

BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVES

SELECT COMMITTEE ON THE CLIMATE CRISIS

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**Hearing Entitled:
“SOLVING THE CLIMATE CRISIS: CLEANER, STRONGER BUILDINGS”
17, OCTOBER 2019**

Chair Castor, Ranking Member Graves, and distinguished members of the Committee; thank you for holding this hearing and for the opportunity to testify today on the critically important topic of “solving the climate crisis: cleaner, stronger buildings”.

My name is Khalil Shahyd, I am a Senior Policy Advocate with the Natural Resources Defense Council (NRDC). NRDC is an international, non-profit environmental organization representing more than three million members and online activists. Since 1970, our environmental experts have worked to protect the world’s natural resources, improve public health, and ensure a safe and sustainable environment for all.

NRDC’s top institutional priorities include advocacy to avert the worst consequences of climate change, creating a healthy environment and clean jobs by scaling up clean energy and increasing investments in energy efficiency.

NRDC has a long history of engagement on federal and state energy efficiency standards as a key policy to lower energy bills, improve indoor air quality and reduce greenhouse gas and other forms of pollution. Since 2014, we’ve worked with the [Energy Efficiency for All](#) (EEFA) coalition partnering with leaders and advocates across the nation to ensure that utility rate-payer-funded energy efficiency programs respond to the needs, potential and benefits of increased energy efficiency investments in the affordable multi-family housing sector.

EEFA unites people from diverse sectors, including housing, health, energy efficiency, environmental, and community advocacy organizations, that have not typically worked together in the past to collectively make multifamily affordable homes energy and water efficient. Our national includes the National Housing Trust, Elevate Energy, Natural Resources Defense Council and the Energy Foundation as well as nearly 50 state and community-based organizations.

What began as a project involving eight state-level partnerships has now grown to twelve states and an expanded network of leaders and practitioners in the Network for Energy, Water, and Health in Affordable Buildings (NEWHAB). NEWHAB is a platform for coalition members and diverse sector leaders to convene, learn from one another, and develop collective solutions to increase access to healthy and affordable homes.

Together, our coalition partners work to ensure that utility, state, local, and federal entities provide equitable investment to improve the efficiency of affordable multifamily homes; advance proven best practices in efficiency program design and implementation to help meet the needs of affordable housing building owners and residents; and advocate for policy solutions to ensure that non-toxic, healthy building materials are used in all home improvements. EEFA's advocacy has led to nearly \$500 million in new confirmed and expected funding for efficiency upgrades and 19 new or improved energy efficiency programs that specifically serve affordable multifamily housing. More than 100,000 affordable apartments have received upgrades via these programs, benefitting an estimated 200,000+ low-income renters.

Congressional action to address climate change can deliver positive benefits for the environment and people, with targeted policies to ensure safe, healthy and energy efficient affordable housing affordable housing. Benefits including;

- Preserving affordable housing
- Lowering household energy cost
- Improving indoor air quality and health outcomes
- Creating jobs with career opportunities for workers

Why energy efficiency?

Many households in the United States are currently experiencing a dual crisis related to the affordability and quality of residential housing. Nearly two-thirds of renters nationwide say they can't afford to buy a home, as home prices are rising at twice the rate of wage growth while more than 11 million Americans (roughly the population of New York City and Chicago combined) spend more than half their paycheck on rent¹.

The legacy of housing discrimination, redlining and disinvestment also exacerbate the housing burden for low-income families, which often face few options but to rely on inadequate or lower quality housing to

¹ <https://www.curbed.com/2019/5/15/18617763/affordable-housing-policy-rent-real-estate-apartment>

secure their families. Many low-income and vulnerable households have few residential options but to rely on low-quality housing due to residential segregation, long-term neighborhood disinvestment and deferred maintenance of the housing stock. These homes tend to be energy inefficient, impacting the stability of many families due to high utility bills and recurring illnesses from inadequate indoor air quality. Struggling families sometimes spend more than 20 percent of their incomes on electricity and heat—far more than the national average of 2.7 percent and nearly one-third of households in the United States have struggled to pay their energy bills, while about one in five households had to choose between purchasing food, medicine or other necessities to pay an energy bill.²

Poor ventilation can cause homes to be drafty in winter and allow in moisture in summer that leads to mold and illness. Poor construction and inefficient appliances leave families unable to safely maintain comfortable temperatures, leaving them further vulnerable to illness or potentially deadly accidents. In fact, 79 percent of fatal home heating fires are started by space heaters or stoves used when home heating systems are inadequate or malfunctioning³.

In addition, rising energy costs place an additional burden on families that have little flexibility in their household budgets to meet their needs. According to the U.S. Energy Information Administration (EIA), retail residential electricity rates (the amount one pays per kilowatt-hour, or ¢/kWh) have risen across the nation at a rate of about four percent on average over the last 10 years -- faster even than the rise in average rent cost. Climate change will likely exacerbate these trends, as average temperatures rise and unpredictable weather gives rise to greater extremes of both hot and cold. Because of these and other factors, the use of energy at home imposes costs and consequences that vary significantly based on where one lives.

Rural Energy Burden

These burdens are particularly acute for rural households. Across the nation over a quarter of all rural low-income households devote more than 10 percent of their income to energy expenses.⁴ That's a significant expense, and for a household it often means deciding between keeping heat or lights on versus paying rent, buying food or paying for medicines or school supplies. Such high energy burdens increase the likelihood that these households will see their utility services shut off at some point. Once shut off, additional fees increase the cost of reestablishing service, and inability to pay can lead to arrears that

² <https://www.eia.gov/todayinenergy/detail.php?id=37072>

³ <https://www.nfpa.org/News-and-Research/Data-research-and-tools/US-Fire-Problem/Heating-equipment>

⁴ <https://www.energyefficiencyforall.org/resources/the-high-cost-of-energy-in-rural-america-household-energy-burdens-and/>

damage credit ratings, making reopening services or even qualifying for better housing difficult or impossible.

Due to the lower densities of the population over wider areas, the cost of delivering energy and energy efficiency services to rural households is on average higher than for their urban counterparts. Rural communities are more likely to be serviced by smaller rural coops or publicly owned utilities that may lack the capacity or resources to invest in comprehensive energy efficiency programs. Consequently, rural energy costs are vastly higher than the national averages and higher than in metro areas.

Rural families are caught in a vise, since they are also more likely to be impoverished while facing higher costs. Approximately 43 percent of households in rural areas have incomes below 200 percent of the federal poverty level, increasing vulnerability to high energy burdens. Low incomes, high energy use, non-ownership status, and inefficient housing stock are some of the key drivers of high energy burdens, which can place significant financial stress on families and other households.

Rural households are also much more likely to live in manufactured housing than their urban counterparts. More popularly known as mobile homes—which are built in a factory, transported to a site on a flatbed truck, and installed on-site—manufactured housing tends to be less energy efficient and more costly to repair than traditional homes. About 20 percent of all rural households live in manufactured homes, making provision of energy efficiency services costlier and less likely to happen.

Urban Energy Burdens Highest for Low-Income Renters and Households of Color

Similarly, low-income households in large metros pay 7.2 percent of household income on utilities—more than twice as much as the median household and three times as much as higher income households who often have the luxury to live in more modern and energy efficient homes⁵.

Affordability is a particularly acute challenge for renters in multifamily buildings, where close to 50 percent of our nation's low-income renters--nearly 10 million people, live.⁶ Almost half of these residences were built 50 years ago. Energy cost and energy related maintenance cost in multifamily housing, including public housing are usually the highest recurring expenditure to maintain affordable, quality homes. In fact, low-income households—in affordable multifamily buildings—spend, on average, 7.2 percent of their income on utility bills, which amounts to about \$1,700 annually out of a median household income of \$25,000. That is more than triple the 2.3 percent spent for electricity, heating and

⁵ <https://www.energyefficiencyforall.org/resources/lifting-the-high-energy-burden-in-americas-largest-cities-how-energy/>

⁶ http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs_americas_rental_housing_2013_1_0.pdf

cooling by higher-income households. Increasing energy efficiency in these homes could cut electricity use as much as 32 percent.⁷

When viewed by race/ethnicity, communities of color are more burdened by energy cost than white families. Poverty and discrimination in rental and housing markets drive low-income households and people of color into older, less efficient buildings leading to higher energy costs. As a result, African-American households experienced a median energy burden 64 percent greater than white households, and Latino households had a median burden 24 percent greater than white households.

Meanwhile, Memphis had the highest energy burden for low-income households, with residents spending, on average, 13.2 percent of their income for energy. The median annual income for low-income residents of Memphis is \$19,157, meaning that a family would be paying a whopping \$200 a month (\$2,400 a year) for energy to keep the lights on and their homes comfortable.

In fact, in 17 of the nation's largest cities, a fourth of low-income households experienced an energy burden greater than 14 percent.

⁷ <https://www.energyefficiencyforall.org/resources/potential-for-energy-savings-in-affordable-multifamily-housing/>

TABLE ES1. Median income, utility bill, energy burden, and unit size for households based on income type, building type, building ownership, and household race for groups across all metro areas

	Household type	Median annual income	Median size of unit (square feet)	Median annual utility spending	Median annual utility costs per square foot	Median energy burden ¹
Income type	Low-income ² (≤80% AMI) ³	\$24,998	1,200	\$1,692	\$1.41	7.2%
	Non-low-income	\$90,000	1,800	\$2,112	\$1.17	2.3%
	Low-income multifamily (≤80% AMI)	\$21,996	800	\$1,032	\$1.29	5.0%
	Non-low-income multifamily	\$71,982	950	\$1,104	\$1.16	1.5%
Building ownership	Renters	\$34,972	1,000	\$1,404	\$1.40	4.0%
	Owners	\$68,000	1,850	\$2,172	\$1.17	3.3%
Head of household race	White	\$58,000	1,600	\$1,956	\$1.22	3.3%
	African-American	\$34,494	1,290	\$1,920	\$1.49	5.4%
	Latino	\$39,994	1,200	\$1,704	\$1.42	4.1%
All households	N/A	\$53,988	1,573	\$1,932	\$1.23	3.5%

¹ Energy burden is the percentage of household income that is spent on energy bills. To calculate median energy burden, we calculated energy burden for all households and then took the median. This value differs from the median energy burden that is calculated using median annual utility spending and income.

² Low-income includes both single- and multifamily households. ³ Area median income (AMI) is the median dollar amount that divides the population into two equal parts.

Source: American Housing Survey (Census Bureau 2011 and 2013a).



Low income households and affordable housing owners face a multitude of barriers when making efficiency investments including: “split incentives” and the need for upfront financing to pay for upgrades. Where renters pay energy bills but owners make investments in durable equipment in the building, neither party can fully capture the benefit of an investment in energy efficiency leading to the split incentive. Since these tenants are more likely to move, they have less incentive to spend their own money on efficiency since they will not enjoy the benefits of long-lived investments. Low income households, including most renters, have little surplus in their budget to pay for the upfront cost of energy efficiency upgrades.

Thankfully there are solutions to these huge burdens. Reducing the cost of energy through increased efficiency and regular maintenance that can improve residential energy performance by reducing energy consumption can help to preserve the long-term affordability of homes.

Federal Programs Falling Short of the Need

Federal support for energy efficiency through programs such as the U.S. Department of Energy's Weatherization Assistance Program (WAP) have played an important role establishing the techniques and technologies used by energy efficiency professionals across the home performance sector.⁸ The creation of WAP has led to the establishment of workforce training centers, best practices and the deployment of adoption of more advanced energy audits and diagnostic equipment to assess home energy performance.⁹ However, despite the considerable and persistent need for energy efficiency improvements in low income housing, many programs that facilitate retrofits are sorely underfunded. Across the country, only about 35,000 homes can enroll in WAP on a yearly basis with a maximum per unit expenditure of just over \$6,000. Not enough to achieve the type of savings through whole building retrofits that will be required. At the current rate of service provision, it would take the State of Ohio roughly 150 years to weatherize all the homes currently eligible for the Department of Energy's Weatherization Assistance Program.¹⁰

Benefits of Action

Preserving Affordability of Housing

The cost of regular maintenance and upgrades for multifamily housing are the most significant barriers to preserving affordable, quality residential housing for low-income families. As negligence and neglect inflate the cost of repairs, federal action will be required to incentivize investments in hard to reach sectors of the housing market. Failure to act will ultimately will result in greater inequity and greater costs to local and state budgets. According to a recent report by the Green and Healthy Homes Initiative; "Investments that address social inequities in housing, energy and health are necessary to produce greater affordability, housing stability, energy security, resiliency, health equity and social justice for all Americans".¹¹

Without needed support for reinvestment in and preservation of existing affordable housing, we run the risk of exacerbating the affordable housing crisis. Millions of affordable rental homes have already been demolished because housing providers could not afford the cost of maintaining the buildings. Much of the nation's remaining affordable rental homes are in buildings that are aging and in need of repair. Climate change, and climate induced disasters from hurricanes, flooding or fires risk further damage to homes critical for enabling access to affordable housing to America's low-income families.

⁸ <https://www.energy.gov/eere/wipo/weatherization-assistance-program-history>

⁹⁹ *ibid*

¹⁰ Dave Rinebolt, Executive Director and Counsel at Ohio Partners for Affordable Energy; "comments during a panel discussion on the Multiple Benefits of Federal Energy programs"

¹¹ https://assets.ctfassets.net/ntcn17ss1ow9/2CMLkZBwIL3n37tfwNfqWS/e5dc2cfc9d74f6a39b5149f922707583/AchievingHealth_SocialEquity_final-lo_0.pdf

Improving the energy and water efficiency of buildings is an essential strategy to preserve existing affordable rentals. Efficiency upgrades can result in significant financial savings to the property by lowering operating expenses that can be reinvested in property improvements. The saved financial resources for building owners can be used to replenish reserves that are set aside for future building repair needs, and/or free up capital to offset potential rent increases. There are several ways that efficiency upgrades can help to preserve affordable housing by improving the financial stability of the property;

1. Utility bills can comprise up to a fifth of operating expenses in multifamily affordable homes and often are the largest controllable, variable expense.
2. Replacing older building equipment with new, more efficient equipment can result in lower maintenance costs.
3. Savings from efficiency upgrades improve the cash flow of the property, which can then be used to leverage additional debt financing that can be reinvested to make other capital improvements to the building.

Lowering Energy Cost for Renters

Energy efficiency investments provide a critical cross sector opportunity to stimulate multiple household and societal benefits. First, weatherizing a home for low-income families offers numerous benefits. Weatherization saves an average of \$283 per year for families living at or below 200 percent of the federal poverty level—which is just over \$12,000 for a single person household and \$25,000 for a four-person household. Households residing in rural manufactured homes would see savings of \$458 per year or more than one-quarter of their energy bill and a full 1.5 percent of their household income. Rural renting, low-income, elderly, and non-white families would all save over \$100 per year if they had the same utility costs per square foot as the metropolitan median household.

Investing in energy efficiency is the most cost-effective path to reducing the demand for energy, thus reducing the amount families need to spend on energy services. If we were just able to bring the low income and low-income multifamily housing stock up to the efficiency of the median household in our largest cities, we would eliminate at least 35 percent of the excess energy burden these families face. The average family could save as much as \$300 annually on utility bills in addition to improvements in health, comfort and safety.

Health Benefits of Energy Efficiency

Direct energy savings benefits to households from efficiency are just one potential benefit from efficiency upgrades. Improving the energy efficiency of homes when coupled with actions addressing social determinants of health and prioritizing the use of healthy building materials can provide a number of “non-energy” health benefits to households.

Energy efficiency measures can improve indoor air quality by reducing criteria air pollutants such as carbon monoxide, lead, ground-level ozone, nitrogen dioxide, particulate matter, and sulfur dioxide.¹² Persistent exposure to these pollutants can increase the likelihood of cardiovascular disorders, respiratory illness and risk of carbon monoxide poisoning. In addition, outdoor particulate matter (PM) can enter a home through cracks and gaps in the doorways or walls but also through open windows and HVAC systems.

In Washington State, the Department of Commerce, who operates the state's weatherization program, incorporates asthma and Chronic Obstructive Pulmonary Disease (COPD) among the outcomes administrators would use to measure program achievements. The Weatherization Plus Health program, partnering with local public health organizations to assist in recruitment and assessment served more than 500 families across the state of Washington and is expanding to provide services to more households.¹³

Residential Energy Efficiency Creates Jobs

In addition to the health and cost saving benefits of investing in energy efficiency, there are job¹⁴ and economic development¹⁵ benefits that provide opportunities for families. For every dollar invested in energy efficiency for low income families, two dollars are put back into the economy through energy savings and increased income from job creation. In fact, energy efficiency is a labor-intensive industry that already accounts for more than 2.2 million jobs across the nation. Ten times more than oil and gas drilling, and thirty times more than coal mining.

These include direct jobs for contractors hired to implement efficiency measures in the home, indirect "supply-chain" jobs generated from the purchase and provision of the materials required to complete the projects, and the final boost in economic activity from the increased combined expenditure of job related income for contractors and energy cost savings for families who receive the services.

A soon to be released report by EEFA on the job potential in retrofitting affordable multifamily housing found that more than 700,000 jobs can be created by deploying energy efficiency upgrades in eleven states with active EEFA coalitions.

Environment and Climate Benefits of Energy Efficiency

Finally, boosting energy efficiency also means we avoid the cost of building out expensive energy infrastructure like power plants and transmission lines, reducing the nation's energy-related utility costs.

¹² <https://www.epa.gov/criteria-air-pollutants>

¹³ <https://www.commerce.wa.gov/growing-the-economy/energy/weatherization-and-energy-efficiency/matchmaker/weatherization-plus-health-wxh/>

¹⁴ <http://aceee.org/files/pdf/fact-sheet/ee-job-creation.pdf>

¹⁵ <https://www.iea.org/newsroom/news/2014/september/energy-efficiency-a-key>

Further, everyone's health improves when we reduce the amount of hazardous mercury, sulfur dioxide and particulate matter spewing out of power plant smokestacks and furnaces.

NRDC's 2018 analysis and report, *America's Clean Energy Frontier: The Pathway to a Safer Climate Future*, shows that the U.S. economy can reduce carbon emissions by at least 80 percent by 2050, with fully half of those savings coming from energy efficiency. This means that maintaining and accelerating energy efficiency improvements is absolutely critical to achieving U.S. emissions reduction goals and doing so in an affordable manner. Aggressive deployment of energy efficiency technologies and system-wide energy efficiency services will be needed across all economic sectors, to slash our energy demand by 40 percent.

The residential sector has a key role to play in meeting those goals. Residential energy efficiency is the largest single measure source of potential carbon reduction in the nation.¹⁶ Every year improvements undertaken through WAP alone cuts America's climate pollution by two million metric tons.¹⁷ In total, **residential efficiency can account for as much as 550 million metric tons of CO2 equivalent emissions reductions annually by 2050** (equal to the combined electric power emissions of California, Texas, New York, Florida, Illinois, and Virginia in 2016).¹⁸

[We need Congressional leadership to realize these benefits](#)

To avert the worst impacts of climate change, our policy must ensure both the reduction of emissions that cause climate change and also support people's capacity to adapt and thrive in a post carbon world. In order to act on climate change while also addressing the threat of rising inequality, we must accelerate action on all fronts and in particular create a more supportive policy environment for affordable housing and accelerate residential energy efficiency. We need Congressional action to lead our nation in its response to climate change and to realize the enormous benefits of these investments. Through decisive action, Congressional leaders can address the dual crisis of affordable housing and climate change, while producing hundreds of thousands of clean jobs and alleviating the negative health impacts of indoor and outdoor air pollution.

Addressing these core policy areas will enable affordable housing and low-income families to be engaged as partners in actions that contribute to meaningful emissions reductions by reducing household energy use and demand. Key policies congress should support toward these outcomes are;

¹⁶ <https://www.nrdc.org/resources/americas-clean-energy-frontier-pathway-safer-climate-future>

¹⁷ <https://energy.gov/eere/articles/celebrating-40-years-america-s-weatherization-assistance-program>

¹⁸ <https://www.nrdc.org/resources/americas-clean-energy-frontier-pathway-safer-climate-future>

Preserving Affordable Housing

- Expand the National Housing Trust Fund from \$367m now to \$3.5 billion/year. Affordable housing is in short supply across the country, and this is one of the newer sources of funding to improve it. The support can be used to reduce energy use and increase resiliency of housing, depending on state allocation plan requirements. But the need vastly outstrips the funding currently available.
- Support and utilize S. 1703 the Affordable Housing Credit Improvement Act (AHCIA)¹⁹ and S.1288 the Clean Energy for America Act²⁰ to enable Low Income Housing Tax Credit (LIHTC) properties to take advantage of tax incentives available for energy efficiency investments.²¹ The LIHTC is the largest and most successful tool for creating and preserving affordable housing. The Clean Energy for America Act amends the Internal Revenue Code of 1986 to provide tax incentives for increased efficiency investments in retrofitting existing and new residential and commercial buildings.
- Support H.R. 4307, the Build More Housing Near Transit Act.²² The legislation would require major transit projects using Federal Transit Administration (FTA) New Starts capital investment grant funding to incorporate an evaluation of housing development near transit station areas as a part of the application process.

Lowering Household Energy Cost

- Support reauthorization of S.983, the Weatherization Enhancement and Local Energy Efficiency Investment and Accountability Act.²³ This bill reauthorizes the DOE WAP, creates a new innovation fund for special projects.
- Support S.185 the Investing in State Energy Act²⁴. This bill would require that the Department of Energy (DOE) distribute funding appropriated for WAP and SEP by Congress to implementing agencies within 60 days²⁵.

Improving Indoor Air Quality and Health

- Support H.R.3590, the Environmental Justice and Civil Rights Restoration and Enforcement Act²⁶. This bill reinforces that Federal agencies are to comply and be held accountable to the Title VI Civil Rights Act and that disparities and outcomes shown to have disparate impact must be

¹⁹ https://www.novoco.com/sites/default/files/atoms/files/sb_1703_ahcia_060419.pdf

²⁰ <https://www.congress.gov/bill/116th-congress/senate-bill/1288/text>

²¹ <https://www.novoco.com/notes-from-novogradac/using-energy-efficient-practices-preserve-affordable-homes>

²² <https://www.congress.gov/bill/116th-congress/house-bill/4307/text>

²³ <https://www.congress.gov/bill/116th-congress/senate-bill/983/cosponsors>

²⁴ <https://www.congress.gov/bill/116th-congress/senate-bill/185/text>

²⁵ <https://www.nrdc.org/experts/deron-lovaas/congress-must-pass-investing-state-energy-act>

²⁶ <https://www.congress.gov/bill/115th-congress/house-bill/3590/text>

address through Environmental Justice actions²⁷. This bill gives communities the legal tools to hold Federal agencies including the Environmental Protection Agency (EPA) accountable to unequal burdens.

- Support H.R.3923, the Environmental Justice Act²⁸. Requires Federal agencies to address environmental justice, to require consideration of cumulative impacts in certain permitting decisions, and for other purposes.

Creation Jobs with Career Opportunities for Workers

- Support H.R.4061, the Blue Collar and Green Collar Jobs Development Act²⁹. Directs the Secretary of Energy to establish and carry out a comprehensive, nationwide, energy-related industries jobs program.
- Support H.R.4148, the Green Jobs and Opportunity Act³⁰. Requires the Secretary of Labor, in consultation with the Secretary of Energy and Secretary of Education, to submit a report on current and future trends and shortages in the clean energy technology industry to achieve a clean energy economy, and to provide grants to establish and enhance training programs for any occupation or field of work for which a shortage is identified.

²⁷https://www.americanbar.org/groups/environment_energy_resources/publications/trends/2011_12/march_april/environmental_justice_title_vi_civil_rights_act/

²⁸<https://www.congress.gov/bill/116th-congress/house-bill/3923/text>

²⁹<https://www.congress.gov/bill/116th-congress/house-bill/4061/text>

³⁰<https://www.congress.gov/bill/116th-congress/house-bill/4148/text>