

Powering Affordability

Why America Should Invest in the Homes We Already Have

Groundswell COMMUNITY POWER

GROUNDWORK COLLABORATIVE

Groundswell
COMMUNITY POWER

About Groundswell

Groundswell lowers energy bills and strengthens resilience for our neighbors across rural, small-town, and urban America. We build community solar, and resilience hubs that provide both everyday stability and emergency readiness. We deliver the repairs and efficiency upgrades that make homes healthier and safer, more affordable, and an asset they can pass on. Since 2009, we have built community power—aligning people, trust, and investment with joy. We measure every result so we can reach the next family. The last mile is our first mile.

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groundswell.org

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About Groundwork Collaborative

The Groundwork Collaborative fights to change economic policy and narratives in order to build public power, breaks up concentrations of private power, and delivers true opportunity and prosperity for all.

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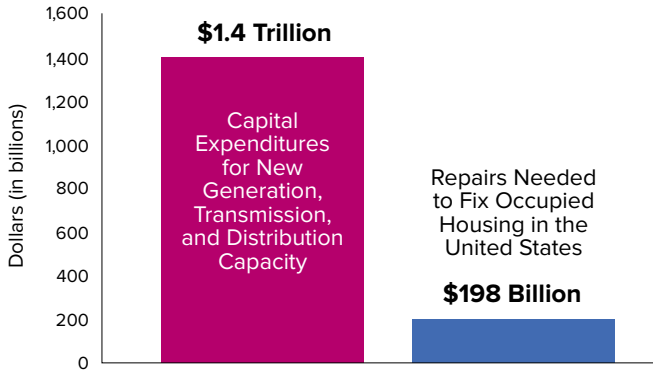
You can't solve the energy crisis without also solving the housing crisis.

Investing in America's existing housing is an investment in our energy future - and in both the everyday wellbeing and long-term economic security of the families who call these houses home. Millions of families live in homes that are inefficient, unhealthy, or in need of critical repairs. These homes are essentially leaking energy, and therefore, money. At the same time, rapidly rising electricity rates and recent energy price shocks are exacerbating these longstanding inefficiencies and forcing families to pay more than they should to live comfortably.

By investing in our existing housing, we can reduce energy waste, decrease demand on the grid, lower electricity bills for families, and create safer, healthier, and more prosperous futures.

Demand for electricity in the United States is surging, driving up electricity prices at a time when everyday households are facing extreme economic pressure. Since the beginning of 2025, residential electricity prices have risen by 12.5% - significantly outpacing inflation and with no clear end in sight.[1] To meet this swelling demand, driven mainly by the expansion and new construction of data centers, investor-owned utilities are expected to spend a record-breaking $1.4 trillion on capital expenditures for new generation, transmission, and distribution capacity through 2030.[2] While grid investments may help to stabilize rates in the long run, utility spending is often a leading indicator of forthcoming rate increase requests. In 2025 alone, utilities requested $31 billion in rate increases – more than double the $15 billion requested by utilities the year before.[3]

Projected Spending by Utilities through 2030



*Federal Reserve Bank of Philadelphia, 2024.

In contrast, the Federal Reserve Bank of Philadelphia estimated in 2024 that $198.4 billion in repairs were needed to fix all occupied housing in the United States, addressing a broad range of maladies: structural issues, leaks and mold, cooling, electrical, heating, pests, and plumbing.[4] Many of those repairs would help reduce the 37 percent of U.S. electricity the residential sector consumes.[5]

The scale of investment needed to repair and modernize America's housing is significant, but it pales in comparison to the capital being mobilized to address rising energy demand and expand the nation's electric grid. **For a fraction of what utilities plan to spend over the next four years, we could make millions of homes more efficient, healthy, and resilient while reducing strain on an already stressed energy system.**

Lower-income families earning below 200% of the Federal Poverty Line (FPL) account for $74.6 billion of the estimated repair needs (38%), despite representing just 29% of occupied housing units. Many homes across the country occupied by lower-income families are often in too poor condition to readily benefit from energy efficiency improvements. These are the exact households who would stand to benefit from these investments the most, as they are often turned down from other assistance programs.

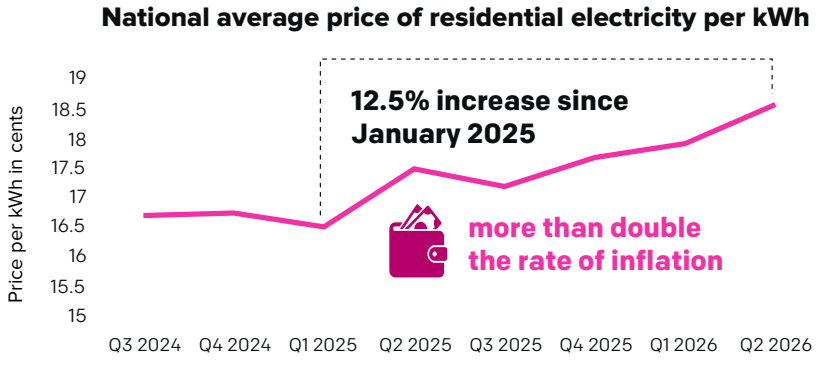
The condition of America's housing stock stands in the way of making energy efficiency a viable alternative to new electricity generation capacity. Even if a portion of the $1.4 trillion that utilities will spend on capital expenditures in the next five years was directed into energy efficiency programs, these investments wouldn't adequately reach the over 6.4 million American households who live in substandard housing conditions or the 49 million who have at least one critical home repair need.[6,7] Roughly one in five applicants to the Department of Energy (DOE) Weatherization Assistance Program (WAP) are deferred from the program due to underlying health and safety concerns with their home.[8] Groundswell's own experience with its Save on Utilities Long-term (SOUL) home repair and upgrade program has shown that 53% of program applicants require some sort of home repair before energy efficiency improvements can be made.

We must tackle the housing and energy crises together, putting affordability first and prioritizing the needs that people feel most directly at the kitchen table, and reaping the larger efficiency rewards as a result.

This paper makes the case for an integrated approach and issues calls to action for policymakers to confront these challenges head-on: investing in long-neglected home repairs and energy efficiency improvements to preserve the family home as a foundation for American prosperity, delivering near-term relief that lowers household energy bills and home maintenance costs, and unlocking energy savings that free up capacity on the electricity grid to help power the country's future. By aligning programs and data and investing at the scale the moment demands, we can preserve America's housing stock, strengthen household stability, help support future grid stability, and fight back against an unprecedented cost of living crisis that is plaguing families across the nation.

Americans are facing an unprecedented energy and affordability crisis.

Across the country, electricity usage is expected to grow by an average of 5.7% per year between 2026 and 2030, representing over 166 GW of new peak demand growth.[9] These load growth expectations have increased by more than a factor of six over the last three years, representing an unexpected explosion in new demand driven primarily by data center expansion.[10]



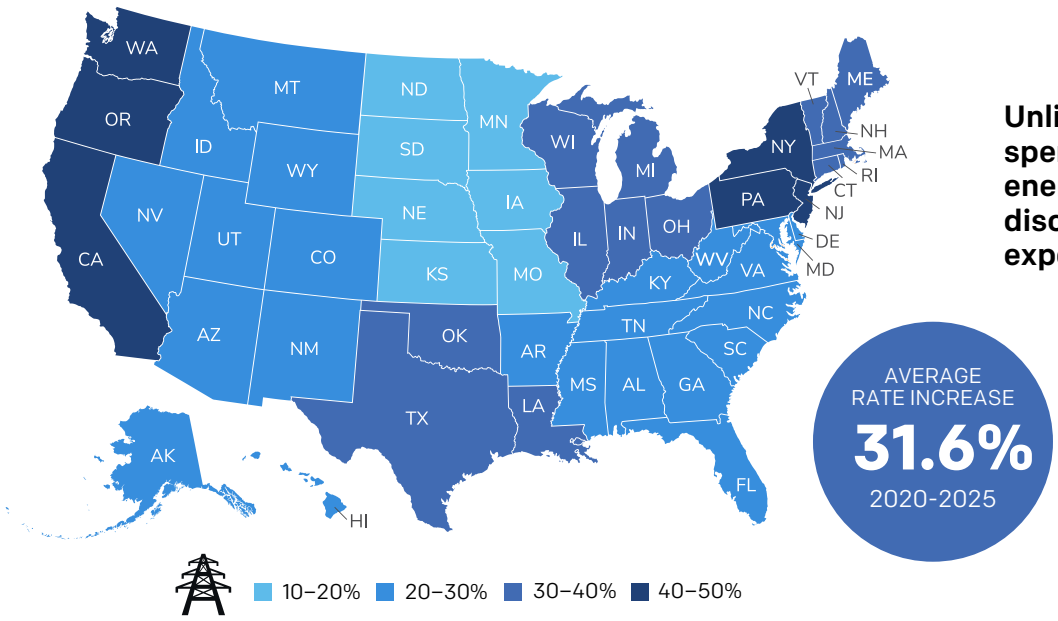
Source: EIA. Residential electricity rates rose 12.5 percent since the beginning of 2025.

The cost burdens of building new capacity to meet this demand have fallen on residential customers already struggling with the cost of housing, groceries, transportation, and other necessities. When utility costs rise, families have little ability to reduce consumption without sacrificing basic comfort, safety, well-being, and quality of life. Higher energy costs disproportionately affect lower-income households and those living on fixed incomes.

The increases in energy prices since 2020 underscore the urgency of the affordability challenge. Unlike many other spending categories, energy is not a discretionary expense. The significant growth in the cost of residential electricity across the United States – driven by increased demand from data center expansion, electrification, growth in the manufacturing sector, and other economic factors – puts enhanced pressure on family budgets at a time of rising costs across the board.

On average, residential electricity rates in the US rose nearly 32% between 2020 and 2025, compared to cumulative inflation of about 24% during that same period.[11,12] In just the period between January 2025 and July 2026, residential electricity prices increased by a staggering 12.5% - more than double the rate of inflation. Ratepayers in the US now spend an average of 17.3 cents per kilowatt-hour (kWh), with disproportionately high price increases in the Pacific (up 48.4% since 2020), Mid-Atlantic (42.5%), and New England (36.0%). The trend of rising household energy costs also shows up in the prices of heating fuels. The price of natural gas rose approximately 43% between 2020 and 2025.[13] Heating oil, which is particularly important in the Northeast, rose in cost by a staggering 64%, and propane, which is disproportionately used in rural communities, saw a 33% price hike during the same period.

Average Residential Electricity Price Increase (2020 to 2025)



Unlike many other spending categories, energy is not a discretionary expense.

Region	2025 Average Residential Rate	Average Increase Since 2020
New England (CT, MA, ME, NH, RI, VT)	28.91 ¢/kWh	**36.0%** ↑
Middle Atlantic (NJ, NY, PA)	22.70 ¢/kWh	**42.5%** ↑
East North Central (IL, IN, MI, OH, WI)	17.70¢/kWh	**30.5%** ↑
West North Central (IA, KS, MN, MO, NE, ND, SD)	13.95¢/kWh	**16.6%** ↑
South Atlantic (DC, DE, FL, GA, MD, NC, SC, VA, WV)	15.31¢/kWh	**29.9%** ↑
East South Central (AL, KY, MS, TN)	14.10¢/kWh	**24.3%** ↑
West South Central (AR, LA, OK, TX)	14.65¢/kWh	**31.6%** ↑
Mountain (AZ, CO, ID, MT, NM, NV, UT, WY)	14.41¢/kWh	**22.5%** ↑
Pacific (CA, OR, WA)	24.74¢/kWh	**48.4%** ↑
Alaska and Hawaii	34.40¢/kWh	**27.3%** ↑

People pay bills, not rates. The quality and efficiency of a home is the key driver of how much energy that household consumes and, ultimately, how much that family pays per month. The overall affordability of energy is not solely determined by the price per kilowatt-hour, but rather by a combination of rates and housing quality and efficiency.

Families are living in increasingly older, inefficient homes

Over 6.4 million families live in housing that the US Department of Housing and Urban Development (HUD) deems inadequate. These homes do not meet the HUD standard of "a decent home and suitable living environment," including many factors that increase energy consumption and lead to lower quality of life, such as lack of insulation, poor heating and cooling capacity, and leaking windows, doors, and walls. For example, approximately 1.5 million households reported inadequate insulation as a primary cause of being uncomfortably cold for a period of 24 hours or more.[14]

These conditions are worsening as America's housing stock ages and families live in increasingly older homes. Nearly half (47%) of the housing stock in the United States was built before 1980 – a common benchmark year for when building and energy codes were first widely adopted.[15] The median age of owner-occupied homes rose from 33 years in 2010 to 42 years in 2024, while renter-occupied homes aged from a median of 36 to 43 years over the same period. Approximately one in four homeowners, or roughly 22 million families, now lives in a home built before 1960.[16] This aging housing inventory reflects years of insufficient new home construction, the rising cost of home acquisition, ownership, and maintenance, and innovations in building techniques to help extend the life of homes.

NEARLY
1 in 5 Americans



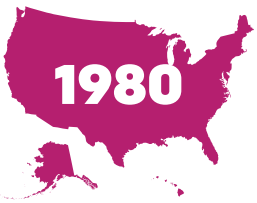
reported **spending less on groceries** to afford electricity bills[18]

89%



of **homes** in the U.S. are **under insulated**[19]

NEARLY
half of all homes in the U.S. were **built before**





Groundswell

53%

of homes needed repairs before energy efficiency measures could be installed (as of Nov 2026)

Older homes are disproportionately occupied by families with the least financial means to make critical repairs and upgrades. As a result, these households pay a persistent financial penalty for a basic level of comfort, and even modest increases in energy prices become significant burdens. Recent analysis from the Harvard University Joint Center for Housing Studies found that the highest income quintile of homeowners spent nearly four times as much on home repairs and upgrades annually as owners in the lowest income quintile.[17] Without the financial means to make significant investments in home maintenance, lower-income households are often unable to address common structural inadequacies in older homes, such as poor insulation, leaky thermal envelopes, and drafty windows. Combined with older HVAC equipment, uninsulated ductwork, and older appliances, these inefficiencies require increased energy consumption to maintain a comfortable indoor environment or accomplish common household tasks.

The spike in energy prices and forecasts for future energy demand reveal why addressing poor housing conditions is an inseparable part of addressing the energy affordability crisis. The EIA 2024 Residential Energy Consumption Survey shows that the percentage of households reporting that they struggled with energy affordability grew from 27% in 2020 to 33% in 2024 – now representing approximately one third of all households.[20] These families are increasingly forced with an extremely difficult choice: cut back in other spending areas to afford the ever-rising cost of energy bills or live in uncomfortable or unsafe conditions in order to reduce costs.

Rising energy costs also become particularly pronounced when viewed in the context of other homeowner cost burdens, including property tax, interest, and insurance. Nationwide, property taxes rose 31% between 2019 and 2025 as demand for housing surged and put upward pressure on home prices.[21] During the same period, interest payments rose approximately 34% and property insurance costs rose an astounding 72%. Collectively, these mounting expenses apply cumulative pressure on households already stretched thin by rising utility bills. This increase across every pillar of housing expenses creates an environment that makes properly maintaining a home increasingly unattainable for lower-income families.



Marla Alexander with John Roberts, Jr. and Leon Childs from Groundswell.

A breath of fresh air: The impacts of home repairs and upgrades in Atlanta's Westside

In Atlanta's historic Westside, many families have struggled to keep up with home repairs and modernizations—particularly with the rising cost of living in the Atlanta metro area. For Marla and Vernon Alexander, their home had become a burden rather than the sanctuary they'd hoped for. With poor insulation and an inefficient HVAC system, the family lived in what Marla called "survival mode," trying to keep cool during the hot months and warm during the winter. Their home was so inefficient that they had electric bills as high as $849—an amount which exceeded their mortgage.

In response to stories like the Alexanders, Groundswell brought together local churches and community partners to launch an initiative called the Westside Resilience Corridor (WRC) to address housing concerns, expand access to workforce training, and create new community resilience hubs.

WRC is anchored by four Southwest Atlanta churches: West Hunter Street Baptist, Providence Missionary Baptist, Community Church Atlanta and its Vicars Community Center, and Atlanta Good Shepherd Community Church. This is how Marla—a member of Community Church Atlanta—found out about the opportunity to receive the zero-cost-to-homeowner upgrades to their house.

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Together—with support from Georgia Power, the Georgia Environmental Finance Authority (GEFA), and the City of Atlanta and funding in part from the Arthur M. Blank Family Foundation—WRC works to increase energy efficiency, improve housing quality, and expand energy affordability through Groundswell's Save On Utilities Long-term (SOUL) program.

By braiding funding from public, utility, and philanthropic sources, the Groundswell team worked with local contractors to improve the Alexanders' home by upgrading and replacing insulation, sealing air leaks, replacing ductwork, encapsulating the crawlspace, and installing a new high-efficiency heat pump and heat pump water heater.

The difference was immediate. The Alexanders' most recent bill was 45% lower compared to the same month last year and down 70% from its peak prior to participating in SOUL. In Marla's words, the home became "a breath of fresh air."

A home is a family's most valuable asset

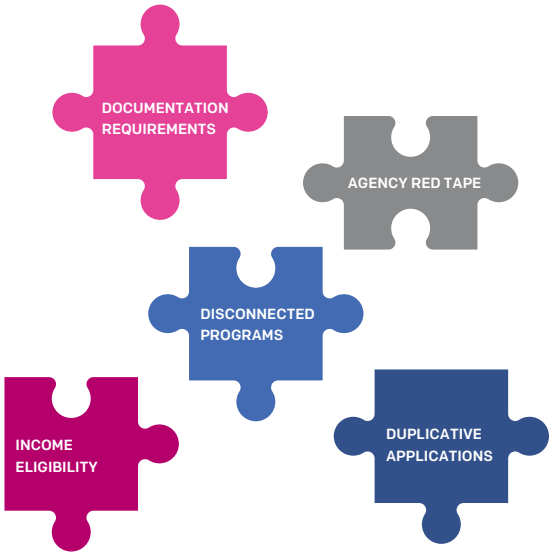
The deterioration of America's housing stock undermines the single most important asset for building multigenerational wealth in America: homeownership. Investing in America's housing not only serves to improve energy affordability, but also helps preserve wealth, financial security, and quality of life. Homes that have fallen into disrepair or that need energy efficiency upgrades are often worth less, reducing the economic benefit that a family might realize from homeownership. Between 2019 and the end of 2025, aggregate homeowner equity rose 88%, representing $16 trillion in equity gains for homeowners.[22] Homes that have fallen into disrepair, lack efficient infrastructure, or that do not have modern appliances and HVAC equipment miss out on equity gains felt by other homeowners. Homeownership is often the largest asset owned and passed on by a household, with the median net worth of homeowners at $396,600 compared to just $10,400 for renters as of 2022.[23]

Preserving America's housing stock is critical for sustaining lower-income home ownership. With the median price of a new construction home at $417,400 in 2025, buying an older home is likely one of the only paths to homeownership for a lower income family.[24] **Preserving a home ensures that it remains in the stock of housing within reach for working families. Energy efficiency and repairs are vital components of this preservation strategy and improvements such as weatherization, insulation, air sealing, health and safety repairs, and efficient HVAC systems can reduce monthly bills while extending the useful life of homes.**

For lower-income households, supporting these upgrades through home repair and energy efficiency programs can be particularly valuable because they address two sources of financial pressure at once: the cost of home maintenance and the recurring cost of home ownership, such as electricity and other utility costs. However, for homeowners seeking assistance to make repairs to their home, inefficient conditions are often accompanied by health and safety concerns that may prevent a home from being eligible for assistance programs. Older homes often face challenges with mold and water damage, the presence of lead paint, or significant structural concerns that must first be addressed before energy efficiency repairs and upgrades can be completed. Integrating energy efficiency investments with broader whole-home repair programs can help preserve the physical condition of older homes and the wealth they can provide for generations to come.

The complexity tax: Energy affordability and housing repair programs are siloed and duplicative

There is a broad array of federal, state, and utility programs designed to improve energy efficiency, reduce energy costs, and preserve housing. But these programs too often operate in silos, either forcing individuals to navigate a complex system on their own or leaving the organizations who serve these households to work through a fragmented and confusing system of programs and qualifications. Incompatible income eligibility rules, duplicative applications, and disconnected program, regulatory, and agency requirements create unnecessary barriers to assistance and impose a "complexity tax" on every program dollar invested. By aligning programs, streamlining requirements, and coordinating resources around a whole-home strategy, implementors can make every dollar go further and deliver meaningful relief to households that need it most.



Policymakers have long understood the importance of supporting home preservation, investing in energy efficiency, and delivering energy savings to households. Despite the close relationship between housing quality and energy affordability, the federal programs designed to address these challenges often fail to integrate efforts. Housing preservation initiatives typically focus on addressing deferred maintenance, repairing structural deficiencies, and ensuring homes remain safe and habitable. Energy efficiency programs prioritize reducing energy consumption through interventions like weatherization, insulation, and HVAC upgrades. Although these objectives are deeply interconnected, the funding streams, program administrators, eligibility criteria, and implementation processes, and timelines remain fragmented.

For example, traditional funding sources aimed at providing home repair and energy efficiency support, like DOE WAP, often have strict limitations on the eligible health and safety repairs that can be included as part of the weatherization process. Health and safety repairs are often critical first steps to ensure the wellbeing of residents and contractors and to preserve the impact of weatherization and energy efficiency upgrades. Some treatments, such as lead paint abatement, major roof repair, and mold cleanup, cannot be charged to DOE WAP under current guidance. If these critical concerns cannot be corrected within the program's allowable scope, the home is likely deferred until it can be adequately repaired. While there are limited investments from DOE in Weatherization Readiness Funds to address some of these concerns, in FY 2026, these funds represented only 8% of the total program budget.[25] As such, nearly one in five (19%) WAP applicants were initially deferred due to ongoing health and safety concerns.[26]

The constraints and red tape of WAP and complementary programs contribute to the complexity tax facing both residents and program administrators as they work to address longstanding housing concerns. While existing federal, state, and utility investments have been effective in improving portions of the country's housing stock, a streamlined, comprehensive approach to home repair and energy efficiency is critically needed to address the housing and energy crises facing families across the country. Separate funding sources and differing program requirements make it difficult to coordinate assistance around a household's specific needs and to scale impact within a given geographic area. Current programs are also too small and too fragmented to adequately meet the breadth of repairs and energy efficiency investments needed and to scale as a viable grid resource.

Overview of Programs Supporting Home Repairs and Upgrades
Disconnected programs, inconsistent eligibility rules, and duplicative requirements make it difficult for households to access the assistance they need.

Program Type	Outcome and Focus	Typical Delivery Model	Examples
Whole home repair/ one-stop shops	*Streamlined application for repair, retrofits, weatherization and accessibility to accelerate implementation*	• Federal funds, state and local delivery • Often layers funds	• Pennsylvania Whole Home Repair • Philadelphia Built to Last • Cleveland Home Repair System • Atlanta ROOTED
Weatherization and efficiency	*Energy savings, health and safety, and bill relief*	• Federal funds or utility funded, state and local delivery	• Weatherization Assistance Program (WAP) • LIHEAP • NYSERDA – Affordable Multifamily Energy Efficiency Program • Mass Save (Massachusetts)
Critical and targeted home repair (home preservation)	*Improve habitability and remove hazards*	• Federal funds, local delivery	• USDA Section 504 Home Repair Program • Cleveland CDBG Home Repair
Appliance and equipment replacements and incentives	*Single-item replacement to improve energy efficiency (building agnostic)*	• Administered through utilities or state energy offices	• DOE Home Energy Rebates (HER) and Home Electrification and Appliance Rebates (HEAR) • NYSERDA – Affordable Multifamily Energy Efficiency Program (AMEEP) • Mass Save (Massachusetts)
Financing-led programs	*Low-interest loans or upfront cost support for energy efficiency improvements*	• Administered through state and local government, utilities, and private lenders	• Property Assessment Clean Energy (PACE) in CA, FL, MO • DOE Better Buildings Neighborhood Program • CT Green Bank Smart E-Loan • Michigan Saves Home Energy Loan

Localized initiatives demonstrate that targeted investments and program optimization can deliver impressive results when properly implemented. For example, Philadelphia's Built to Last program delivered coordinated whole-home repairs and upgrades to over 400 homes in the City of Philadelphia, an estimated 54% of which had serious structural deficiencies.[27] In addition to preserving housing and improving quality of life, this program saves households an estimated $300-1,000 a year in energy costs. Green banks are also experimenting with financial tools to free up capital for program implementors and developing creative mechanisms to finance residential improvements. But available funding is often too small to adequately address need at scale or is hamstrung by federal requirements, high costs, and red tape.

At a time when housing affordability is an increasingly pressing concern across the country, Congress came together in a rare act of bipartisanship to pass the 21st Century ROAD to Housing Act earlier this year. While the bulk of the legislation focuses on enabling the construction of new housing, the law includes some provisions aimed at housing preservation. For example, the act authorizes HUD to create a pilot grant and forgivable loan program for whole-home repair and rehabilitation, targeting low-income homeowners and small-scale landlords. Consequently, the program's potential to assist homeowners and renters to preserve existing housing will depend on future congressional appropriations, as this bill did not provide new sources of funding. While this bill is a step in the right direction for helping to support whole-home repairs, it highlights a lingering gap between the willingness to authorize federal action and the resources necessary to carry it out.

SOUL® Save On Utilities Long-term

Navigating the complexity tax: Example of geographic and income qualification in Georgia

Groundswell regularly navigates the complexity of home preservation and upgrades through its SOUL program, which delivers targeted repairs and energy efficiency improvements to income qualified households. The program got its start in Troup County, GA – driven by a desire to support residents who predominately live in older mill-style homes common to this region of the rural Southeast. Many of these residents were economically impacted by the closure of mills and the loss of other employers in the area and have not been able to adequately keep up with maintenance, repairs, and contemporary upgrades, leaving their homes inefficient and at risk of deterioration. As a result, there is an increasingly aging population in the region that faces the difficult decision of paying extremely high energy bills or living in uncomfortable conditions due to the state of their homes.

With a variety of federal, state, and utility programs aimed at helping to preserve housing and reduce energy bills, each requires a household to meet a different set of qualifications to benefit from the program. Program implementors like Groundswell often face two competing objectives: minimizing the points of entry and documentation requirements from the applicant household vs. maximizing the potential funding sources to help repair and upgrade a home. There is a complex web of qualification criteria to sort through, challenges acquiring the proper income and geographic qualification documents from applicants, and difficulty balancing the different activities and timelines allowed under each program. For example, three of the most commonly used federally-funded home repair and upgrade programs in Georgia (DOE WAP, Low-Income Home Energy Assistance Program (LIHEAP), and U.S. Department of Agriculture (USDA) Section 504) not only have different income qualification limits, but those limits are also each based on a distinct measure of income (the federal poverty level (FPL), state median income (SMI), and area median income (AMI), respectively).

Focusing solely on geographic and income qualification criteria, below is a representative example of how two different households, both located less than an hour's drive from one another, qualify for a non-exhaustive list of available programs.

Continued on the following page

Program qualifications for similar households living less than an hour apart in Georgia
Without a streamlined whole-home approach to home repair and energy efficiency upgrades and fragmented program requirements, lower-income households may have limited access to resources for repairs.

	West Point, GA (2 people, $52,000/year)	**Newnan, GA** (2 people, $52,000/year)
Income Qualifications		
Weatherization Assistance Program (WAP) - $43,280 (200% FPL)		
Georgia Power EASE – $64,920 (300% FPL)	X**	X
Georgia Home Energy Rebates – 80% AMI* West Point: $51,000 Newnan: $75,400		X
Low Income Home Energy Assistance Program (LIHEAP) – $45,179 (60% State Median Income (SMI))		
Geographic Qualifications		
USDA Rural Housing Eligible (access to Housing Preservation Grants)	X	
Within Georgia Power Territory (access to EASE program)		X

** For Georgia Home Energy Rebate Program, an income of 80% or less of AMI qualifies the applicant for rebates that cover 98% of total project costs, up to $16,000. Non-income qualified applicants qualify for only $4,000.*
*** While the household in West Point meets the income requirements for Georgia Power's EASE program, West Point is served by a municipal utility, putting the household outside of Georgia Power territory.*

In this example, there are two households in different cities with the same number of people earning the same income. Both the West Point and Newnan households, despite needing repairs, make too much to qualify for the WAP and LIHEAP assistance programs – two of the largest federal programs supporting home repairs and upgrades. While the household in Newnan could qualify for assistance through both Georgia Power's Energy Assistance for Savings & Efficiency (EASE) program and the Georgia Home Energy Rebate (HER) Program, the West Point household lives outside Georgia Power territory and makes slightly too much to qualify for the HER program, leaving it with fewer options for relief.

A more harmonized and impact-oriented program qualification environment would ensure that program implementors could maximize the intended outcomes of each program while minimizing the administrative and logistical burden of braiding multiple funding streams. This integrated approach can help ensure that housing preservation also delivers energy savings and improves health and safety while expanding the impact of federal, state, and utility program dollars.

Home repairs and upgrades are a vital part of future energy infrastructure

Investing in residential energy efficiency is one of the most cost-effective ways to help counteract the surging energy demand driven by data centers while also improving quality of life and reducing energy costs. With housing and related costs becoming an increasingly large share of family budgets, rising energy costs applying pressure, and an aging housing stock exacerbating the cost of home maintenance, strategic investments in energy efficiency would provide significant relief to households in need while also contributing valuable demand reduction to the broader energy system. An individual home is a piece of energy infrastructure, and the physical condition of that infrastructure determines how efficiently and effectively other energy investments perform. At scale, the aggregate of individual home inadequacies equates to a massive system inefficiency. Inversely, investments in energy efficiency across large portfolios of homes add value to the grid in the form of reduced demand, particularly when reductions are at a large enough scale to reduce demand during peak hours or relieve congestion in constrained parts of the distribution system.

Energy efficiency investments are not perfectly interchangeable with dispatchable capacity, as some sources of capacity, like battery storage, can be deployed as needed, whereas the demand savings from energy efficiency improvements depend on outside factors like household behavior and weather. Nevertheless, when compared to the buildout of new generation capacity, investments in energy efficiency can provide significant cost and time savings. Analysis from the American Council for an Energy-Efficient Economy (ACEEE) shows that the median cost of energy savings through energy efficiency investments is only $21 per megawatt-hour (MWh) – less than half of the least expensive new-construction natural gas plants, which range from $45-108/MWh.[28] When compared to yearslong lead times for new utility-scale generation, energy efficiency programs can utilize existing networks of utility contractors, state agencies, and nonprofit organizations to quickly channel investments and deliver results. With the levelized cost of energy (LCOE) reaching 15-year highs, longer lead times for new generation to come online, permitting and interconnection delays, and rapidly growing demand for electricity, generation-scale investments in energy efficiency represent an increasingly attractive avenue for grid management.[29]

Realizing the potential that energy efficiency offers requires federal and state interventions to change how efficiency is planned, measured, and compensated. Rather than continuing the current collection of limited repair and upgrade interventions and customer rebate programs, utilities and regulators can identify areas where reducing residential demand would defer generation, transmission, or distribution investments and target efficiency and repair programs accordingly. Properly valuing and measuring energy efficiency upgrades, made increasingly streamlined with the adoption of advanced metering and other connected devices, helps to determine when and where efficiency provides value to the system.

Investing in home repair and energy efficiency at scale is critical to unlocking the full potential of distributed energy resources, demand response, and virtual power plants (VPPs). By improving a home's performance and reducing inefficiencies, technologies like smart thermostats, battery storage, heat pumps, and other demand response devices can deliver maximum results for grid efficiency while further cutting bills for households. Without first addressing inefficient buildings and critical repair needs, investments in these technologies risk underdelivering on their potential. Investing in repairs and energy efficiency before or alongside the deployment of demand response and distributed technologies is essential to build a more flexible, reliable, and affordable energy system that allows individual homes to scale into active contributors to grid resilience and help large load customers procure a portion of their energy needs through residential energy efficiency.

Home repair investments, while important for health, safety, housing stability, and often a precursor to ensure the effectiveness of energy efficiency improvements, serve a fundamentally different purpose and should not be included in considerations of value to the electric grid. Even when enabling weatherization and energy efficiency upgrades, critical home repairs like roof replacement, mold mitigation, and lead paint abatement do not produce measurable or attributable electric system benefits.

Recommended Strategies

1. **Perform a detailed analysis of existing federal, state, and utility programming to identify areas of alignment, program overlap and duplication, and current gaps.** Examine differences in eligibility, funding rules, delivery models, and administrative requirements to determine where programs can be better coordinated, resources more effectively leveraged, and impact expanded.
    - **Impact:** This analysis can inform results that streamline program delivery, close gaps in assistance, reduce administrative costs, and ensure more funding reaches households in a way that effectively supports essential repairs, energy efficiency upgrades, and home preservation.
    - **Example:** A more effective and coordinated whole-home approach could clarify pathways for overcoming common program bottlenecks. A household that needs a roof repair before insulation is installed, for example, could benefit from a strategy that clearly outlines how USDA repair assistance and DOE weatherization funds could be coordinated, how activities should be sequenced, and how the program journey could be made as seamless as possible.
2. **Repeal the complexity tax embedded in fragmented federal, state, and utility home repair and energy efficiency programs.** Align eligibility requirements, simplify applications, coordinate funding across sources, and streamline administrative and regulatory processes.
    - **Impact:** More public and ratepayer dollars will reach households and fund comprehensive whole-home repairs and energy improvements instead of being hindered by administrative red tape. Families will gain faster access to assistance, lower energy bills, improved living conditions, and long-term financial stability.
    - **Example:** Aligning the income qualification and verification process for federal programs through one entry point will greatly reduce the administrative burden of connecting families with eligible programs.
3. **Invest in a comprehensive, coordinated national effort to collect, update, harmonize, and analyze data on America's housing stock to quantify the scale of home repair and energy efficiency needs.** Identify the types of investment needed, differences across regions and communities, and estimate the cost of investments needed. Develop comprehensive methodologies to quantify projected energy savings from investments in different home repairs and upgrades. Partner with states, utilities, local governments, community-based organizations, and research institutions to establish consistent data standards.
    - **Impact:** Closing current data collection gaps ensures that policymakers gain a clearer picture of where needs are greatest, the scale of investment needed, and how approaches may differ based on geographic and demographic factors. Better data would support stronger coordination across programs, help to better quantify investments in energy efficiency for utilities and public agencies, and direct resources to where they can deliver the greatest benefits.
    - **Example:** Establish a national housing stock assessment that combines existing federal, state, and utility data with targeted surveys and property-level assessments to evaluate housing conditions, energy performance, critical repair needs, and regional cost differences.

4. **Enable and expand large-scale energy efficiency and home repair investments through low-cost financing, loan guarantees, revolving funds, new capitalization, and other financial instruments.** Congress and federal agencies, in partnership with states, utilities, and financial institutions, should deploy innovative financial instruments to mobilize public and private investment, support the deployment of community benefits agreements, and help close the gap between available funding and the scale of housing and residential energy needs.
    - **Impact:** This approach would ensure that more households can access critical home repairs without experiencing common program roadblocks. Well-designed financing mechanisms can help overcome upfront cost or program limitations, expand the reach of limited grant funding, and support investments that preserve housing, lower energy bills, improve health and safety, and reduce peak energy demand.
    - **Example:** Establish a federally capitalized home repair and energy efficiency revolving fund that provides low-cost loans and grants to states, community-based organizations, and other qualified entities. Funding could be combined with utility incentives, existing state programs or rebates, and private investments from tech companies to coordinate large-scale home repairs and energy efficiency upgrades.
5. **Advance federal and state policies that recognize residential energy efficiency as a strategic grid resource and integrate it into electricity system planning.** These policies should enable improved measurement and valuation of energy efficiency as a resource to increase utility investment in whole-home efficiency. Strategies for funding home repairs should be coordinated, though funded separately so that repair costs are not socialized across utility ratepayers.
    - **Impact:** This approach would ensure that investments in energy efficiency are a viable alternative to the construction of new electricity generation capacity and help to put market value on the reduction of peak demand.
    - **Example:** Support from federal agencies and state regulators could pave the way for a proposed data center to incorporate investments in residential energy efficiency as part of its strategy for energy procurement in a new market.

References

1. EIA, Average Price of Electricity to Ultimate Customers by End-Use Sector, Q1 2025-Q2 2026.
2. PowerLines, "Utilities Are Planning to Spend $1.4 Trillion on Capital Expenditures Through 2030 as Utility Bills Rise, Study Finds," *PowerLines,* April 14, 2026, **https://powerlines.org/utilities-are-planning-to-spend-1-4-trillion-on-capital-expenditures-through-2030-as-utility-bills-rise-study-finds/**.
3. *Utility Bills Are Rising - 2025 Review* (Powerlines, 2026).
4. Eileen Divringi, *Home Repair Costs 2025: Updated Estimates and New Measures of Cooling Needs,* December 2025, **https://www.philadelphiafed.org/community-development/housing-and-neighborhoods/home-repair-costs-2025.**
5. EPA, Electricity Customers. **https://www.epa.gov/energy/electricity-customers**.
6. *Inadequate Shelter: Millions of U.S. Homes Fail to Meet Standards – Eye On Housing,* December 2025, **https://eyeonhousing.org/2025/03/inadequate-shelter-millions-of-u-s-homes-fail-to-meet-standards/**.
7. Divringi, *Home Repair Costs 2025: Updated Estimates and New Measures of Cooling Needs.*
8. "Estimating the Impacts of Weatherization Readiness Programs," *ACEEE | American Council for an Energy-Efficient Economy,* n.d., accessed October 13, 2026, **https://www.aceee.org/resource/b2504/**.
9. John D. Wilson et al., *Power Demand Forecasts Revised Up for Third Year Running, Led by Data Centers* (Grid Strategies, 2025), **https://gridstrategiesllc.com/wp-content/uploads/Grid-Strategies-National-Load-Growth-Report-2025.pdf**.
10. Wilson et al., *Power Demand Forecasts Revised Up for Third Year Running, Led by Data Centers.*
11. EIA, Average Retail Price of Electricity, Q1 2020-Q4 2025.
12. "Summary of Annual and Semi-Annual Indexes : U.S. Bureau of Labor Statistics," Bureau of Labor Statistics, accessed October 13, 2026, **https://www.bls.gov/regions/mid-atlantic/data/consumerpriceindexannualandsemiannual_table.htm**.
13. EIA
14. "American Housing Survey - Housing Quality," American Housing Survey, 2023.
15. *Almost Half of the Owner-Occupied Homes Built Before 1980 – Eye On Housing,* n.d., accessed October 4, 2026, **https://eyeonhousing.org/2026/03/almost-half-of-the-owner-occupied-homes-built-before-1980-2/**.
16. "Many Owners Cannot Afford to Maintain Aging Homes | Joint Center for Housing Studies," July 16, 2026, **https://www.jchs.harvard.edu/blog/many-owners-cannot-afford-maintain-aging-homes**.
17. "Many Owners Cannot Afford to Maintain Aging Homes | Joint Center for Housing Studies."
18. "Rising Electricity Bills Are Straining Household Finances—Forcing Many to Consider Tradeoffs, Including Cutting Grocery Budgets, New Consumer Reports Survey Finds," *Consumer Reports,* n.d., accessed October 29, 2026, **https://www.consumerreports.org/media-room/press-releases/2026/10/rising-electricity-bills-are-straining-household-finances-forcing-many-to-consider-tradeoffs-including-cutting-grocery-budgets-new-consumer-reports-survey-finds**.
19. Stacy Fitzgerald-Redd, "Report: 89% of Homes Are Under Insulated," NAIMA Blog, *Insulation Institute*, October 25, 2024, **https://insulationinstitute.org/report-89-of-homes-are-under-insulated/**.
20. "Energy Insecurity on the Rise: Preliminary Findings from the 2024 Residential Energy Consumption Survey," NCLC, n.d., accessed October 22, 2026, **https://www.nclc.org/resources/energy-insecurity-on-the-rise-preliminary-findings-from-the-2024-residential-energy-consumption-survey/**.
21. "The State of the Nation's Housing 2026," *Joint Center for Housing Studies,* 2025, **https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_The_State_of_the_Nations_Housing_2026_0.pdf**.
22. "The State of the Nation's Housing 2026."
23. Andrew C. Chang et al., *Changes in U.S. Family Finances from 2019 to 2022* (The Federal Reserve, 2024), **https://doi.org/10.2139/ssrn.4683046**.
24. Chang et al., *Changes in U.S. Family Finances from 2019 to 2022.*
25. "Weatherization Program Notice 26-2," Department of Energy, July 9, 2026, **https://www.energy.gov/documents/wap-wpn-26-2pdf**.
26. "Estimating the Impacts of Weatherization Readiness Programs."
27. philaenergy, "Built to Last Evaluation Highlights Philadelphia's Progress Preserving Affordable Housing," *Philadelphia Energy Authority,* April 20, 2026, **https://philaenergy.org/2026/04/20/built-to-last-evaluation-highlights-philadelphias-progress-preserving-affordable-housing/**.
28. "Faster and Cheaper: Demand-Side Solutions for Rapid Load Growth," ACEEE | *American Council for an Energy-Efficient Economy,* n.d., accessed October 5, 2026, **https://www.aceee.org/resource/u2601/**.
29. L*azard 2026 Levelized Cost of Energy+ Report* (Lazard, 2026), **https://lazard.com/news-announcements/lazard-releases-2026-levelized-cost-of-energyplus-report-pr/**.

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