



# Affordable & Equitable Home Electrification Retrofits

Lessons Learned from ~~1,500~~ 3,000+ Homes

Cooper Marcus, Chief Quitter and CEO – March 5, 2024



QuitCarbon



- **Introductions, PG&E Safety Message, and Welcome**
- **QuitCarbon Intro**
  - Heat pump water heater (HPWH) example
- **Electrification Marketing Case Study - 3C-REN**
- **Misperceptions and Mass Marketing**
- **Empowering Electrification Accelerators**
- **Partnering Effectively with Contractors**
- **Homeowner Education**
- **Ensuring equitable, affordable solutions**
- **Class Survey, Closing and Wrap up**



"Do I need to install more breakers?"

"Where is tax form 8911?"

# It's *hard* for homeowners and contractors

"What's a subpanel?"

"The electrician won't call me back"

"My friend said I need more amps! What're those?"

"What's a 'mini split'?"

"How much money will I save?"

"Do I need solar? A battery? A car with a house battery?"

"I don't trust these door-to-door salesmen"

"My hot water tank is leaking. The plumber said to get another gas boiler."

"Will it be cheaper to do it all at once?"

"How do I get all that rebate money I was promised for my EV?"

"I can't get a heat pump. I need air conditioning too, not just heat"

"Is induction like those glowing red coils? I hate those"

"What happens when the power goes out?"

"Can you recommend a good plumber?"

How do you spell HVAC?"



**QuitCarbon**

**FREE Home Electrification Planning  
Live, Expert Assistance  
Vetted Contractor Network**

**...and so much more!**





## QuitCarbon delivers scaled...

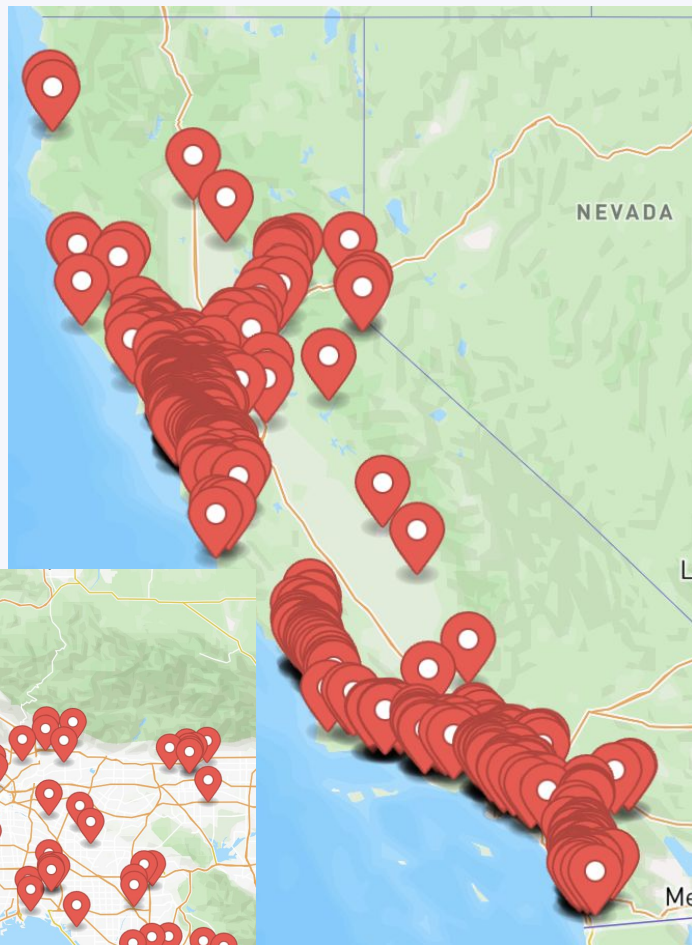
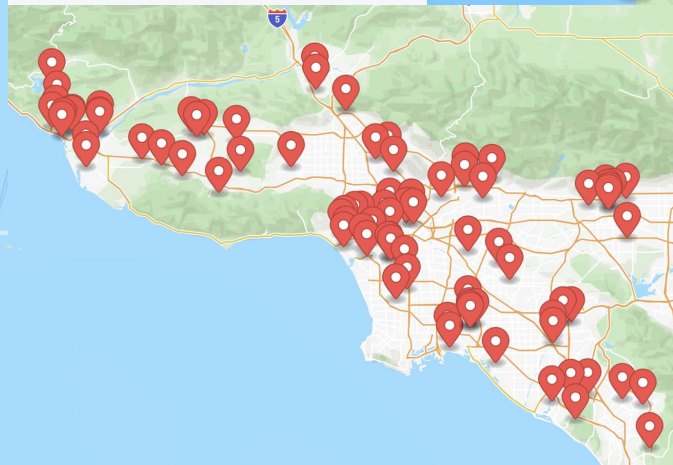
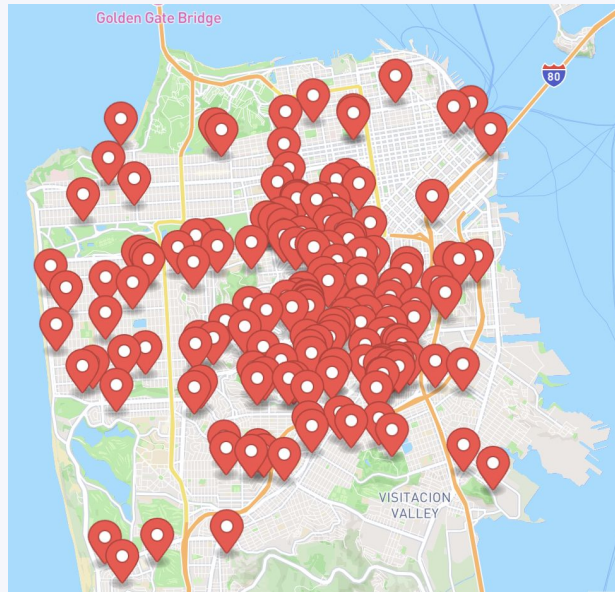
- Marketing
- Engagement
- Whole-home electrification roadmaps
- Maximum rebates & minimum costs
- Retrofit installations via partner contractors
- Grid-friendly operation

...of residential electrification retrofits ***at no cost to homeowners***



QuitCarbon Homes

**3,000+ across CA**





## Awards and Validation



Winner of two *different* US  
Department of Energy prizes!

**Equitable and Affordable  
Solutions to Electrification  
(EAS-E) Prize**

*and*

**Buildings  
Upgrade Prize**

**Buildings UP**  
The Buildings Upgrade Prize



**DoE - Better Buildings  
Residential Network Member**

**Selected for IMPEL  
2023 Cohort**

DoE tech-to-market  
program at LBNL



**Decarbonization-focused  
with strong network**

Southern California expansion



**BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT**

**Invited Member - Bay Area Air Quality Management  
District (BAAQMD) Zero NOx Appliance Rules  
Implementation Working Group**

Advising on first-in-the-nation upcoming ban on gas water  
heaters and furnaces

Nonprofit, Community, Utility, and Government Partners





## Third-Party Certifications

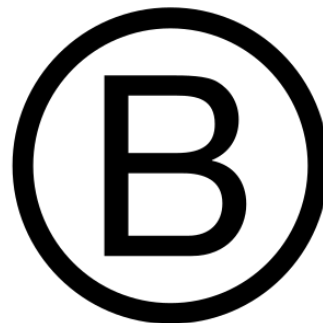


**Coming in 2024**

**ENERGY STAR Home  
Upgrade Service  
Provider Partnership**



**Certified**



®

**Corporation**



## In scope

- Homeowners + Contractors
- Owner-occupied single-family homes
- Smaller multi-family homes
- California-centric

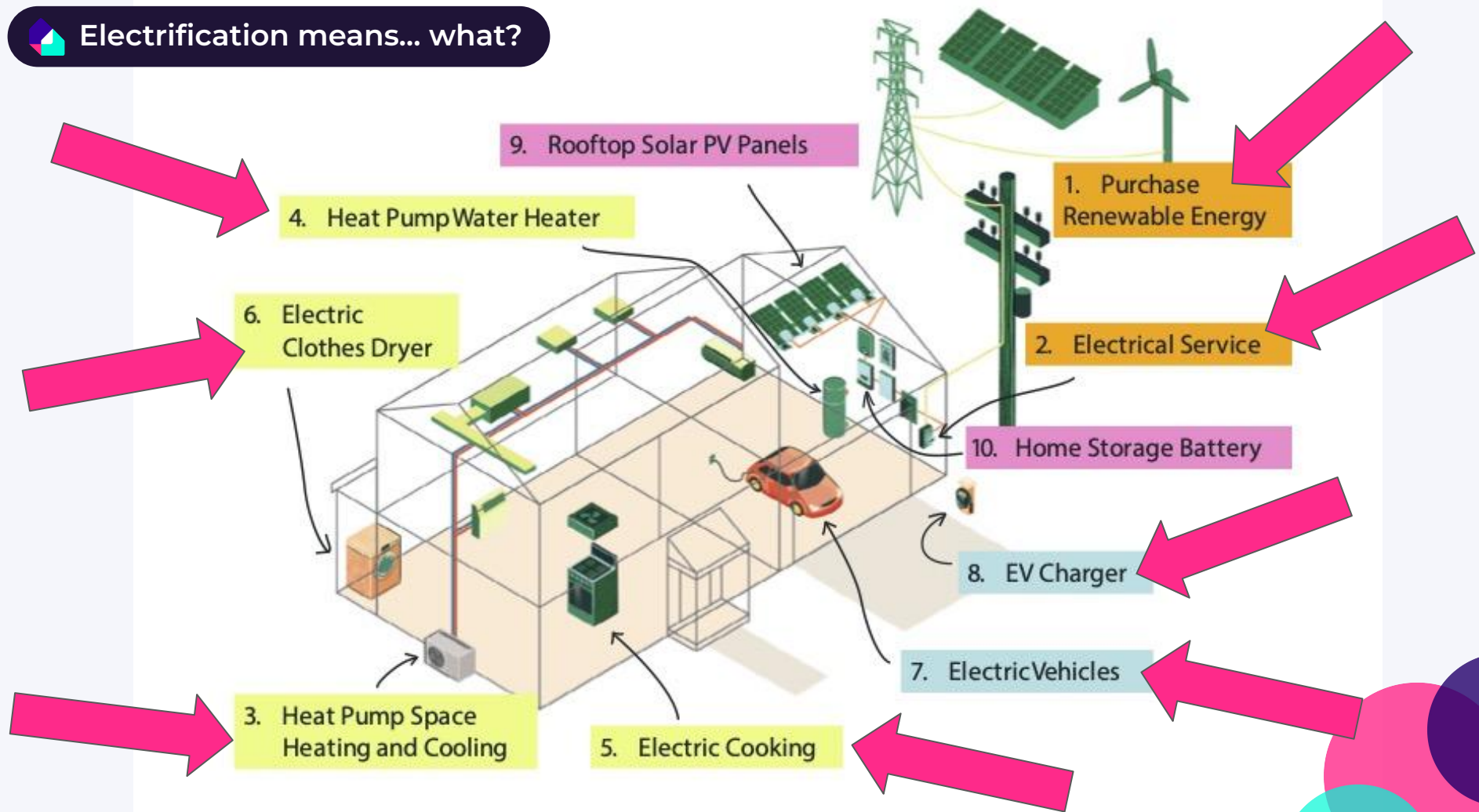
## Out of scope

- Renters
- Large multi-family buildings
- Commercial and industrial

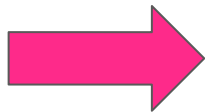




## Electrification means... what?



Gas water heater



Heat pump  
water heater!

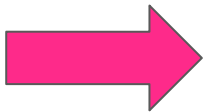
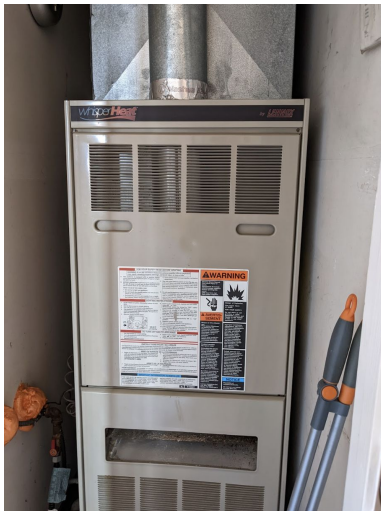






Electrification means... HVAC heat pumps

Gas furnace



Heat pump!





Electrification means... induction stoves

Gas stove



Induction!





Electrification means... lots more





Electrification means... solar & batteries?





## Electrification means... solar & batteries?

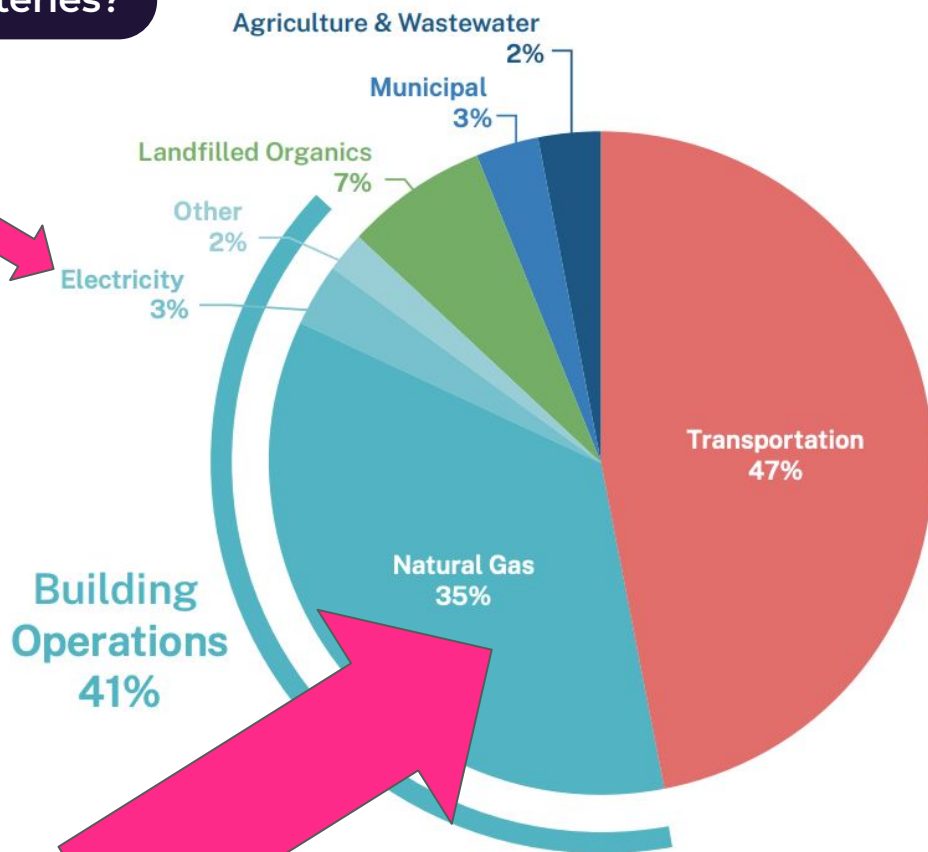
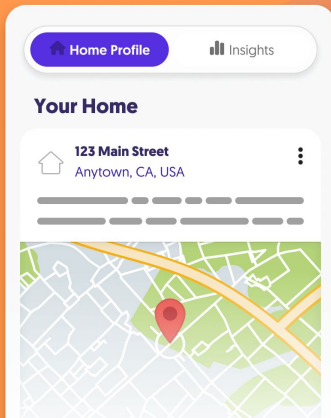


FIGURE 4: SAN FRANCISCO'S 2019 GHG INVENTORY

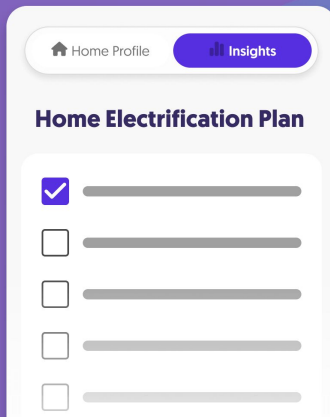


- **Electrification happens when homeowners say "YES!" to contractors**
- **Awareness → Intent → Action**
  - Amplified by positive word of mouth!
- **How to make more YES?**
  - Add confidence to the relationship - both ways
  - Quality bids
  - Price discovery
  - Optimal scope
  - Post-purchase education





**Assess**



**Optimize**

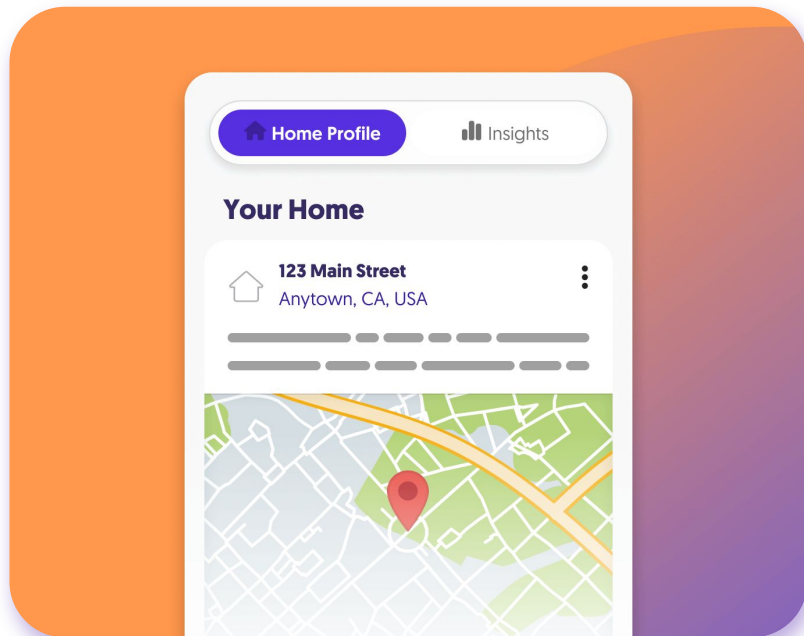


**Upgrade**



## Step 1: Assess

Tell us about your home and priorities



Share information about your home's systems, energy use, and comfort level.

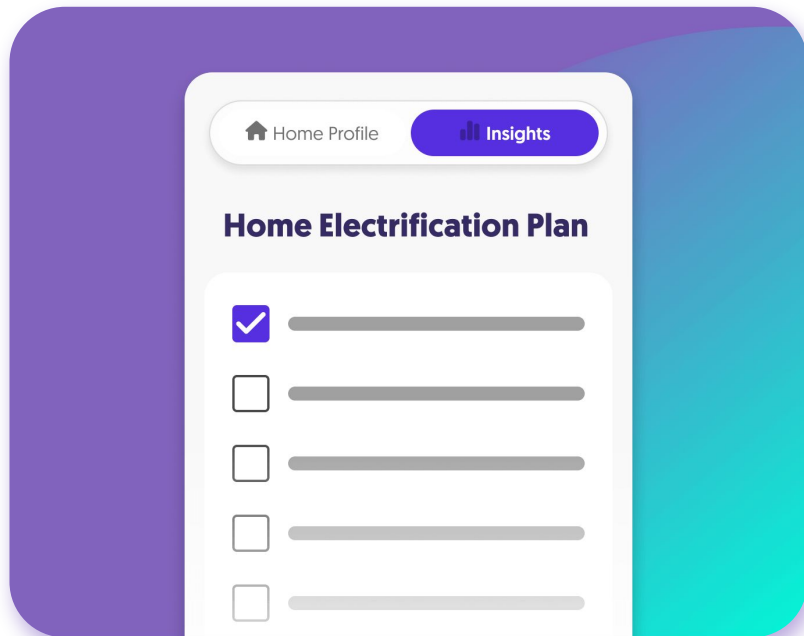
- Confirm your home details
- Securely share your utility usage
- Add appliance information
- Talk to our friendly, expert planners





### Step 2: Optimize

Get personalized advice for your home and needs



See the cost and carbon savings when you upgrade your home.

- Understand your home's current performance and impact
- Get cost ranges for each project
- See your utility bill savings
- Maximize rebates and incentives



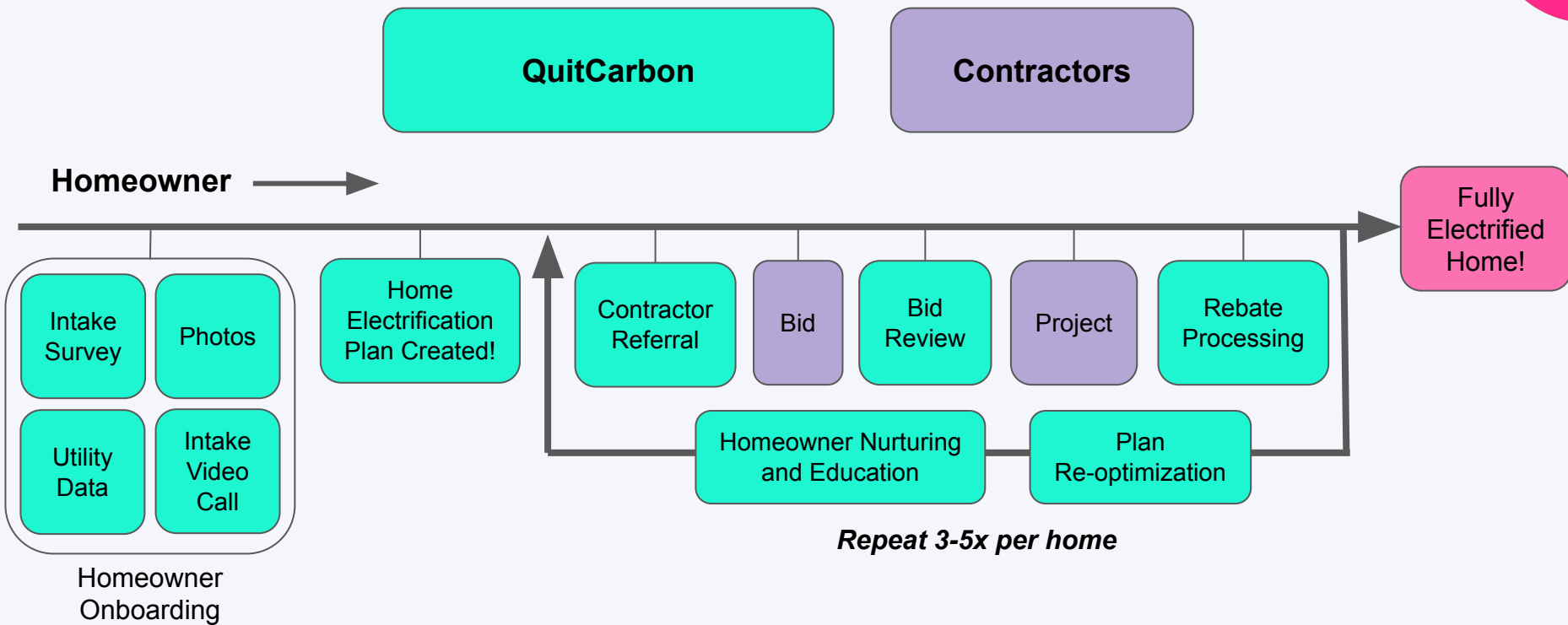
### Step 3: Upgrade

Save time and money when you make the switch



Get your projects done right with expert guidance and vetted local contractors.

- Request referrals to start projects
- Get introduced to the best local contractors
- QuitCarbon benchmarks each bid to confirm the price is fair and the scope is correct





### Beer Culture and Changing Beer

Can you explain the relationship between the beer industry and the 1960s counterculture? How did the 1960s counterculture influence the beer industry? How did the beer industry influence the 1960s counterculture? How did the beer industry influence the 1960s counterculture?

### Why Did Beer Drinking Become a Trend?

What factors contributed to the rise of beer drinking in the 1960s? How did the beer industry influence the 1960s counterculture? How did the beer industry influence the 1960s counterculture?

### How Did Beer Drinking Become a Trend?

What factors contributed to the rise of beer drinking in the 1960s? How did the beer industry influence the 1960s counterculture? How did the beer industry influence the 1960s counterculture?

**Join the Bill Leavitt's Green Center Initiative**

Join the Bill Leavitt's Green Center Initiative, a non-profit organization dedicated to promoting sustainable living and reducing carbon footprints. The initiative offers a variety of resources, including a free e-book, "Green Living 101," and a free e-course, "Green Living 101: A Practical Guide to Sustainable Living." The e-course is a 10-part series of lessons that cover a wide range of topics, from energy conservation to sustainable transportation. The e-book is a comprehensive guide to sustainable living, covering topics such as energy conservation, sustainable transportation, and sustainable consumption. The initiative also offers a variety of other resources, including a free e-book, "Green Living 101," and a free e-course, "Green Living 101: A Practical Guide to Sustainable Living." The e-course is a 10-part series of lessons that cover a wide range of topics, from energy conservation to sustainable transportation. The e-book is a comprehensive guide to sustainable living, covering topics such as energy conservation, sustainable transportation, and sustainable consumption.

**Join the Bill Leavitt's Green Center Initiative**

Join the Bill Leavitt's Green Center Initiative, a non-profit organization dedicated to promoting sustainable living and reducing carbon footprints. The initiative offers a variety of resources, including a free e-book, "Green Living 101," and a free e-course, "Green Living 101: A Practical Guide to Sustainable Living." The e-course is a 10-part series of lessons that cover a wide range of topics, from energy conservation to sustainable transportation. The e-book is a comprehensive guide to sustainable living, covering topics such as energy conservation, sustainable transportation, and sustainable consumption. The initiative also offers a variety of other resources, including a free e-book, "Green Living 101," and a free e-course, "Green Living 101: A Practical Guide to Sustainable Living." The e-course is a 10-part series of lessons that cover a wide range of topics, from energy conservation to sustainable transportation. The e-book is a comprehensive guide to sustainable living, covering topics such as energy conservation, sustainable transportation, and sustainable consumption.

- **What is the difference between a variable and a constant?** A variable is a value that can change, while a constant is a value that remains the same.
- **What is the difference between a scalar and a vector?** A scalar is a quantity that has only magnitude, while a vector is a quantity that has both magnitude and direction.
- **What is the difference between a scalar and a vector?** A scalar is a quantity that has only magnitude, while a vector is a quantity that has both magnitude and direction.
- **What is the difference between a scalar and a vector?** A scalar is a quantity that has only magnitude, while a vector is a quantity that has both magnitude and direction.

**Discussion questions**

1. How do you think people have reacted to the fact that the British have been found to be guilty of the crimes? Do you think it will have any effect on the way the British are perceived in the world?
2. Do you think the British should have been held responsible for the crimes? Why or why not?
3. Do you think the British should have been held responsible for the crimes? Why or why not?
4. Do you think the British should have been held responsible for the crimes? Why or why not?
5. Do you think the British should have been held responsible for the crimes? Why or why not?

[illegible]

**3. The following are the main reasons for the failure of the first two attempts:**

- a) The first attempt was made in 1918, when the British government was in a state of financial collapse and the economy was in a state of depression.
- b) The second attempt was made in 1920, when the British government was in a state of financial collapse and the economy was in a state of depression.

**4. The following are the main reasons for the failure of the first two attempts:**

- a) The first attempt was made in 1918, when the British government was in a state of financial collapse and the economy was in a state of depression.
- b) The second attempt was made in 1920, when the British government was in a state of financial collapse and the economy was in a state of depression.

### Wall Hiker

This is a very simple, but very effective, way to get a good look at the wall. It is a simple, but very effective, way to get a good look at the wall. It is a simple, but very effective, way to get a good look at the wall.

gross profit	240 - 200	40	contribution margin ratio = 40 / 240 = 16.67%
contribution margin	240 - 180 = 60	60	
contribution margin ratio	60 / 240 = 25%		
break-even sales (\$)			
	<ul style="list-style-type: none"> <li>fixed costs / contribution margin ratio</li> <li>= 200 / 25%</li> <li>= 800</li> <li>break-even sales (\$)</li> <li>= 800</li> <li>break-even units = 800 / 2 = 400</li> <li>break-even revenue = 400 * 2 = 800</li> </ul>		
break-even			
margin of safety			

Copyright © 2010 by The McGraw-Hill Companies, Inc.

[illegible]

**Electric Vehicle (EV) and Charging**

**Vehicle Charging**

[illegible]

1. **Researcher's role** – to identify the research problem, to design the study, to collect data, to analyze data, to interpret data, to communicate findings.

1. **Identify the problem.** The first step in the problem-solving process is to identify the problem. This involves understanding the situation, gathering information, and determining the goal.

2. **Generate possible solutions.** Once the problem is identified, the next step is to generate possible solutions. This involves brainstorming ideas and considering different approaches.

3. **Evaluate the solutions.** After generating possible solutions, the next step is to evaluate them. This involves comparing the solutions to the problem and determining which one is the most effective.

4. **Implement the solution.** Once a solution has been identified, the next step is to implement it. This involves putting the solution into action and monitoring its progress.

5. **Reflect on the process.** The final step in the problem-solving process is to reflect on the process. This involves evaluating the effectiveness of the solution and identifying areas for improvement.

**Question:** How can we tell if we are using a lot of resources that come from a very poor country to help a rich country?



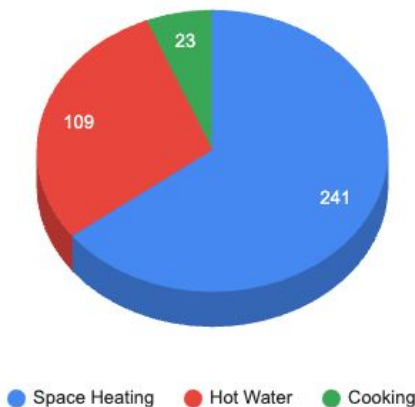
- **Every plan is always going out of date**
  - Need to avoid analysis paralysis
  - Good enough plans for a fast enough energy transition
- **Actions begats action**
  - Connect the docs
  - Each heat pump water heater (that replaces a gas water heater) makes our better future more achievable for everyone!
  - Quality plans make it easier, cheaper, better to electrify



### Your Impact

In the last year, your home burned **374 therms of fossil fuels**, which released **4,373 lbs. of carbon dioxide (CO<sub>2</sub>)** into the atmosphere. Your fossil fuel usage, and thus your carbon pollution, is roughly split as follows:

Annual Pollution by Source (Therms)

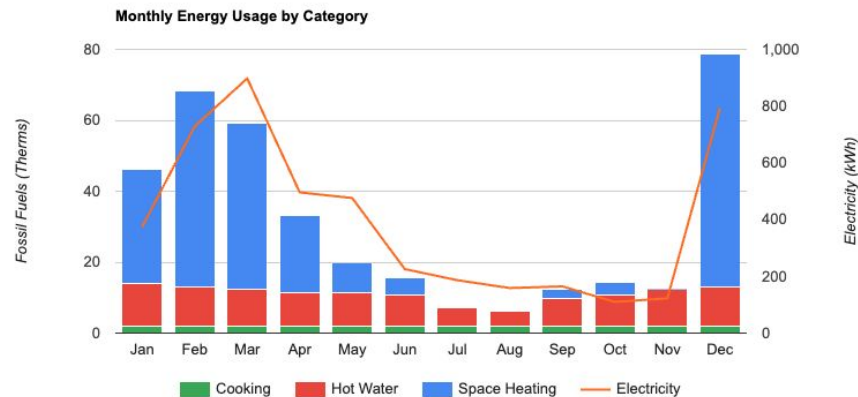


If you switch to electric appliances powered by clean energy, over the course of 15 years you'll save **~30 tons of carbon pollution**, equivalent to **not** driving a gas car from California to New York **33 times**!



## Your Energy Use

Based on our estimates, gas consumption by end use would look like the following for a home of your profile.



Source	Therms	Percent	CO2 (lbs.)
Space Heat	241	65%	2,824 lbs
Water Heat	109	29%	1,280 lbs
Cooking	23	6%	268 lbs
Clothes Drying	0	0%	0 lbs

As you can see above, eliminating gas use in your home will significantly benefit our climate. In your home, space heating produces the most carbon in your home, followed by water heating.



### Utility Bill Savings from Electrifying

When you electrify your home, your utility bills will change - you'll pay zero for climate-impacting fossil gas (yay!), and you'll be purchasing more climate-friendly electricity (more yay!).

We estimate that you will save **\$4,500** on your utility bills over the next 15 years by electrifying your carbon-emitting gas appliances. We estimate that you would pay **\$22,500** for gas compared with **\$18,000** if you were to switch to clean and efficient electrical appliances.

For this estimate, we use \$2.61 per therm of methane and \$0.39 per kWh from recent utility rates, plus the projected change in gas and electricity rates over the coming 15 years. This is based on CPUC (California Public Utility Commission) projections of future rate changes.





### Hot Water

- You currently heat your water with a 50-gallon natural gas (methane) water heater. Your water heater is located in the garage. It is approximately 3 years old.
- Please note that heat pump water heaters make some sound when the compressor runs to heat the water, akin to a vacuum cleaner. Generally, this is not audible in the home when the heater is located in a garage, unfinished basement, outdoors, or otherwise away from living space. If sound is a concern for you, please consult with us about other options.



#### Recommendations

We recommend a 65-gallon 120-volt, shared-circuit electric heat pump water heater. These units plug into an existing electrical outlet, saving you money on new wiring. Because they run at very low power, they won't strain your home's electrical service or the grid. They do have longer recovery times (how long it takes to reheat the water in the tank) than traditional gas or electric water heaters, so we recommend a larger tank that can store enough water for your peak usage times and then replenish during the long periods each day of lower hot water use.



### Estimated Up-Front Costs and Incentives

In a section above, we estimated the utility bill changes you'll see when you electrify your whole home. Below, we estimate the up-front costs to electrify your water heating. Again, these are rough estimates, and a plumber will need to visit your home to make a more detailed bid.

	Heat Pump Water Heater	Fossil Gas Water Heater
<b>Installation Labor and Equipment</b>	\$7,000 - \$10,000+ (plus electrical)	\$4,000 - \$6,000+
<b>Incentives*</b>	\$400 - \$2,400	\$0 - Incentives are generally unavailable for fossil gas appliances
<b>Total Up-Front Cost</b>	\$4,600 - \$9,600+ (plus electrical)	\$4,000 - \$6,000+
<b>Additional Benefits</b>	<ul style="list-style-type: none"><li>• Utility bill savings (especially with solar)</li><li>• Zero carbon emissions</li><li>• Reduced local air pollution</li><li>• Electrical grid support</li><li>• Singing in the zero-carbon shower</li></ul>	



## HPWH in QuitCarbon Insights

### Incentives

BayREN: Home+

\$400 ▾

Inflation Reduction Act: EEHIC (25C) tax credit

Up to \$2,000, 30% of project cost ▾

\* Incentives are estimated based on current availability. Additional incentives may be available which are payable directly to the contractor. They may choose to explicitly pass these on to you in the invoice, or use them to lower their cost of completing the job.



### Your Electrification Planner Says:



It is likely that this incentive total will increase in less than 3 months - please [reach out to us](#) for details.



### How to Take Action

Let us know that you'd like to move forward with electrifying your water heater. QuitCarbon will refer you to a plumbing contractor for a quote. [Request a referral today!](#)

QuitCarbon will review the quote, provide feedback, and help you finalize a price and scope of work with the contractor.

Schedule the job with the contractor and have them complete the work.



# Start a Home Upgrade Project

Take the next step for a better, more comfortable home.

## QuitCarbon is thrilled to help you quit!

Please share a few details here about the project you'd like to get started on.

QuitCarbon will introduce you to a vetted local contractor who will get the job done right.



## Get Matched With A Vetted Contractor

Your Email\*

cooper@quitcarbon.com

What project(s) would you like to start soonest?\*

- ☒ Water Heater
- ☐ Heating and Cooling (HVAC)
- ☐ Induction Cooking
- ☐ Washer / Dryer
- ☐ Solar and/or Battery



## HPWH in Exterior Closets







## HPWH in Unusual Spots





[Redacted Name]

[View Virginia's Profile](#)

8:23AM (46 minutes ago)



to me, Amelia ▾



Opens: 4

Logged to: 2 record(s) ▾



Thank you. I've been thinking about this for a long time, it feels good to move forward and have you, at Quit Carbon, helping.  
Virginia

Milton	They led me to a very good company for installing a heat pump, [Redacted] which did an excellent job at a reasonable price.
Robert	Y'all were so helpful in making our transition to getting our home off fossil fuels very easy in terms of excellent advice including navigating confusing paperwork for securing rebates
Joann	Responsiveness to inquiry and subsequent questions. Ease of providing info online.
Leslie	It's a fantastic, free service. The support and information QuitCarbon provides enabled me to take steps to lower the use of fossil fuels in my home, a process that had confused me for a long, long time.



# Homeowners Love QuitCarbon

Your NPS score ⓘ



75% Promoters

- minus

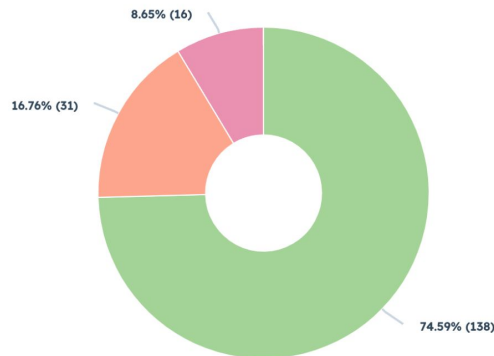


9% Detractors

= 66 NPS

How your customers are feeling ⓘ

● Promoters 9-10 ● Passives 7-8 ● Detractors 0-6



## NPS Benchmarks

[Delighted.com](https://delighted.com)

[Survicate.com](https://survicate.com)

David, Alameda  
Whole Home



In the middle of working  
with QuitCarbon to electrify my  
home, I am very pleased  
with the work you are doing.



Kit, San Francisco  
Heat Pump



Easy to contact, quick  
knowledgeable responses and  
great "quit carbon" plan produced  
& tailored to my home. It's the  
various contractors & getting bids  
that is the toughest part.



Donald, Oakland  
Water Heater



Very skilled, generous, personable,  
reliable, dedicated!



Kris, Kensington  
Heat Pump



I really appreciate that how helpful  
it's been for you to pull everything  
together. It's hard kind of doing this  
piecemeal, so it's good to see it  
holistically.

Alan, San Francisco



I love having that outside  
perspective, to say, 'okay, here's a  
long-term plan over the next five  
years to electrify your home and  
reduce your climate impact.

Joe, Menlo Park  
Whole Home



This is a pretty cool thing you're  
doing. I'm a huge data person. I  
mean, that's part of my job day to  
day. It was revealing to see my  
carbon emissions breakdown and  
your recommendations.






# QuitCarbon engaged by 3C-REN for market research and outreach - late-2023 to early-2024



CONTRACTORS  
& INDUSTRY

MULTIFAMILY  
PROPERTIES

FOR  
RESIDENTS

An aerial photograph of a densely populated residential neighborhood, likely in Southern California, with many houses and palm trees. In the background, a range of mountains is visible under a clear blue sky.

**3C-REN (Tri-County Regional Energy Network) reduces energy use in our region's buildings for a more affordable, healthy, resilient and sustainable community.**

- ★ Generate **as many enrollments as possible** (homeowners interested in electrifying)
- ★ Develop and test a **wide variety of marketing content and messaging** across multiple digital and offline channels
- ★ **Collect data and report** on which content, messaging, and channels result in the **best marketing** metrics - and what is less successful

- Meta (Facebook & Instagram)
- Google
- Nextdoor
- Spotify
- Public radio
- Postcards
- Created and iterated on 5 landing pages
- Created and tested 150+ ad variations, with 10 videos and 50+ images



CANARY MEDIA

Clean energy journalism for a cooler tomorrow

[Heat pumps](#) [Electric vehicles](#) [Batteries](#) [Hydrogen](#) [Electrification](#) [Guides](#)

## How to get people to kick fossil fuels out of their homes

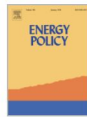
A new study of 10,000 Americans suggests decarbonization programs should focus on reducing upfront costs and emphasize health, comfort — and even aesthetic benefits.

## QuitCarbon collaborates with US Department of Energy researchers to optimize marketing, messaging, and outcomes



Energy Policy

Volume 185, February 2024, 113940



## Regional assessment of household energy decision-making and technology adoption in the United States

[Chrissi A. Antonopoulos](#) [Tracy L. Fuentes](#) [Kieren H. McCord](#) [Adrienne L.S. Rackley](#) [Saurabh Biswas](#) <sup>1</sup>

So what's the biggest barrier people face to making home energy upgrades?

By far, it's the upfront cost. About 65 percent of all respondents had concerns about the expense, more than double the 29 percent of households that stumbled over the next most identified hurdle: *unclear* costs and benefits. The researchers say

[Get rights and content](#)

open access

ons in residential building [greenhouse gas](#)  
household decisions regarding appliances and

## ★ **Appliance Replacement / Upgrade**

Replace your old gas appliances with electric upgrades

## ★ **Money Savings**

Get upfront incentives + ongoing bill savings from electrifying your home

## ★ **Home Safety and Comfort**

Electric appliances make your home safer, cleaner, and healthier

## ★ **Climate Benefits**

Your home is part of the climate problem. Make it part of the climate solution

# Marketing and Outreach Research - 3C-REN Image Testing

 **QuitCarbon**  
Sponsored · 

Say hello to your clean, efficient, electric dream home.

...See more



**Want a stove that's both better and healthier?**

 QuitCarbon

FORM ON FACEBOOK  
**Upgrade your home the easy way**

[Sign up](#)

  13

6 comments

 **QuitCarbon**  
Sponsored · 

It's time to retire your old gas water heater.



FORM ON FACEBOOK  
**Get a low-cost heat pump water heater**


[Sign up](#)

   30

24 comments

 **QuitCarbon**  
Sponsored · 

It's time to retire your old gas water heater.



**Make the switch to a heat pump water heater!**

**\$400** lower utility bills each year

**3-5x** more efficient

**Up to \$8,200** savings in Central Coast rebates!

 QuitCarbon

FORM ON FACEBOOK  
**Upgrade to a heat pump water heater**

[Sign up](#)

   16

6 comments



## IT'S TIME TO RETIRE YOUR WATER HEATER!



## SAVE \$14,700 ON HOME UPGRADES!



## MAKE YOUR FAMILY HOME AN ELECTRIC HOME!



## Get huge cost savings on a new efficient, electric water heater

If you still have a gas water heater, you're burning money on your utility bills while polluting the air with methane, NOx, and more.

Modern, electric water heaters are 3-4x more efficient than gas — and you can get a new heat pump water heater for nearly free, thanks to amazing incentives and tax credits in the Central Coast.

Save time and money when you upgrade your home with QuitCarbon's free, expert guidance and vetted local contractors.



QuitCarbon helps our Central Coast neighbors electrify and save!

- ✓ Safer & more comfortable home
- ✓ Lower utility bills, higher home value
- ✓ Healthy air, healthy climate



## Upgrade to electric appliances and save! Make the most of Central Coast home efficiency incentives.

There's never been a better time to upgrade your home.

		
<b>Water Heater:</b> Save up to \$8,200	<b>Furnace &amp; AC:</b> Save up to \$4,500	<b>Electric Upgrade:</b> Save up to \$2,000

Central Coast Incentives & Tax Credits: Jan 2024



QuitCarbon helps our Central Coast neighbors electrify and save!

- ✓ Safer & more comfortable home
- ✓ Lower utility bills, higher home value
- ✓ Healthy air, healthy climate



## Electric appliances are simply better for your home, family and future.

Using gas for heating, cooking, and hot water pollutes your air, causes respiratory illness, and contributes to the climate crisis.

When you upgrade to modern electric options like induction stoves and heat pumps, you'll make your home safer and more comfortable.

Electrify the easy way with QuitCarbon's free expert advice, generous rebates, and trusted contractors in the Central Coast community.

### WHY GO ELECTRIC?

- Gas appliances create more NOx pollution than our cars and power plants.
- Gas stoves produce more cancer-causing benzene than cigarette smoke.
- 42% of childhood asthma symptoms are linked to gas stoves.



QuitCarbon helps our Central Coast neighbors electrify and save!

- ✓ Safer & more comfortable home
- ✓ Lower utility bills, higher home value
- ✓ Healthy air, healthy climate



## Save up to \$8,200 when you upgrade!



Scan the code or visit [QuitCarbon.com/WaterHeater](https://QuitCarbon.com/WaterHeater)

THIS SPACE RESERVED FOR ADDRESSING

## Get free expert advice & vetted local contractors



Scan the code or visit [QuitCarbon.com/Upgrade](https://QuitCarbon.com/Upgrade)

THIS SPACE RESERVED FOR ADDRESSING

## Start getting away from gas today



Scan the code or visit [QuitCarbon.com/QuitGas](https://QuitCarbon.com/QuitGas)

THIS SPACE RESERVED FOR ADDRESSING

- Images with real photos had 50% higher CTR than images with graphics
  - Also converted to signups at a much higher rate
- Ad on left = 11 signups at \$15 per signup
- Ad on right = 0 signups at a similar spend

 **QuitCarbon**  
Sponsored

**See why the Central Coast is upgrading to electric home appliances**


With the amazing rebates for heat pumps in the Central Coast, you can save up to \$8,200 on a new water heater, \$4,500 on a new furnace and air conditioner, and \$2,000 on electrical upgrades!

You'll lower your utility bills and your climate impact when you go electric.

Get free, expert advice for upgrading your home along with vetted local contractors from QuitCarbon!




Get free expert guidance [Sign up](#)

 **QuitCarbon**  
Sponsored

**See why the Central Coast is upgrading to electric home appliances**

With the amazing rebates for heat pumps in the Central Coast, you can save up to \$8,200 on... [See more](#)

**CENTRAL COAST SAVINGS**  
**Upgrade your home with new rebates!**



Get free expert guidance [Sign up](#)



## Marketing and Outreach Research - 3C-REN Message Testing

Ad name	Messaging Pillar	CPC
True or false? California gets 60% of its electricity from clean sources.	Climate	\$0.22
Why is the Central Coast upgrading to electric home appliances?	Appliance Upgrade	\$0.26
True or false? Homeowners in CA can save \$500 per year by switching to electric appliances	Money Savings	\$0.35
True or false? Gas stoves increase childhood asthma rates by 42%	Home Health & Safety	\$0.36
Central Coast rebates make it cheap (or even free!) to upgrade your hot water heater...	Money Savings	\$0.36
"I try to do the right things for the climate, so I was surprised to learn my house is part of the problem."	Climate	\$0.39
True or false? Electric appliances lower your home's utility bills	Money Savings	\$0.40
Why are top chefs and home cooks switching to electric induction stoves?	Appliance Upgrade	\$0.43
I need to get a new water heater for my home...	Appliance Upgrade	\$0.54
What home improvement rebates am I eligible for?	Money Savings	\$0.57
The air inside our homes can be 2x-5x more polluted than the air outdoors.	Home Health & Safety	\$0.67
True or false? Electric homes are safer and more comfortable	Home Health & Safety	\$0.70
Central Coast rebates make it cheap (or even free!) to switch to electric home appliances...	Money Savings	\$0.70
Is it time to retire your old water heater or furnace?	Appliance Upgrade	\$0.72
Idea of the Day Climate-friendly home noun A comfy, safe, money-saving, and clean electric home.	Climate	\$0.75
"I hate finding contractors for home upgrade projects"	Appliance Upgrade	\$0.80
Shocked by your utility bills?	Money Savings	\$0.89
Are you burning money on your utility bills?	Money Savings	\$0.95
True or false? The Central Coast has large rebates for home upgrades	Money Savings	\$1.07
Want to make your home a climate-friendly home?	Climate	\$1.52

- **740,000 impressions** of electrification messaging in the 3C-REN service area
- **325 enrolled** homeowners



## Marketing and Outreach Research - 3C-REN Findings Summary



The most effective channels for generating leads and activations were Facebook ads, Google ads, and radio sponsorships. The least effective were postcards, Nextdoor ads, and Spotify ads.

The most effective messages were about the reasons to upgrade specific appliances, as opposed to more general messages about home electrification or climate. Specifically, messaging about “retiring your old water heater” performed the best across channels for lead generation.

Many of these topics - especially the dangers of gas appliances - are controversial. Because QuitCarbon was the brand that interfaced with the public during this campaign, 3C-REN was protected from any potential damage to its reputation from any messaging that wasn't received well by the audience.



Stay tuned to QuitCarbon for electrification marketing insights in partnership with:

- **City of San Jose**
- **City of Santa Monica**
- **City of San Francisco**
- **[Your city, county, utility here!]**

## Misperception: Electricity is more expensive



Daryl Anthony Biancucci

[QuitCarbon](#) Misinformation. Running a home on electric is not cheaper than gas. I asked a local electrical contractor who has done conversions and he laughed. Its more expensive.

It doesnt matter what the analysis shows because there are plenty of us out here that know the real cost of electric. If everyone in California ever did convert to electric, sit back wait and watch the rates sky rocket.

## New Heat Pump Water Heater Example

\$9,000 estimate 🐱  
- \$7,700 in rebates! 🎉  
= \$1,300 out of pocket  
- \$2,500 utility bill savings (15 years)

**= you get paid \$1,200 to electrify!** 😄

(New gas water heater = \$2,000 - \$4,000)

+ Better & safer homes, communities, and planet

## Misperception: Power outages are common, and affect only electric appliances



**Jim Senke**

Staying with my gas, and electric. If the electric goes, at least I still have gas to cook with, and a real fireplace w/o gas, electric. Just a log, strike a match and that's it!



**Douglas Hope**

no we're not. we can't even charge an electric car in the summertime. rolling brown outs and just plain blackouts occur. stop demonizing energy.



**Actual outages: ~200-450 minutes/year**  
(out of 525,600 total minutes/year)

**Cognitive biases lead us to *believe* electricity is less reliable than it is!**



Source: [2020 System Average Interruption Duration Index \(SAIDI\)](#)



- **Gas appliances often need electricity, too:**
  - All gas furnaces
  - Some gas water heaters
  - All gas dryers
- **Hot water in an electric heat pump water heater will last for 12+ hours without power**
- **Electricity backup can come from:**
  - Gas generators
  - Home batteries
  - (Soon) Bi-directional EV chargers
  - (Soon) Appliances with built-in batteries

## **Misperception: Electricity generation is dirty**

**Patricia LaCava**

Where does electricity come from? Oh yes, oil and coal fired plants.

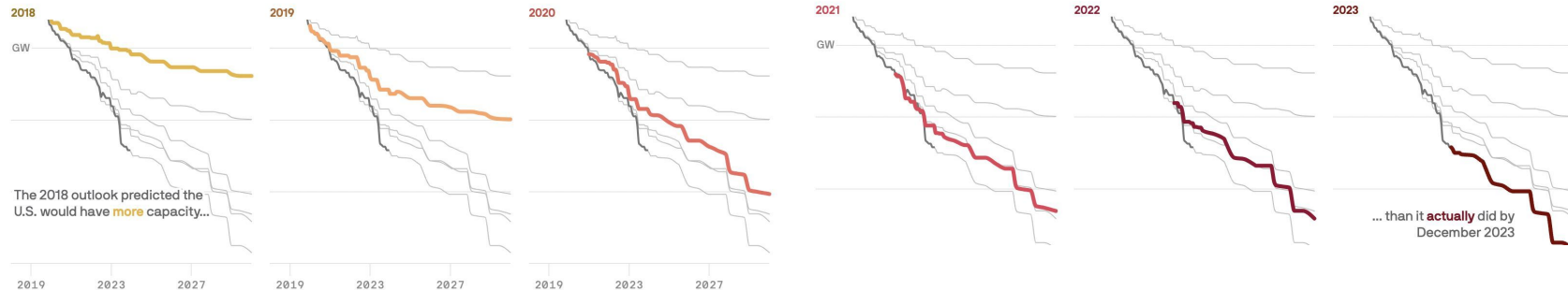


# Electricity generation is ~~dirty~~ clean-ish and getting cleaner *faster* than projected

U.S. operational coal-fired power capacity, by year outlook was projected

In Gigawatts; Monthly; January 2018 to December 2030

— Historical capacity  
As of November 2023

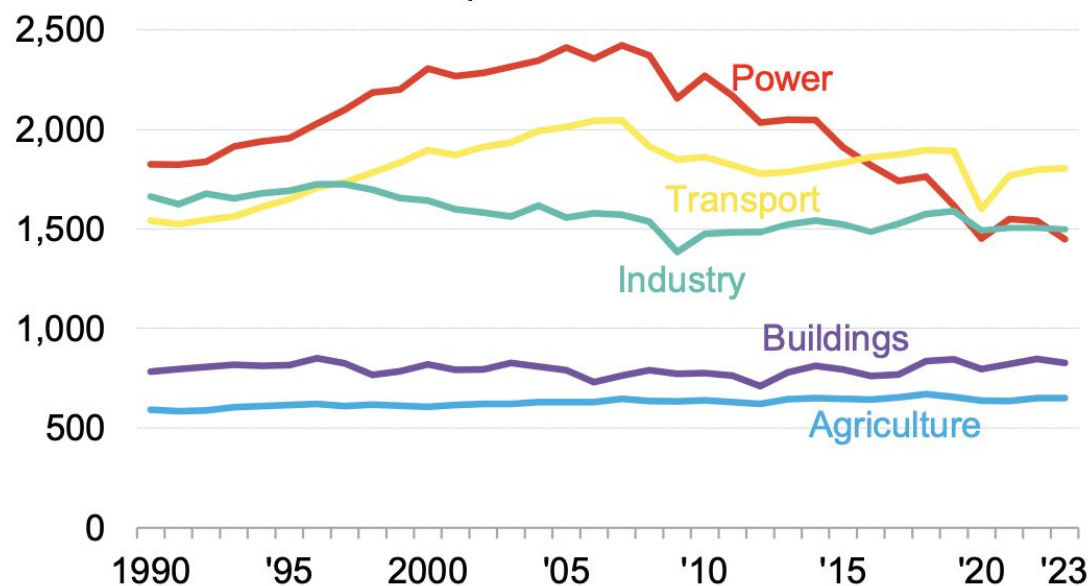


“Not long ago, during the Obama years, coal was the #1 source of energy powering our electric grid in America. Now it accounts for **only 15% of electricity generated**, *less than renewables*, and falling fast.”

## Power sector is getting cleaner *faster* than other sectors

### Emissions by sector

Million metric tons of CO2 equivalent

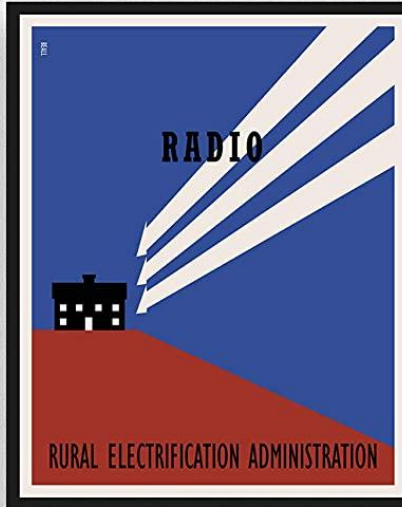
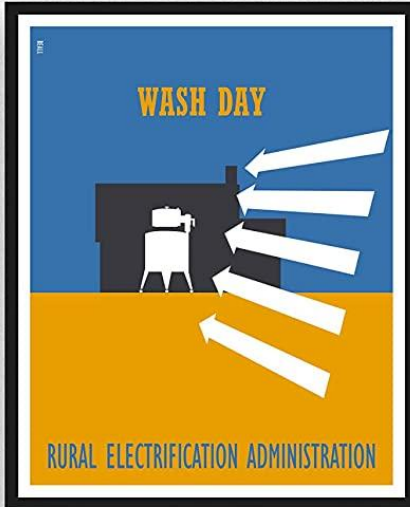
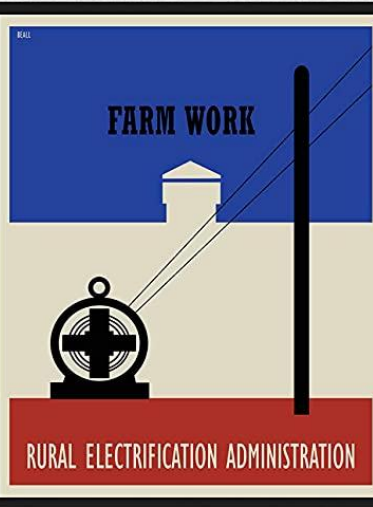
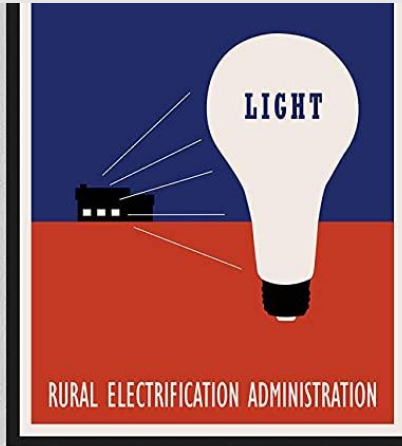
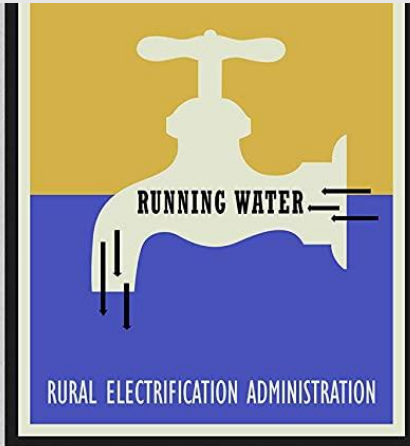
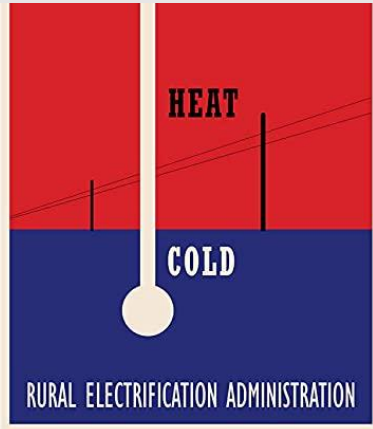




- **Must Have: Wide-scale, omni-channel, sustained (10+ years!) marketing campaign**
  - Extol the virtues of electricity
  - Counter misperceptions
  - Position fossil fuels as old-fashioned, costly, and hazardous to our future.
- **Like the campaigns against tobacco use**



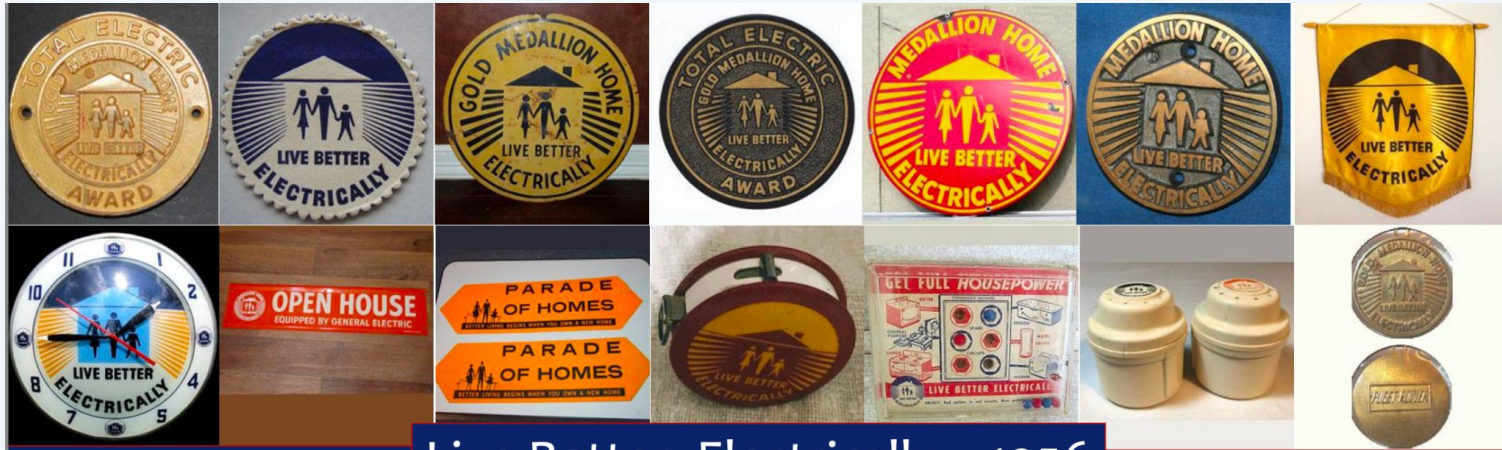
# 1930s-1950s: Equity via the Rural Electrification Administration







# Mass Marketing of... Electricity!



## Live Better, Electrically – 1956







## Mass Marketing of... Electricity!



### Families love to get together in the wonderful comfort of a total electric Gold Medallion Home

You, too, will be proud to own a Gold Medallion Home. Its heart is flameless electric home heating. Its soul is comfort. Here your whole family can live royally with a single source of energy to serve at the flick of a switch.

For only electricity brings you clean, cool flameless cooking, flameless clothes drying, and a flameless water heater that needs no flue and stows away anywhere. In a Gold Medallion Home your whole family also enjoys modern Light for Living

and Full Housepower Wiring that lets you operate as many appliances as you like efficiently and simultaneously.

Before you buy, build or modernize ask your electrical contractor about the advantages of a Gold Medallion Home or talk it over with the people at your electric utility company.

#### YOU LIVE BETTER ELECTRICALLY

Edison Electric Institute, 750 Third Avenue, New York, N.Y. 10017

MAKE THIS YOUR YEAR TO DISCOVER THE JOY OF TOTAL ELECTRIC LIVING!



Flameless electric home heating gives you wonderful feeling of comfort, delivers heat even heat flow from anywhere cold



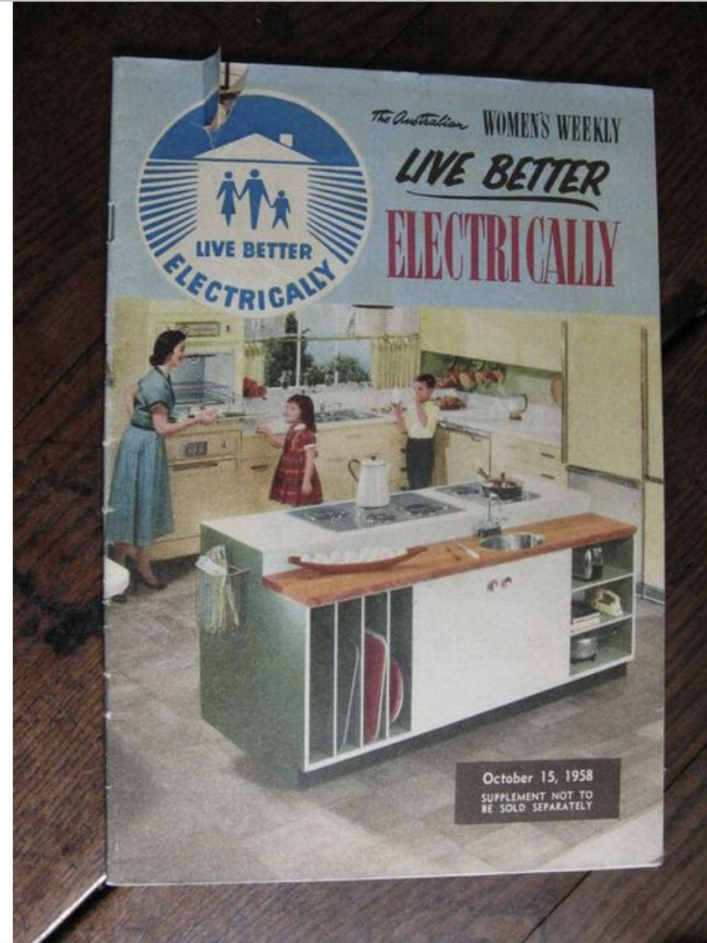
Flameless electric appliances provide modern convenience, save time, help take the drudgery out of housework



Full Housepower Wiring assures plenty of outlets, switches and circuits for present and future needs



Sign of Total Electric Living This Gold Medallion identifies homes that are electrically sound



# 1950s: Utilities Fund a Hit TV Show and Reagan's Demonstration Home





## Fossil fuel industry is actively marketing to students

**The Washington Post**  
*Democracy Dies in Darkness*

BUSINESS

## The plastics industry would like a word with your kids

School campuses are a new battleground in an increasingly bitter brawl over plastic's impact on the environment

## Big Oil's Marketing Campaign Is Targeting US Classrooms

BY  
KEERTI GOPAL

A nonprofit backed by the fossil fuel industry has wormed its way into Illinois public schools to convince students to pursue careers in oil and gas.

Sources: <https://www.washingtonpost.com/business/2024/02/13/plastics-schools-plastivan-recycling/>  
<https://jacobin.com/2024/01/big-oil-education-climate-illinois>

## They will inherit the world we make - get them fighting for our future!

- Educational content
- *Fun* content
- Activities
- Fundraisers



Source: <https://www.nrel.gov/news/program/2023/beneath-the-surface-spark-squad.html>



- **Tell stories of happy electrifiers**

- Positive word-of-mouth is ***critical*** for accelerating electrification retrofits

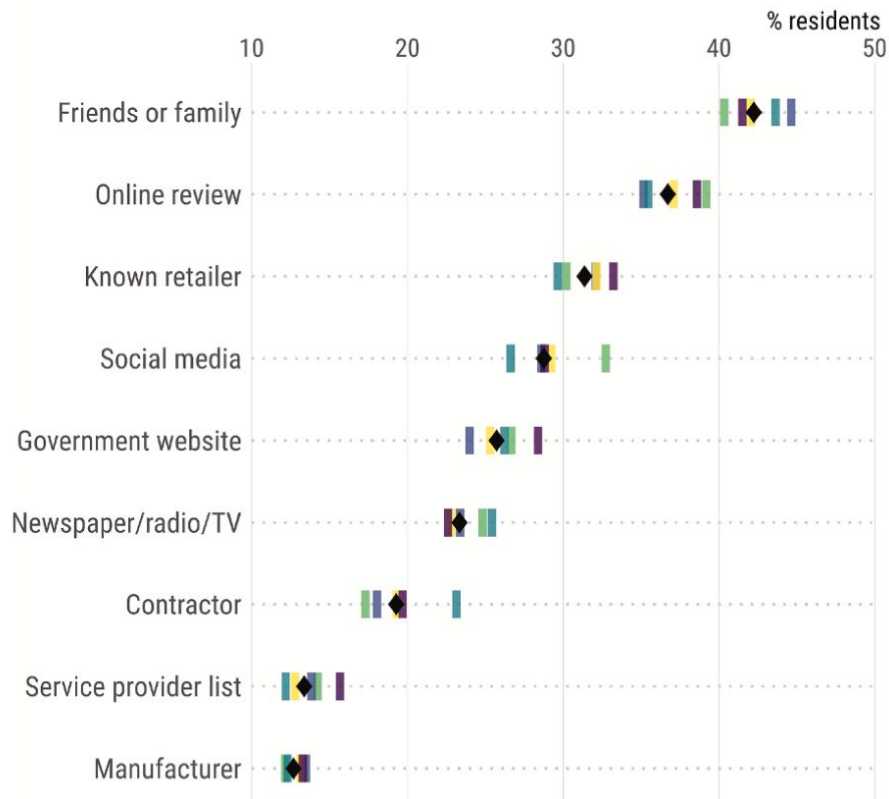
- **Cobbler's children**

- Help ensure that electrification program staff and contractors are electrifying ***their*** homes
- It is much more effective for an advisor to say “I have the same HPWH” or “I switched to induction recently - I love it!”



### Enlist sources that homeowners already trust

C) Sources of Information



- **Permissive copyright on marketing and education content, allowing easy reuse**
  - Creative Commons
- **More publicly-funded research on marketing messages, channels, and tactics**
- **Make a place for electrification advisors in government and utility programs, websites, etc**
  - Contractors aren't the only ones that help folks electrify



- **More open source software**
- **More open source data**
  - Every government-funded program should have an API
- **Easier access to electric and gas meter data**



- **“What’s in it for me?”**
- **Minimize business process changes**
- **Reduce sales risk and costs by improving close rates**
  - Increase homeowner’s intent to buy prior to contractor’s bid visit
- **Reduce workload for rebates**



- **Keep contractors happy with electrification**
  - We can't electrify everyone unless we have lots of contractors doing great electrification work
- **Help them load balance**
- **Be a conduit of information, knowledge, expertise, and connections - that lead to better business outcomes**
  - Not *only* leads



- **QuitCarbon *assumes* incentives will change**
- **We discover changes early, then respond by:**
  - Encouraging homeowners to hurry... or wait!
  - Negotiating improved pricing from contractors in "group buy" arrangements
  - Directing homeowner's attention to upgrades that remain funded (HVAC, induction, etc)
  - Increased outreach to LMI households (for whom incentives are underutilized)

- **HPWH sound**
- **Heat pump HVAC “set it and forget it”**
- **120v EV charging (plug in all the time, like your phone)**
- **Heat pump dryers take longer**
  - Clothes may need a shake
- **Induction cooking will feel different at first**
- **Bills may not go down right away**
- **Rebates may take a while**

- **Correct configuration of HPWH, heat pump, EV charger**
- **Enroll in demand response programs**
- **Switch to lower-cost electricity rate plan**
  - Lack of awareness in alternate rate plans
  - Lack of confidence in the ease and value of switching
- **Highlight the counterfactual**
  - “You would have spent \$\$\$ more if you hadn’t switched from gas to electric!”
- **Solicit positive word of mouth**
  - Online reviews, social media, tell a friend

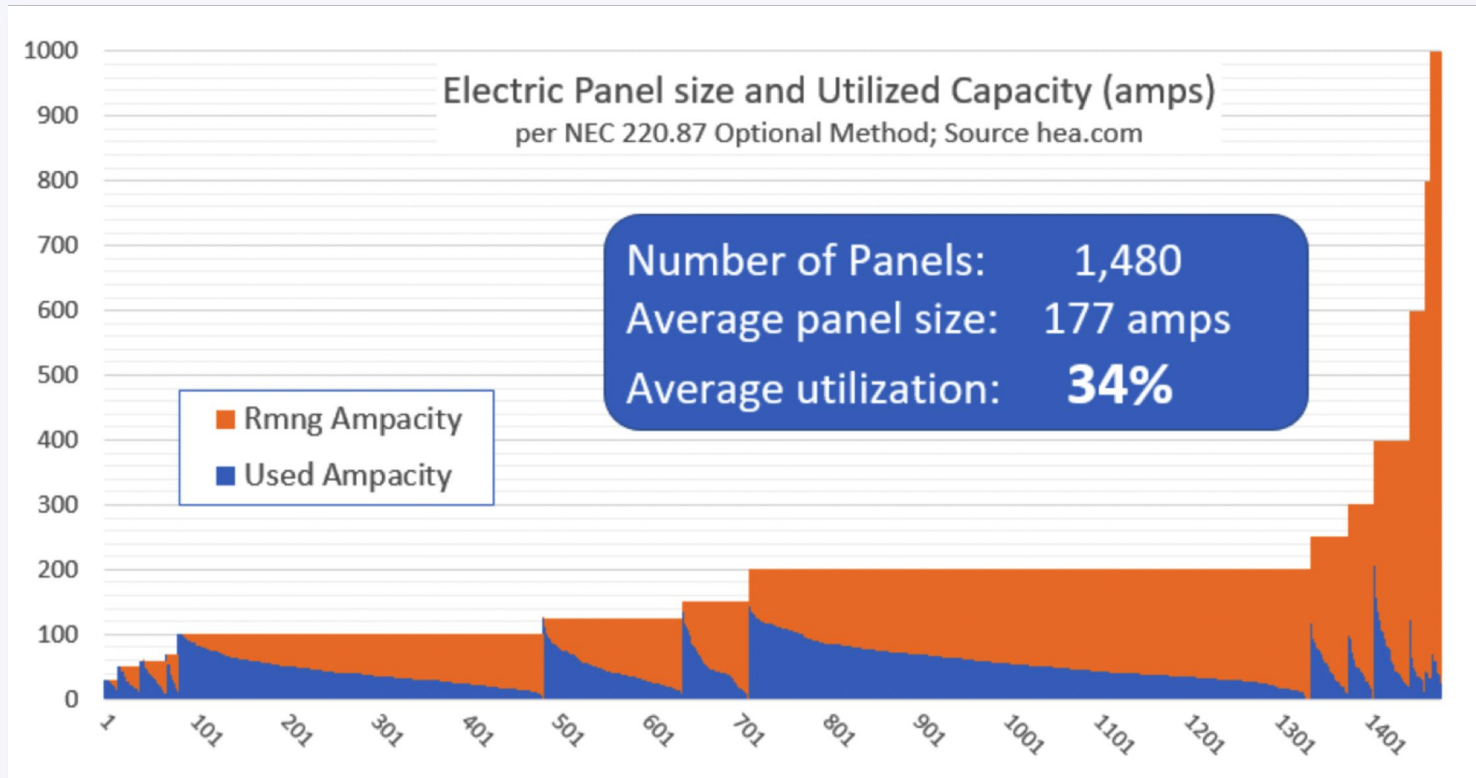
- **Bay Area**
  - 585,000 low-income households
  - 40% are homeowners (virtually all single-family homes)
- **Large incentives**
  - “...every low-income Bay Area household can receive a free heat pump water heater...”



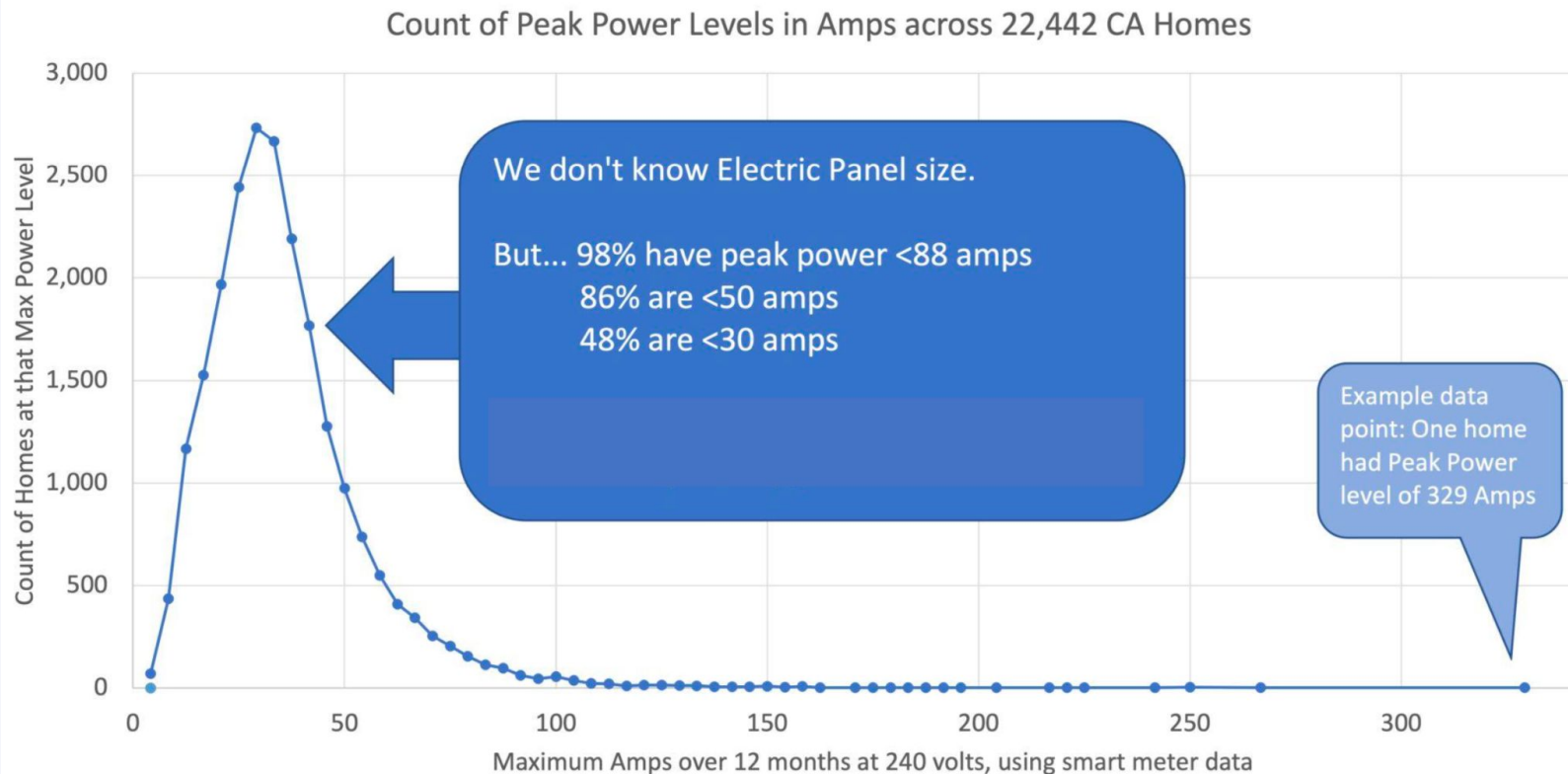
- **Lower income homeowners need different approaches**
  - Single point of contact is even more important
  - Timing of payments / rebates is critical
  - Language support is challenging
- **Weatherization has extra big benefits**
  - Lower upfront and ongoing costs for HVAC
  - Improved thermal safety
  - Improved indoor air quality
- **Resident may want to avoid inspections**
  - Immigration concerns
  - Previous unpermitted work
  - Code violations

- **Avoid electrical service and panel upgrades**
  - “Design incentive programs to include subsidies for technologies that mitigate the need [for electrical upgrades]”
  - Ensure all AHJs consistently accept Electrical Code section 220.87 with electrical meter data
- **We are all still learning**
  - Need more sharing of what works...

## Electrical Work - QuitCarbon Avoids Unnecessary Expenses



## Electrical Work - QuitCarbon Avoids Unnecessary Expenses



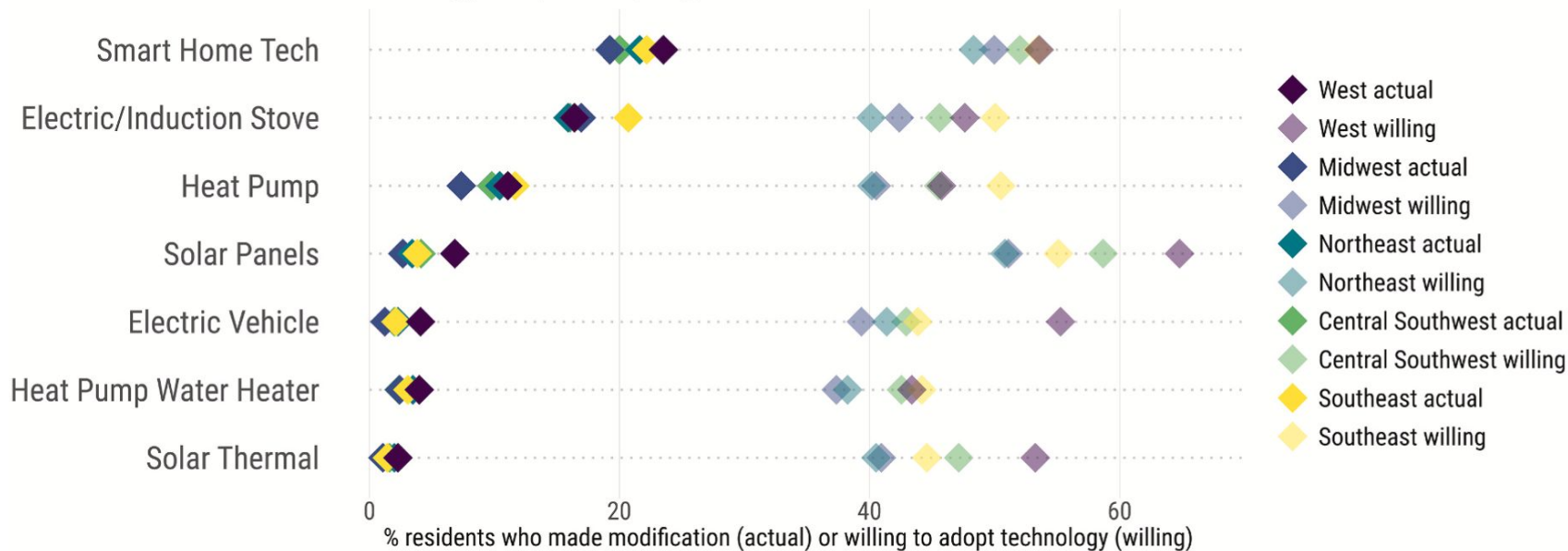
Source: Home Energy Analytics (HEA), PG&E HomeIntel service single family user data



## Big gaps between “Willing to adopt” and actual adoption

(assumes the technology is “affordable”)

Technology adoption by region



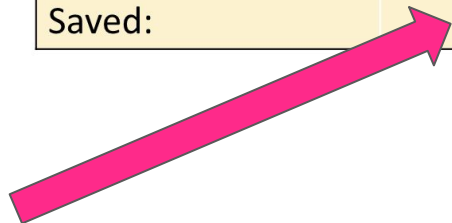
## Shift focus from incentives to financing

Ex: Full Home Electrification & Efficiency Upgrade, 2% Interest Rate

18 SEER Heat Pump, Heat Pump Water Heater, Attic Insulation, Air and Duct Sealing

Project Bought Down to 2% Interest Rate	
Financing Amount:	\$40,000
Term Length:	180 months (15 yrs)
Original Interest Rate:	7%
Monthly Payment:	\$354
Total Interest Paid:	\$24,715
Post-Reduction Rate:	2%
Monthly Payment:	\$257
Total Interest Paid:	\$6,333
Funder's Cost of Buy-Down*	\$11,362

Impacts	
Monthly Payment Reduction:	\$102
Total Interest Saved:	\$18,383



\*Present Value of Original "Total Interest Paid"





**QuitCarbon**

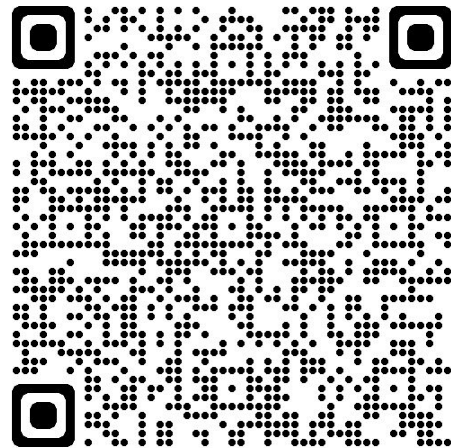
**Thank you!**

**[Cooper@QuitCarbon.com](mailto:Cooper@QuitCarbon.com)**

The survey should only take 2 minutes  
and your responses can be confidential.

Here's how to participate:

- Click the provided link
- Or
- Scan the QR code with your phone's camera





# THANK YOU



Together, Building  
a Better California