

# **DRCOG Secondary Research**

## **Executive Summary**

# AGENDA

**Market Research Overview**

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**01**

**Key Learnings**

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**02**

**Next Steps**

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**03**

**Appendix**

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**04**



# Building Decarbonization Goals

## Current Challenge:

- Environmental and infrastructure crisis rooted in building-related greenhouse gas (GHG) emissions, outdated technologies, and structural inequities in energy access

## Business Goals:

- Reduce GHG Emissions at Scale
- Expand Workforce Readiness
- Create a Replicable Policy Framework

# DRCOG Decarbonization

KARSH • HAGAN



## Incentives

Why?

Helps Buy a  
Heat Pump

How?

Makes it Cheaper

What?

1

Incentive  
Platform



Regional  
Approach

1,600

Free Upgrades  
for Low-income  
Homes



Education



Pilot Programs



## Workforce

Why?

Fill the Trades Gap

How?

Training and  
Jobs

What?

3,800 New workers



Advising and  
Support for  
Contractors



Increased  
Access to  
Quality Jobs



Reducing  
Barriers to  
Economic  
Mobility



## Building Policy Collaborative

Why?

Standardize Building  
Policy

How?

Local Support:  
Money and Time

What?

\$34.8  
million

To Local  
Governments  
(DRCOG)



Peer-to-Peer  
Learning



Research on  
Beneficial  
Electrification



Regional Policy  
Roadmap



Policy  
Implementation  
Support

Communication, Engagement, Website



# 01 **MARKET RESEARCH OVERVIEW**

# Market Research Phases

## PHASE 1

Baseline  
Understanding  
**May-July 2025**

Inform brand,  
personas, and  
preliminary  
campaign.

## PHASE 2

Localized  
Understanding  
**Aug-Nov 2025**

Inform refined  
messaging &  
campaigns  
(e.g. audience-  
specific)

## PHASE 3

Ongoing  
Understanding  
**Jan 2026 +**

To assess  
campaign  
effectiveness  
and inform  
continual  
refinement.



# Phase 1 Research

	<b>GROUP 1: Low-income Homeowners</b>	<b>GROUP 2: Pragmatic Homeowners</b>
<b>Objectives</b>	Messag ing	Messag ing
<b>Methodology</b>	Resident Advisory Group (Focus Group	Online digital survey (e.g. Remesh)
<b>Sample</b>	8-12 CBOs, Neighborhood Groups	150 survey participants representing residents of diverse DRCOG geographies, gathered via 2 online focus groups

# Phase 1 Research

	<b>GROUP 3: Building Owners &amp; Managers</b>	<b>GROUP 4: Contractors &amp; Workforce</b>
<b>Objectives</b>	Messaging Stakeholder Map	Messaging Stakeholder Map
<b>Methodology</b>	1-1 Virtual Interviews	1-1 Virtual Interviews
<b>Sample</b>	5-12 interviewees representing diverse building owners/managers (e.g., commercial, multifamily, industrial, etc.) and diverse DRCOG geographies	3-8 interviewees representing contractors, trade schools, workforce development programs, post-incarceration reentry programs and diverse DRCOG geographies



# Literature Overview

- **Over 100** national, international, and regional program reports & studies
  - Many studies from peer-reviewed journals
  - Mix of meta analyses, primary research, program reports, and case studies
- Prioritized research on heat pumps, building electrification, and energy efficiency; also assessed research on EVs and water conservation

# Literature Overview

- Documented **mindsets; values; perceptions; awareness; motivators; barriers;** messaging levers, channels, and **key learnings;** and trusted messengers
- Used Google, Google Scholar, ScienceDirect & Elsevier to identify relevant literature
- Used ChatGPT in some instances to facilitate synthesis



# Campaign Overview

- Reviewed **~50 national, international, and regional campaigns**
- Prioritized review of campaigns for building electrification & energy efficiency; also assessed some for EVs & water conservation
- Documented **campaign name & tagline**; languages; **motivators, barriers** & messaging levers applied; and any published results or **key learnings**, including unintended consequences
- Used Google to identify relevant campaigns
- Used ChatGPT to identify some campaigns and in some instances, to facilitate synthesis

# 02 **KEY LEARNINGS**



## Overall Summary – All Target Audiences

Element	Key Insights
<b>Framing</b>	Focus on benefits first. Simplify choices.
<b>Language</b>	Use everyday, non-technical terms and simple language.
<b>Motivators</b>	Cost, efficiency, comfort, health, environment, peer influence.
<b>Barriers</b>	Cost, complexity, lack of awareness, inertia/behavioral resistance, risk aversion, performance/reliability, lack of qualified installers.

## Overall Summary – All Target Audiences

Element	Key Insights
<b>Messengers</b>	Contractors, utilities, peers, local organizations, local government.
<b>Visuals</b>	Use real-life product images (e.g., heat pumps), rather than illustrations or lifestyle shots. Avoid high-tech imagery.



# Anchor in Personal Benefit

- **Lead with:** Cost savings, comfort, health, efficiency
- **Avoid** creating misperceptions of cost savings (i.e., energy savings vs. cost savings)
- **Position** environmental impact as a co-benefit

**Low-income:** Lead with affordability, minimizing energy burden (present & future), & equity

## Efficiently heat & cool your home with an air source heat pump

### Why heat pumps?



#### For your comfort.

Variable speed heat pumps provide consistent temperatures, quiet operation, and better dehumidification.



#### For the planet

Adding a heat pump is one of the most impactful home upgrades you can make to lower emissions.

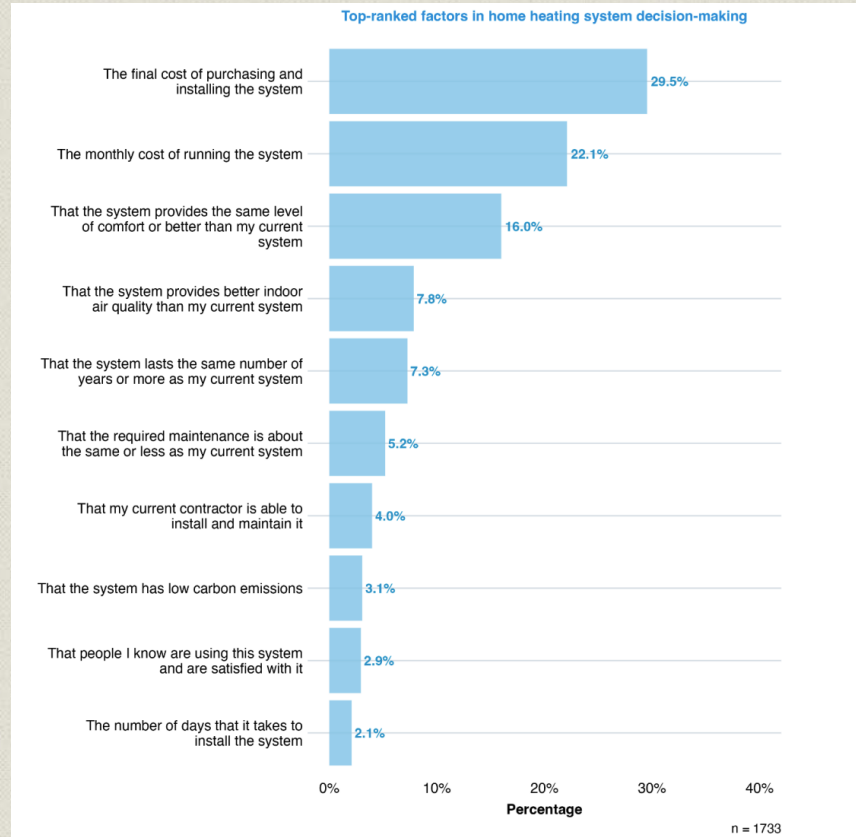


#### For fuel flexibility

You can cushion gas price hikes with the efficient electric heating of a heat pump.

# Cost is the Top Factor

When it comes to home heating system decisions, people – even those who identify as eco-conscious – prioritize **price & cost of running the system.**

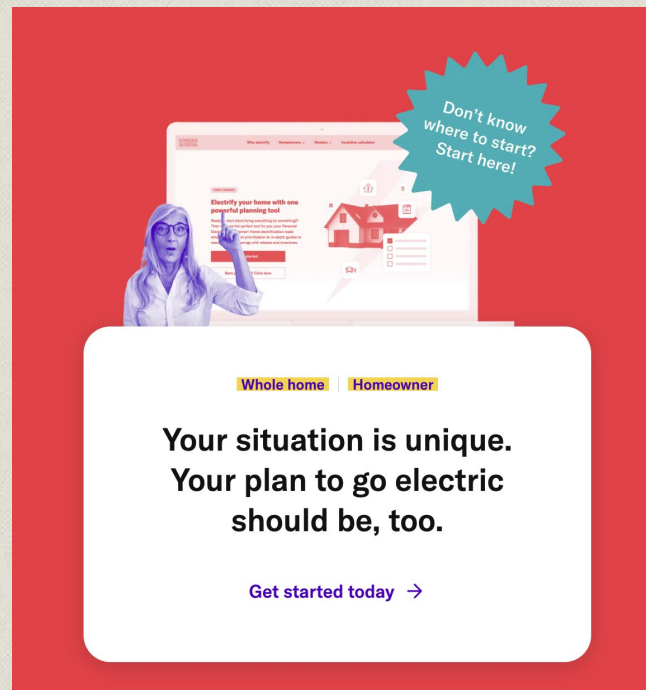




# But it isn't always cheaper...

- **Cost barriers** include upfront equipment costs, electricity costs, and uncertainty about future electricity costs.
- **Avoid misleading consumers about the cost benefit** as negative experiences could lead to unintended consequences that slow the transition.

*How do we tell a nuanced cost benefit story, but simply?*



Example: Rewiring America program tackles the barrier of complexity in the business model by offering customized plans.

# Define the customer journey

What are the key steps in heat pump adoption?

## Awareness

Communicate the benefit with social proof.

## Education

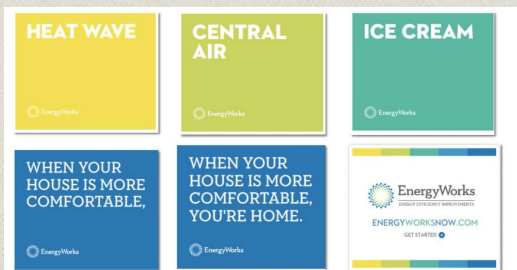
Provide more detailed information on the benefits

## Adoption

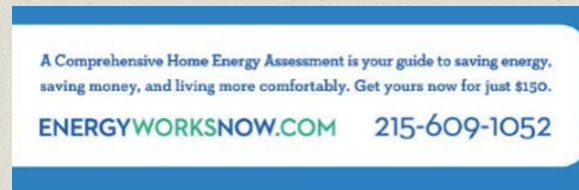
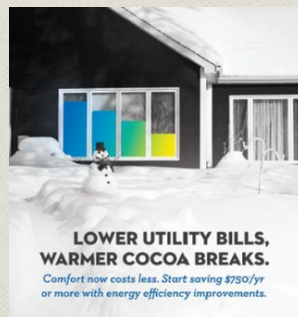
Provide services on how you can see if these benefits fit your personal circumstances.



# Example Campaign Journey



\*Ran during days with temperatures at 85 degrees or above



## Awareness

Energy efficiency can make your house more comfortable.

## Education

Comfort now costs less, start saving \$750/yr or more with energy efficient improvements.

## Adoption

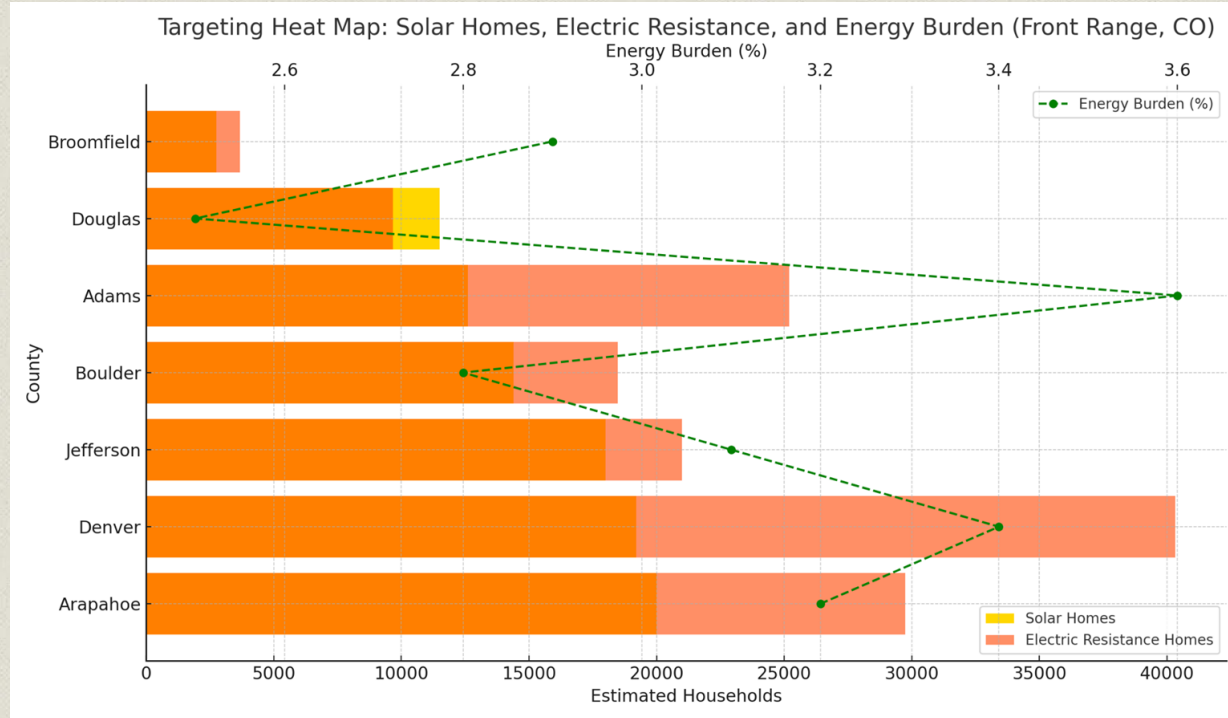
Book a home energy assessment to see how you live more comfortably, save energy & money.

# Targeting

- Heat pump adoption is notably higher in regions with low electricity prices.
- Adopters of solar are more likely to upgrade to a heat pump, in part because of electricity costs.
- Studies recommended targeting households that already use **electric resistance heating systems** and **propane users**, as they likely to realize cost savings. (CEE, 2024)



## Solar, Electric Resistance & Energy Burden in Front Range, CO



Source: Estimate based on US Census ACS (2022) and EIA RECS (2020), DOE Lead

# Address Barriers Directly

- **Common barriers:** Cost, complexity, lack of awareness, inertia/behavioral resistance, risk aversion, performance/reliability
- Simultaneously **amplify motivators & mitigate barriers**
- **Reduce resistance first** before amplifying benefits

***Note: We need to ground-truth statements about cost, ease, and comfort before leaning in.***





Example: Electrify America's  
“Normal Now”

# Audience Messaging Needs



## Low Income Homeowners

### Insights

"I just want my energy bills to go down and stay down. It's hard keeping the house warm and the lights on. If there's a safe way to make things more affordable—and fair—I'm open to learning."

### Messaging

**Relieve the energy burden**



# Audience Messaging Needs



	Pragmatic Homeowners
Insights	“If electrification means more control, lower bills, and at least the same level of comfort I have now, I’ll consider it—but it has to pencil out and be worth the switch.”
Messaging	<b>Upgrade - control energy use and the bills</b>

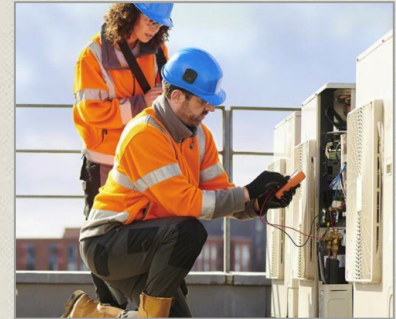
# Audience Messaging Needs



	Building Owners & Managers
Insights	"I care about operational costs and tenant satisfaction. If I have proof that electrification boosts ROI, cuts maintenance headaches, works for my building, and helps retain tenants, it's something I'll explore."
Messaging	Tenant retention, ROI & reliability



# Audience Messaging Needs



	Contractors
Insights	"Customers are starting to ask about heat pumps and electric upgrades. I want to stay ahead of the curve, but I also need to know it's doable, profitable, and worth offering."
Messaging	Meet customer demand with ease

# Perceptions – Electrification

- See electrification as **modern, efficient,** and potentially **cost-saving**
- **Skepticism about performance** and reliability compared to gas
- **Mixed attitudes toward climate** benefits – more motivated by practical advantages
- May perceive electrification as **complex** or **disruptive**



**Pragmatic  
Homeowners**



# Perceptions – Electrification

- Perceive electrification as **expensive** or **out-of-reach** due to upfront costs
- Concerned about **higher bills** if rates not designed equitably; **replacement costs** if equipment has limited life
- May view electrification as **policy for others**, not personal
- **Less likely to associate** electrification with comfort or direct benefits and immediate benefits are a deciding factor.



Low Income  
Homeowner  
s

# Consumer Mindset Segmentation

## Sustainability segments



### Planet Protectors

Engaged environmentalists, happy to pay more for products that are good for the environment, interested in issues related to sustainability

28%



### Price Point Green

Caring about the environment and making an effort to protect it, but price remains the key factor in their purchase decisions

20%



### Green When Keen

Recognize that climate change is a problem, agree we should do more to protect the environment, but sustainability is not entrenched in their lifestyle

14%



### On The Green Fence

Unconcerned and disengaged; uninterested in sustainability issues

17%



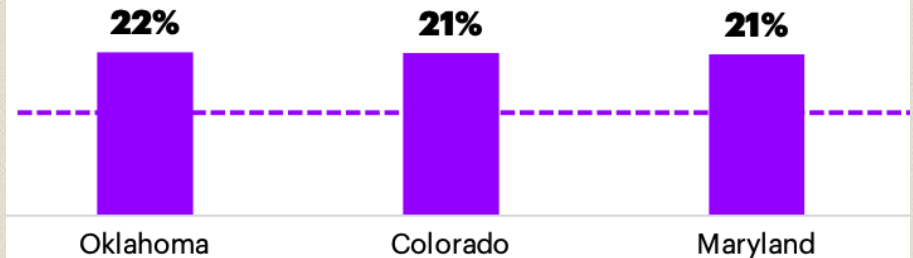
### Green Rejecters

Negative views on environmental sustainability, skeptical about climate change, prioritizing economic and political issues over the environment

21%

Colorado over indexes on Green When Keen - they agree climate change is a problem and we should do more, but it's not entrenched in their lifestyle yet. They are Pragmatic.

## Top three states for Green When Keen





# Heat Pump Segmentation

Although cost is the primary message, there will be different segments within Pragmatic Homeowners that will respond to different co-benefit statements. In Minnesota, Lifetime Value Seekers was the most attractive segment to target; in the Netherlands it was Eco-Conscious Innovators.

## Lifetime Value Seekers

“I am concerned about the **time and money** I have to spend on my heating and cooling system. I want a system that is **easy to install, maintain** and will **last a long time.**”

## Discerning Investors

“I am concerned about the **quality** that my heating and cooling system offers. I am interested in the **comfort** that the system provides, the health benefits (for example better **air quality** inside my home) and the **environmental benefits.**”



## Eco-Conscious Innovators

“I am concerned about the **energy consumption** of my heating and cooling system. I like to learn about **new and more efficient technologies** that allow me to **reduce my carbon footprint.**”

## Nearly-there converts

“I have **heard about air source heat pumps** before today, and I was **already interested**. I just need to find out if it’s the right choice for me and my home.”

# Messaging

- Offer **positive examples** from the local market (Denver, Boulder).
- Rebate messages should be **clear** and **timely** to align with design phase.
- **Demonstrate reliability** of heat pumps in cold weather. Adapt ULI Mythbusting messaging.
- Need **training for O&M** personnel.
- Biggest retrofit opportunity: **buildings using electric or propane.**

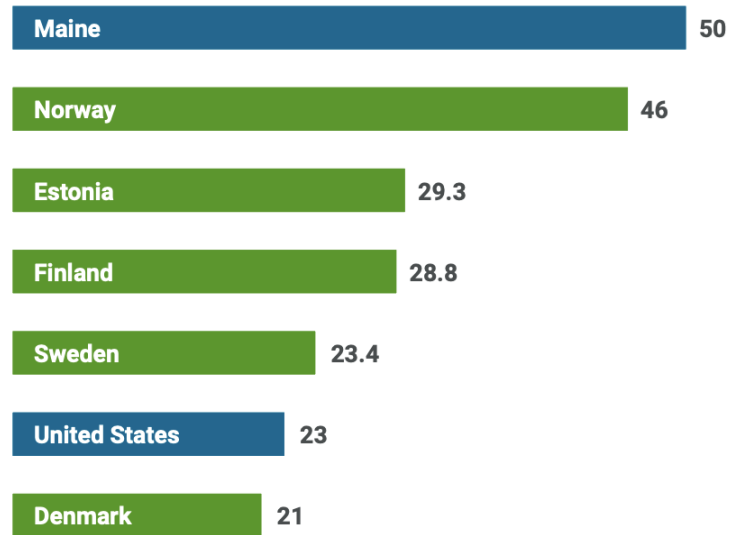


**Building  
Owners &  
Managers**



# Mythbusting

FIGURE 7. HEAT PUMPS SOLD PER 1,000 HOUSEHOLDS  
IN NORTHERN EUROPE, MAINE, AND THE UNITED STATES



Source: Data from the European Heat Pump Association, State of Maine, and AHRI. Graph adapted from [Carbon Switch](#).

Source: [Pumping Up Sustainability, ULI, 2024](#)

# Messaging

- Offer stories of **customer demand** and **case studies** of contractors finding new market opportunities in energy efficiency sector.
- Opportunity for **good pay** and economic opportunities.
- **Increased production** and emergent technology.
- Demonstrate **reliability** of heat pumps in cold weather.



**Contractors**



# Messaging

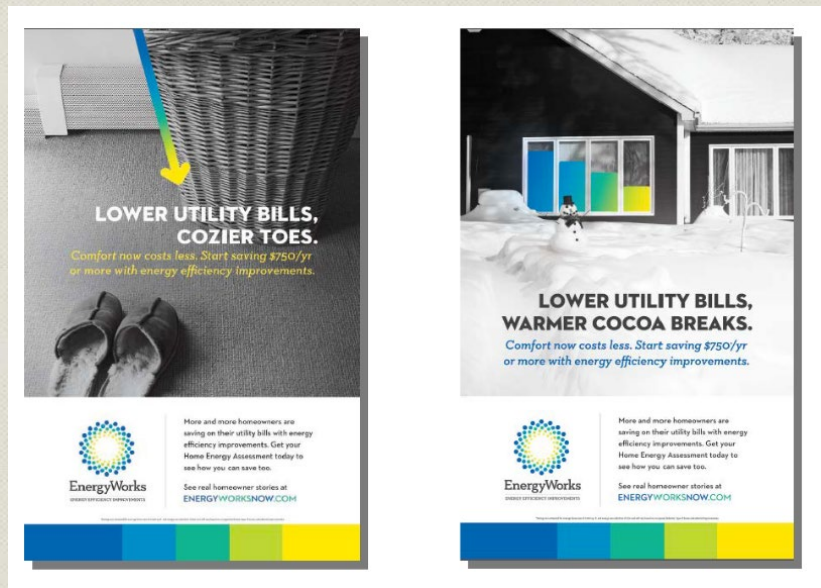
- Use authentic voices of current workers to prove it's a **well-paid, stable** opportunity.
- Make **opportunities for growth** clear.
- Showcase **diversity**, including of women.
- Show that it is **easy to get training** (assuming wraparound services in place).
- **Leverage peer networks** & trusted messengers (e.g., schools, WF centers, CBOs).



**Workforce**

# Timing

- **Focus on key moments & decision points**
  - Equipment failure / end of life
  - Moving
  - Home renovations
  - Retirement, parenthood
- **Create urgency** (limited time)
- **Ensure relevance** (contextual timing: seasons, bill cycle)
- Coordinate timing with **installer capacity**



Example: Energy Works (PA)



# Approachable, Empowering Brand

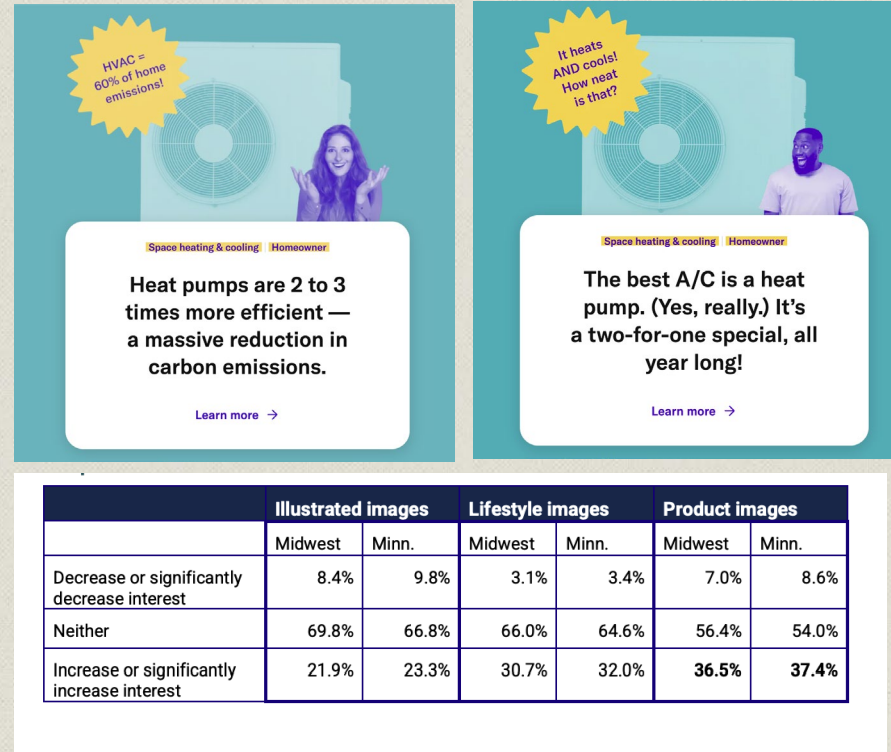
- **Tone:** Human, uplifting, relatable.
- **Words to avoid:** Retrofit, audit, decarbonize
- **Words to embrace:** Upgrade, home visit, easy, clean, smart
- **Storytelling, testimonials:** Others like you are doing this



Example: Southern CA Edison's "[We Have the Power](#)"

# Visuals

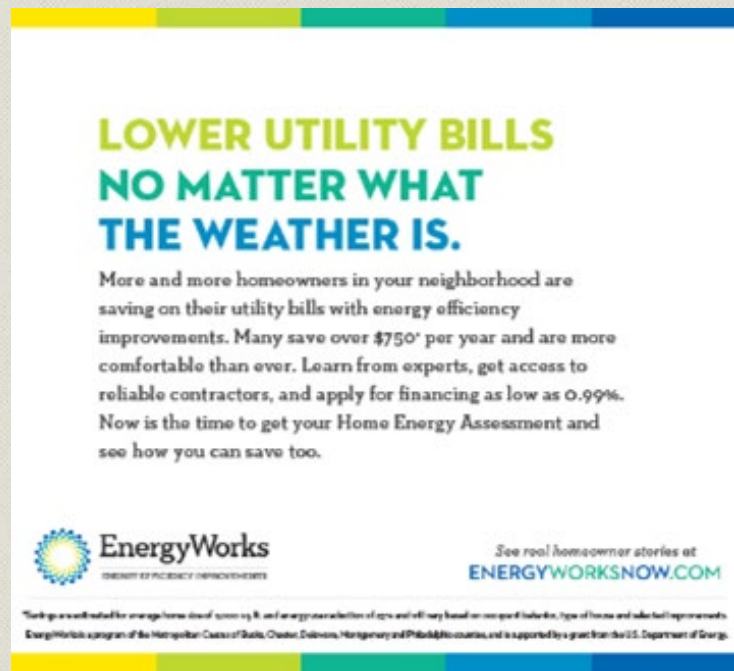
Awareness of heat pumps is low. **Visualizing heat pumps** with photography helps. Research (CEE, 2024) shows that using product images increased interest.






# Social Proof

**Descriptive norms** –  
describing that all your  
neighbors are doing it –  
perform well.



**LOWER UTILITY BILLS  
NO MATTER WHAT  
THE WEATHER IS.**

More and more homeowners in your neighborhood are saving on their utility bills with energy efficiency improvements. Many save over \$750\* per year and are more comfortable than ever. Learn from experts, get access to reliable contractors, and apply for financing as low as 0.99%. Now is the time to get your Home Energy Assessment and see how you can save too.

 **EnergyWorks**  
ENERGY BY EFFICIENCY IMPROVEMENTS

See real homeowner stories at  
**ENERGYWORKSNOW.COM**

\*Savings are estimated for average homes of 2,000 sq. ft. and average collection of 12% and utility based on average of location, type of home and selected improvements. EnergyWorks is a program of the Metropolitan Council of State, County, Education, Metropolitan and Philadelphia counties, and is supported by a grant from the U.S. Department of Energy.

# Channels

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- **Trusted local messengers:** Peer stories, CBOs, contractors
- **Channels:** Paid media, local ambassadors
- **Tools:** Visual norming cues (e.g., yard signs), neighborhood events, point-of-sale demos
- **Integrated approach:** Couple with hands-on community engagement & outreach





HeatSmart Tompkins held a meeting to launch its community campaign.

Example: The HeatSmart Tompkins (NY) campaign included a website, YouTube channel, media coverage, local advertisements, email list-servs, pamphlets, and yard signs. However, most enrollees learned about the campaign through friends and word of mouth.

## KH Most Effective Campaigns

Campaign	Adoption	Audience Reach	Motivators	Campaign Elements
<b>National Grid (Mass Save) – <a href="#">The Great Indoors</a></b> (MA & NY) (multi-year targeted campaign focuses on moving customers through marketing funnel, esp. high-propensity segments)	8,200+ heat pumps installed; \$57M customer rebates	27.4 million total campaign visits Web: 936,000 visits; 400,000 new visitors; 2,700 avg site visits/day	<b>Comfort, Cost Savings/Affordability, Efficiency</b>	Paid Media Direct Mail Email Travel & Leisure Magazine Social Media Google Search



## KH Most Effective Campaigns

Campaign	Adoption	Audience Reach	Motivators	Campaign Elements
<b>Baltimore Gas &amp; Electric</b> – <b>Fairy Tale</b> (Baltimore, MD) (tested themes: It Pays beat out Control (of energy use) & Get it Done (make easy to cross off to-do list))	312% increased participation in Smart Energy Savers Programs	>25 million broadcast television impressions Web: 120% increase in traffic, 113% increase in new visitors	<b>Comfort, Cost Savings/ Affordability, Efficiency</b>	Paid Media - TV

## KH Most Effective Campaigns

Campaign	Adoption	Audience Reach	Motivators	Campaign Elements
<b>PSE&amp;G – <u>Welcome to the Saverhood</u></b> (NJ) (idyllic community, smart choices)	219% conversion rate increase; 89% month-over-month conversions	676 million impressions Web: 265% increase in visits	<b>Comfort, Cost Savings/ Affordability, Efficiency, Convenience</b>	TV Social Paid Billboards Digital Paid Ads Events



## KH Most Effective Campaigns

Campaign	Adoption	Audience Reach	Motivators	Campaign Elements
<b>Wisconsin Utilities – <u>Focus on Energy</u></b> (WI)	109.9% of energy savings goal reached in 2016; 134.45% in 2017	32,594 new customers Web: 630% increase in visits; 511% increase in new visitors	<b>Comfort, Cost Savings/Affordability, Efficiency,</b> Home improvement	Digital Welcome Packs

## KH Most Effective Campaigns

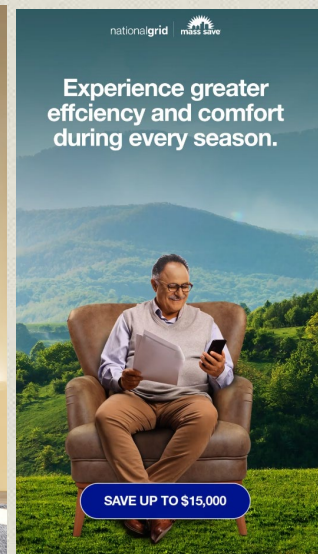
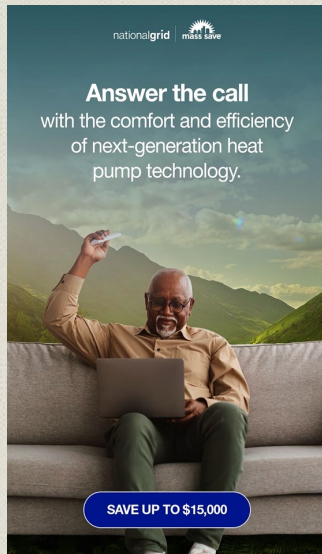
Campaign	Adoption	Audience Reach	Motivators	Campaign Elements
<b>Consumers Energy</b> – <b><u>Powered by Charles</u></b> (MI) (your “next-door” energy mentor – community orientation)	No data	66 million impressions, 34 million video views Web: More than 160,000 clicks	<b>Cost Savings/Affordability,</b> Safety, Environmental	TV YouTube Channel



# National Grid's "The Great Indoors"

NY & MA

**Multi-year targeted campaign** focuses on moving customers through marketing funnel, especially high-propensity customer segments





# BG&E's "Fairy Tale"

Baltimore Gas & Electric tested several themes & ultimately chose **Saving Money** (It Pays) over Control (of energy use) and Get it Done (make easy to cross off your to-do list).

**120% WEB TRAFFIC**

**UPGRADE YOUR PALACE**  
Get an average of \$2,500 in rebates when you make recommended home improvements.

**MyBGE**  
Sponsored by BGE

**UPGRADE YOUR PALACE**  
Get rebates averaging \$2,500!  
BGESmartEnergy.com/Upgrade

**RECYCLE YOUR OLD FRIDGE**  
GET \$75  
Schedule your pickup today!

**BGE**  
All rebates courtesy of BGE

**EmPOWER MARYLAND**

**START YOUR ENERGY-SAVINGS TALE**

Schedule a Quick Home Energy Check-up.

**BGE**  
All rebates courtesy of BGE

**EmPOWER MARYLAND**



# PSE&G's "Welcome to the Saverhood"

NJ

- Founded on concept "If savings were a place"
- Depicts **idyllic community** where all roads lead to **smarter energy choices**



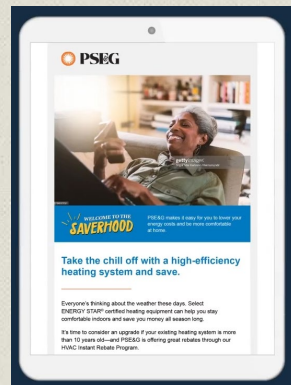
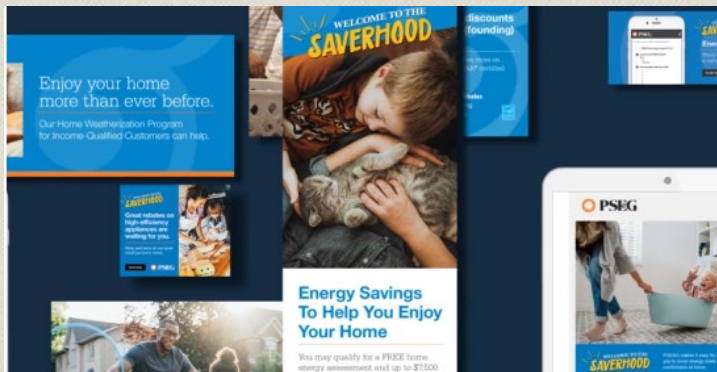
WELCOME TO THE  
**SAVERHOOD**

More comfort and convenience are closer than ever.

Optimize your energy efficiency with our Home Performance with ENERGY STAR® Program today!



Find a Participating Contractor  
Visit [pseg.com/HPwES](http://pseg.com/HPwES)  
or call 1-855-846-2895.





# UK Government's "Feel All Warm & Fuzzy Inside"

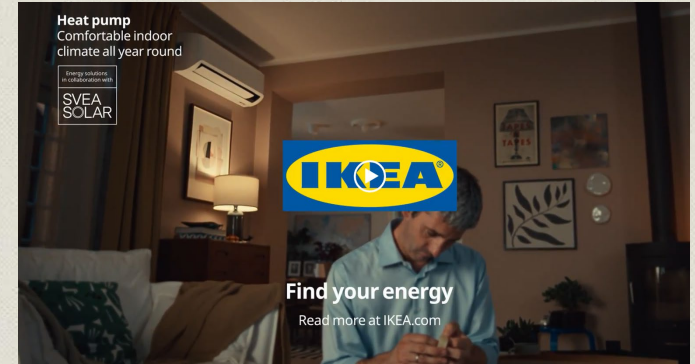
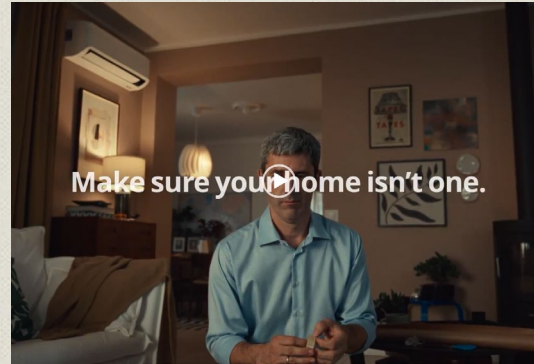
- **Authentic stories** based on interviews w/ real heat pump owners
- Launched Mar '25 so no data but praised for warmth, charm, & effectiveness in making heat pumps relatable





# Ikea's "Life is Full of Energy Thieves"

- **Down-to-earth storytelling** to resonate globally
- **Playful** to communicate benefits & differentiate from traditional, technical energy advertising
- Launched 2024 but no public data



# Common Elements

- **Cost savings/affordability** most universal benefits, followed by **efficiency**, and **comfort** benefits.
- Other motivators could be tested for relevancy with select audiences as secondary benefits: Environment, Health, Safety, Control, Convenience, Resiliency, Reliability, Innovation, Home improvement, Community.

**insulation** noun (in-suh-ley-shun)

1. The feeling you get when you're so comfortable in your home you fall asleep on the couch.
2. Adding special material to your home to keep it cool in summer and warm in winter.



**EnergyWorks**  
ENERGY EFFICIENCY DESIGN PROGRAM

A Comprehensive Home Energy Assessment  
is your guide to saving energy, saving money,  
and living more comfortably.

Chat yours now for just \$250.  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)  
215-609-1052



# Common Elements

- For campaigns specific to **heat pumps**, **comfort was most common motivator**.
- **Barriers were not explicitly addressed** in campaigns, with only one exception
- Many campaigns went **beyond marketing** to include community programs (e.g., in meetings, workshops, community events, yard signs, etc.)

**insulation** noun (in-suh-ley-shun)

1. The feeling you get when you're so comfortable in your home you fall asleep on the couch.
2. Adding special material to your home to keep it cool in summer and warm in winter.



**EnergyWorks**  
ENERGY EFFICIENCY DESIGN PARTNERS

A Comprehensive Home Energy Assessment  
is your guide to saving energy, saving money,  
and living more comfortably.

Get yours now for just \$250.

[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)  
215-609-1052

# Campaign Titles

- Many **action-oriented**: Create sense of immediate action & feel participatory
- **“Electric”** most commonly used: Sounds modern & appealing
- **“Energy”** commonly used: Neutral, gateway term appeals to wide audiences
- Some focus on **emotional/lifestyle benefits** (e.g., comfort, warmth, better, fairy tale): Humanize message & tie to everyday quality of life
- Some suggest **personal identity** or **local community**: Make people feel part of something bigger
- Some use **storytelling** or **playful** concepts (e.g., fairy tale, energy thieves, saverhood): Makes technical topic more approachable



## Top Ranked Campaign Name Themes

Theme	Frequency/Presence
Action/imperative language	Very common (~50%)
"Electrify" / "Electric" terms	Common (~20%)
Energy/efficiency framing	Common (~20%)
Comfort / lifestyle benefits	Frequent (~15-20%)
Community / personal identity	Moderate (~10-15%)
Narrative / playful language	Moderate (~10%)

## Top Ranked Benefits from the Campaigns

Theme	Presence / Frequency
Comfort & quality of life	Very strong (30-40%)
Savings / affordability	Very strong (30-40%)
Sustainability / clean energy	Common (20-30%)
Empowerment / action language	Moderate (15-20%)
Playful / story-driven tone	Growing (10-15%)

# DRCOG–Region Program Titles

There may be **benefits or detriments** in supporting / aligning with existing program titles.

- Energize Denver
- Boulder County's Living Electric: Making power moves in Boulder County
- Efficiency Works (Estes, Longmont, Ft. Collins, Loveland)
- HEAR (Home Electrification and Appliance Rebate Program)



# DRCOG-Region Program Titles

- CARE (Colorado's Affordable Residential Energy) Program
- RENU (Colorado Renewable Energy Upgrade Loan)
- C-PACE (financing)
- Colorado Clean Energy Fund (financing)

Bottom line: There is **no dominant, unifying** campaign or program.

03

# **NEXT STEPS**



# Gaps & Next Steps

- Need to **ground-truth** experiences of early adopters, especially homeowners & small businesses:
  - Upfront costs
  - Operating costs
  - Complexity, operating issues
  - Comfort and performance
- Use insights to inform discussion guides for **primary research**
- **Segmentation** for sub-audiences and secondary collateral development

**THANK YOU!**



03

# **APPENDIX A**

## **Literature Review**

# **Homeowners**

## **Including Low-Income**



# Denver-Specific Data

## For Under-Resourced & POC Communities

### Energize Denver Renewable Heating and Cooling Plan – Lotus, June 2021:

- Expressed preference for electric appliances, with exception of water heaters for homeowners, where 60% preferred gas-powered water heaters
- Main considerations for replacing home appliances are: 1. Safety., 2. Reliability and cost, 3. Energy efficiency, 4. Health.
- Notably, least important priority for qualities in replacement appliances was impact on indoor air quality YET these homeowners also said they would pay more for an appliance if it made their home healthier (61%).
- Primary concern was additional upfront costs. Other concerns: administrative burden of using assistance programs; lack of culturally appropriate outreach materials
- More encouraged to use air source heat pumps (ASHP) if provided both space heating and cooling

# Denver Regional Data

## For Under-Resourced & POC Communities

**The path to pollution-free buildings: Meeting Xcel's 2030 gas decarbonization goals,** Western Resource Advocates, 2023:

- Lack of awareness is major barrier: Residents unfamiliar with how electric heating systems work or how compare to gas-based systems
- Education & outreach re: benefits & performance of heat pumps (especially in cold climate)
- Contractors are a primary outreach channel
- Consumer-facing tools critical: Online tools, hotlines, community events
- Streamlined programs: Simplify consumer journey by ensuring rebates, incentives, & upgrade processes easy to access & understand



# Mindsets – Homeowners

- Mindset shaped by sustainable lifestyle, risk tolerance, age, political identity, knowledge of energy systems (Brown, et al., 2023)
- **Low-income** groups are most concerned with affordability, minimizing energy burden, and equitable access (Sandoval, N., et al., 2025)
- Heat pump adoption strongly correlated with electricity prices (Environmental and Energy Policy and the Economy, 2024)
- Heat pump water heater customers more likely than HP customers to explore new options while existing equipment still functioning well (Opinion Dynamics, 2022)
- Those who have solar more likely to adopt HPWH or HVAC HP (Opinion Dynamics, 2022)
- Feeling in control positively influences intention to adopt heat pump (Martens, E., et al., 2025)
- One can have positive attitude toward heat pumps but low intention to adopt (Martens, E., et al., 2025)

# Barriers – Homeowners

- High upfront costs (Sandoval et al., 2025)
- Incompatibility with existing infrastructure, requiring additional home upgrade requirements (Sandoval et al., 2025)
- Concerns of complexity (including related to maintenance) and disruption (Joana Neves & T. Oliveira, 2021)
- Lack of trusted contractors (Tan, L., et al., 2025)
- Long lifetimes of existing fossil fuel equipment (Rewiring America, 2024)
- Concerns that heat pumps slower to heat (Opinion Dynamics, 2022)
- Perceived risks: Poor performance and skepticism that local power grids will support transition & government incentives will continue (Ad Council Research Institute, 2025)
- Low awareness of incentives & technologies (especially cold-climate heat pumps), especially among **low-income** & younger consumers
- Limited or complex policy support, especially for **low-income** groups (Yim, E., & S. Subramanian, 2023)
  - Slow rebates, inconsistent specs (Tan, L., et al., 2025)
  - Programs perceived as confusing, inaccessible (Tan, L., et al., 2025)
- For **low-income**, Skepticism about upgrades that could increase costs or risk displacement (Sandoval, N., et al., 2025)
- For **low-income**, risk of higher energy bills if rate design isn't equitable (Yim, E., & S. Subramanian, 2023)



# Motivators – Homeowners

Motivators dependent on what's salient with peer group (Wolske, K. S., et al, 2020) but include:

- **Low-income** motivators
  - Equity & justice central: fair treatment, protection from cost increases, access to benefits (Rewiring America, 2024)
  - Protection from rising fossil fuel costs (Yim, E., & S. Subramanian, 2023)
- Cost savings (40%) and environmental benefit (25%) (Rewiring America, 2024)
- Cost savings & long-term ROI (Brown et al., 2023)
- Energy efficiency & improved performance of electric appliances (Ad Council Research Institute, 2025)
- Health & comfort improvements (e.g., fewer pollutants, safer operation) (Yim, E., & S. Subramanian, 2023)
- Environmental benefits & climate action (Yim, E., & S. Subramanian, 2023)
- Financial support: Rebates, tax credits, incentives (Kirsznner, M., C., et al., 2022)
- Social proof/ peer adoption (Koo, J., 2018)
- Desire to complement existing/future solar installations by converting as many appliances as possible (Opinion Dynamics, 2022)
- Local job creation (Clean Energy States Alliance, 2019)
- Reduced grid demand (Liang, J., et al., 2022)

# Values – Homeowners

- Affordability & bill savings (Fink, H. S., 2011)
- Efficiency & reliability of home systems (Sussman, et al., 2024)
- Reliability & performance (Opinion Dynamics, 2024)
- Social acceptance / peer validation (Wolske, K. S., et al., 2020)
- Modernization among younger, tech-savvy homeowners (Koo, J., 2018)
- Ease of use & access (Sussman, et al., 2024; Tan, L., et al., 2025)
- Political views: More politically conservative individuals less in favor of investment in energy-efficient technology than those more politically liberal – and less likely to purchase a product if it's labeled as environmentally conscious (D.M. Gromet, H. Kunreuther, & R.P. Larrick, 2013.)

## Low-income:

- More likely to rate cost, equipment longevity, performance, & availability of discounts as extremely important when considering purchasing new water heater (Opinion Dynamics, 2024)
- Upgrades must provide immediate, tangible benefits & not risk displacement (Sandoval, N., et al., 2025)
- Most important benefits are reduced utility bills, lower energy burden, and equitable access (Yim, E., & S. Subramanian, 2023)
- High-efficiency electrification is prioritized, as it can lower annual utility bills, while low-efficiency upgrades can increase costs (Yim, E., & S. Subramanian, 2023)
- Fairness, bill affordability, climate action, reducing energy burden, equitable access to benefits (Yim, E., & S. Subramanian, 2023)
- Affordability & bill savings most important (Fink, H. S., 2011)
- Environmental benefits are valued, but secondary to affordability (Sandoval, N. et al, 2025)



# EE Upgrade Correlations – Homeowners

- Adoption higher for those with higher awareness of & support for policies. (Corbett, M., et al., 2023)
- Gateway tech ownership (like electric lawn equipment) increases openness to further electrification (Sussman, et al., 2024)
- Having solar PV correlated w/ adoption of HPWHs or HVAC heat pumps in CA (Opinion Dynamics, 2025)
- Factors that make more willing to adopt energy efficiency upgrades: 1. Children at home, 2. Owned home 6-10 years (owned home for more or less time progressively less willing), 3. Own home built after 1991, 4. Males significantly more willing than females, 5. Presence of household member comfortable installing upgrades (Reuven, S., et al., 2018)
- Factors that increase likelihood of adopting heat pump: 1. urban areas, 2. younger heads of household, 3. larger homes and 4. better insulation (Miguel Poblete-Cazenave, et al., 2023)
- HP adoption not found to correlate w/ income, unlike solar & EV adoption (Environmental and Energy Policy and the Economy, volume 5, 2024)

# Awareness

## For home electrification

- General awareness of electrification high, but low knowledge of differences, especially VSHPs and their benefits. (Kirsznner, et al., 2022)
- Many residents unfamiliar with how electric heating systems work or how they compare with gas-based systems. (Western Resource Advocates, 2023)
- Overall public awareness limited and uneven, especially of specific technologies like cold-climate heat pumps. (Romero-Lankao, et al., 2021)
- Only about a quarter of non-heat pump owners are open to installing one, indicating need for education. (Rewiring America, 2024)
- Openness to electrification shaped by early exposure / childhood experience w/ electric appliances. (Sussman, Reuven & Jonah Eisen, 2024)



# Messaging

## Homeowners

- Individuals may not understand link between energy efficiency & technology well enough to have consistent opinion independent of framing of a message. (Cole, J.C., et al., 2018)
- Rather than use terms like “retrofit,” use "upgrades." Using positive, less intimidating language can change perceptions of energy efficiency from technical problem to opportunity to invest in one's home and make it more comfortable. (Stern, S., 2011)
- To avoid decision paralysis, recommend three most effective actions homeowners can make. (Stern, S., 2011)
- Descriptive norm that compared resident to neighbors (e.g., 99% of people in your community reported turning off unnecessary lights to save energy) with a graphic resulted in greater energy conservation than other tested messages (self-interest, environment, or social responsibility). (Nolan, J. M., et al., 2008)
- Messages on energy efficiency combining specific behaviour guidelines & economic benefits more effective than those based on either type of info alone. (Fernando Casado, et al., 2017)
- Specific messages more effective than generic. (Fernando Casado, et al., 2017)
- **Low-income:** Messages focused on affordability, energy burden reduction, equity most impactful. For example, highlighting that high-efficiency electrification can lower utility bills & protect against rising costs. (Sandoval, et al., 2025)

# Messaging – Homeowners

- Most popular messaging & imagery for US respondents (Cole, J.C., et al. 2018): Message: “The newest energy efficiency technologies are now just within your reach & will save you money for years to come,”  
Imagery: \$ and house, \$ & lightbulb
- Respondents more likely to report willing to upgrade after reading messages that espoused specific benefits of upgrading (bill savings, health and comfort), and messages that took advantage of anchoring heuristic (i.e., reducing initial cost by amount homeowners would spend on repairs anyway). Homeowners chose to invest in more expensive upgrades if not listed next to extremely cheap “no-brainer” items with high annual savings. (Reuven, S., et al., 2018)
- Mentioning health, bill savings and comfort were most persuasive benefits to highlight. (Reuven, S., et al., 2018)
- Long payback dates should be de-emphasized, if possible. When payback dates discussed, may be slightly more successful if present dates as specific months and years, as opposed to years-from-today. (Reuven, S., et al., 2018)
- Messaging should counteract belief that EEHAs hard to install or maintain: Use testimonials or narratives: “I thought this would be hard — but it was easy!” (Joana Neves & Tiago Oliveira, 2021)
- Coupling benefits, cost savings, and environmental benefits stronger messaging strategy. (Rewiring America, 2024)
- Messages combining personal benefit (cost/convenience), peer behavior (“your neighbors are doing it”), & environmental impact most effective. (Dietz, T., et al., 2009)
- Environmental messages work for some, but social proof & practical benefits generally more persuasive. (Wolske, K. et al., 2020).



# Messaging – Homeowners – continued

- Gain-framed messages more effective in encouraging take-up willingness among moderate-income homeowners than loss-framed messages
- For **low-income** homeowners, framing does not affect willingness. (Catherine Chen, 2023)
- Neither gain nor loss frame significantly increased willingness to purchase energy-efficient furnace. (Reuven Sussman, et al., 2018)
- Environmental messaging can turn away politically conservative. (D.M. Gromet, et al., 2013)
- In West, reducing harmful health & environmental impacts were key motivators for decarbonization. (Chrissi A. Antonopoulos, et al., 2024)
- Real-life product images that feature heat pumps favored over illustrations or lifestyle shots. (CEE & Behavioral Insights, 2024)
- Most impactful when messaging is transparent about benefits & tradeoffs, and focuses on bill savings & equity. (Yim, E., 2023)

# Messaging Levers

## For Homeowners

- Leverage positive experience with "gateway" tech (e.g., electric lawn equipment). (Sussman, et al., 2024)
- Target equipment replacement moments. (Sussman, et al., 2024)
- Public commitments & visible leadership can be effective but vary by context. (Romero-Lankao, P., et al., 2021)
- Yard signs reinforce trusted messengers (your neighbor) and can create perception of social norm if enough yard signs in neighborhood. (Stern, 2011)
- Bringing neighbors together & having them commit in front of one another creates a social norm of taking action to improve efficiency. (Stern, 2011)
- Based on survey in western US (Chrissi A. Antonopoulos, et al., 2024):
  - Focus program messaging on reducing health and environmental impacts as it relates to technology choice.
  - Promote heat pump technologies to households without cooling.



# Channels – Homeowners

- Word of mouth most common way people heard about heat pumps. (Opinion Dynamics, 2024)
- Peer influence via social networks & visible neighborhood adoption (e.g., signage, testimonials) boosts confidence & motivation. Stronger peer effects for heat pump adoption in urban (vs. rural) settings. (Yohan Min, 2025)
- Most effective channels leverage local peer networks: neighborhood programs, community groups, visible demonstration projects. Digital social networks & word-of-mouth also play strong role, especially when tied to local identity. (Wolske, K. S., et al., 2020)
- Most impactful when messaging is delivered by trusted local organizations (Yim, E., 2023)
- Most common ways respondents heard about availability of HPWH incentives was through utility bill inserts, web search, & word of mouth. (Opinion Dynamics, 2024)
- Trusted contractors (Tan, L., et al. (2025)
- Direct outreach (door-to-door, workshops, in-home assessments) helps personalize messaging and address individual concerns.
- Point-of-sale education (Sussman, Reuven & Jonah Eisen, 2024)
- Mass media (TV, radio, print), social media, community-based social marketing (door-to-door, peer-to-peer), feedback mechanisms (reports, online audits, in-home displays), competitions. (Harris, J., et al., 2010)

## Low-income:

- Local utilities, CBOs, & trusted local leaders identified as effective (Sandoval, 2025)
- Community-based, time-limited campaigns (Solarize model) are effective (Koo, J., 2018)

# Building Owners & Managers

Com m e r c i a l, M u l t i - f a m i l y, I n d u s t r i a l



# Denver-Specific Data

## For Commercial Buildings

Energize Denver Renewable Heating and Cooling Plan – Technical Appendix, Lotus, June 2021:

- Lowest first cost drives most decisions for commercial groups
- Buildings turn over every five to seven years. The timeline for investments is short.
- Concerns about having to replace everything when going electric.
- Space constraints in some buildings; contractors cannot physically get some equipment in designated space.
- Improved health and comfort benefits do not resonate with commercial owners.
- Commercial customers starting to look at carbon impact and consider electrification options.

NOT COMMERCIAL-SPECIFIC: Generally, partnerships recommended by advisory groups (Public Health & Air Quality, Building Contractors, & Building Owners and Property Managers): HOA management companies, Residential neighborhood organizations, Realtors, Home inspectors, Large building owners (not small ones), Pipefitters, Plumber unions

# Barriers

## For Building Owners & Managers

- Cost & payback period (Center for Energy and Environment, & Elevate Energy, 2021), including for upgrades like electrical wiring & service panels. (York, D., C. Cohn, D. Morales, and C. Tolentino, 2022)
- Lack of knowledge about heat pump operation & maintenance (Center for Energy and Environment, & Elevate Energy, 2021)
- Lack of understanding of implications for tenant comfort & retention (Center for Energy and Environment, & Elevate Energy, 2021)
- Concerns re: ability of heat pumps to keep tenants warm (Center for Energy and Environment, & Elevate Energy, 2021)
- Inexperienced heat pump designers & installers (Opinion Dynamics, 2022)
- Concerns re: space / where to site heat pumps (Opinion Dynamics, 2022)
- Uncertainty & variability of monthly energy cost savings due to differences in climate, electricity rates, fuel costs, equipment efficiency (York, D., et al., 2022)
- Split Incentives between building owners & tenants: When tenants pay utilities, landlords under-invest in energy efficiency upgrades, resulting in higher energy costs & consumption for tenants. (Melvin, 2018)



# Motivators

## For Multifamily Building Owners & Managers

### Multi-Family

- Reluctance to be at forefront of technology because of past negative experiences. (Center for Energy and Environment, & Elevate Energy, 2021)
- Space heating and cooling with heat pumps viewed as easier to implement than water heating with heat pumps b/c equipment similar to what workforce used to working (air conditioners, rooftop units, VRF systems). (Opinion Dynamics, 2022)
- Want to know equipment has worked effectively at other properties. (Opinion Dynamics, 2022)
- Willing to try equipment that operations and maintenance (O&M) staff might not be familiar with. (Opinion Dynamics, 2022)
- **Buildings with centralized fossil heating system:** Reusing infrastructure not possible with current technologies – may overburden existing capacity/infrastructure; shift heating costs to residents; affect utility allowances subsidized to owners by HUD (York, D., et al., 2022)
- **Nonprofit-owned Affordable multifamily:** Little flexibility to consider HVAC systems that inherently come with operational or financial risks (Center for Energy and Environment, & Elevate Energy, 2021)

### Subsidized affordable housing developers

- Where utility allowances employed, if cost of tenant utilities decreases, owners can capture difference in additional rent – particularly critical to nonprofit-owned affordable housing owners.

# Values

## For Building Owners & Managers

- Installation of heat pumps needs to make financial sense. (Center for Energy & Environment, 2021)
- Performance & Reliability, particularly important for cold climate heat pumps
- Lowest First Costs drive most commercial decisions. (Lotus, 2021)
- Nonprofit-owned affordable multifamily:
  - Nonprofits operate with tight margins and need to avoid passing costs to tenants. But if utility costs drop, some nonprofits (especially in subsidized housing) can capture value through higher rent via adjusted utility allowances—making efficiency upgrades financially attractive (Center for Energy & Environment, 2021)



# Case Study

## PROJECT PROFILE

### ALL-ELECTRIC CAMPUS BY MORGAN CREEK VENTURES BOULDER, COLORADO

#### KEY FACTS

- 12 mixed-use, commercial, and multifamily buildings
- 426,000 square feet
- \$252 million invested
- Design begun in 2016, delivered in phases between 2017 and 2024
- Mid-rise, four stories
- VRF heat pump systems throughout

The founder of Morgan Creek Ventures, Andy Bush, has been implementing heat pumps in new construction for some time. In the last five years, watching the pricing and technology improvements, he says heat pumps have gotten more efficient every year. He estimates a 10 percent efficiency increase in that time frame; they both cost less to operate and better operate on colder days. "This is the path we are on with heat pumps—they are getting less expensive over time and performing increasingly better," says Bush.

"Natural gas is still cheaper at the moment, but if you put it in the context of future-proofing buildings, it makes more sense. Our total operational costs are going down while our competitors' are going up, long term."

The decision to implement VRF heat pumps into the all-electric campus in the Boulder Junction neighborhood was made because the technology was the most robust and efficient. The technology also works for all the building types that Morgan Creek Ventures is developing for the campus, ranging from mixed-use office with ground-floor retail to mixed-use multifamily/retail and multifamily-only buildings.



MORGAN CREEK VENTURES/PORTFOLIO MEDIA

A multifamily building in the Morgan Creek Ventures development sits at 3200 Bluff Street.

# Messaging

## For building owners/managers

- Messages about rebates or incentives should be clear, transparent, & timed to align with planning for rehab work or early in design process of new buildings (Center for Energy & Environment, 2021)
- Reliability of heat pumps in cold weather must be demonstrated. (Center for Energy & Environment, 2021; York et al, 2022)
- Seven out of nine multifamily owners/managers interviewed mentioned that technical support, in form of more knowledgeable contractors or training for O&M staff, would be important for considering heat pumps. (Center for Energy & Environment, 2021)
  - Consider: Adapt ULI's myth-busting messaging using local climate & energy data (*Pumping Up Sustainability: Myth -Busting Heat Pumps in Commercial Real Estate* ). Myths mostly related to cost & performance, but excellent resource at end for developers on what questions to ask during design phase.



# Contractors

# Denver-Specific Data

## For Workforce & Labor

Energize Denver Renewable Heating and Cooling Plan – Technical Appendix, Lotus, June 2021:

- Contractors are super busy.
- Difficult to motivate to do something new & unfamiliar.
- Women & people of color should be recruiting to help diverse young people see themselves in this workforce.
- Recruitment opportunities should start as early as high school.



# Mindset

## For Contractors

- There are three types of contractors (Yao Zhang, 2023):
  - Adopters: Initially positive but fragile, evaluative, watching external signals, looking for realized benefits.
  - Potential Adopters: Ambivalent, sensitive to peer behavior, resource constrained, evaluating expected benefits, peer behaviors, costs, & technical barriers.
  - Abandoners: Skeptical, risk-averse, disillusioned but potentially recoverable, looking at incentives, public pressure, competitor success, and clarity of standards.
- More confidence in selling, sizing, & installing HPWH equipment in smaller buildings & single-family homes than larger properties with centralized systems. (Opinion Dynamics, 2024)
- Often customer-centric, deferring to customer needs & cost sensitivities and wanting to guide with expertise, yet not confident in explaining and educating about heat pump technology and/or benefits (Kirsznner, et al., 2022)
- More interested in providing uncomplicated service (i.e., with few callbacks) than selling/upselling items more difficult to install & explain to customer. (Center for Energy and Environment, 2021)

# Values

## For Contractors

- Core Business Values: Economic rationality, cost sensitivity, resource capability & fitness, corporate responsibility, future competitiveness, reputation, image. (Opinion Dynamics 2024)
- Customer Satisfaction: Cost Effectiveness, Reliability, Comfort, Environmental Values (to a lesser extent) all play a part. (Kirsznner, Hogan, & Pitt, 2022)
- Capacity & Capability: Ability & confidence in selling, installing, & maintaining heat pump technologies. (Opinion Dynamics, 2024)
- Lowest First Costs: Contractors know (& perhaps assume) that lowest first costs drive most commercial decisions. (Lotus, 2021)
- Core business values: Economic rationality, cost sensitivity, resource capability & fitness (companies with stronger capabilities & capacities more likely to value & adopt green behaviors). (Yao Zhang, 2023)
- Strategic & Cultural Values: Corporate responsibility, future competitiveness, reputation & image. (Yao Zhang, 2023)



# Perceptions

## For Contractors

- Many unconvinced ASHPs work effectively in cold climates or believe the technology “isn’t there yet.” (Pickard, et al. 2020)
- Perception that standard (not cold-climate) ASHPs can’t meet winter needs, require more maintenance than other HVAC systems, will cost customers more money (due to low natural gas prices). (Pickard, et al., 2020)
- Many remain unaware of advantages & challenges of emerging HP technologies. (Northeast Energy Efficiency Partnerships, 2024)
- Among contractors familiar with ccASHPs, perceived benefits: long-term monetary savings, energy savings, ability to both cool & heat; ccASHPs can perform at colder temperatures than standard ASHPs, so money savings on heating bills because rely less on backup heating systems. (Pickard, et al., 2020).
- Most contractors (59% of surveyed) aware of rebates or incentives and said they promote to customers. (Opinion Dynamics, 2024)
- Electrification & VSHPs often seen as “premium” or “best” option, which may not be warranted if cost is high. (Kirsznier, et al., 2022)
- Many contractors generally knowledgeable but see gaps in peer training & proper sizing of HP technologies (Kirsznier, et al., 2022)

# Motivators

## For Contractors

- Offer of living wages & supporting career advancement opportunities can motivate underrepresented workers to participate in programs. (Shoemaker, et al., 2020)
- Good pay & new economic opportunities can motivate contractors & those seeking to enter the trades to enter into the energy efficiency sector. (Opinion Dynamics, 2024)
- Manufacturers increasing production of wider range of models & price points, making easier for contractors to promote & providing increased exposure/experience with HP technologies. (Kirsznner, et al., 2022)
- Customer interest in long-term cost-savings & for some, “going green” can motivate. (Kirsznner, et al., 2022).
- Regulatory mandates/codes & incentives can motivate contractors & customers. (Kirsznner, et al., 2022; Zhang, et al., 2023)
- Motivated by peer behavior if see other contractors or firms finding success or market opportunities. (Kirsznner, et al., 2022; Zhang, et al., 2023)
- Some contractors expressed they feel it's their responsibility to advise customers on energy efficient options. (Beek, et al., 2025)



# Barriers

## For Contractors

- Supply chain & logistical challenges: Availability of appliances & parts for installation can be difficult (Bastian & Cohn, 2022; World Energy Outlook, 2022).
- Lack of awareness & confidence / risk-aversion: Contractors are risk averse and found to be least confident in ability to properly size HPWH equipment. Confidence in servicing & maintaining HPWH equipment similar across different property types, (Opinion Dynamics, 2024; Zhang, et al., 2023) Also find lack of consumer awareness challenging. (Bastian & Cohn, 2022)
- Lack of multifaceted skills training & capacity: A need to increase capacity & address business skills & soft skills, along with technical skills, to help minority-owned businesses & underrepresented workers navigate programs, licensing, certifications, & project financing. (Shoemaker, et al., 2020)
- Psychological resistance: May be uncomfortable with system complexity or technology customers don't fully understand & that may require callbacks & so are less likely to promote dual-heat, hybrid, other types of systems to customers. (Center for Energy and Environment, 2021; Kirsznier, et al., 2022)
- Cross-licensing & time consuming admin: Often not cross-licensed across trades (e.g., electrical, plumbing, HVAC) & requirements disparate across jurisdictions. Electrification often requires multiple trades for full installation, making projects more complicated & schedules longer (Opinion Dynamics 2024). Complaints that time-consuming tasks & paperwork required. (SERT, n.d.)

# Messaging

## For Contractors & Workforce Development

- Contractors play critical role as trusted messengers & “middle actors” in influencing customer decisions. Empower them as advocates with stories of success, use cases, & clear explanations. (Beek, et al. 2025)
- Make sure messaging is consistent & aligned across workforce development & consumer education. (Beek, et al. 2025)
- Create workforce development & training that is accessible, practical, & builds confidence. Address business & soft skills along with technical skills. (Beek, et al., 2025)
- Peer-influence important, especially from competitors & benchmark enterprises. Increasing contact between adopters & potential adopters or even non-adopters can effectively increase conversion to adopters. (Zhang, et al., 2023)
- Tendency to overemphasize energy efficiency & expected cost savings from heat pump installation revealing need for increased efficacy, transparency, & consistency in messaging. (Mikhail, et al., 2025)
- Establish bellwether by identifying early adopters, manufacturers, distributors, trustworthy contractors already successful. (Bastian & Cohn, 2022)
- Partner with community-based organizations, utilities, manufacturers, sales/design technicians, & distributors as trusted messengers for information & training. (Bastian & Cohn, 2022; Kirsznier, et al., 2022; Pickard, et al., 2020)
- Peer influence from competitors & benchmark enterprises. Demonstration projects. Communicating growing market demand. Public pressure. Social norms around green construction practices. Professional networks, partnerships, industry groups. Messaging could also come from government through mandatory regulation, financial incentives, or evaluation criteria. Field visits and/or peer benchmarking recommended so contractors can see benefits, learn first-hand & reduce risk aversion. (Yao Zhang, 2023)



# Prospective Workforce

# Motivators

## For Future Workforce

- Economic opportunity: Pathways to financial security, good paying jobs, economic mobility, and career advancement. (Shoemaker, Ayala, & York, 2020; Opinion Dynamics, 2024)
- Social impact (Student Energy, Orsted, 2023)
- Salary (Student Energy, Orsted, 2023)
- Alignment of values with those of the company (Student Energy, Orsted, 2023)
- Opportunities for growth (Student Energy, Orsted, 2023)
- Job stability (Student Energy, Orsted, 2023)
- Good pay & new economic opportunities can motivate contractors & those seeking to enter the trades to enter into the energy efficiency sector. (Opinion Dynamics, 2024)



# Barriers

## For Future Workforce

- Low awareness of “energy efficiency” as career path (ACEEE, 2025)
- Negative perceptions of careers in construction as being physically demanding, outdoorsy, & masculine (Alexander, K., et. al, 2024)
- Perceptions of construction as a ‘male’ occupation (Alexander, K., et. al, 2024)
- Shortage of aligned training programs (ACEEE, 2025)
- Inadequate professional development support (ACEEE, 2025)
- Lack of support services to support learning – including wraparound services, such as for transportation, childcare, and housing (Berkowitz 2019; Madigan & Bonney, 2021)
- Limited job preparedness, including support for writing a resume, access to work clothing, and preparing for interviews (Lehmann, et al., 2021)
- Lack of access to career planning and post-training advancement support (e.g., job descriptions, catalog of available jobs for jobs seekers) (Fazeli, 2021)

03

# **APPENDIX B**

## **Campaign Examples**



Organization	Campaign Name	Tagline
DOE	Better Buildings Initiative	Saving Energy. Saving Money. Leading the Way
IRA	Home Energy Rebate Program	Electrify everything- affordably
EPA	Energy Star Home Upgrade	Build a better home for you - and the planet
BDC	The Switch is On	The clean energy future starts at home. Ditch Gas. Go Electric
Rewiring America	Electrify Everything	Save money. Save the planet. Go electric
RMI	Electrify Efficiently	Electrify with ease. Smarter retrofits. Cleaner homes.
MEAM	Electrify Your Life	Comfort. Convenience. Clean energy.

Organization	Campaign Name	Tagline
Tech Clean California	The Switch is on	The clean energy future starts at home; Break up with gas
NYC Mayor's Office	ElectrifyNYC	Helping NYC Keep Cool, Safe and Sustainable
Efficiency Vermont	Button Up Vermont	Keep the heat in and the cold out; Button up for a warmer, more efficient home
Energy Trust of Oregon	Energy Savers, Ready for Tomorrow	Energy Trust helps you save energy and money
Efficiency Maine	Save like a Mainer	Save like a Mainer
Mass Save	Start saving with Mass Save	Savings through Energy Efficiency
EnergyWorks		When your house is more comfortable, you're home.
Boulder	Living Electric	Making power moves in Boulder County
CleanPowerSF	Break up with Gas	Move on with electric
ElectrifyDC	ElectrifyDC	Working together to electrify all homes
City of Bellevue	Energy Smart Eastside	Together we're electrifying the Eastside



Organization	Campaign Name	Tagline
Baltimore Gas & Electric	Fairy Tale	Live efficiently ever after
Wisconsin Utilities	Focus on Energy	Wisconsin is in for Home Solutions
Con Edison	Energy for Every Day (2024)	New York runs on energy. We're making it clean.
	Where Clean Energy Lives (2021-23)	A cleaner, greener energy future
	Clean Energy for All (2019-20)	Energy touches every moment of our lives. Switching to renewable energy means these moments can last forever.
	Energy Future (2018-19)	With Con Edison, you have the power
PSE&G	Welcome to the Saverhood	
Xcel Energy	Get Pumped for Heat Pumps	
Denver Water	Use Even Less	Use only what you need
	Life is Better with Water	Water is everything

Organization	Campaign Name	Tagline
Ikea	Life is Full of Energy Thieves...	...Make sure your home isn't one.
LG	Switch for Good	Make the switch for good
UK Government / Department for Energy Security and Net Zero	Feel All Warm & Fuzzy Inside	



# City Level Campaigns for Biz

## Baltimore Gas & Electric's "Small Business, Many Hats" campaign:

<https://vimeo.com/903758585>

- Motivators focused on cost savings, convenience, and environmental benefits
- Highlighted small business owners who had "truly" benefitted from BGE's energy & cost saving program
- Messages included:
  - "Small businesses are the heart of every community. And Baltimore's are doing better than ever, thanks in part to BGE."
  - "When do you find time to cut costs? Never stop looking for ways to save."
  - A chance to get "a helping hand, a little break, a little sanity"

# City Level Campaigns

## Baltimore Gas & Electric

### Talking Tips 2009 – 2015

ICF set up focus groups to test customer sentiment and messaging. The results were used to develop BGE's Talking Tips campaign.



- + Lighthearted Tone
- + Gave energy efficiency advice and program specific offers

### The Ways 2015 – 2019

Based on focus group findings, customers thoughts on BGE, and social norming The Ways campaign was developed.



- + Social Norms Approach resonates; customers are proud to use BGE
- + Used an upbeat illustrated style to simplify complex subjects



# City Level Campaigns (Denver)

## Denver Water

Videos here: <https://www.denverwater.org/about-us/history/use-only-what-you-need/use-only-what-you-need-video-gallery>



# City Level Campaign

## Denver Water: Life Is Better with Water

Video here:

<https://www.facebook.com/DenverWater/videos/840470533222837>





# City Level: Campaign Evolution

## Con Edision (NYC)

Campaigns focused on energy since at least 2018:

- Energy Future (2018-19) - focus on innovation
- Clean Energy for All (2019-2020) - focus on community, family & tech
- Where Clean Energy Lives (2021-2023) - focus on innovation & relationships
- Energy For Every Day (2024) - focus on diversity & worthiness; portrays NYC not only as bustling metropolis, but as collective home deserving of preservation.

# City Level

## Ann Arbor's A2Zero

Not marketing campaign per-  
say – mostly community events,  
website, & newsletters





# City/County Level Campaigns

## City of Boulder w/ Boulder County

- Focused on promoting comfort over savings
- Not robust marketing campaign: Info meetings, targeted mailings, social marketing; Google ads; TV ads
- Identified homeowner cohorts likely to consider upgrading:
  - Early Energy Tech Adopters
  - Small Ranch Houses (lacking central AC)
  - Well-To-Do Progressives
  - “Greens” in need of replacing AC/furnace in next 5 years
  - AirBnB Rentals Lacking AC



# County Level Campaigns

## Boulder County's Living Electric





# County Level: 3-Phase Campaign

EnergyWorks Phase 1: Awareness (Several PA counties)

**68°  
BEDROOM  
TV REMOTE  
REALITY SHOW**

When your house is more comfortable, you're home.

  
EnergyWorks  
ENERGY EFFICIENCY IMPROVEMENTS

Experience a more comfortable home while saving up to 20% or more on utility bills. That's energy efficiency. And from assessment, to financing, to improving your home, EnergyWorks gets you there.  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)

**73°  
KID'S ROOM  
TEDDY BEAR  
NAP TIME**

When your house is more comfortable, you're home.

  
EnergyWorks  
ENERGY EFFICIENCY IMPROVEMENTS

Experience a more comfortable home while saving up to 20% or more on utility bills. That's energy efficiency. And from assessment, to financing, to improving your home, EnergyWorks gets you there.  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)

**76°  
KITCHEN  
ICED COFFEE  
SUDOKU**

When your house is more comfortable, you're home.

  
EnergyWorks  
ENERGY EFFICIENCY IMPROVEMENTS

Experience a more comfortable home while saving up to 20% or more on utility bills. That's energy efficiency. And from assessment, to financing, to improving your home, EnergyWorks gets you there.  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)

**HEAT WAVE**

  
EnergyWorks

**CENTRAL AIR**

  
EnergyWorks

**ICE CREAM**

  
EnergyWorks

**WHEN YOUR HOUSE IS MORE COMFORTABLE,**

  
EnergyWorks

**WHEN YOUR HOUSE IS MORE COMFORTABLE, YOU'RE HOME.**

  
EnergyWorks

  
EnergyWorks  
ENERGY EFFICIENCY IMPROVEMENTS  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)  
GET STARTED

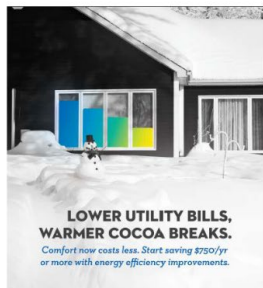
\*Ran during days with temperatures at 85 degrees or above

# County Level: 3-Phase Campaign

EnergyWorks Phase 2: Harder Sell / Marry Value with Comfort  
(Several PA counties)



More and more homeowners are saving on their utility bills with energy efficiency improvements. Get your Home Energy Assessment today to see how you can save too.  
See real homeowner stories at [ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)



More and more homeowners are saving on their utility bills with energy efficiency improvements. Get your Home Energy Assessment today to see how you can save too.  
See real homeowner stories at [ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)



More and more homeowners are saving on their utility bills with energy efficiency improvements. Get your Home Energy Assessment today to see how you can save too.  
See real homeowner stories at [ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)

## LOWER UTILITY BILLS NO MATTER WHAT THE WEATHER IS.

More and more homeowners in your neighborhood are saving on their utility bills with energy efficiency improvements. Many save over \$750\* per year and are more comfortable than ever. Learn from experts, get access to reliable contractors, and apply for financing as low as 0.99%. Now is the time to get your Home Energy Assessment and see how you can save too.



**EnergyWorks**  
COMFORT BY EFFICIENCY. IMPROVEMENTS BY DESIGN.

See real homeowner stories at  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)

\*Savings are estimated for average home based on savings by R and energy conservation of 25% and vary based on energy bill, location, type of home and other factors. EnergyWorks is a program of the Metropolitan Council of Greater St. Louis, Greater St. Louis, Montgomery and Philadelphia counties, and is supported by a grant from the U.S. Department of Energy.



# County Level: 3-Phase Campaign

EnergyWorks Phase 3: Education, Comfort & Savings (Several PA counties)

## air sealing *noun (air seal-ing)*

1. Jumping up and down for joy when you realize how much money you're saving.
2. The best thing you can do to improve your home's energy use.



A Comprehensive Home Energy Assessment is your guide to saving energy, saving money, and living more comfortably. Get yours now for just \$150.

[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM) 215-609-1052

## insulation *noun (in-suh-ley-shun)*

1. The feeling you get when you're so comfortable in your home you fall asleep on the couch.
2. Adding special material to your home to keep it cool in summer and warm in winter.



A Comprehensive Home Energy Assessment is your guide to saving energy, saving money, and living more comfortably.

Get yours now for just \$150.  
[ENERGYWORKSNOW.COM](http://ENERGYWORKSNOW.COM)  
215-609-1052



## air sealing *noun (air seal-ing)*

1. A big step in making your home an indoor oasis.



# State Level

## National Grid (NY & MA) Marketing to Businesses

**The Future of Heating  
and Cooling for your  
Business.**

**Reach your sustainability goals with  
high-efficiency heating & cooling.**

Are you a residential customer?

► Heat pumps for your  
home.

### Measurable results for our business customers

See how our customers are taking advantage of generous rebates and getting a head start on a sustainable future by upgrading their HVAC systems to heat pumps.



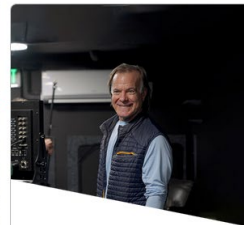
#### Mass Audubon

Helping a sustainability-focused organization make good on their mission.



#### O'Connor & Co. Insurance

How a family-run business used heat pumps to create a more comfortable atmosphere for their employees. And the partnership that got them there.



#### Nantucket TV

Heat pumps helped a Nantucket TV station reflect the values of the island community.





# State Level (continued)

## Southern California Edison's "We Have the Power"

Video (English & Spanish) here:

<https://www.rpa.com/work/project/southern-california-edison-we-have-the-power-campaign>

Utility customers often feel powerless and isolated: Campaign makes them feel powerful and united and inspires collective action by showing that everyday actions make difference for shared community – by making heroes of ordinary Southern Californians of all walks of life.



# State Level Campaigns

## Wisconsin Utilities' Focus on Energy

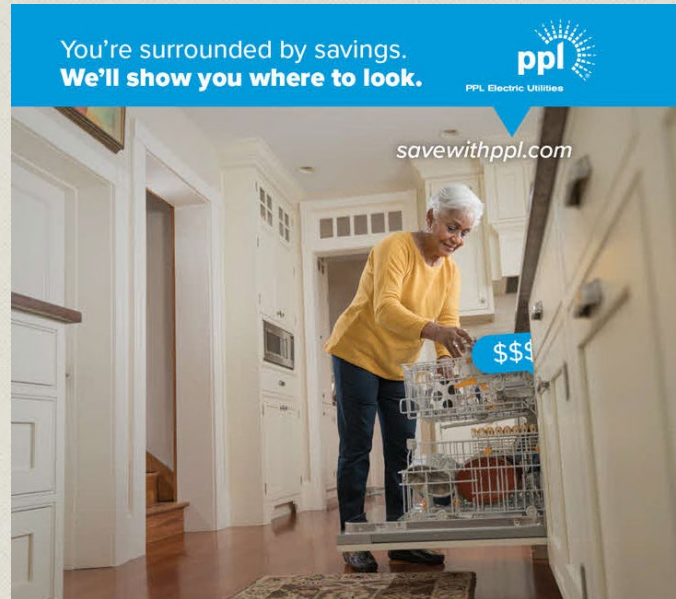
Video here: <https://www.youtube.com/watch?v=FYWBsFafRyw>

The image is a collage of promotional materials for Wisconsin's Focus on Energy campaign. It features a blue background with white musical notes and a silver showerhead. The central focus is a brochure titled "WISCONSIN IS IN FOR HOME SOLUTIONS." which includes the Focus on Energy logo and a photograph of a modern house. Below the title, the brochure text reads: "You've taken an important first step toward making your home more efficient. Find even more ways to save at [focusonenergy.com/residential](https://focusonenergy.com/residential)." To the right, a larger graphic displays the phrase "Ahh the sweet tune of savings!" in a large, white, handwritten-style font. Below this, it says "Get a FREE Hand Showerhead Pack from FOCUS ON ENERGY." and includes the Focus on Energy logo. At the bottom left of this graphic, the URL "focusonenergy.com/free" is visible. The Wisconsin Focus on Energy logo is also present at the bottom right.



# State Level Campaigns

PPL Electric Utilities' Opportunities Everywhere



# State Level Campaigns (continued)

## Consumers Energy's Powered by Charles



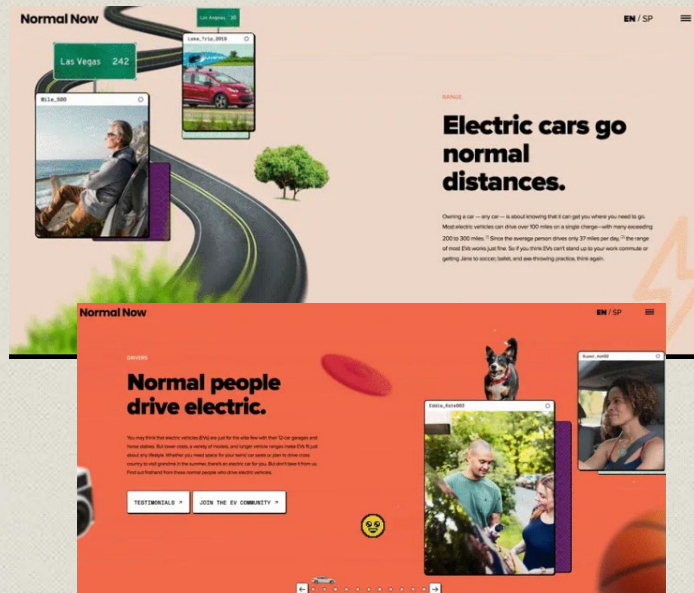
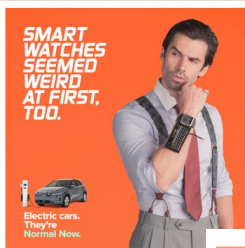
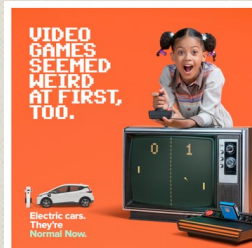


# National Level Campaigns

## Electrify America's "Normal Now"

Videos: <https://workingnotworking.com/projects/301537-normal-now-electrify-america>

Compares "new tech" of past with transportation method of future. Explores how scary old "new tech" was & reinforces that while it may seem weird at first, it's normal now.



# National Level Campaigns (Continued)

U.S. Department of Energy (2011)





# International Campaign

## UK Government's Feel All Warm & Fuzzy Inside

Video here: <https://www.youtube.com/watch?v=lpxFjrGMVew>

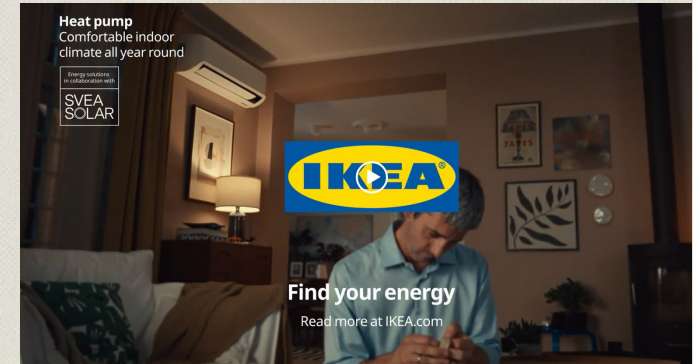
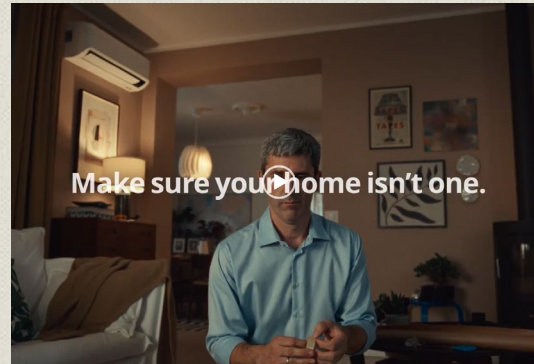
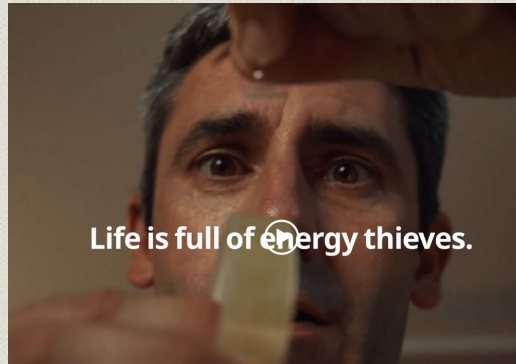




# Product Campaign

## Ikea's Life is Full of Energy Thieves

Video here: <https://lbbonline.com/news/ikea-highlights-everyday-energy-thieves-in-latest-campaign>

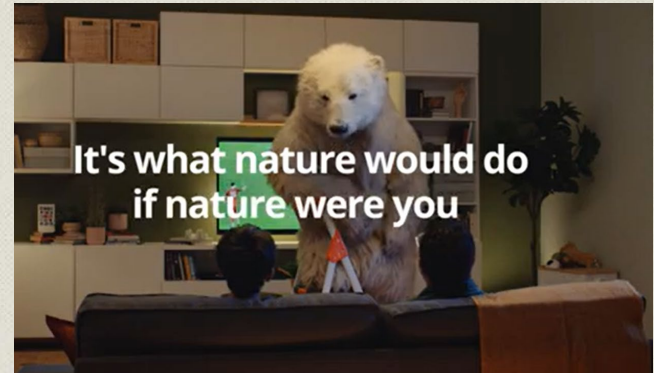




# Product Campaigns

## Ikea's It's What Nature Would Do

Video here: <https://campaignme.com/ikeas-new-campaign-on-sustainability-shows-the-changing-relationship-of-people-with-nature/>



# BDC



Building Decarbonization Coalition (BDC) is a national coalition that works across 9 states including Colorado to drive the clean buildings transformation by building partnerships with utilities, labor and workforce, environmental, climate justice, and public health stakeholders.



**WEBINAR**

Now We're Cooking! Presents:

**How induction has revolutionized the sales floor**

with Chef Andrew Forlines

Thursday June 23 | 10AM PT





 BUILDING DECARBONIZATION COALITION

*Electric Kitchens Showcase*

Lead Sponsor



Co-Sponsors





APPLIANCE SHOWROOM



# BDC – The Switch is On



The Switch Is On initiative was launched in 2019 by the Building Decarbonization Coalition (BDC) to educate, inspire, and make switching to electric appliances easier for communities, contractors, and all those who live and work in buildings.



## Are you a contractor?

Join the rapidly growing Switch Is On network of utilities, governments, manufacturers, distributors, and pros.

[Sign up for free](#)



# What others are saying...



YouTube channel is filled with videos addressing all kinds of questions + concerns about switching to electric. Views are quite low, however.





# MEAM – Electrify your Life

Municipal Electric Association of Massachusetts provides social media content for Utility companies to share. Focus on power, and energy puns that empower you to be the hero, be smart, be seasonal and save money



## Water Heaters

A new ENERGY STAR® certified heat pump water heater can save a home up to \$3,500 in energy costs over its lifetime. Learn more about SELCO's heat pump water heater rebate at [www.goo.gl/G1nBvF](http://www.goo.gl/G1nBvF)



## Energy Star Appliances

Rebates on select Energy Star® appliances are available from SELCO at [www.goo.gl/G1nBvF](http://www.goo.gl/G1nBvF). Learn more about energy savings at [www.energystar.gov](http://www.energystar.gov) #ThePowerIsYours



## Rebates on select Energy Star appliances

Rebates on select Energy Star® appliances are available from SELCO at [www.goo.gl/Vd4rcw](http://www.goo.gl/Vd4rcw). Learn more about energy savings at [www.energystar.gov](http://www.energystar.gov) #PlugInForEnergySavings

# Rewiring America


National non-profit organization that provides consumer-facing content to electrify in addition to research resources on adoption best practice across key groups.

Whether you're a renter or a homeowner, fully committed or just curious about heat pumps and hot plates...

**We're here to help YOU go electric.**

Homeowners, make a plan!

Renters, start here!




Bye, gas!  
Buy electric!

Cooking | Renter

**The easiest first step?**  
A snazzy ~\$100 portable induction cooktop you're going to love.

[Learn more →](#)

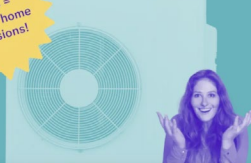


HVAC = 60% of home emissions!

Space heating & cooling | Homeowner

**Heat pumps are 2 to 3 times more efficient — a massive reduction in carbon emissions.**


[Learn more →](#)



Christopher Matos-Rogers

Real estate broker

**This Atlanta real estate broker champions electric upgrades in homes — starting with his own**





# Rewiring America (2 of 3)

REWIRING  
AMERICA

Homeowners ▾

Renters ▾

Savings calculator

Find contractors

Make a plan

Log in

English Español

## YOUR SAVINGS CALCULATOR

### See how much you could save on electric appliance upgrades

There are many savings programs for energy-efficient appliances and upgrades.  
Enter your household info to see the programs you're eligible for.

#### Your household info

[Reset](#)

RENT OR OWN ⓘ

Homeowner ▾

ZIP ⓘ

12345

ELECTRIC UTILITY ⓘ

Select utility ▾

Enter your ZIP code to select a utility.

HOUSEHOLD INCOME ⓘ

\$0

TAX FILING STATUS ⓘ

Single ▾

HOUSEHOLD SIZE ⓘ

1 person ▾

EMAIL ADDRESS (OPTIONAL)

you@example.com

View results

By sharing your email, you agree to our [terms](#) and to receive updates from Rewiring America. We'll store and protect your data in accordance with our [privacy policy](#).

GIVE FEEDBACK

# Rewiring America (3 of 3)

**Select your top 2 motivations for electrifying**

☐ Lower my energy bills

☒ Maximize government incentives

☒ Lower my climate impact

☐ Improve health and comfort

☐ Future-proof my home

☐ Modernize my equipment



# Gas Leaks

National non-profit organization that seeks to expose the truth about the danger of natural gas and the Fossil Fuel Industry's disinformation machine. Uses humor of 'Break Up with Gas' and 'Hot & Toxic' spoof reality star show.



## Meet Di

Get ready America, she is going to take your breath away, literally. As a byproduct of burning "natural" gas, Nitrogen Dioxide harms your lungs, and contributes to respiratory disease and asthma.

## THE TOXINS

"Natural" gas is a hot mess. After all, with 21 pollutants filling the air in your home, there's no escaping the drama. It's almost like living with a house full of toxic reality stars. Get to know some of the most dangerous "cast members" of Hot & Toxic!

# City Level Campaigns

## Boulder County



Boulder County campaign on electrification uses humor of animated bear to show benefits of going electric. No campaign results available. Content released on Instagram, YouTube in the last month ([Boulder County](#))

## San Francisco

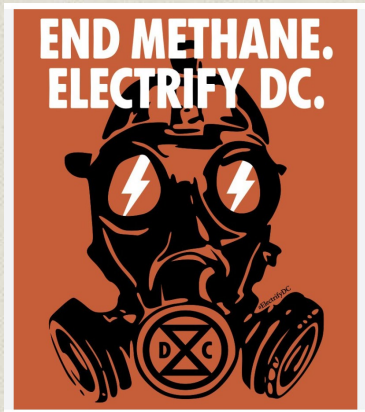


Break up with Gas campaign from CleanPowerSF, site attracted 10,000 visitors, 700 followed links to find out about incentives ([CleanPowerSF](#))



# City Level Campaigns (2 of 2)

ElectrifyDC



Non-profit working to decarbonize Washington DC.

# Healthy Homes



National HUD campaign to support low income families with healthier homes covering health, safety and environment, supported by local campaigns. Federal funding just got pulled.



**HEALTHY HOMES**  
Start here...

**HEALTHY HOMES RENTAL INSPECTION PROGRAM**

You have the right to a safe and healthy home environment.

To file a complaint, call 3-1-1, the Healthy Homes Rental Inspection Program at 816-513-6347, or walk into the office located at 3400 Troost Ave, Suite 3600.

**KANSAS CITY, MO**  
**HEALTH DEPARTMENT**

*Are you experiencing any of the following issues in your rental unit?*

- ☐ Water leak
- ☐ Smoke alarm absent
- ☐ Carbon monoxide alarm absent
- ☐ Kitchen inoperable
- ☐ Bathroom inoperable
- ☐ Appliances not working
- ☐ Windows and doors inoperable
- ☐ Waste water and sewage
- ☐ Water supply
- ☐ Heating
- ☐ Ventilation
- ☐ Electrical safety
- ☐ Common areas maintained
- ☐ Pests and mice
- ☐ Lighting
- ☐ Moisture and humidity
- ☐ Structural safety
- ☐ Evidence of suspect mold
- ☐ Chipped paint

**HEALTHY HOMES RENTAL INSPECTION PROGRAM**

*You have the right to a safe and healthy home environment.*



# Green & Resilient Retrofit



National HUD campaign to support building retrofit with funding for energy efficiency and building materials.



# Efficiency

