



*Better Buildings Residential Network
Peer Exchange Call Series*

*The Latest in Educating Homeowners on the Benefits of
Energy Efficiency*

September 26, 2024

Agenda and Ground Rules

- Moderator
 - **Jonathan Cohen**, Better Buildings Residential Network
- Agenda Review and Ground Rules
- Residential Network Overview and Upcoming Call Schedule
- Opening Poll
- Featured Speakers
 - **Chrissi Antonopoulos**, Pacific Northwest National Laboratory (PNNL)
 - **Beth Karlin**, See Change Institute
 - **Grace Lewallen**, ACEEE
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.

Better Buildings Residential Network

Join the Network

Member Benefits:

- Recognition in media, social media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- *10/10: Successful Strategies for Better Insulating*
- *10/24: TBA*

Peer Exchange Call summaries are posted on the Better Buildings [website](#) a few weeks after the call



Chrissi Antonopoulos
PNNL

The Latest in Educating Home Occupants on the Benefits of Energy Efficiency

Chrissi Antonopoulos

Pacific Northwest National Laboratory

DOE Peer Exchange Call, September 26, 2024



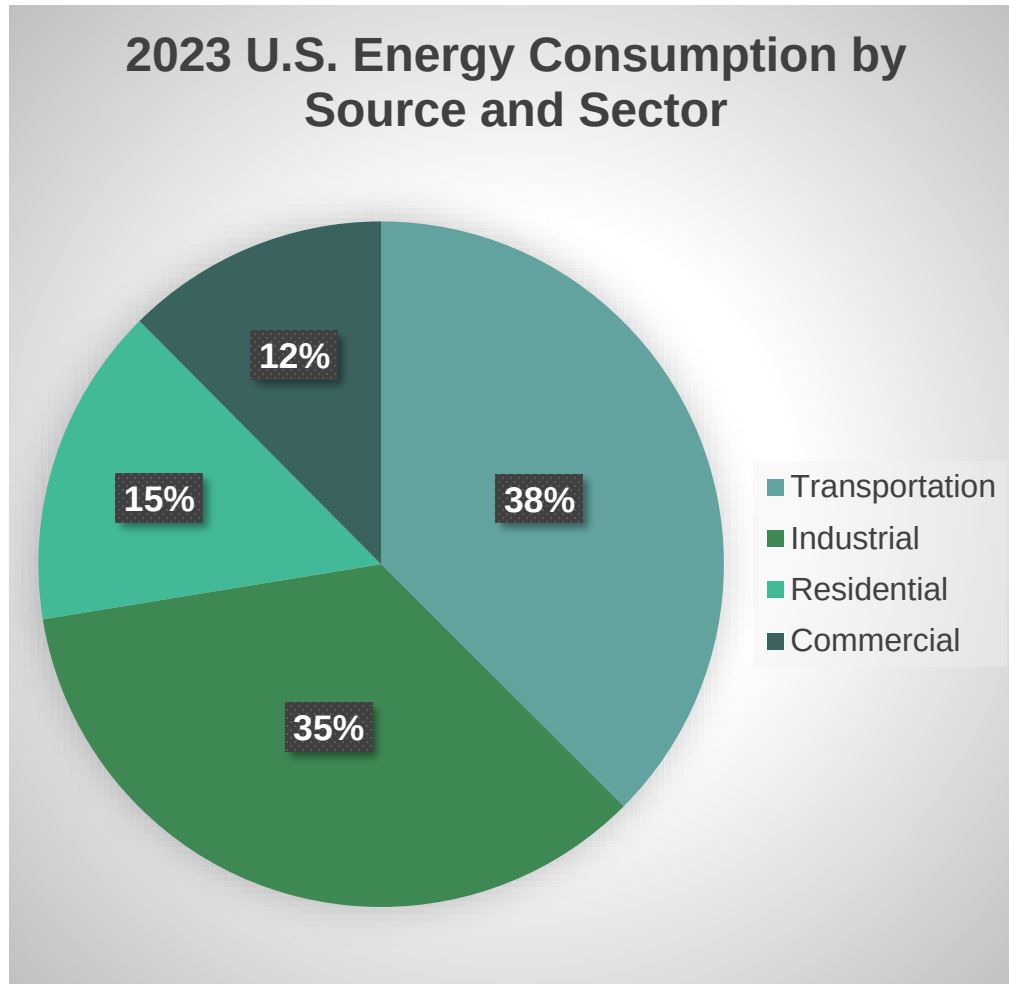
Project Overview

The U.S. Department of Energy (DOE) Building Technology Office (BTO) is funding research to investigate how residents make home energy decisions and to explore whether those decisions help meet decarbonization goals.

Research Questions:

1. What are the **motivations** and **key decision points** for energy-related home retrofits and upgrades?
2. How do different residential stakeholders **decide to buy and use** key technologies relevant for residential electrification?
3. How can these patterns be leveraged to **increase technology uptake** and **meet decarbonization goals**?

Why is Decarbonization Important?



Data Source: EIA
https://www.eia.gov/totalenergy/data/monthly/pdf/flow/total_energy_2023.pdf

The Stats:

- Residential buildings account for **15% of primary energy consumption** in the United States.
- Fossil-fuel combustion in buildings leads to roughly **30% of total greenhouse gas emissions**.
- **Roughly 100 million homes** in the United States was **built before energy codes** were enacted, resulting in underperforming (by current standards), energy intense buildings.

Decarbonizing our Homes

Objectives:

- Building **energy efficiency**
- **Electrification** of end use appliances/equipment
- Integration of renewables, energy storage and “smart” energy technologies for **demand control**
- **Low-carbon** material selection

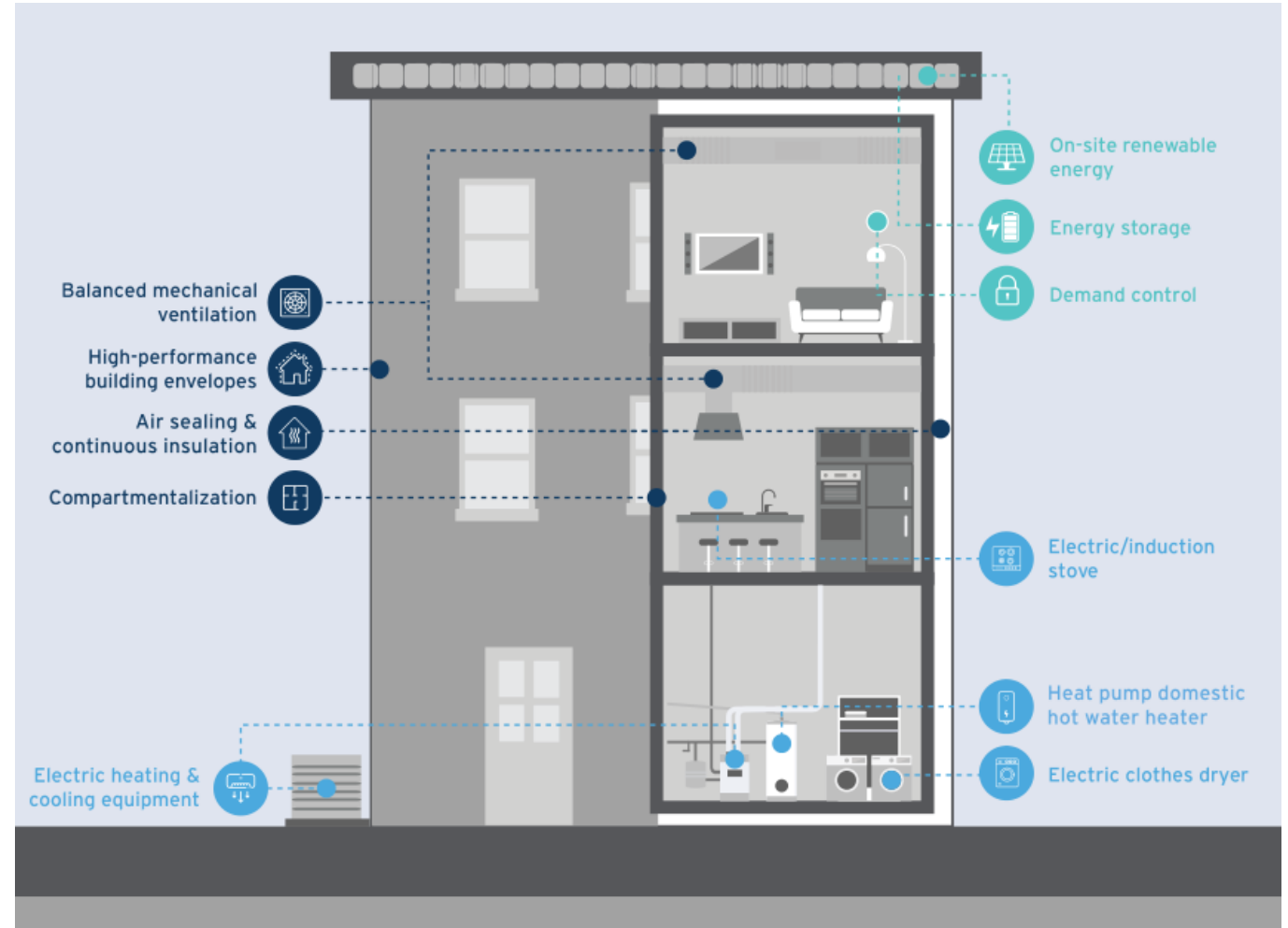


Figure Source: Rocky Mountain Institute <https://rmi.org/insight/decarbonizing-homes/>

Values, Perceptions, and Decision Making

The Challenge:

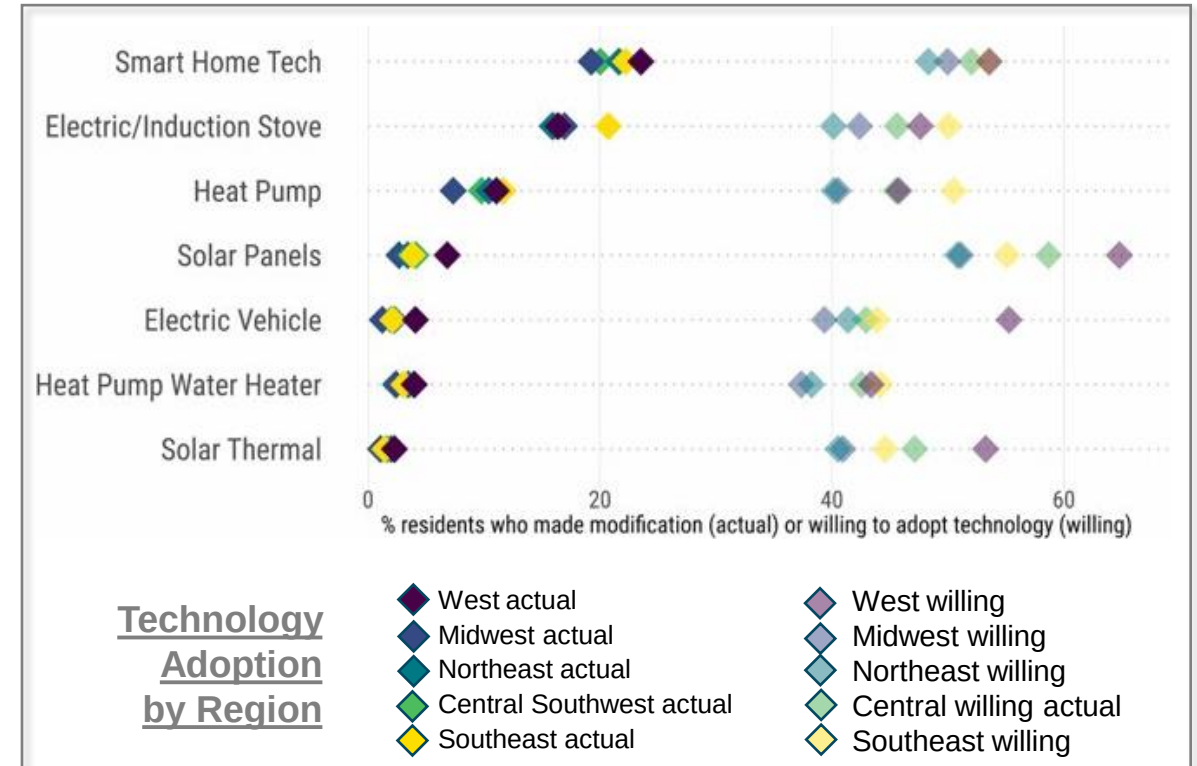
- Household behavior and technology adoption **patterns are difficult to predict.**
- Even with incentives**, many energy-efficient technologies and home upgrades have had **slow uptake.**

Typology	Intervention	Examples
Stick	Regulation Prohibiting Behavior	Ban on natural gas installations in new home construction
	Regulation Requiring Behavior	Building codes requiring high levels of energy efficiency
Carrot	Reward for Discouraging Behavior	Utility rate system tiered to actual energy use
	Reward for Engaging in Behavior	Subsidy for installing energy efficient appliances
Sermon	Provide Information About Energy Conservation	Utility information campaigns
	Provide Feedback About Household Energy Use	Utility inserts, smart meters

Project Activities

Primary Research Activities:

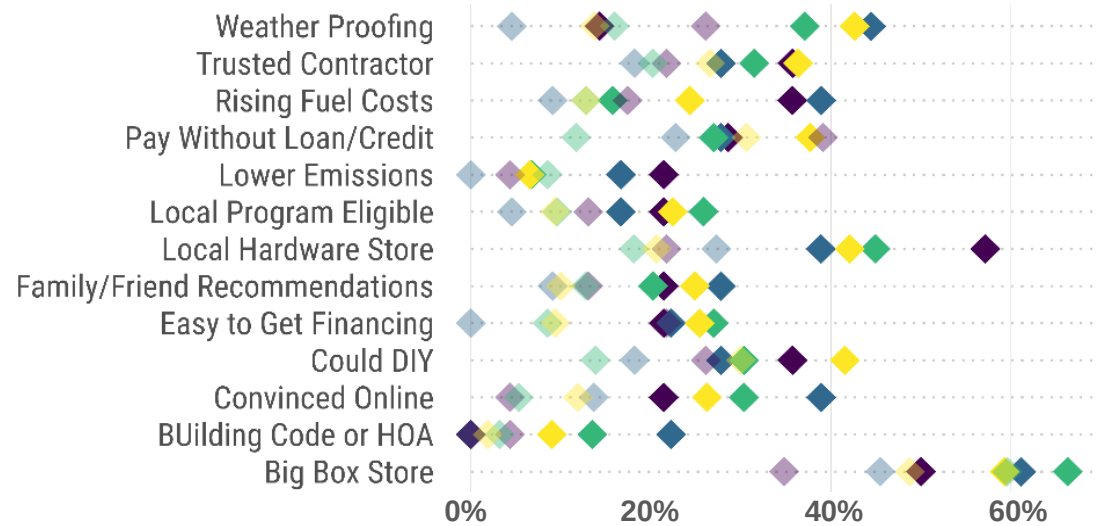
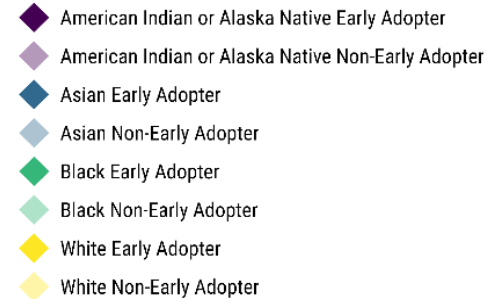
- **HVAC manufacturer outreach** to learn about customer discovery and marketing.
- **Review literature** to identify previous study findings.
- Develop research protocols, sampling strategy, participant criteria, analytical methods and gain **Institutional Review Board (IRB)** approval.
- Conduct in-depth, semi-structured **interviews** with 150 households to better understand purchasing decisions, use patterns and energy efficiency perceptions and behavior.
- Execute national-scale **survey** of 10,000 homeowners and renters, using questions developed from interview outcomes.



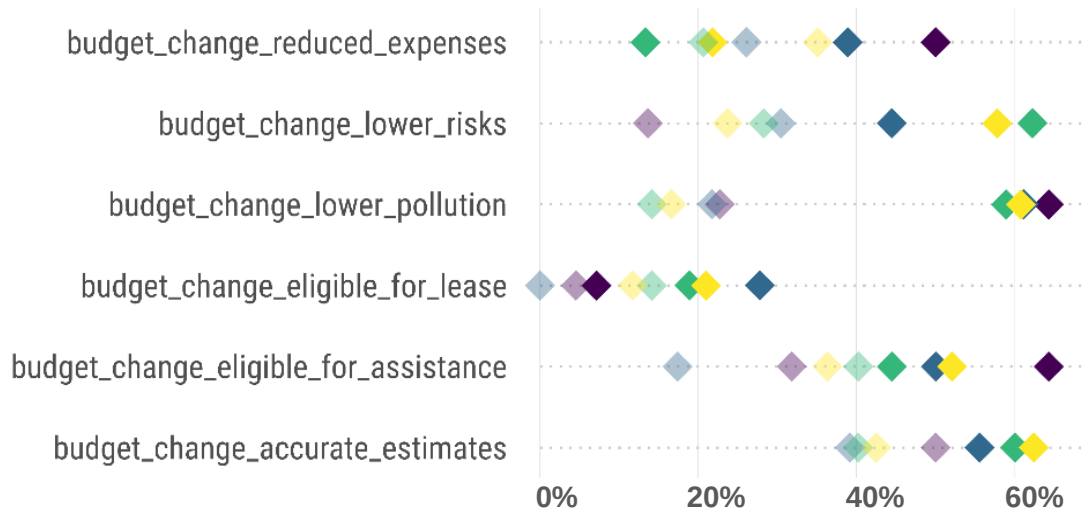
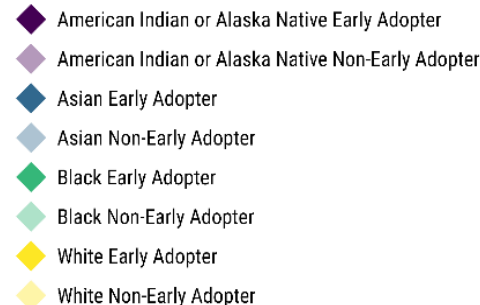
- Work with an international **external advisory board**, comprised of experts in the field to inform methods and research protocol.
- **Synthesize results** from interviews and survey to inform decarbonization strategies.
- **Collaborate** with relevant stakeholders to enhance findings and expand decarbonization efforts.

Approach

DECISION CONSIDERATIONS by Race and Technology Adoption status (percent)



BUDGET CONSIDERATIONS by Race and Technology Adoption Status (percent)



Interviews:

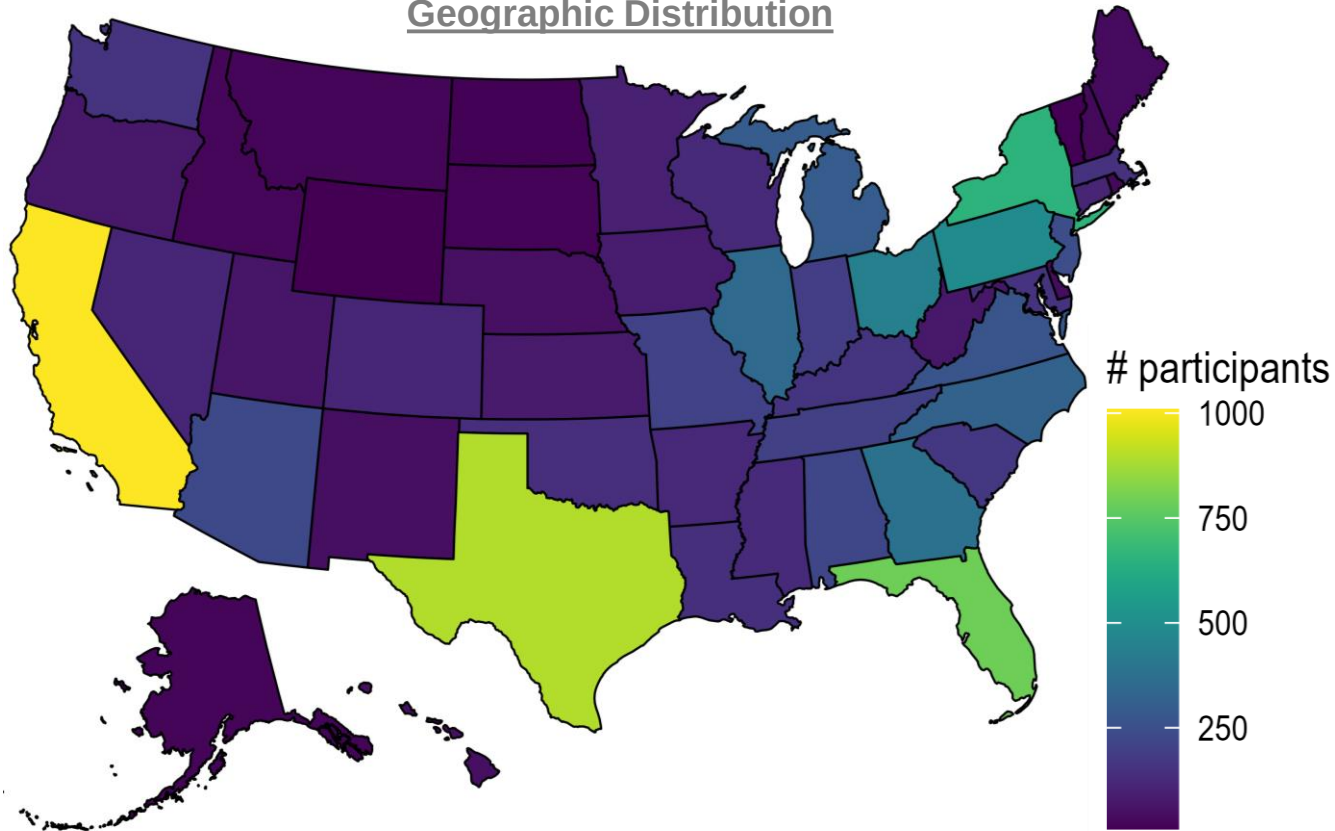
- Conduct **semi-structured interviews** with residents in
 - warm** weather states (30 AZ, 31 GA)
 - cold** weather states (30 IL, 30 MA).
- Learn how **circumstances** (life stage, finances, relationships, preferences) interact with building characteristics, info availability, and market to **influence decisions**.

Survey:

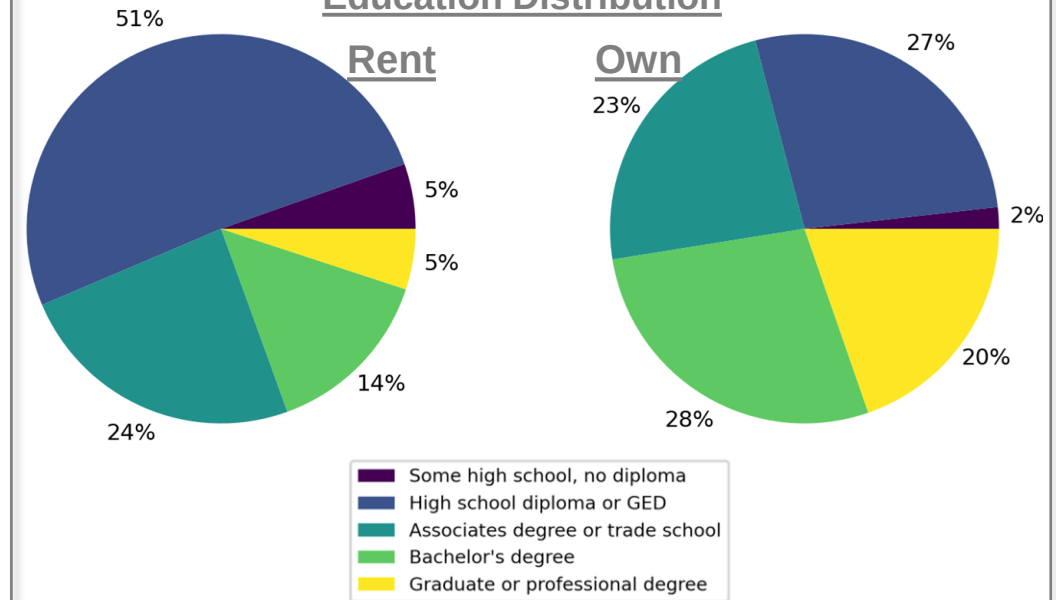
- National-scale survey to **10,000 households** with even regional distribution.
- 70% homeowner, 30% renter**
- Focus on higher response rates from **low-income, non-white** populations.

Emphasis on matching
census distributions
with intentional oversampling of
marginalized populations

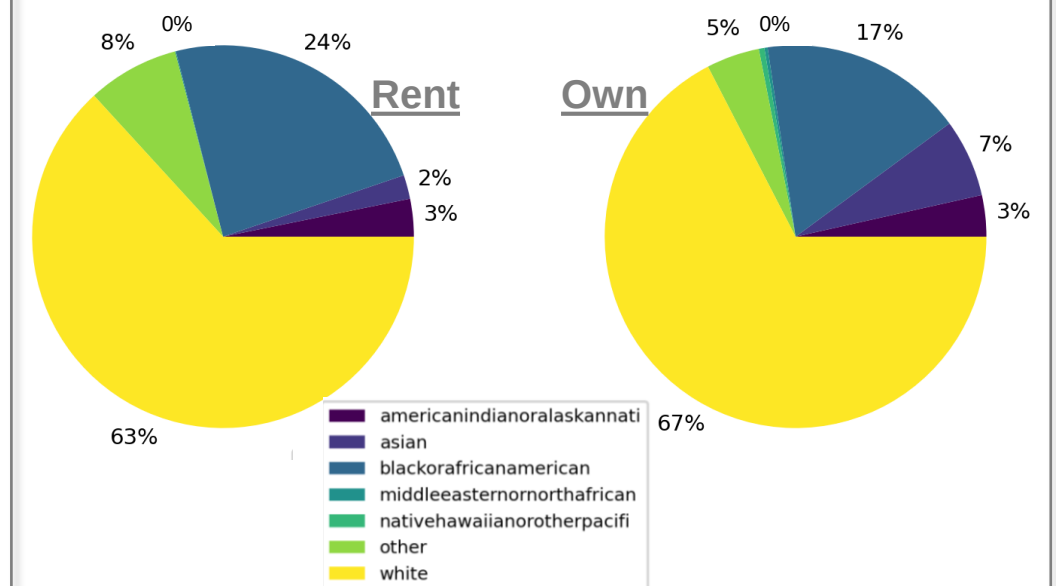
Geographic Distribution



Education Distribution



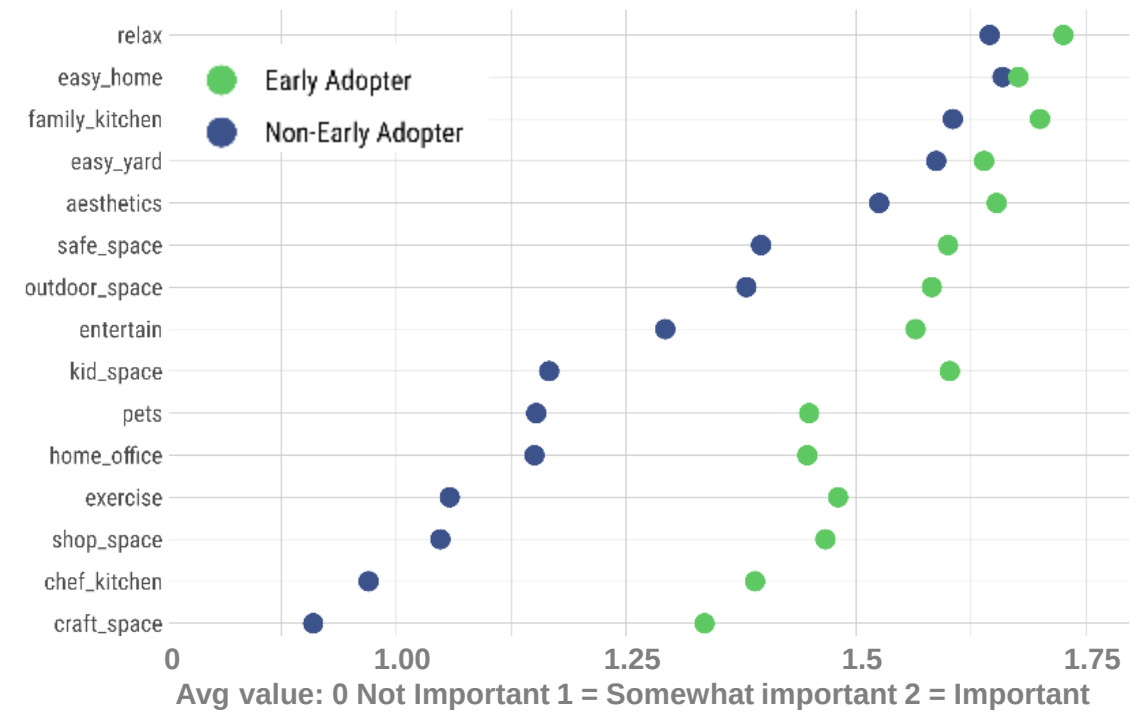
Race/Ethnicity Distribution



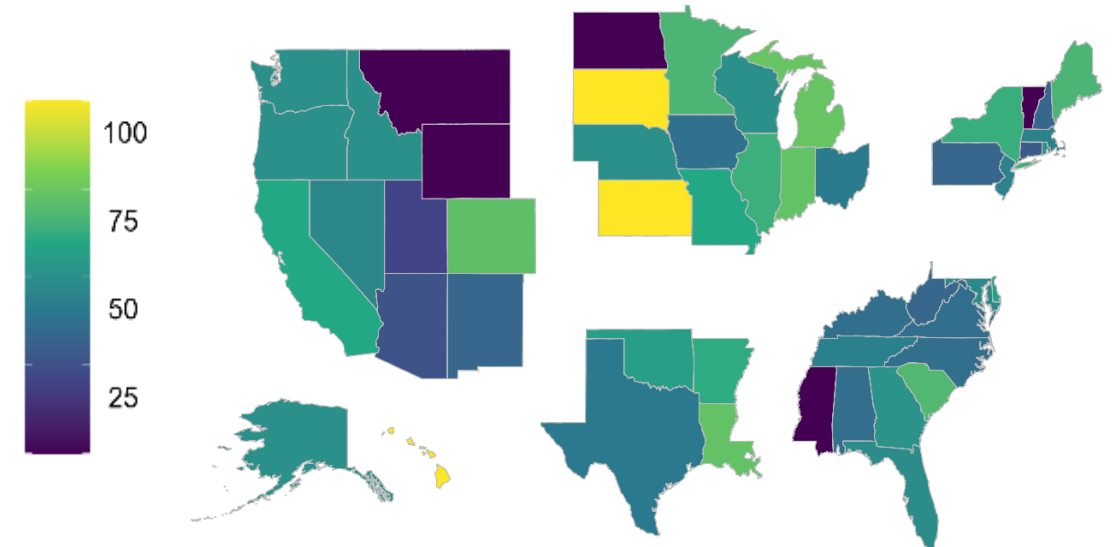
Heat Pump Adoption

- **Hypothesis:**
 - Heat pump adoption is currently driven by “early adopters”
 - Advancing to “late majority” will require better understanding of occupant decision-making.
- The **analysis framework** isolates early adopters of heat pumps, who....
 - Have different household preferences;
 - Are motivated by different factors;
 - Find information in different ways;
 - Interact with contractors and programs more.
- **Outcomes** can help find touch points for mass market uptake for heat pumps.

Rated Importance of Household goals by Early Adopters vs Non-Early Adopters of Heat Pumps



Percentage of Residents in each State who are Early Adopters of Heat Pumps



Programs

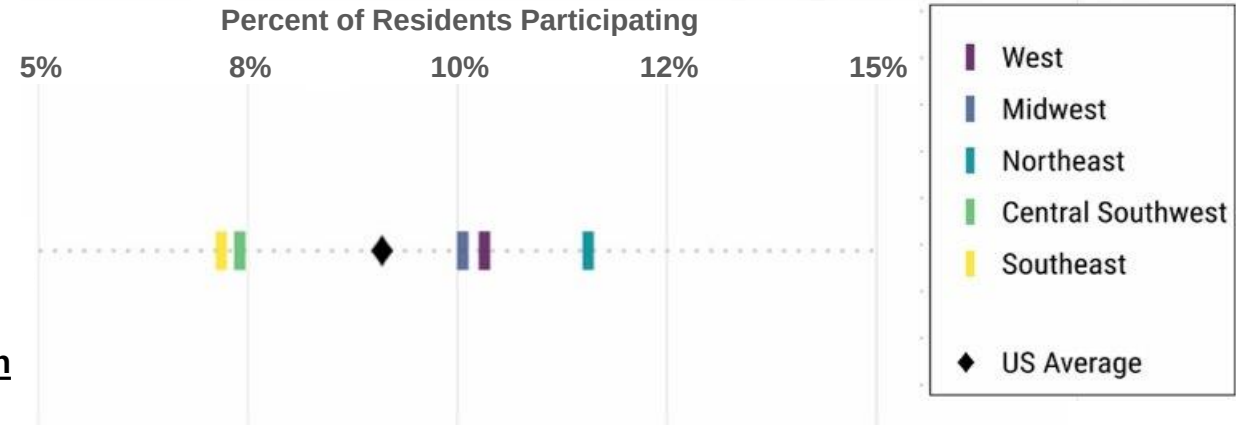
The good news:

- Programs work! More people make modifications when they participate in energy efficiency programs compared to those that don't.

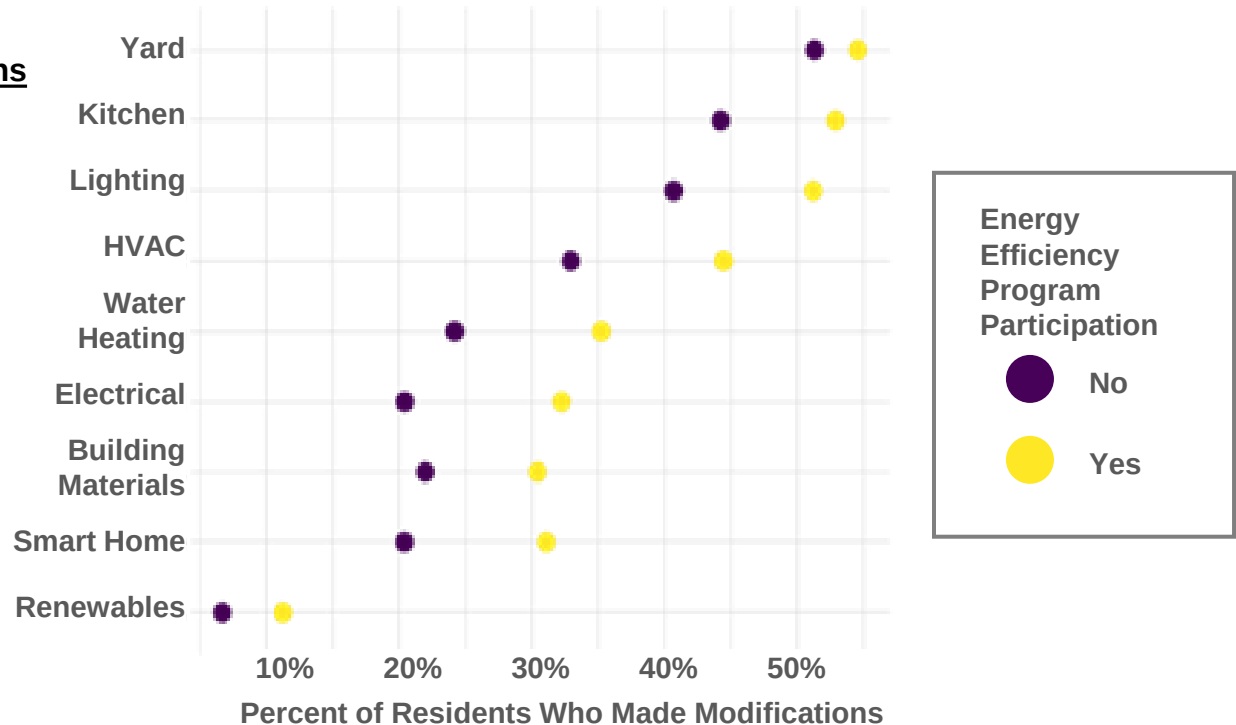
The bad news:

- Only 9% of occupants participate in programs nationally. Some regional variation is observed.

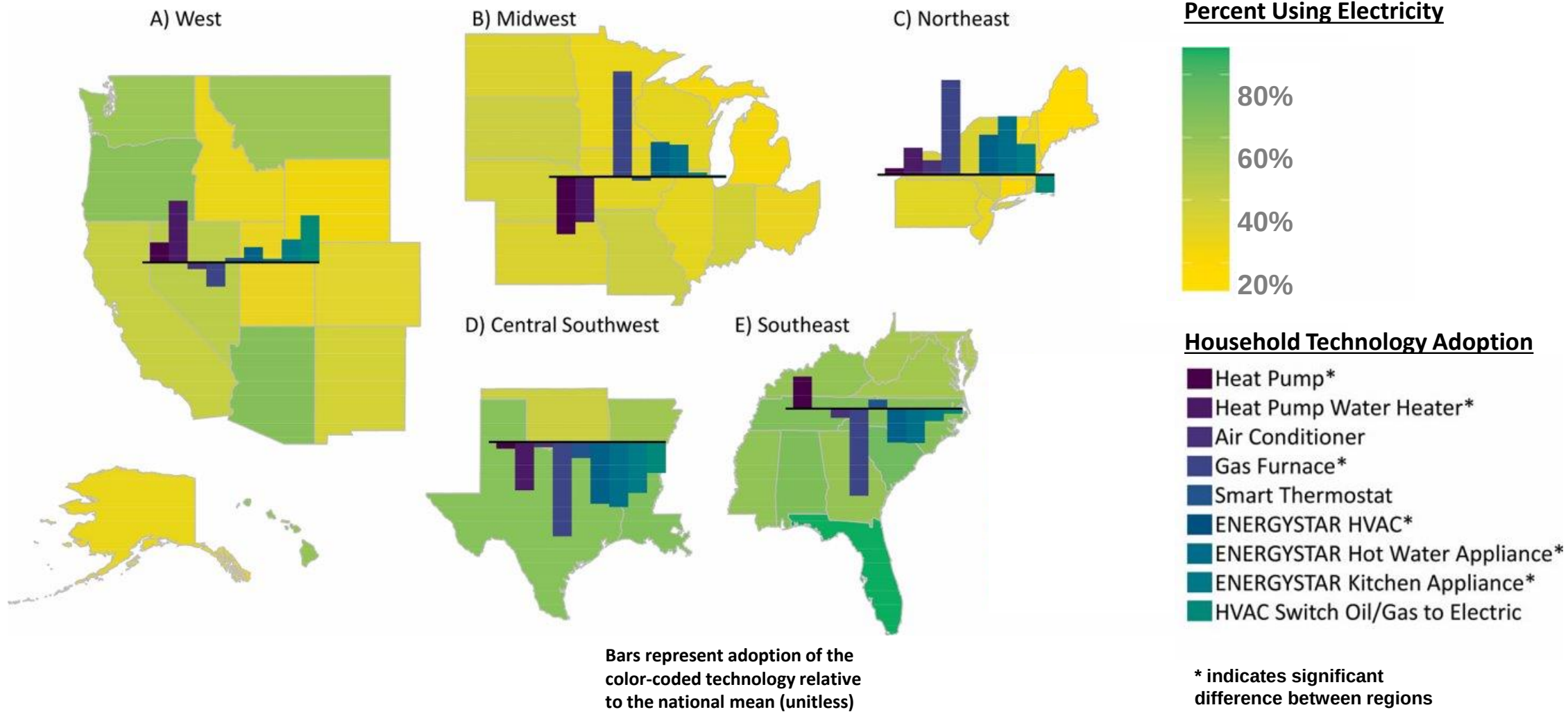
Energy Efficiency Program Participation
by Region



Purchased Modifications
by Program Participation



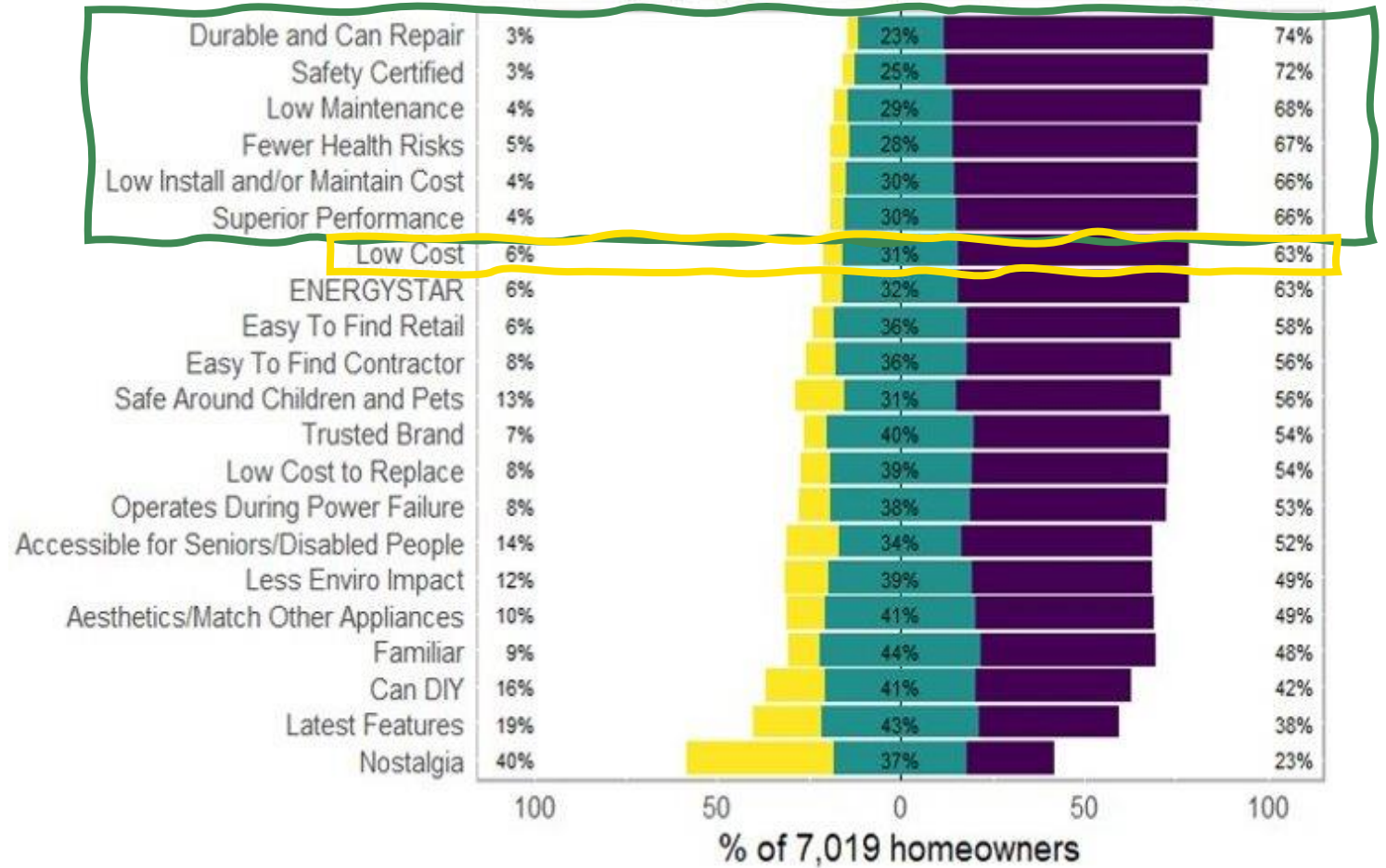
Technology Adoption by Region



Not All Decisions are Based on Cost

- Six decision making factors are more important to homeowners than **low first-cost**
- All are non-energy benefits (NEBs)

How important are the following factors when buying appliances or home technology?

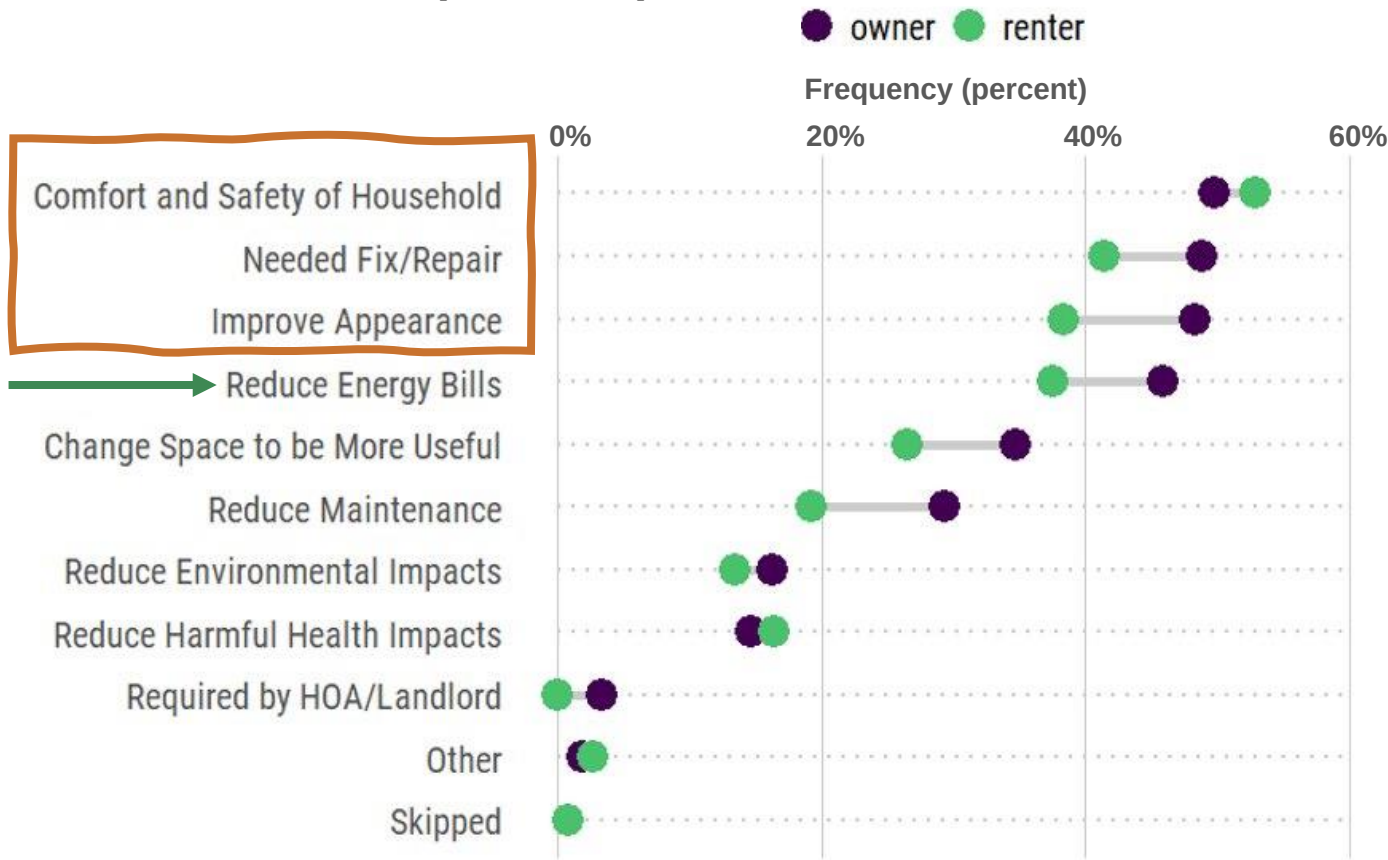


Response ■ Not Important ■ Somewhat Important ■ Important

Households prioritize many non-energy factors

Factors Influencing Home Modifications by:

- Homeowners (n = 7019)
- Renters (n = 2900)



What influences home energy modifications?

- **Comfort / safety for pets / children** is the most important decision-making factor for home modifications.
- **Repairing / replacing something broken** is second in importance for both homeowners and renters.
- **Improving appearance** and **reducing energy bills** are also important.

Big Take-Aways

- Homeowners and renters are **willing to adopt** decarbonization technology, but very **few have done so** to-date.
- **Decision-making varies significantly** based on demographics:
 - Race
 - Income
 - Early vs late adopters
- Focusing on specific **goals of diverse populations** can increase decarbonization.
- Improving **comfort and safety** for children/pets >> environmental benefits.
- Renters and homeowners **value their kitchens** highly and are likely to make different decisions specific to **how they value a particular room/space**.
- Program **participation is LOW**, but the outcomes show that **THEY WORK!**
- **Cost is not the #1 driver** for most decisions, but it's more of a consideration for renters than homeowners.



Team



Pacific Northwest
NATIONAL LABORATORY



Chrissi Antonopoulos
Senior Building Scientist



Tracy Fuentes
Terrestrial Ecologist



Kieren McCord
Building Scientist



Ebony Mayhorn
Electrical Engineer



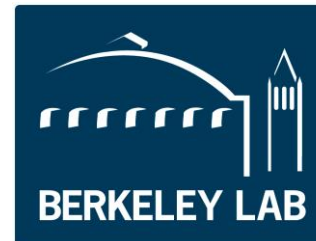
Charlotte Roiger
Data Scientist



Developed, conducted
household interviews
in 4 states



Analysis of heat
pump adoption



Combined household
and contractor surveys
to look at synergies



Combined data with
ResStock to investigate
user-centric trends

Thank You!

Chrissi.Antonopoulos@pnnl.gov





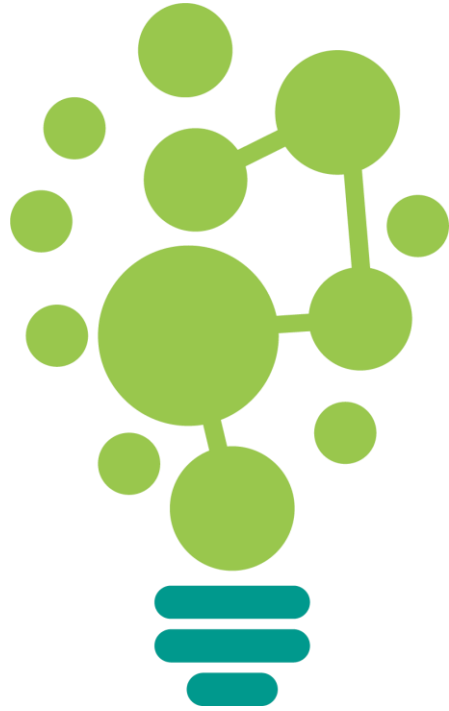
Beth Karlin
See Change Institute

The Latest in Educating Homeowners on the Benefits of Energy Efficiency



Dr. Beth Karlin

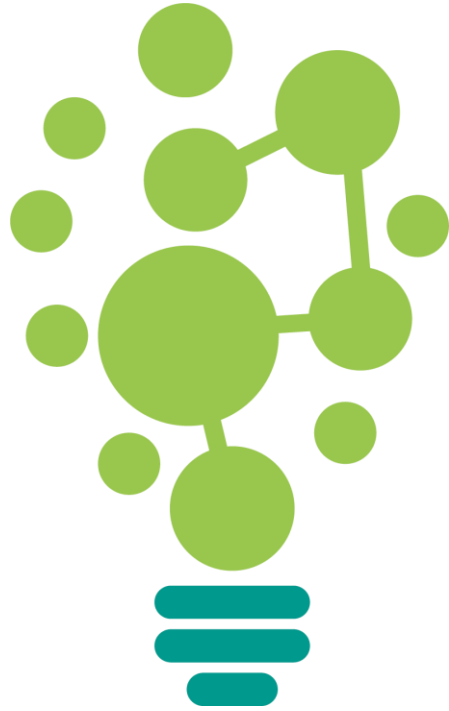
bkarlin@seechangeinstitute.com



We help good people
do good *better*.

See Change Institute is an
applied behavioral science firm.

We specialize in **Research,**
Strategy, Design, and
Evaluation of environmental and
health behavior change.



We help good people
do good *better*.



uplight™ Customer Research

Through science-based research, we uncover customer attitudes, motivations and thought processes around energy usage



Voice of the Customer

Annual survey with 1,000 utility customers to examine trends



Qualitative Research

Deep dives on topics inc. EVs, rates, and DER owners.



Special Topics

2023 “gap analysis” on customer perception and performance.

Select research available at: <https://uplight.com/energy-customer-research/>

Sources of Literature

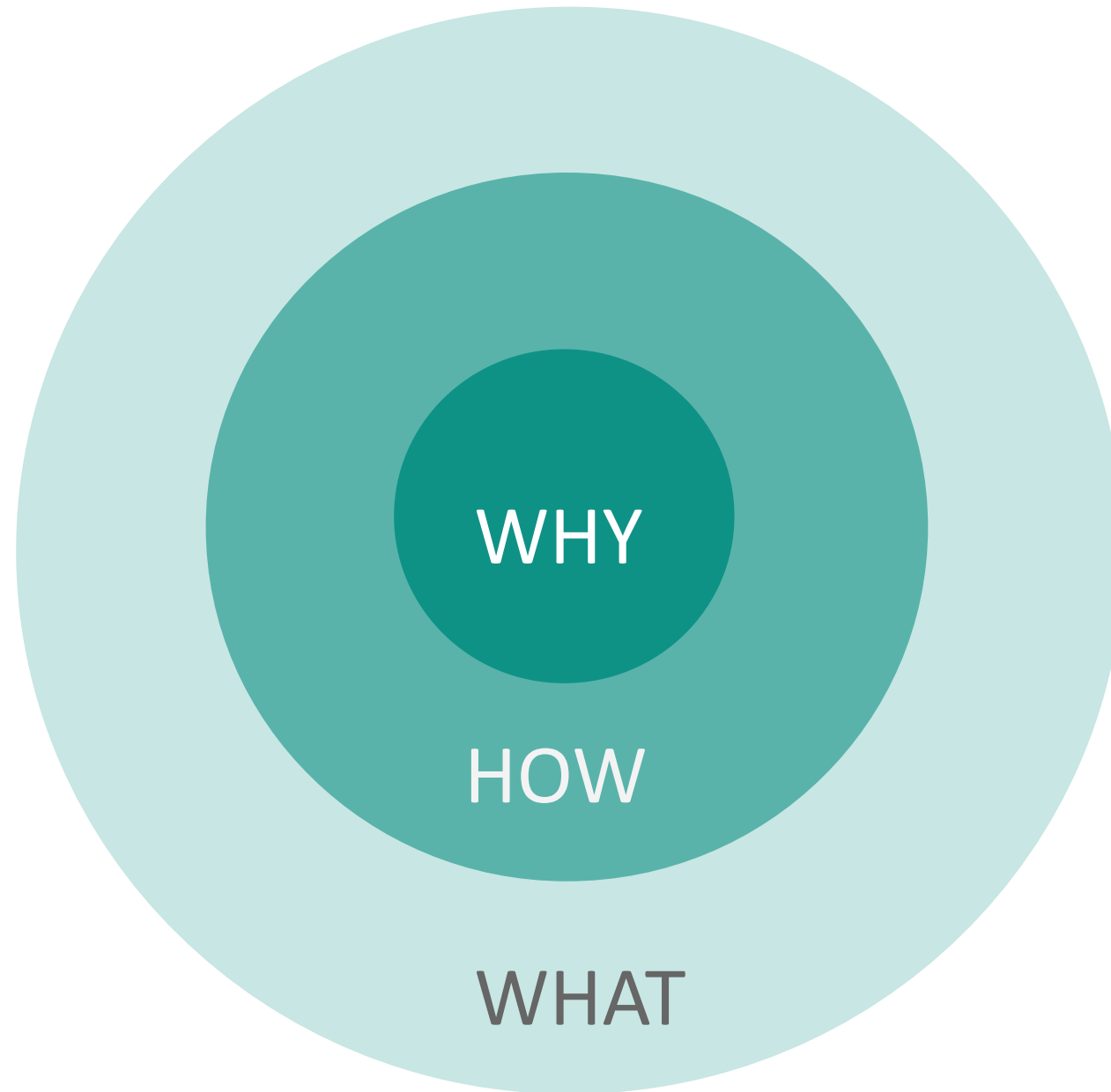
We searched **academic databases**, **industry sites**, and **policy documents**, using search terms including:

- Electrification
- HVAC systems
- Heat pumps
- Water heating
- Induction cookers
- Community engagement
- Motivations / Barriers
- Installers/Contractors
- Equity / Low-Income
- Social Norms / Diffusion

Analysis

1. **208 sources** identified
2. Reviewed / coded each one
3. Developed key themes
4. Identified **critical gaps**, and **intervention opportunities**

But First...



Why Behavioral Science?

Programs designed for:

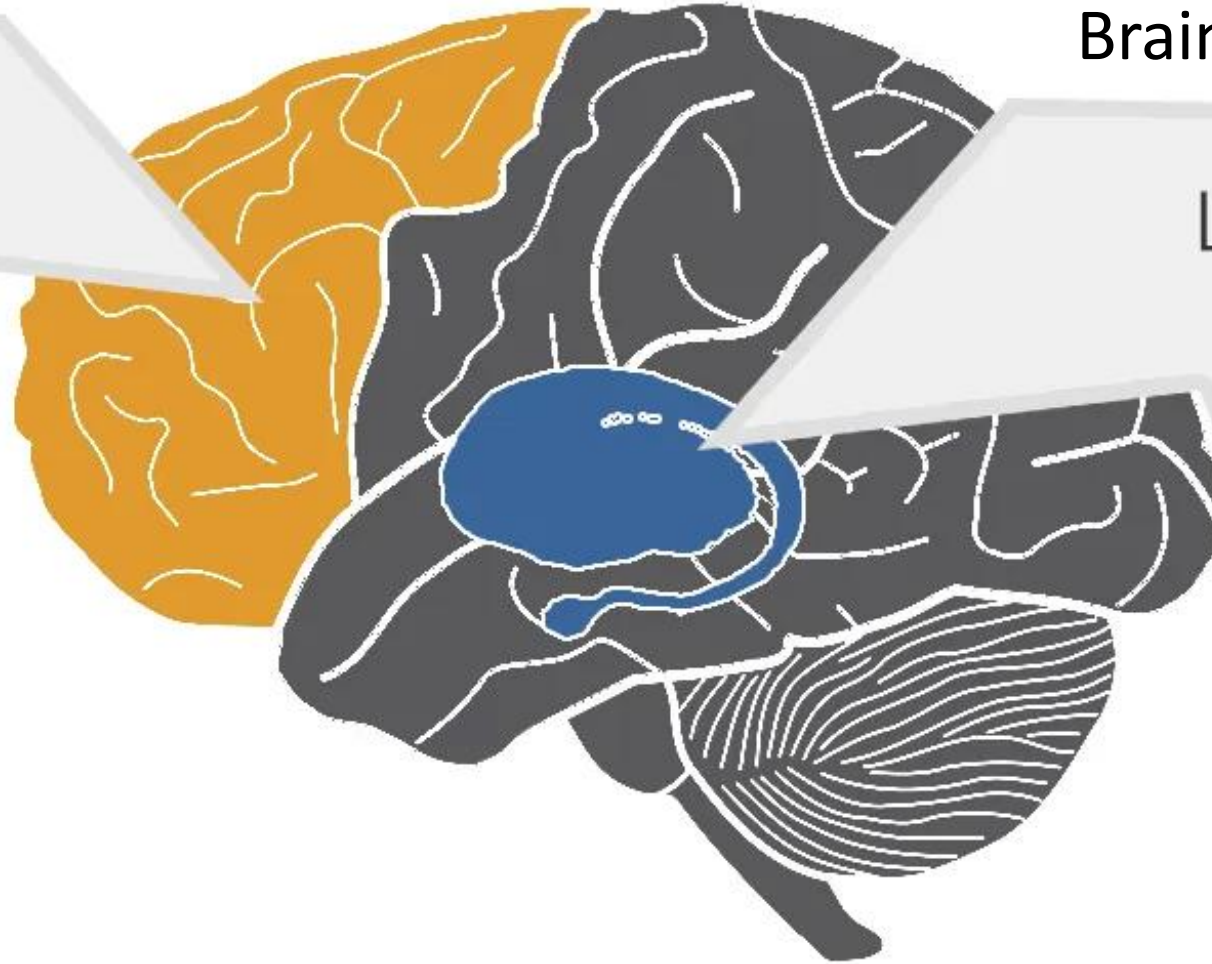
Frontal Lobe

slow
effortful
infrequent
logical
calculating
conscious

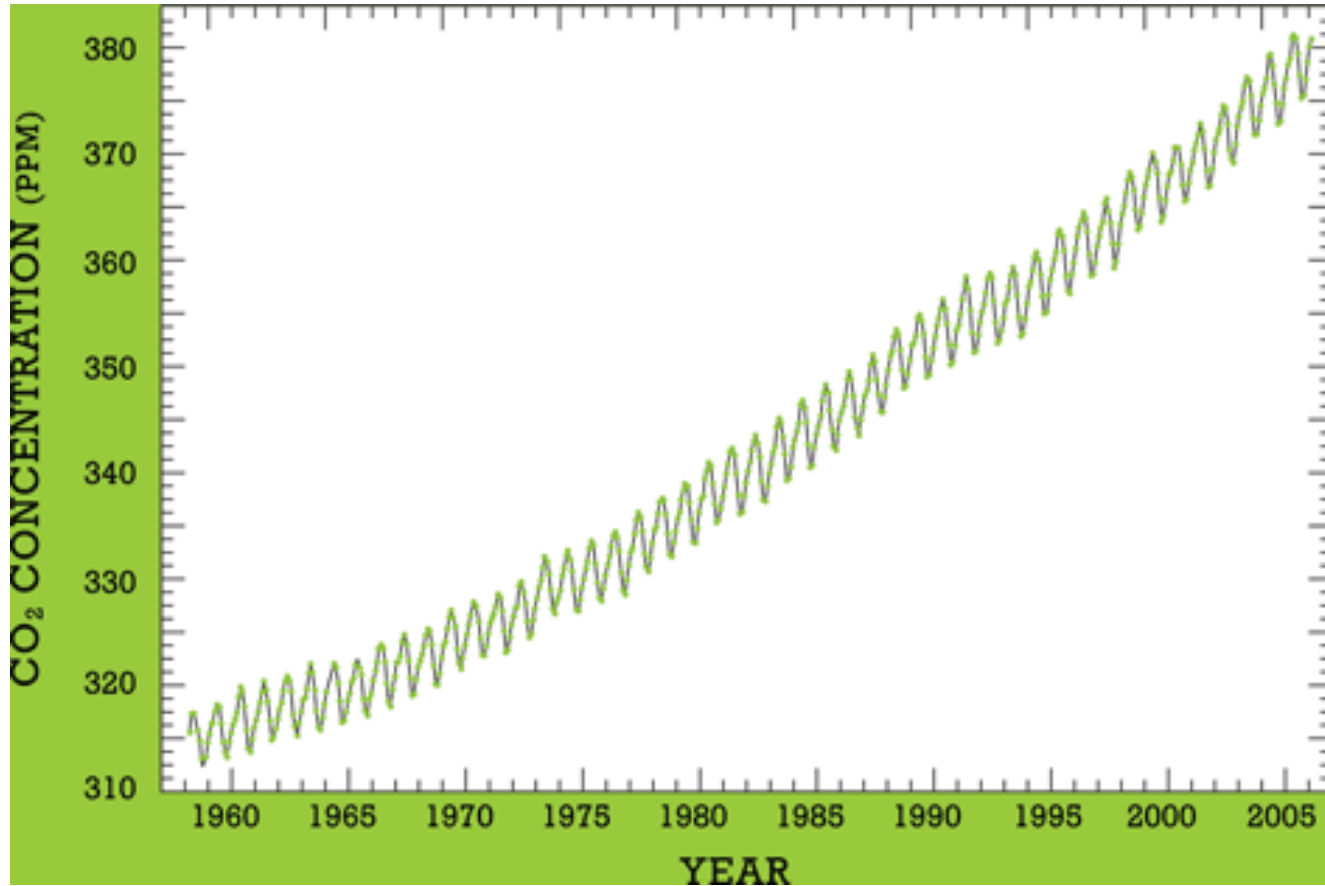
Brain defaults to:

Limbic System

fast
automatic
frequent
emotional
stereotypic
subconscious



Planned Electrification



Emergency Replacement

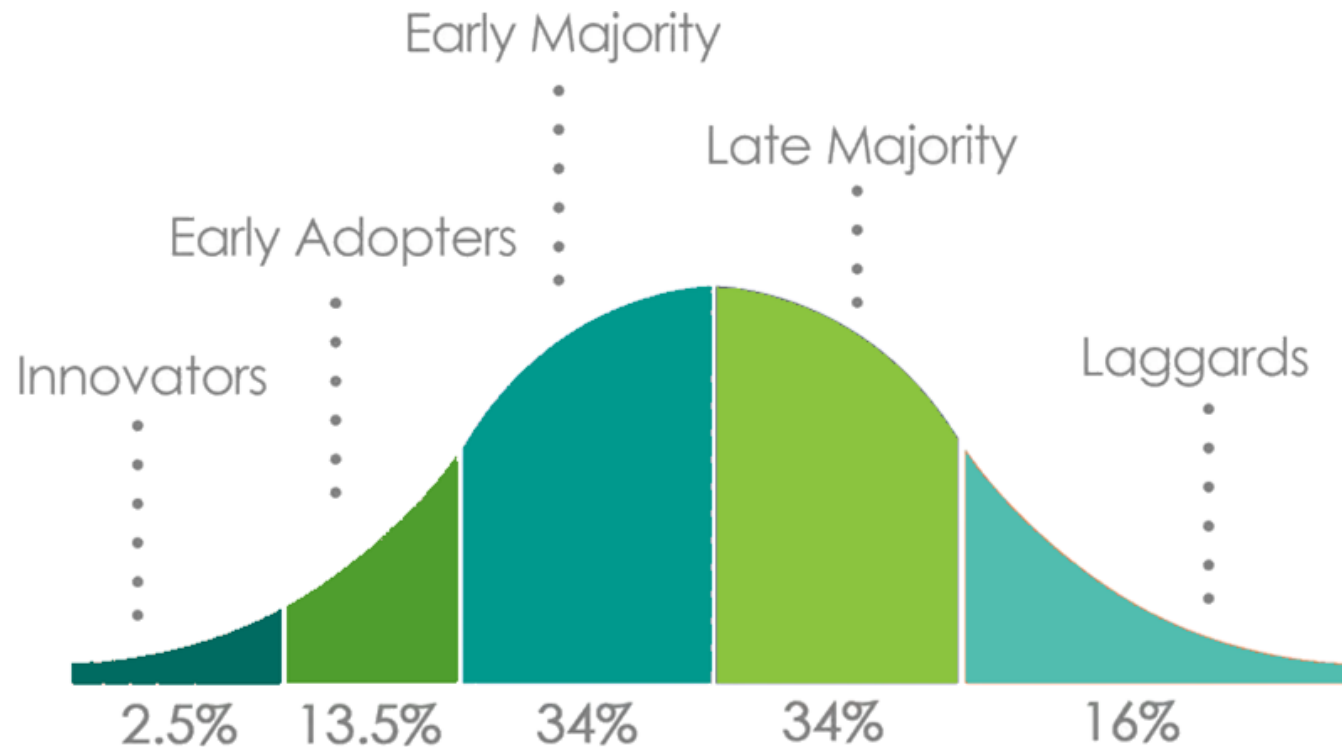


Common Strategies



Diffusion of Innovation Theory

Interpersonal process by which an **innovation spreads** throughout a population



Diffusion of Innovation Theory

Intrapersonal process by which individuals **decide to adopt** an innovation

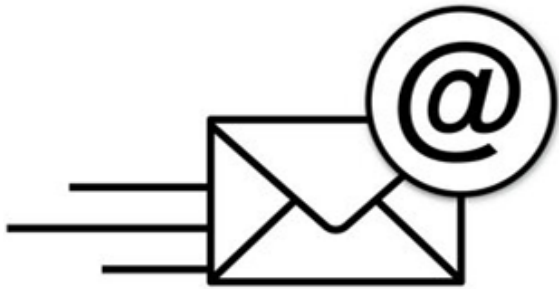


**This is called the innovation-decision process...
and I'm going to use it to guide our discussion today!**



Lack of knowledge is a barrier for many, **ranging from 20% to 80%** for various electrification technologies. It can be addressed via:

Message Campaigns



Email, bills, home energy reports

Trusted Messengers



Peer ambassadors, contractors, etc.

Community Events



Workshops and town hall meetings

Knowledge

Persuasion

Decision

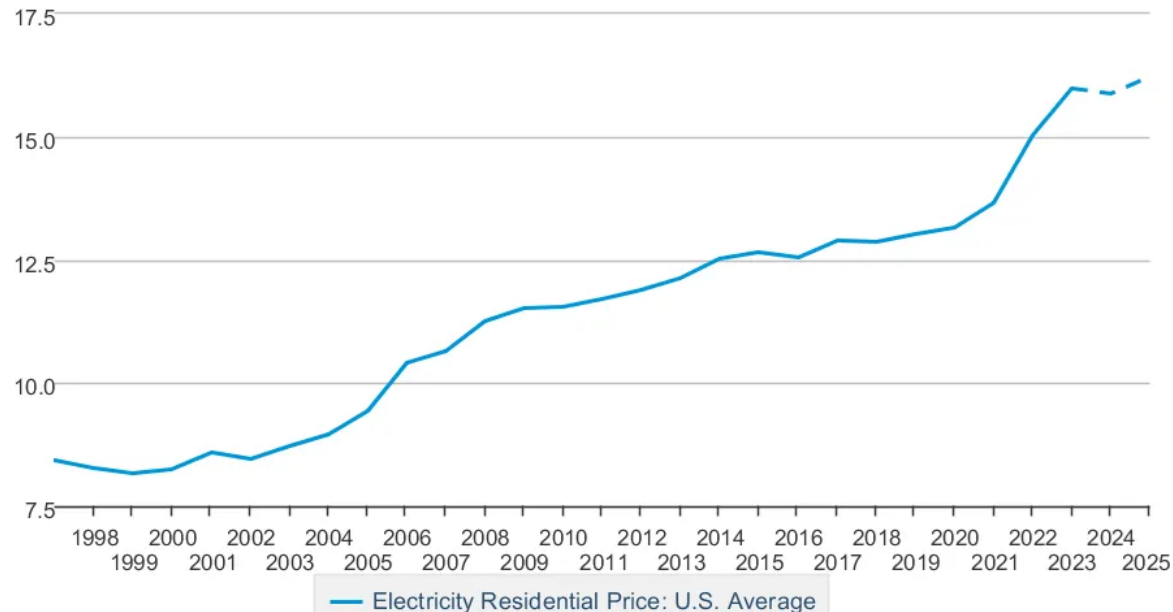
Implementation

Confirmation

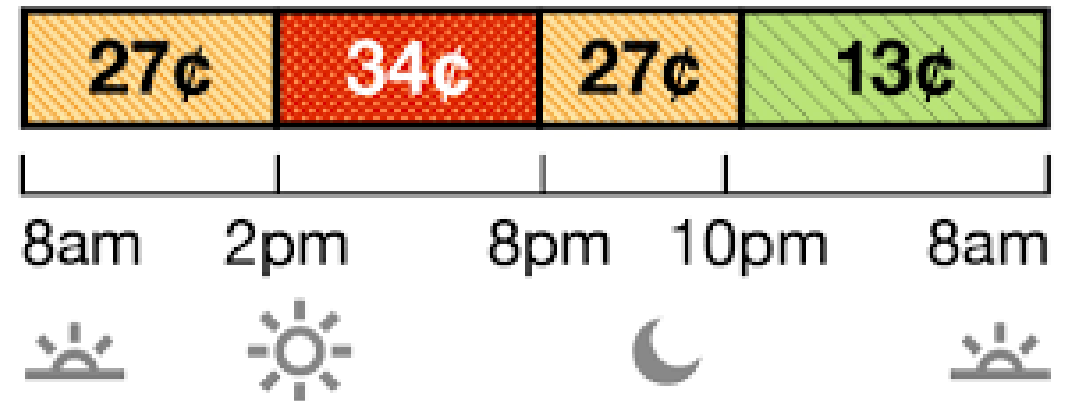
Integrate **information on new and changing rates** into messaging.

Electricity Residential Price: U.S. Average

cents per kilowatthour



Weekdays



Knowledge

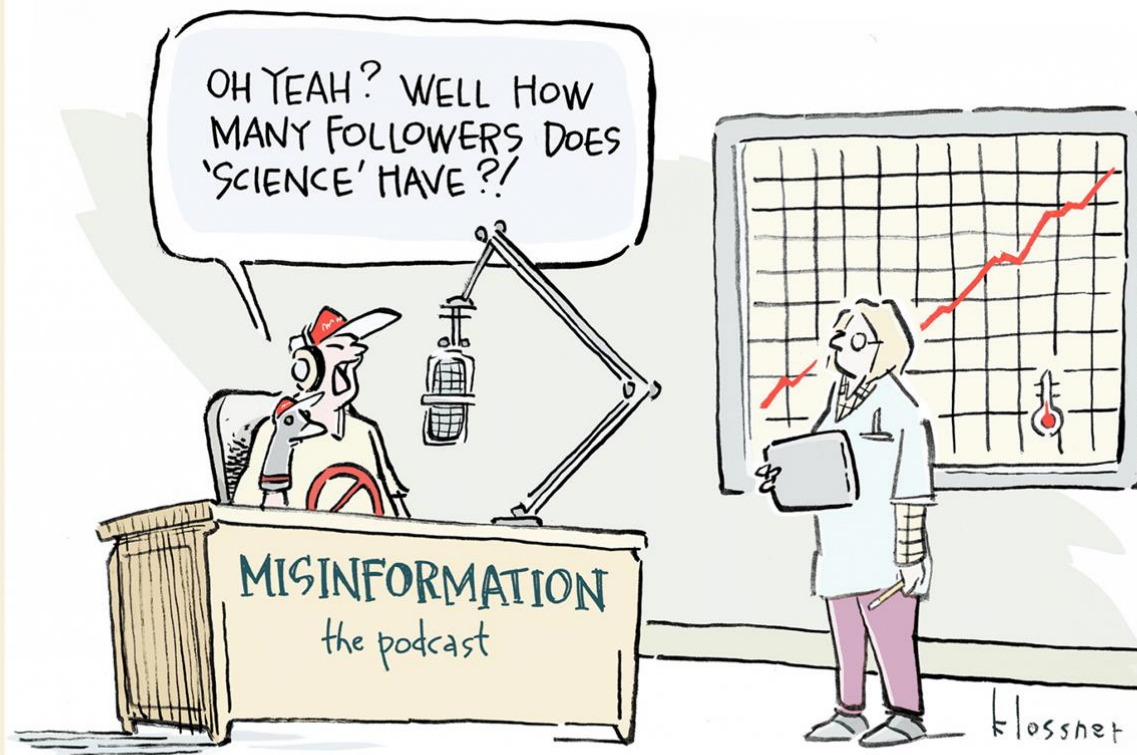
Persuasion

Decision

Implementation

Confirmation

And don't miss opportunities to **counter misinformation** when you hear it.



Knowledge

Persuasion

Decision

Implementation

Confirmation

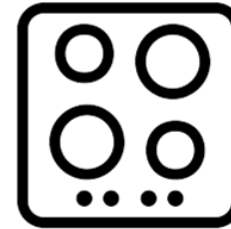
Electric technologies must be seen as providing a **better value or service** than what they are replacing. Concerns about products need to be overcome.



Electric Heating

Concerns re: **cold weather**, **heat loss** during blackouts, and **reliability**.

65% of buyers cite “better home heating” as a reason for wanting gas.



Induction Stovetops

Perceived **poor performance** of electric stovetops (including induction).

Low awareness of dangers and health impacts of gas-powered stoves.



Integrate **social norms** into messaging to build positive perceptions.





Integrate **social norms** into messaging to build positive perceptions.

Peer Influence Campaigns



Highlight adoption with testimonials or stories from community members

Social Proof Messaging



Convey widespread adoption with (trusted) statistics or ratings from peers



The decision process for emergency replacement is **often rushed, lacking forethought and planning**. Cost is often cited as a barrier, but other key factors include:



Trust



Middle Actors



Knowledge

Persuasion

Decision

Implementation

Confirmation

Be sure to leverage key **moments that matter.**

1

Specific
Moments



Knowledge

Persuasion

Decision

Implementation

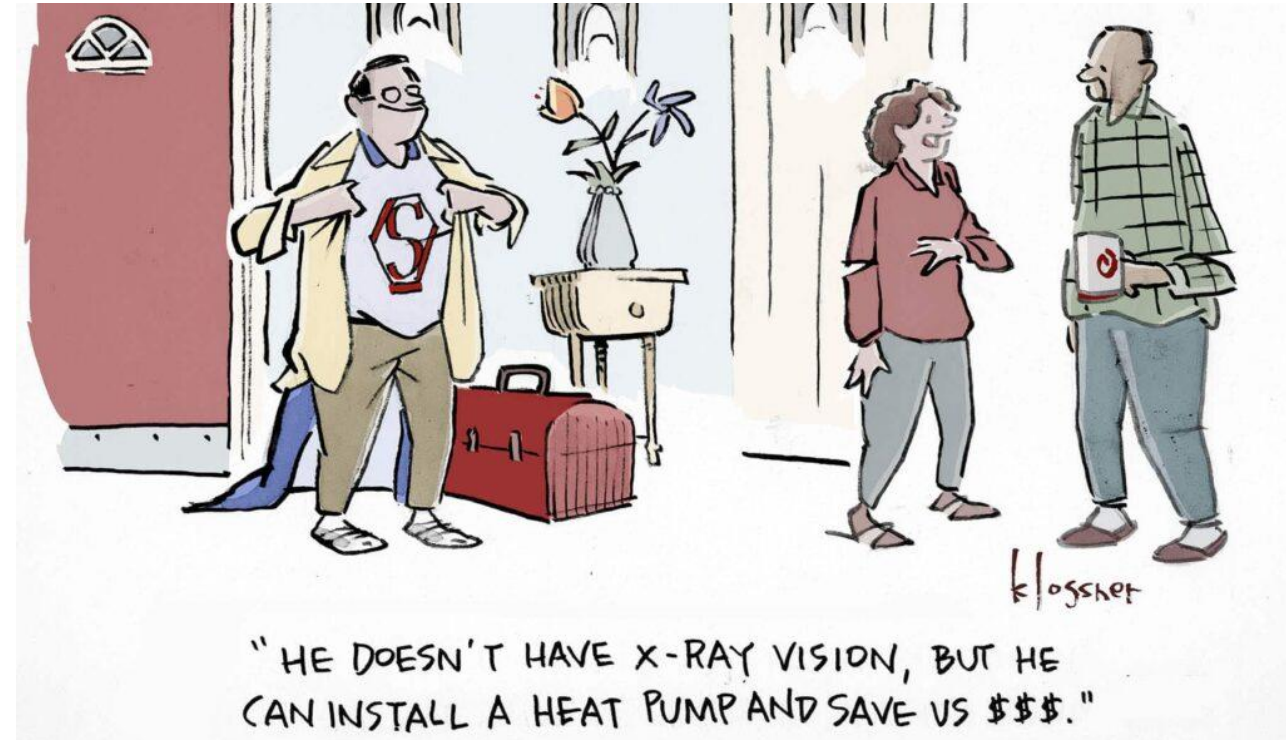
Confirmation

Be sure to leverage key **moments that matter.**

1

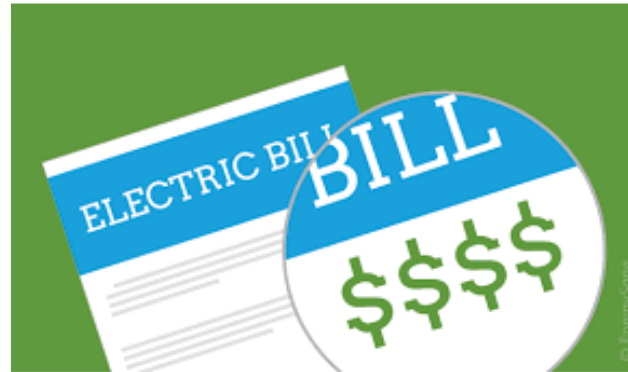
Specific
Moments

WHO YA
GONNA
CALL?





Be sure to leverage key **moments that matter**.



Say hello to your first weekly Home Energy Report

In addition to your monthly Home Energy Reports, these weekly reports help you understand how much electricity you used each day last week, see which was your highest day, and even better, find out how to reduce your usage before your next bill!

! You used 61% more electricity this week.





Be sure to leverage key **moments that matter**.





Be sure to leverage key **moments that matter**.



HOW ANNUAL HVAC Maintenance SAVES YOU MONEY

- ⚡ LOWER ENERGY BILLS
- 🕒 PROLONGED SYSTEM LIFE
- 🔧 REDUCED REPAIR COSTS

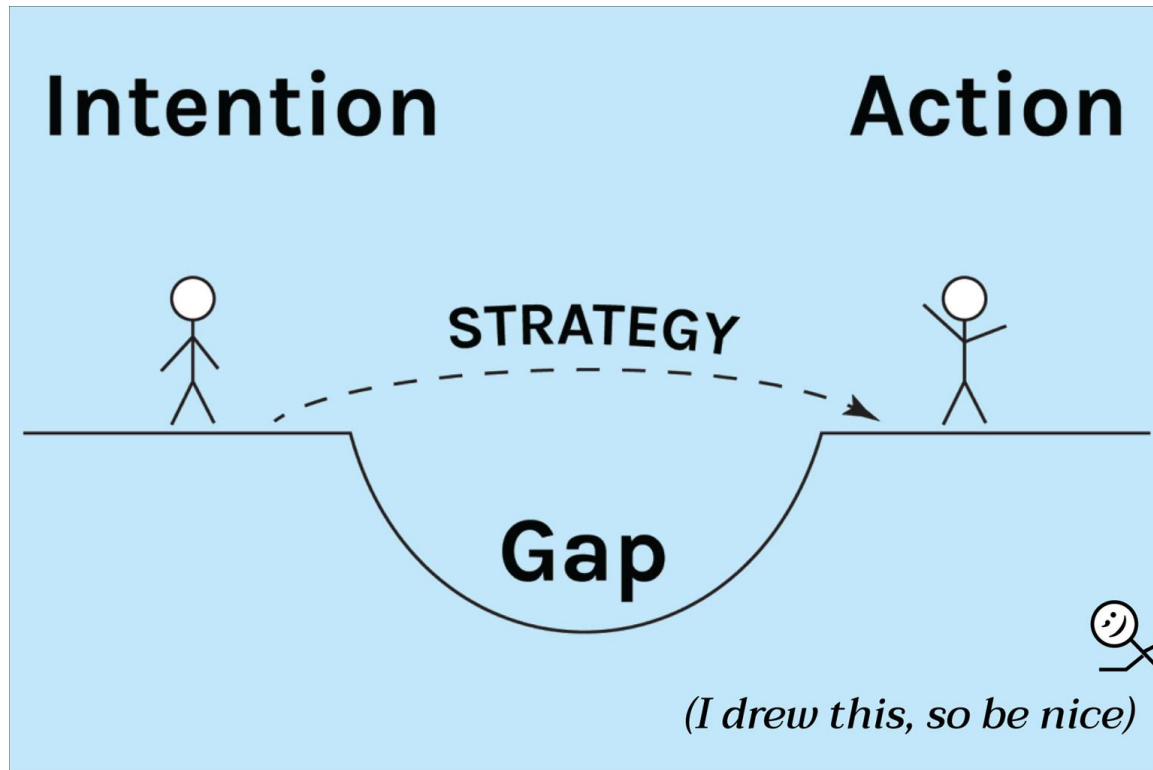


Electrification **adoption lags willingness to adopt by about 40%**. Intention is a leading predictor of implementation... but it doesn't get you all the way there!

Type of behavior	Percentage of variance explained by intentions
Health behaviors	20–30%
Exercise and healthy eating	30–40%
Physical activity	60% when intentions are stable, 27% when intentions are unstable

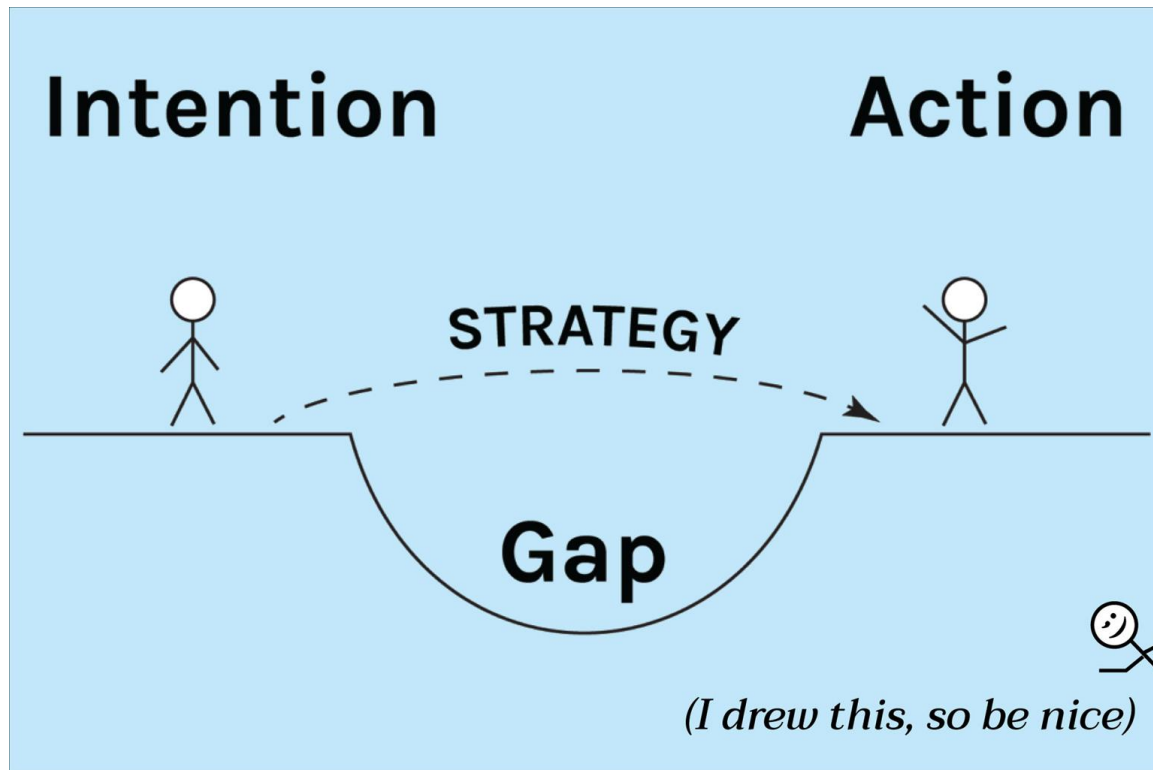


Don't assume that intention leads to action... **help the process** along.



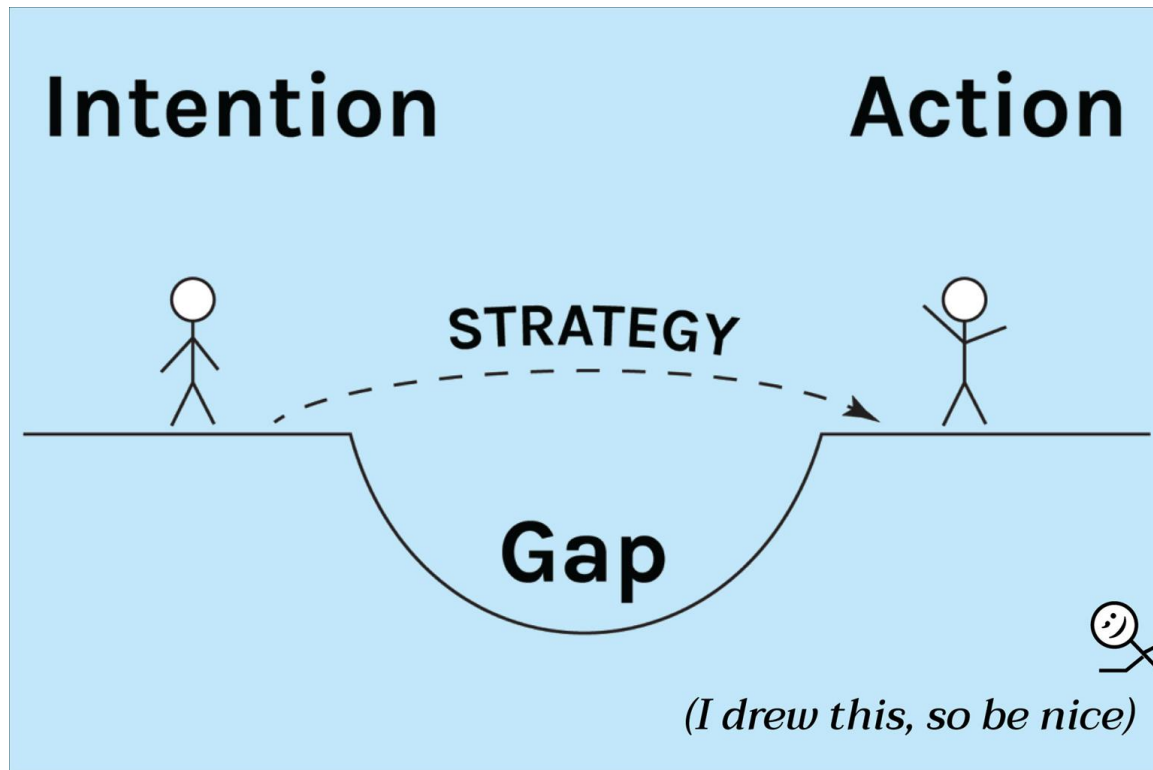


Don't assume that intention leads to action... **help the process** along.





Don't assume that intention leads to action... **help the process** along.





Turn customers into champions by bringing joy into the installation process.

Issues can arise if customers fail to learn how to **effectively operate** their new technology.



Problems impact further uptake. **Word-of-mouth** is a key driver of adoption *and* resistance.



Knowledge

Persuasion

Decision

Implementation

Confirmation

Turn customers into champions by bringing joy into the installation process.



Start a conversation.



Highlight cool features.



Motivate referrals.

Knowledge

Persuasion

Decision

Implementation

Confirmation

Turn customers into champions by bringing joy into the installation process.



UNTIL FURTHER NOTICE
*Celebrate
Everything*

Acknowledgements

- Our partners at **Uplight, Calpine Energy Solutions, Silicon Valley Clean Energy,** and **Peninsular Clean Energy** for funding and supporting this work.
- My amazing team: **Rebecca Ford, Leo Kleiman-Lynch, Matt Chester, Sea Rotmann, Gabby Lamm, Johnny Figueroa,** and **Addie Johnson Talbot.**
- **YOU** for joining this webinar and listening to my talk!

Find more of our research at: <http://seechangeinstitute.com>



Dr. Beth Karlin
bkarlin@seechangeinstitute.com





Grace Lewallen
ACEEE

How to Package and Market Comprehensive Home Retrofits

Grace Lewallen

Reuven Sussman, Ph.D.

Steven Conrad, Ph.D.

September 23, 2024



Going beyond one-off energy upgrades

How can we encourage more homeowners to invest in “comprehensive*” energy upgrades / whole-home retrofits?

** Reducing home energy use by 20 % or more (modeled savings)*

Going beyond one-off energy upgrades

IRA offers rebates for energy efficiency upgrades that improve the overall energy performance for single-family homes.

Energy Savings*	Household Type	Rebate Cap
20%-35%	LMI	80% of cost, up to \$4,000
	Non-LMI	50% of cost, up to \$2,000
35% or more	LMI	80% of cost, up to \$8,000
	Non-LMI	50% of cost, up to \$4,000

Source | §50121(c) of Inflation Reduction Act of 2022 (P.L. 117-169)

**based on modeled energy savings*

Going beyond one-off energy upgrades

How can we encourage more homeowners to invest in “comprehensive*” energy upgrades / whole-home retrofits?

Going beyond one-off energy upgrades

How can we encourage more homeowners to invest in “comprehensive*” energy upgrades / whole-home retrofits?

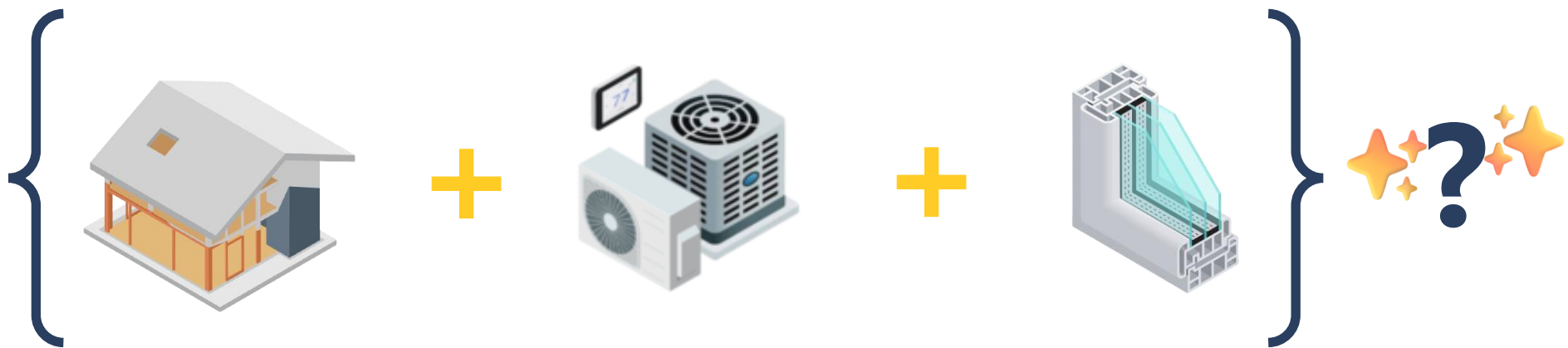


What would be the most attractive way to combine home energy upgrades as a “comprehensive” retrofit package reducing energy consumption by 20% (or more)?

Research Questions

Q1

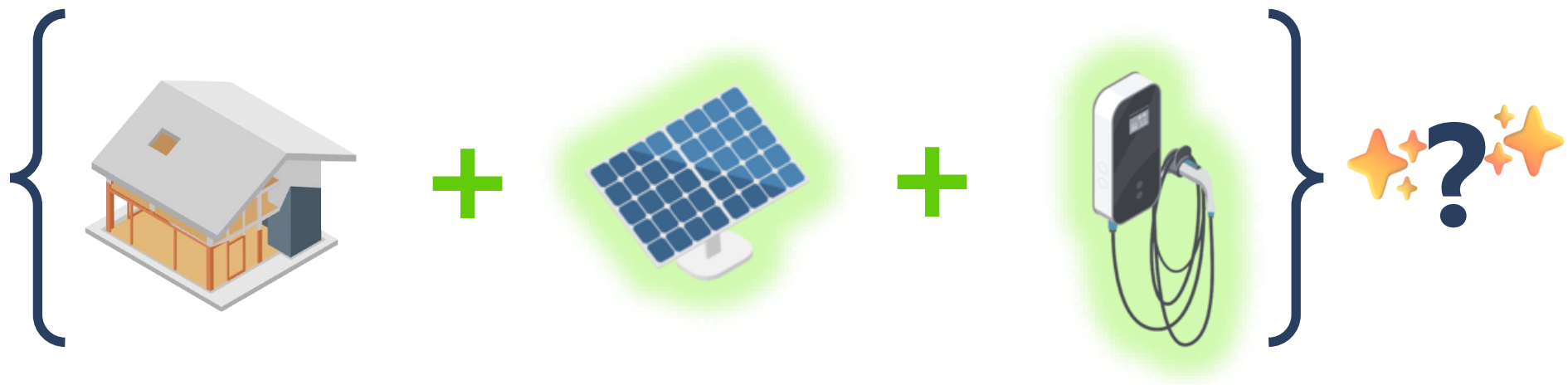
In the context of energy retrofit bundling, **which energy upgrades or packages of upgrades, are most attractive to homeowners?**



Research Questions

Q2

Would adding non-EE measures like (Level 2) **EV chargers*** or **solar panels** make **comprehensive energy efficiency packages** more **attractive** to homeowners?



Research Questions

Q3

Can we identify **any groups or types of people who would be more receptive** to comprehensive energy retrofit packages?



Methods

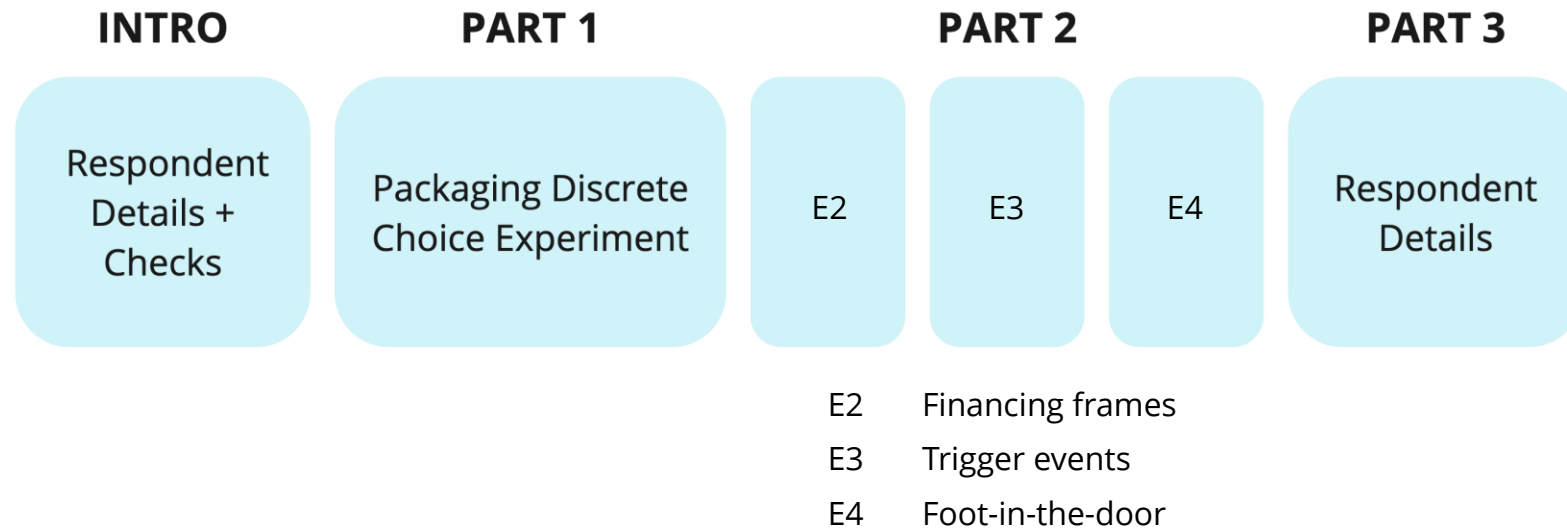
We conducted an online survey of 1500 US homeowners.

- Nationally representative sample
- Own a home
 - single-family detached home, duplex, rowhouse, townhouse, manufactured/mobile home, or condominium/apartment structure with no more than six units
- NOT employed in marketing, advertising, PR, environmental orgs, or utilities
- Live in the continental US
- Proficient in English
- 18 or older
- Must pass knowledge checks at the start of the survey

Methods

We conducted an online survey of 1500 US homeowners.

SURVEY OVERVIEW



Which of the following energy upgrade packages would you prefer?

	Package A	Package B
Insulation and Air Sealing 	-	Insulate and air seal attic
Window and Door Upgrades 	Upgrade windows	Upgrade windows
Heating and Cooling System 	Upgrade heating AND cooling systems to a heat pump	Upgrade either heating OR cooling system to a higher efficiency model
Water Heater 	Upgrade to heat pump water heater	Upgrade to heat pump water heater
Major Appliances 	Upgrade 1 appliance	-
Solar Panels 	-	Install solar panel system
Electric Vehicle (EV) Charger 	-	Install EV charger
Cost to Homeowner (financed at 0% interest over 5 years)	\$384 per month for 5 yrs. Total cost: \$23,020	\$827 per month for 5 yrs. Total cost: \$49,640
Savings on Energy Bill (Bill = \$250 / mo. before upgrades)	\$92 per month Save 37% on your energy bill	\$210 per month Save 84% on your energy bill
	I would select Package A	I would select Package B

Which of the following energy upgrade packages would you prefer?

Upgrade Types (Attributes)

Insulation and Air Sealing



Window and Door Upgrades



Heating and Cooling System



Water Heater



Major Appliances



Solar Panels



Electric Vehicle (EV) Charger



Cost to Homeowner
(financed at 0% interest over 5 years)

Savings on Energy Bill
(Bill = \$250 / mo. before upgrades)

Package A

-
Upgrade windows
Upgrade heating AND cooling systems to a heat pump
Upgrade to heat pump water heater
Upgrade 1 appliance
-
-
\$384 per month for 5 yrs. Total cost: \$23,020
\$92 per month Save 37% on your energy bill

I would select
Package A

Package B

Insulate and air seal attic
Upgrade windows
Upgrade either heating OR cooling system to a higher efficiency model
Upgrade to heat pump water heater
-
Install solar panel system
Install EV charger
\$827 per month for 5 yrs. Total cost: \$49,640
\$210 per month Save 84% on your energy bill

I would select
Package B

Which of the following energy upgrade packages would you prefer?

	Package A	Package B
Insulation and Air Sealing 	-	Insulate and air seal attic
Window and Door Upgrades 	Upgrade windows	Upgrade windows
Heating and Cooling System 	Upgrade heating AND cooling systems to a heat pump	Upgrade either heating OR cooling system to a higher efficiency model
Water Heater 	Upgrade to heat pump water heater	Upgrade to heat pump water heater
Major Appliances 	Upgrade 1 appliance	-
Solar Panels 	-	Install solar panel system
Electric Vehicle (EV) Charger 	-	Install EV charger
Cost to Homeowner (financed at 0% interest over 5 years)	\$384 per month for 5 yrs. Total cost: \$23,020	\$827 per month for 5 yrs. Total cost: \$49,640
Savings on Energy Bill (Bill = \$250 / mo. before upgrades)	\$92 per month Save 37% on your energy bill	\$210 per month Save 84% on your energy bill
	I would select Package A	I would select Package B

Which of the following energy upgrade packages would you prefer?

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Additional Cost information

I would select
Package A

I would select
Package B

The Obvious

Cost = Prohibitive

35%

of respondents NOT willing
to spend \$1000 or more

Preferred the cheapest
options/no upgrades

65%

of respondents willing to
spend \$1000 or more

More holistic decision-
making, varying preferences

Key Finding 1

Most Appealing Upgrades in Packages

Of course, when contractors go into the field, they should listen to homeowners and customize their offerings based on what they hear from the customer....

...but **before knowing the preferences of specific customers**, our findings suggest generic packages should include **three elements**.

Key Finding 1

Most Appealing Upgrades in Packages

Across nearly all demographic groups, **packages were SELECTED more frequently when they included the following** elements:



Heat Pump Hot Water Heaters (22% increased preference)



Heating and Cooling Systems (7% increased preference)



Appliances (5% increased preference)

Key Finding 1

Most Unappealing Upgrades in Packages

And **packages were AVOIDED** more frequently when they included the **following** elements:



Level 2 EV Charger (22% reduced preference)



Solar (20% reduced preference)



Energy Star windows (19% reduced preference)

Key Finding 2

No one package to rule them all...

Our research resulted in 5 classes of preferences:

1	"I want appliance upgrades and definitely not solar."	28% of interested homeowners	Prefer only appliance upgrades and firmly reject solar
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Key Finding 2

No one package to rule them all...

Our research resulted in 5 classes of preferences:

1	"I want appliance upgrades and definitely not solar."	28% of interested homeowners	Prefer only appliance upgrades and firmly reject solar
2	"Upgrade my heating, cooling and hot water... and maybe some other things too."	26% of interested homeowners	Interested in upgrading mechanical systems and open to additional improvements

Key Finding 2

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3	"Give me energy independence: solar, EV charger, and efficiency"	17% of interested homeowners	Desire solar, EV charger, and energy efficiency for energy independence

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3	"Give me energy independence: solar, EV charger, and efficiency"	17% of interested homeowners	Desire solar, EV charger, and energy efficiency for energy independence
4	"Reduce my energy consumption to the max" (Traditional comprehensive energy efficiency)	17% of interested homeowners	Focused on reducing energy consumption to the maximum with traditional comprehensive energy efficiency

Key Finding 2

No one package to rule them all...

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3	"Give me energy independence: solar, EV charger, and efficiency"	17% of interested homeowners	Desire solar, EV charger, and energy efficiency for energy independence
4	"Reduce my energy consumption to the max" (Traditional comprehensive energy efficiency)	17% of interested homeowners	Focused on reducing energy consumption to the maximum with traditional comprehensive energy efficiency
5	"Upgrade my HVAC and water heater... that's all."	12% of interested homeowners	Interested only in upgrading mechanical systems; averse towards solar, EV charging, or windows

Key Finding 3

Packaged vs. à la carte?

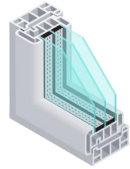
Later in the survey we asked participants to write in their answer to the following question:

“Which home energy upgrade would you be most interested in purchasing for your home?”

Key Finding 3

Evidence of contextual preferences

Top 3 Desired Upgrades



1. Windows



2. Solar



3. HVAC

**#1 and #2 were
NOT preferred in
the experiment!**

**Packaged
Preferences** $\neq$ **Preferences
à la carte**

Summary of Findings

- **Cost** can't be ignored
- **No clear winner** when it comes to comprehensive retrofit packages
- Evidence for **diverse classes of preferences** for retrofit packages
- Evidence for **contextual preferences when bundling upgrades**
- **Solar and EV chargers seem less attractive when packaged** with EE upgrades (and/or when cost is highly salient)
- Most attractive in general: **HVAC upgrades, heat pump water heaters, and appliances**





For more information, see our
report on **Messaging
Comprehensive Retrofits**

[Link to report](#)

[Link to blogpost](#)

ACEEE::

Presenter



Grace Lewallen, Research Analyst, ACEEE

As part of the Behavior, Health, and Human Dimensions team, Grace conducts research focused on understanding human behavior aspects related to energy efficiency. Her work aims to promote pro-environmental behaviors and contribute to a more sustainable future.

She holds a master of behavioral and decision sciences from the University of Pennsylvania.

You can reach her at glewallen@aceee.org



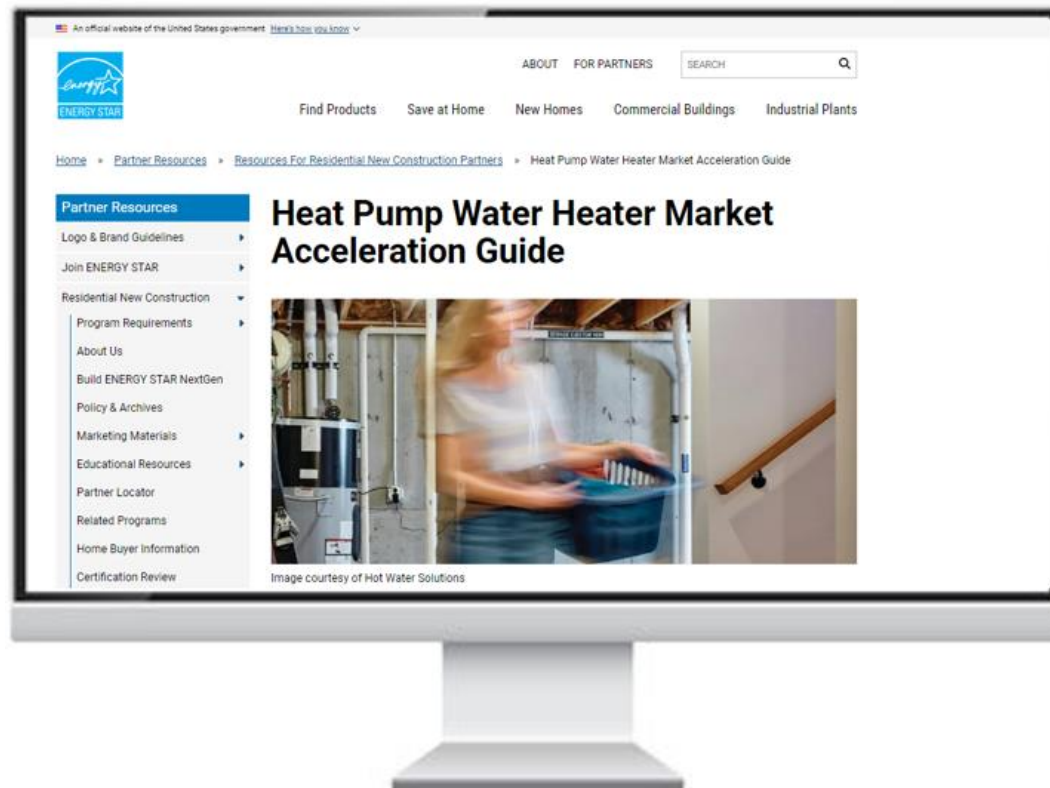
About ACEEE:

The American Council for an Energy-Efficient Economy (ACEEE), is a nonprofit research organization that develops policies to reduce energy waste and combat climate change. Its independent analysis advances investments, programs, and behaviors that use energy more effectively and help build an equitable clean energy future.

Learn more at [aceee.org](https://www.aceee.org)



ENERGY STAR Market Acceleration Guide for Heat Pump Water Heaters



[View the New Guide](#)

Introducing the new [ENERGY STAR Market Acceleration Guide](#) for heat pump water heaters. Created with input from experienced program designers, water heating experts, and key industry players, the Guide is a comprehensive resource offering proven strategies and best practices for program development and implementation.

A Living Resource:

The Market Acceleration Guide is intended to be a living resource continuously informed by industry voices that represent all segments of the market. This is made possible by your feedback!

Explore the Residential Program Guide

Resources to help improve your program and reach energy efficiency targets:

- [Handbooks](#) - explain *why* and *how* to implement specific stages of a program.
- [Quick Answers](#) - provide answers and resources for common questions.
- [Proven Practices](#) posts - include lessons learned, examples, and helpful tips from successful programs.
- [Technology Solutions](#) **NEW!** - present resources on advanced technologies, **HVAC & Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.
- [Health + Home Performance Infographic](#) – spark homeowner conversations.



<https://rpssc.energy.gov>

Health + Home Performance Infographic



DOE's Health + Home Performance Infographic reveals the link between efficiency and health – something everyone cares about. Efficiency programs and contractors can use the question-and-answer format to discover a homeowner's needs.

The infographic is ideal for the “kitchen table” conversations where people decide what to do – and who they want to do it. It also has links for homeowners to find a qualified contractor if they do not already have one.

[Download](#) this infographic from DOE's Better Buildings Residential Network.

Looking for photos to help tell your energy efficiency story? Visit our image libraries:
<https://www.energy.gov/eere/better-buildings-residential-network/articles/image-libraries>

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