



Efficiency, Electrification, and Equitable Rates for Low-Income Households

September 17th, 2024

About ACEEE:


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

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



Energy insecurity is prevalent in the U.S.

1 in 4 households in the U.S. struggled to meet their energy needs in 2020 (U.S. Energy Information Administration 2022)



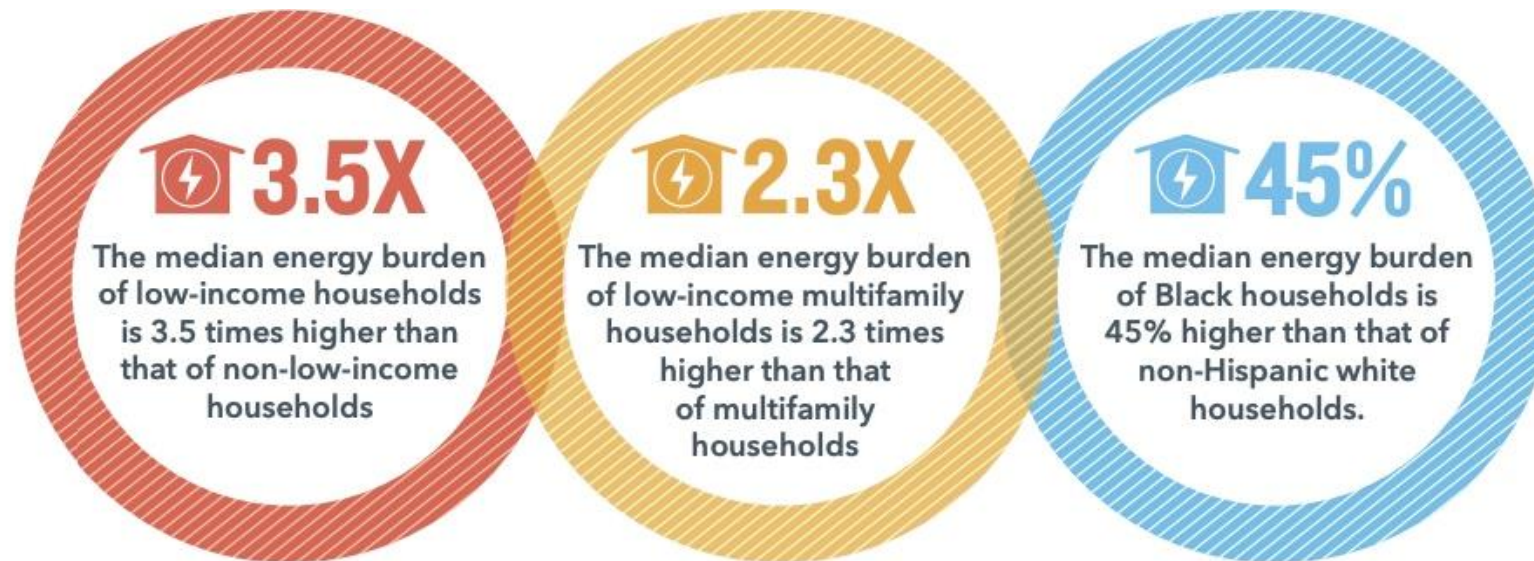
4 million energy shutoffs between January and October 2022 (Goodson Bell et al. 2023)



Households without affordable energy access experience health challenges and are more likely to experience poverty (Lima, Ferreira, and Leal 2022; Hernández and Laird 2021; Partnership for the Public Good and PUSH Green 2022)

National Energy Burden Findings

- **25%** of all households (**30.6 million**) have a high energy burden (above 6%)
- **36% of Black households** (6 million)
- **28% of Hispanic households** (4.6 million)
- **36% of Native American households** (540,000)
- Median energy burden is **3.1%**, and the median low-income energy burden is **8.1%**
- **A quarter of low-income households have an energy burden above 14.4%**,



National Energy Burden Factsheet available at aceee.org/energy-burden

Comprehensive Approaches to Achieving Energy Affordability

Head upstream to address energy affordability at its source:

- Combining Bill pay assistance with energy efficiency improvements
- Addressing building comfort for heating and cooling seasons
- Electrifying home heating systems and household appliances*
- Enrollment in equitable utility rates: PIPP and tiered discount programs

*Benefits/costs vary by location, depending on local electricity rates

Common Efficiency-Related Measures



MECHANICAL MEASURES

- Clean, tune, repair, or replace heating and/or cooling systems.
- Install duct and heating pipe insulation.
- Repair leaks in heating/cooling ducts.
- Install programmable thermostats.
- Repair/replace water heaters.
- Install water heater tank insulation.
- Insulate water heating pipes.
- Install solar water heating systems.



HEALTH & SAFETY MEASURES

- Perform heating system safety testing.
- Perform combustion appliance safety testing.
- Repair/replace vent systems to ensure combustion gas draft safely outside.
- Install mechanical ventilation to ensure adequate indoor air quality.
- Install smoke and carbon monoxide alarms when needed.
- Evaluate mold/moisture hazards.
- Perform incidental safety repairs when needed.



BUILDING SHELL MEASURES

- Install insulation where needed.
- Perform air sealing.
- Repair/replace windows/doors.
- Install window film, awnings and solar screens.
- Repair minor roof and wall leaks prior to attic or wall insulation.



ELECTRIC & WATER MEASURES

- Install efficient light sources.
- Install low-flow showerheads.
- Replace refrigerators with energy efficient models.



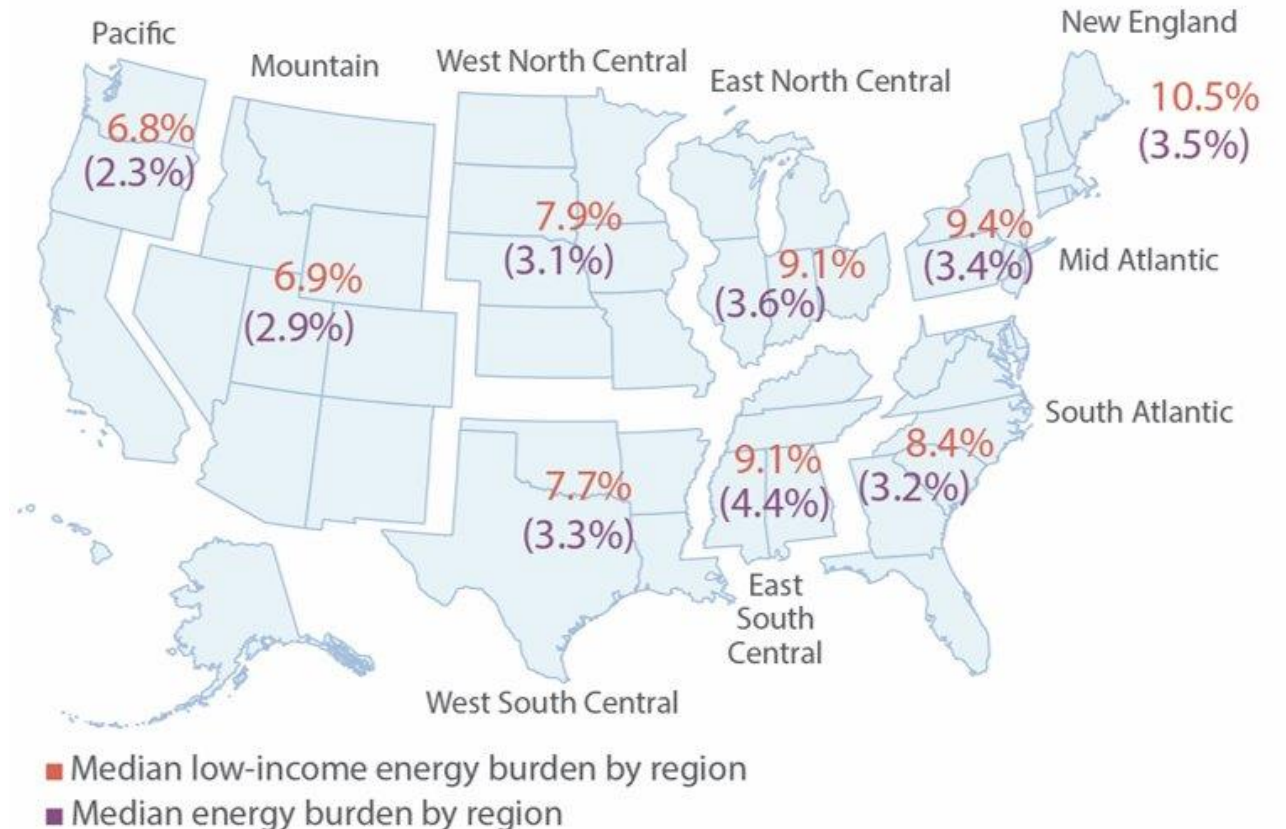
CLIENT EDUCATION ACTIVITIES

- Educate on potential household hazards such as carbon monoxide, mold & moisture, fire, indoor air pollutants, lead paint and radon.
- Demonstrate the key functions of any new mechanical equipment or appliances.
- Discuss the benefits of using energy efficient products.

Centering Equity in the Clean Energy Transition

There are more than **26 million households** in the U.S. below 80% AMI that are **burning fossil fuels inside their homes**.

On average they pay more than 9% of their income on energy for their home. The other approximately 95 million households pay less than 4% of their income for the same purpose

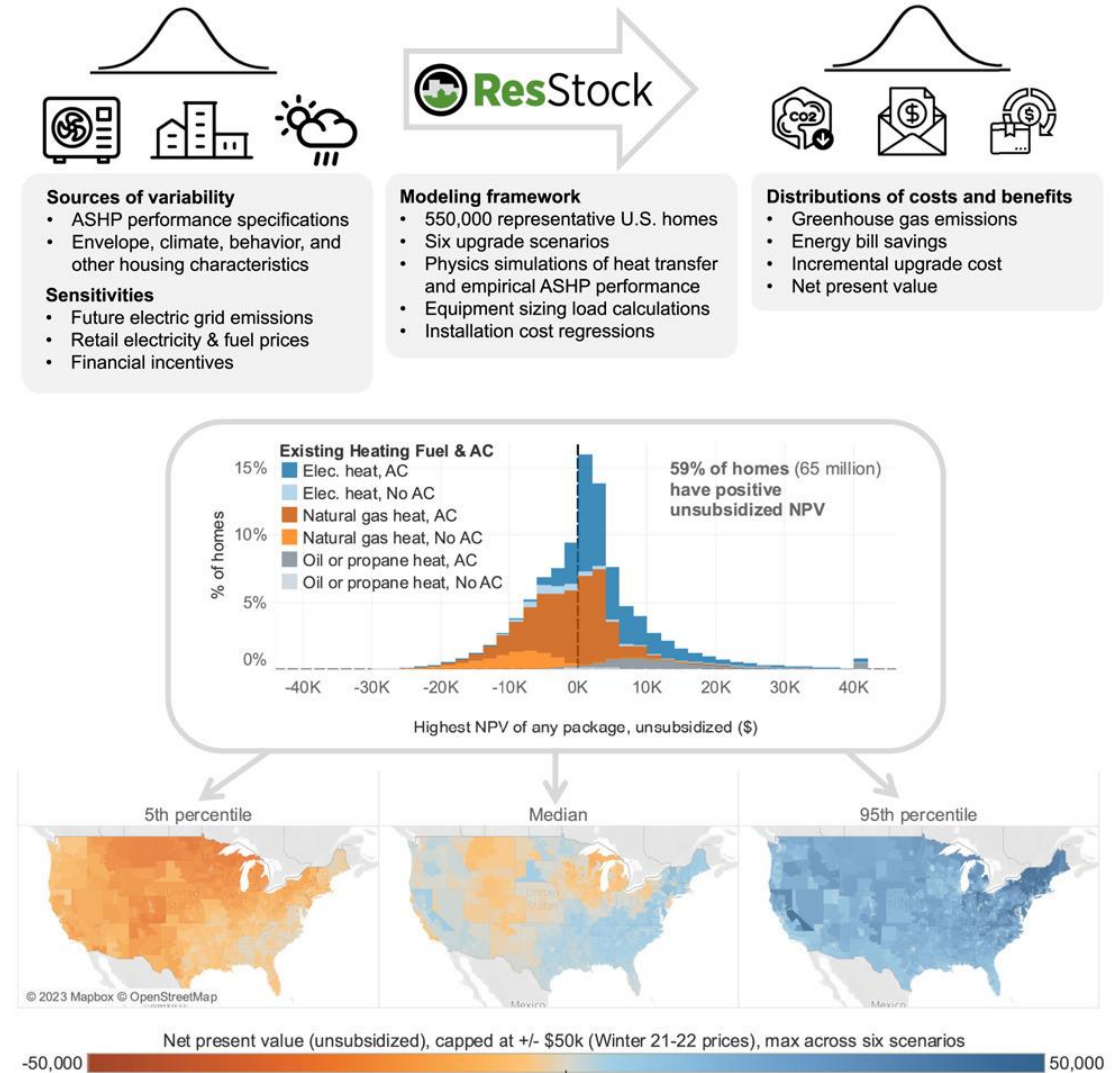


Efficient Electrification will lower most bills

“These results show the significance that presence of AC and primary heating fuel type have on energy bill savings. Providing cooling to homes that previously did not will likely have substantial co-benefits in the form of avoided mortality and morbidity due to extreme heat.”

“However, efficiency is key: whereas minimum-efficiency equipment could increase energy bills in 39% of households, this fraction is only 19% when also upgrading insulation or 5% when using higher-efficiency equipment”

Heat Pumps for All? Distributions of the costs and benefits of residential air-source heat pumps in the United States, Wilson et al, Joule 8, February 12, 2024
<https://doi.org/10.1016/j.joule.2024.01.022>



Serving the Needs of Renters



Rental homes present an added challenge:

Rental properties are less energy efficient than others, **on average consuming 15% more energy per square foot** than owner-occupied homes.

These inefficient homes also mean renters spend a lot on energy bills, with **nearly one-third having high energy burdens**, spending more than 6% of their income on energy bills.

Yet making energy-saving improvements to rental properties may be difficult or even prohibited for tenants.

Bipartisan Infrastructure Law (BIL) Inflation Reduction Act (IRA)

New federal funding is accelerating efficiency deployment:

- BIL dramatically expanded WAP funding for efficiency improvements
- IRA funds new state programs for energy efficiency and electrification
- Funding for residential energy projects can come from multiple sources, but restrictions apply
- Training Residential Energy Contractors (TREC), formula and competitive funds for workforce development
- In total, IRA allocates \$369 billion for energy security and climate change through formula grants, competitive funds, and revolving loans

Utility Energy Efficiency Programs

For many states, utility programs are still the biggest game in town

- Annual utility efficiency program spending exceeds \$7B per year
- Income-qualified programs for low-income households range from light touch direct installation of basic lighting and water efficiency measures, to full replacement of HVAC equipment and comprehensive building envelope upgrades
- Utilities already have existing contractor networks, touch every customer, and utilize marketing budgets to promote their programs
- The IRA has prompted more effort to leverage and coordinate efficiency funding and delivery from multiple sources

Braiding and stacking funding and financing for comprehensive retrofits

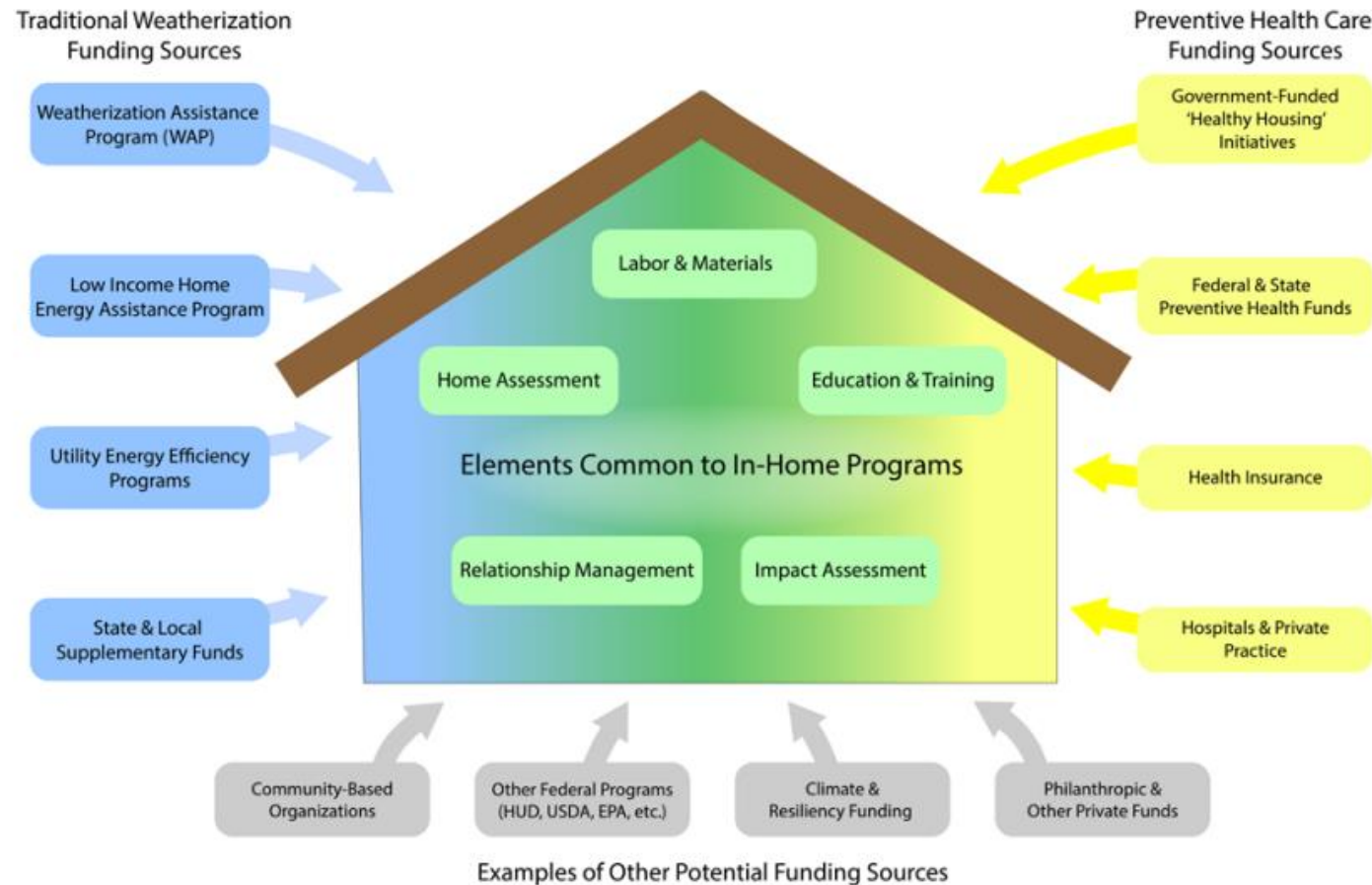


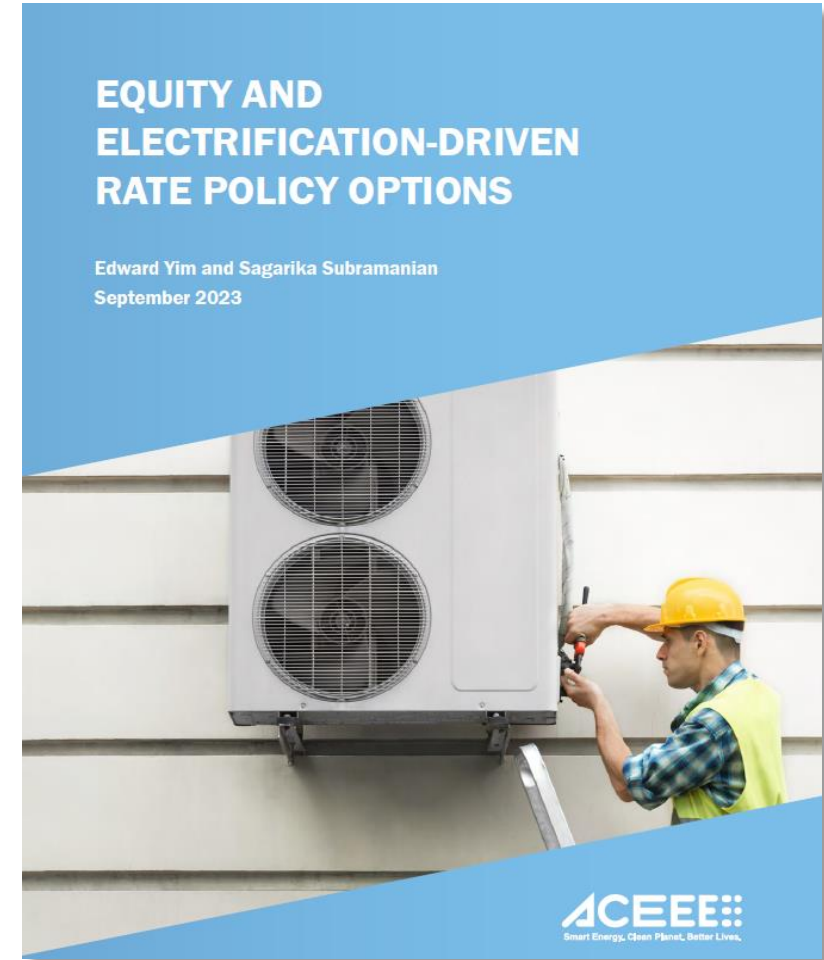
Figure ES-1. Energy efficiency and health sector funding sources that might be braided together to support program elements common to the work of both.

Affordability Programs and Electrification Rates

- Percentage of Income Payment Plans
- Increasing Tiered Discounts
- Electrification Rates
- Ending Utility Shutoffs

<https://www.aceee.org/blog-post/2024/02/heat-pump-programs-cant-keep-leaving-low-income-households-behind>

<https://www.aceee.org/white-paper/2023/09/equity-and-electrification-driven-rate-policy-options>



Summary and Recommendations:

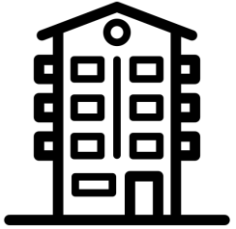
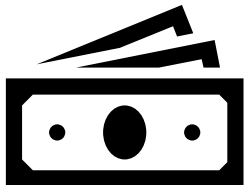
Invest LIHEAP dollars in Energy Efficiency

Tap into local utility EE programs to achieve deeper efficiency savings

Help clients access IRA Home Energy Rebates

Learn about utility PIPP and tiered discount programs, assist clients with enrollment

Facilitate categorical eligibility and streamline enrollment processes for clients



Questions?

Contact:
Forest Bradley-Wright
fwright@aceee.org
(504) 208-7597

ACEEE::

UPCOMING ACEEE EVENTS

2024	Energy Efficiency Policy Forum	Washington, DC	December 3
2025	Hot Air and Hot Water Forums	Portland, OR	March 3–5
	Summer Study on Energy Efficiency in Industry	Charlotte, NC	July 16–18
	Energy Efficiency as a Resource Conference	Denver, CO	October 7–9

Recent ACEEE Bibliography

1. [Heat Pump Programs Can't Keep Leaving Low-Income Households Behind | ACEEE](#)
2. [Adapting Energy Efficiency Programs to Reach Underserved Residents | ACEEE](#)
3. [Strengthening Equity in Energy Efficiency Programs: Case Studies of Two Utilities | ACEEE](#)
4. [Toward Affordable Energy Access: Approaches to Reducing Energy Unaffordability, Arrearages, and Shutoffs | ACEEE](#)
5. [Equity and Electrification-Driven Rate Policy Options | ACEEE](#)
6. [How Utility Energy Efficiency Programs Can Use New Federal Funding | ACEEE](#)
7. [Empowering Electrification through Building Envelope Improvements | ACEEE](#)
8. [Impact of Electrification and Decarbonization on Gas Distribution Costs | ACEEE](#)
9. [Toward More Equitable Energy Efficiency Programs for Underserved Households | ACEEE](#)
10. [Building Electrification: Programs and Best Practices | ACEEE](#)