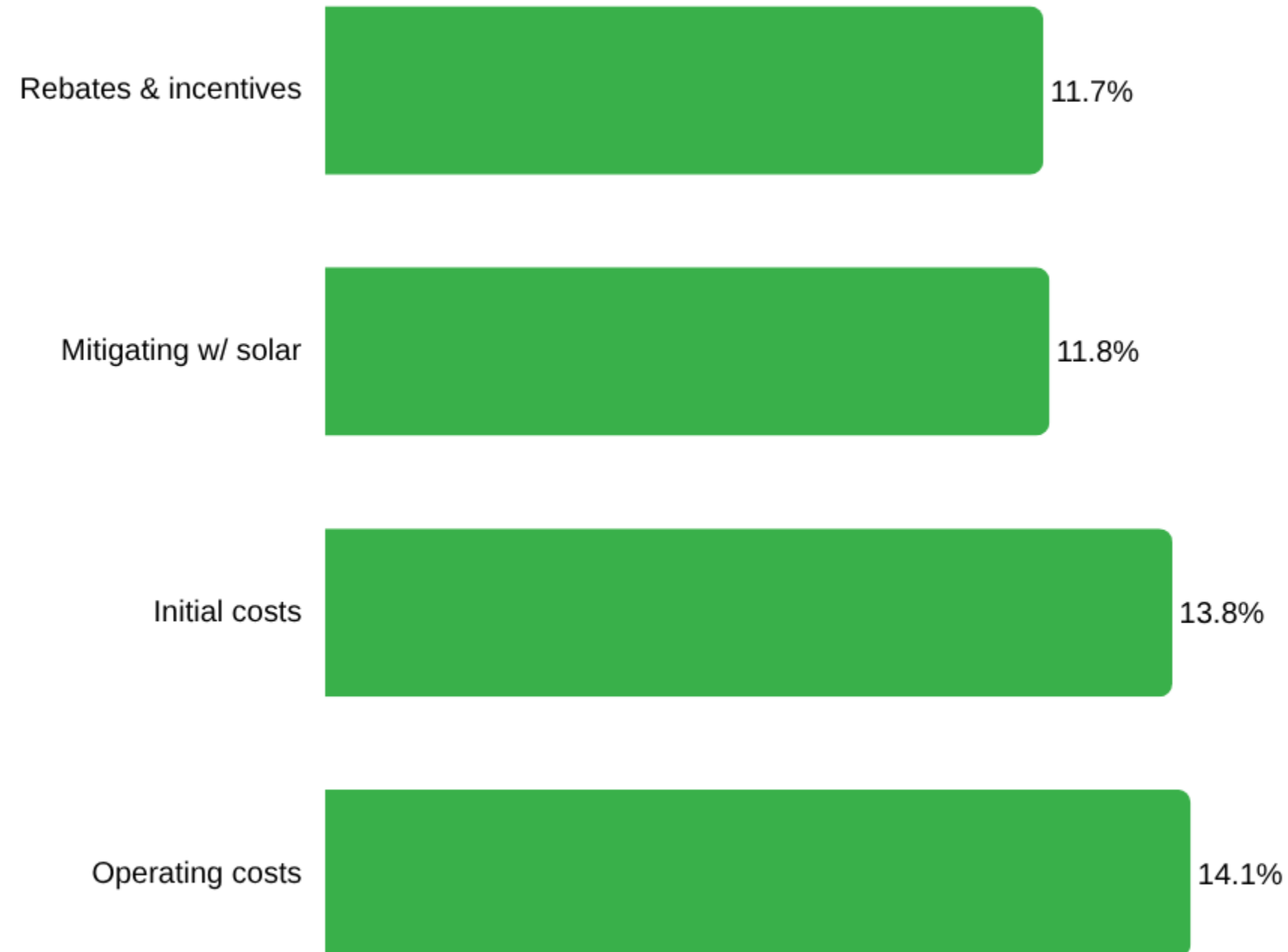
**Why Reddit?** It ranks at the top of search results for heat-pump questions and runs on geographic, unmoderated communities, making it the natural place prospective buyers go to research, and a rich, authentic source for us.

# Five key barriers



# **Cost Barriers**

Cost shows up four different ways, and they're tightly linked



## **“Is this quote fair?”**

Sticker shock plus deep distrust of contractor markups; quotes from \$16K to \$25K+.



## **The electricity-bill fear**

High CA rates, especially PG&E, make buyers fear operating costs even at higher efficiency.



## **Solar as the rescue**

Operating-cost worry pairs with solar more than any other topic (co-occurrence 97).

# “It's not the technology. It's the bill.”



*With my old home our heater was a heat pump... I'd keep the house at 72 and my bill was nothing. Now I keep it at 67, we all need layers, and my bill is projected to be \$200. The price for kWh is literally 3× what SMUD is.*

— Sacramento-area Reddit user, after moving from SMUD to PG&E territory

## WHAT IT TELLS US

- Operating-cost anxiety is territory-specific; especially acute under PG&E
- Efficiency gains can be erased by the electricity-to-gas price gap
- Buyers do their own kWh-vs-therm math and often talk themselves out of it

# Information deficits

Buyers can't get clear, trustworthy answers — so they stall

## Lack of knowledge (19.4%)

- Confusion over basic types; mini-split vs. ducted vs. hybrid
- Unsure what fits their home, ratings, or savings
- No “Consumer Reports” to compare products against

## Conflicting information (2.0%)

Small in volume, large in impact. Buyers get opposite answers from different contractors and forums:

*“One guy said heat pumps are louder, the others the opposite.”*

Contradiction breeds paralysis and a retreat to the familiar gas furnace.

# It has to work in *MY* house

Concerns about the home itself — and whether the system will deliver comfort



## Home infrastructure (10.5%)

- Ductwork & insulation (6.9%); “Will old ducts even work?”
- Electrical panel (3.6%); Costly upgrades; one quote hit ~\$30K
- Older homes feel “disqualified” before they start



## Equipment performance (10.5%)

- Temperature regulation (9.4%); “Will it cool in a 110°F heat wave?”
- A CA twist: the worry is extreme HEAT, not extreme cold
- Air filtration (1.1%); wildfire-smoke ventilation questions



# Gatekeepers

The people who should open the door sometimes close it



## Contractors (5.2%)

- A shortage of installers trained on heat pumps
- Hard to find someone buyers trust — “lots of shady companies”
- Active reluctance — pushed toward familiar gas, even with rebates on the table

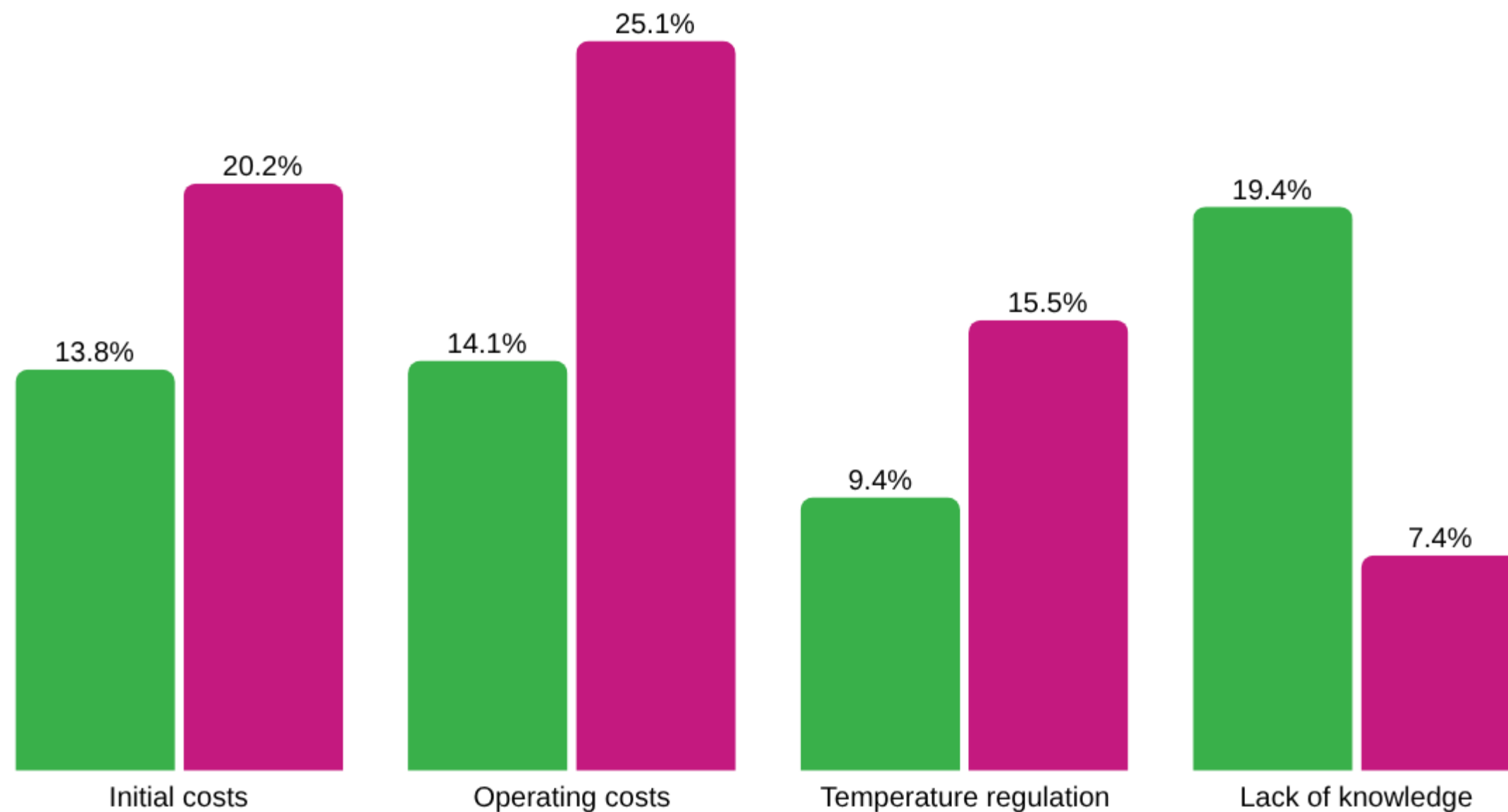


## Landlords (1.0%)

- Renters can't modify the property; no exterior mounting, line-set penetrations, or other permanent changes to walls, roofs, or facades
- Landlords reluctant to invest, even in low-cost retrofits
- Tiny share, but outsized in CA; the most renters in the U.S.

# The skeptics aren't uninformed — they're unconvinced

● Interested ● Not interested



## WHAT FLIPS BETWEEN THE GROUPS

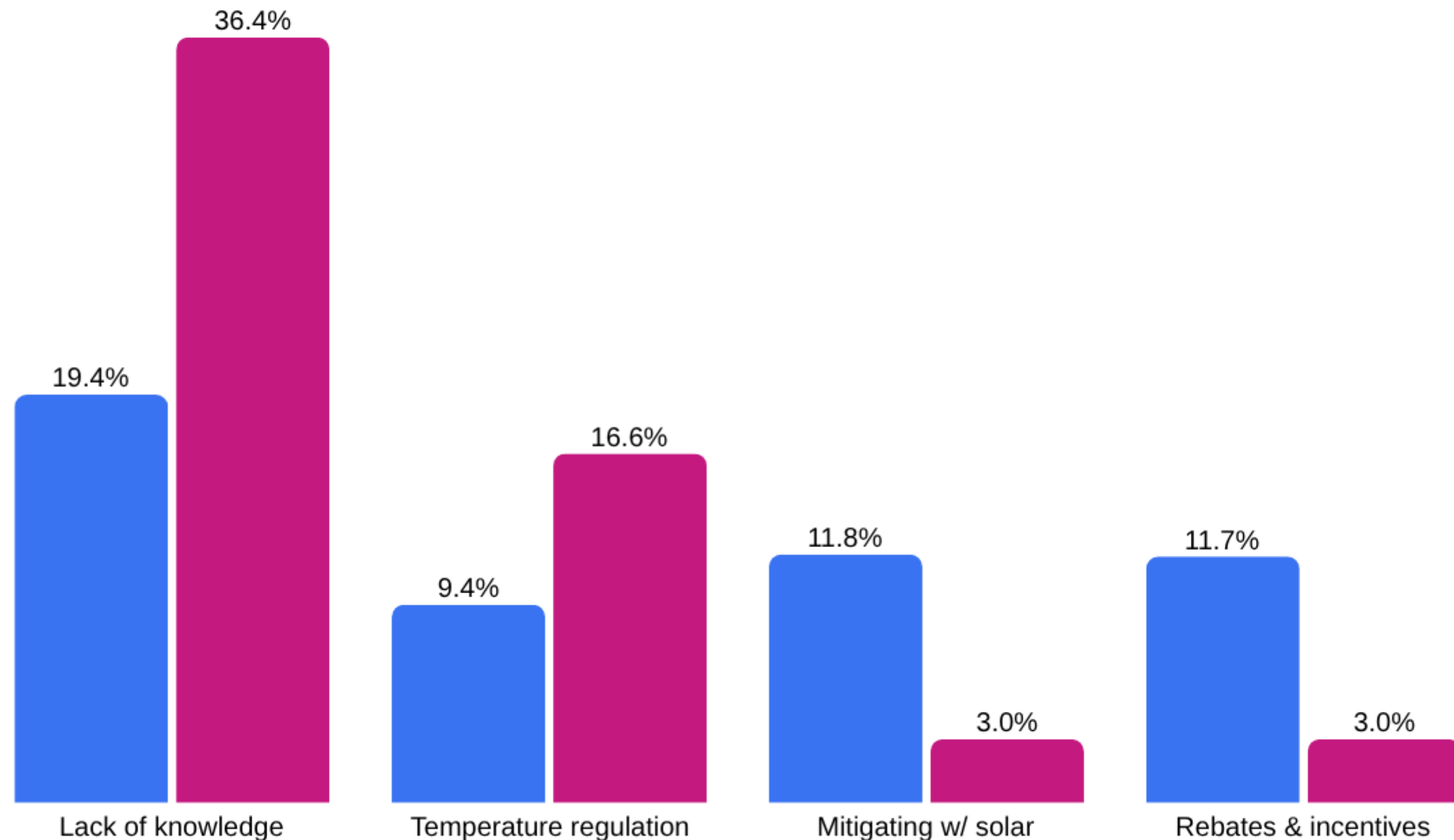
Skeptics cite cost & comfort far more — and frame them as **dealbreakers, not hurdles**.

They report *less* concern about lack of knowledge (7.4% vs 19.4%); confident, not curious.

*Sentiment analysis confirms it: the “Not Interested” group is overwhelmingly negative across every category.*

# Californians have unique concerns

● California ● National



## Solar is a CA fixation

11.8% vs 3.0% nationally; the bill makes solar feel essential.



## Rebate overload

11.7% vs 3.0% ; too many overlapping federal/state/local programs.



## Heat, not cold

Nation fears cold-climate gaps; CA fears heat-wave cooling.

## THE GAP ANALYSIS

# The problem isn't missing information. It's scattered information.

We checked CA utility & program websites against the five barriers. What we found:



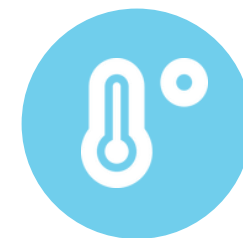
### Costs

Lots on rebates; almost nothing on real install or operating costs (SMUD is a rare exception).



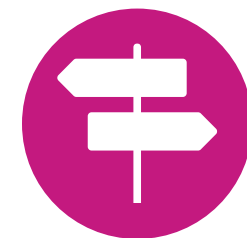
### Basics & home fit

Few explain how heat pumps work or which type suits a given home, panel, or ducts.



### Performance

Vague nods to “efficiency” and “comfort” — rarely any SEER/HSPF specifics.



### One clear source

Answers are spread across many pages & PDFs — a heavy cognitive burden.

## RECOMMENDATIONS

# Four proven formats to meet buyers where they are



### Explainer videos

Short clips that demystify how heat pumps work and perform — exactly where confusion is highest.



### Smart FAQs

Organized, linked Q&A as an “external memory” — easy to find, easy to return to.



### Testimonials

Real owners & contractors as social proof — stories make benefits stick and build trust.



### Cost calculators

Personalized bill & savings estimates that answer the #1 worry with real numbers.

**Best practice:** keep it simple — a Minnesota study found that just explaining what a heat pump is worked as well as complex messaging. Aim for a 6th-grade reading level, skip the jargon, and segment by audience.



## THE BOTTOM LINE

# Answer the questions customers are *really* asking



### Lead with cost — honestly

Half of all worry is cost. Address bills and solar head-on, by utility territory.



### Build one trusted source

Consolidate scattered answers into a single, clear, easy-to-find hub.



### Localize to California

Heat-wave cooling, rebate tangles, renters — national messaging won't fit.



**UC DAVIS**  
Market Transformation  
Research Program

# THANK YOU!

Feel free to reach out!

Eli Alston-Stepnitz, Ph.D.  
[ecalstonstepnitz@ucdavis.edu](mailto:ecalstonstepnitz@ucdavis.edu)

Visit our website:  
<https://energy.ucdavis.edu/research/centers/market-transformation-research-program>



## Heat Pump Customer Questions Study

### Final Report

ET24SWE0022



Prepared by:

**Sarah Outcault** University of California, Davis  
**Shahar Zach** University of California, Davis  
**Ellian Eorwyn** University of California, Davis  
**Eli Alston-Stepnitz** University of California, Davis  
**Emily Searl** University of California, Davis  
**Cinthia Magaña** University of California, Davis

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Review of innovative heat pump promotion efforts in the U.S., Canada, the UK, and Europe, with the goal of helping California accelerate residential heat pump adoption by learning from programs elsewhere.

### Key findings:

- Programs that work best make heat pumps visible through testimonials, home tours, demo houses, neighborhood campaigns, and public examples.
- They reduce uncertainty with FAQs, explainer videos, comparison tools, contractor guidance, and personalized support.
- They improve trialability and ease of adoption through rentals, show homes, one-stop-shop services, and case management.

### Core contribution:

- Searchable database of 39 innovative programs



## Innovative Approaches to Residential Heat Pump Promotion **Final Report**

ET23SWE0053



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**Eli Alston-Stepnitz** University of California, Davis  
**Ellian Eorwyn** University of California, Davis  
**Cinthia Magaña** University of California, Davis  
**Emily Searl** University of California, Davis

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