Powering Up for Health: Policy Solutions for Energy Insecurity in New York City

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NYC Health

WE ACT FOR ENVIRONMENTAL JUSTICE

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Executive Summary

Energy insecurity—the inability to adequately meet basic household energy needs—affects more than a quarter (28%) of New York City residents. While energy cost burden, a function of energy cost, consumption, and household income, is one important way to measure difficulty meeting energy needs, energy insecurity encompasses more than economic hardship. It is worsened by physical living conditions and expressed through coping behaviors to contain costs and maintain comfort.[1] Residents in un-weatherized homes or relying on energy-inefficient appliances use more energy and pay more to meet their everyday energy needs. Meanwhile, people who are energy insecure may seek to reduce their energy cost burden by severely restricting their energy use, a coping strategy that can put their health and safety at risk.

Energy insecurity adversely impacts health, increasing the odds of mental strain, respiratory conditions, cardiovascular health issues and limiting the use of electronic medical devices.[2] The distribution and health effects of energy insecurity are inequitable, felt most by low-income households, households with children, households where someone uses electric medical equipment, people of color, recent immigrants, and renters.[2] As extreme weather becomes more frequent and intense, the cost of living and utility bills rise, and energy and building heating systems transition to cleaner and potentially more expensive sources, energy insecurity will likely worsen and become more inequitable without active intervention.

While responsibility for the energy sector spans federal, state and local authorities, imminent threats to the energy safety net benefits that support energy affordability and infrastructure to enable a clean and just energy transition at the federal level, make state and local leadership even more critical to achieving universal access to life-sustaining energy. In this report, we outline policy options to address energy insecurity based on public health evidence from recent research conducted in NYC. While policies and programs often intersect across the core domains of energy insecurity—economic, physical, and coping—we present them separately, discussing evidence-based and health-promoting policy options within these primary areas of focus. Below is an overview of our featured approaches.

1 Financial policies and programs to promote energy affordability

- Reform and expand New York's energy safety net by increasing overall funding levels and bolstering the Home Energy Assistance Program (HEAP)* to cover equipment and energy costs year-round for both heating and cooling.
- Integrate energy assistance into public health insurance coverage, such as Medicaid and Medicare.

- Redesign utility rates to make energy more affordable for low- and moderate-income customers and provide avenues for utility debt prevention and arrearage management.

2 Policies and programs to address housing and energy infrastructure

- Invest in weatherization, energy-efficient housing improvements, and beneficial electrification to improve housing quality.
- Strengthen and modernize the power grid to support electrification, make energy infrastructure more resilient in areas in need of improvement, prevent overloading, and reduce power outages, while also containing costs to consumers.
- Enable faster adoption of clean energy technology, by increasing household participation in rooftop and community solar, and adoption of induction stoves.
- Shift public perception of clean energy technology by educating the public on the health and efficiency benefits of clean cooking appliances.

3 Health, Safety and Thermal Conditions Safeguards

- Increase protections against utility disconnections for residential customers.
- Promote safe and sufficient energy consumption through utility provider programs to address both over- and under-consumption, such as residential demand-response paired with educational outreach on average and safe levels of energy usage.
- Pair residential programs with campaigns and initiatives to discourage excess cooling in commercial spaces while ensuring that all New Yorkers have access to cooling equipment in their homes.
- Reduce unsafe coping behaviors and increase thermal comfort and safety by increasing City capacity to enforce no heat/hot water complaints in the short term. In the long term, route buildings to appropriate resources to upgrade energy systems to address energy inefficiencies and deficiencies.
- Ensure universal access to home cooling through maximum indoor temperature regulation in hot weather.

4 Screening and surveillance actions to embed energy equity into public health

- Standardize operationalization of energy insecurity, ensuring measurements that are conceptually valid and relevant for policy-makers.

- Track energy insecurity metrics routinely, for example, by integrating into NYC Health Department community health profiles and at the national level via existing surveys and public health surveillance efforts.
- Broaden and encourage greater clinical screenings and referrals to benefits.

As a multifaceted issue that encompasses utility bills, housing quality, thermal comfort, access to safety net supports and public health, multiple interventions are needed to address energy insecurity and allow for equitable participation in the clean energy transition. Interventions are most likely to be successful, if coupled with efforts to address energy affordability upstream through utility rate design. We close with recommendations for standardized tracking of energy insecurity in relation to health and integrating screening into clinical care and public health surveillance efforts. Addressing energy insecurity through a holistic lens—rather than through siloed housing, health, or energy programs—allows for coordinated strategies that recognize how temperature regulation, affordability, and social protection intersect. A comprehensive approach can therefore yield more durable solutions, improving not only household energy affordability and housing quality but also health equity and climate resilience.

Energy Insecurity and Health in NYC

Energy insecurity (EI)
The inability to meet basic household energy needs— encompasses hardship affording utility bills, inefficient and deficient housing conditions and coping behaviors to contain costs and maintain comfort

EI impacts **28%** of NYC households

EI impacts health including respiratory, cardiovascular and mental health, sleep and use of electronic medical devices

Policy Solutions for EI in NYC

FINANCIAL POLICIES AND PROGRAM

- Expand energy assistance programs
- Link energy benefits to health insurance
- Reform safety net benefits

HOUSING AND ENERGY INFRASTRUCTURE

- Invest in energy efficient housing improvesments
- Educate the public
- Modernize power grid equitably

HEALTH, SAFETY, AND THERMAL CONDITIONS

- Enhance utility disconnection protections
- Increase no heat enforcement
- Implement maximum indoor temperature and AC access policies

SCREENING AND SURVEILANCE ACTIONS

- Advance public health surveillance of EI via standardized measures
- Broaden clinical screening and benefit referrals

Addressing energy insecurity via upstream and coordinated solutions can improve not only household energy affordibility and housing quality but also health equity and climate resilience.

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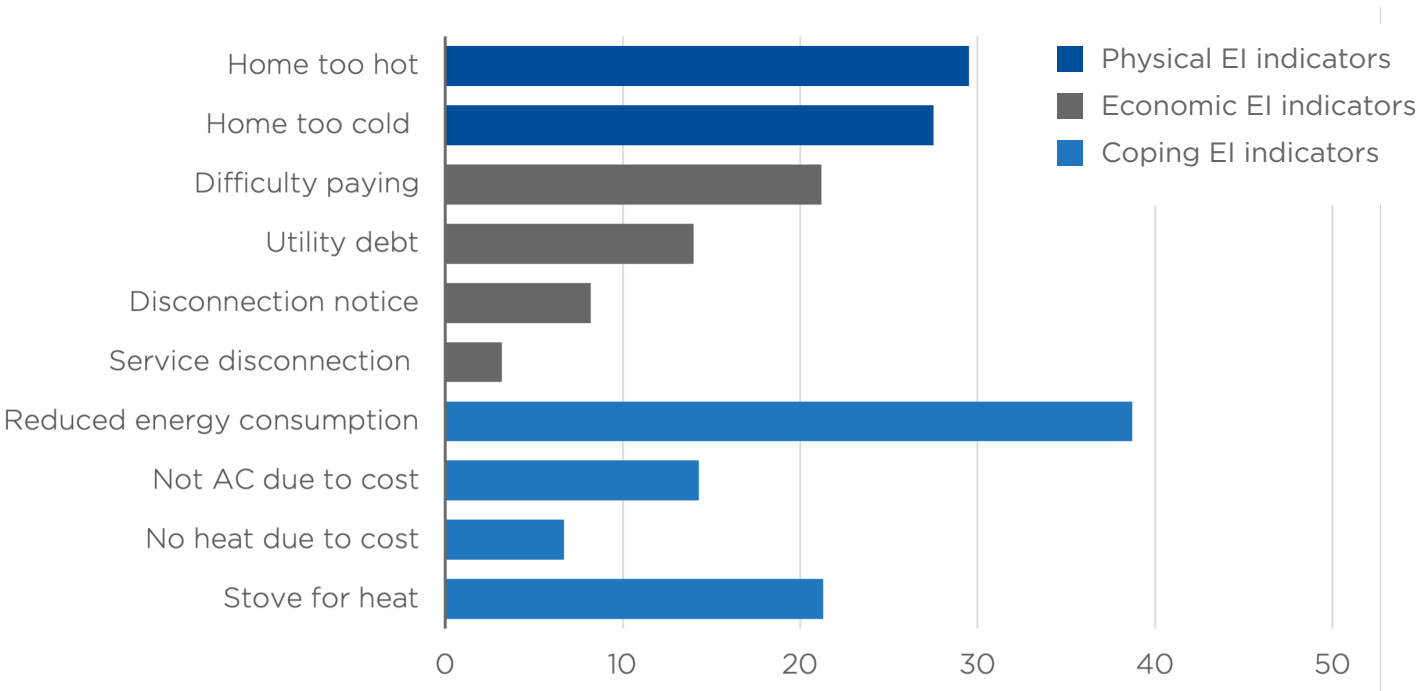
Introduction

The 2022 New York City (NYC) Household Energy and Health Survey—an unprecedented representative survey[3] of health and household energy needs of NYC residents—found that the majority (69%) of New Yorkers experienced at least one indicator of energy insecurity,[2] which is defined as the inability to adequately meet basic household energy needs.[4] Many residents (38%) reduced energy consumption to save on their bills, resulting in thermal discomfort for nearly a third of households (i.e., homes that were either excessively hot in the summer or excessively cold in the winter). More than 1 in 5 had trouble paying their gas and electricity bills. Similarly, 21% resorted to using a stove, oven, or space heater for heat, which increases risk for carbon monoxide poisoning and fires (Figure 1). To reflect cumulative burdens and identify New Yorkers most at risk, this study classified energy insecurity as the experience of 3 or more of 10 indicators that reflect economic, physical, and coping impacts resulting from being unable to adequately meet household energy needs. By this measure, more than one in four (28%) adult New Yorkers experienced energy insecurity.

Figure 1: Prevalence of Energy Insecurity Indicators among NYC Residents



Data Source: NYC Household Energy and Health Survey, 2022 as reported in Siegel et al., Health Affairs, 2024[2]

The survey found that exposure to energy insecurity is not distributed equally. Energy insecurity was more common among Black (non-Latine) and Latine residents compared to White residents, renters compared to owners, recent immigrants compared to those in the country for longer, and households with children compared to those with none.[2] Energy insecurity was also more common among people living in small multi-family homes (1-4 and 5-19 units) and in communities formerly designated for mortgage denial through discriminatory housing policy known as "redlining".[5] Moreover, people experiencing energy insecurity were more likely to experience worse health, which includes having someone in the household who uses an electric medical device or who has heart, respiratory, and/or mental health conditions.

In addition to energy insecurity rooted in costs, 20% of New Yorkers were impacted by electrical, heating, hot water, or gas outages of six or more hours for reasons unrelated to inability to pay (e.g., weather, maintenance, or construction).[6] This oft-overlooked aspect of energy insecurity is highly disruptive and usually completely beyond residents' control. What is more, the survey established that the vast majority of NYC residents lack access to rooftop solar, highlighting important gaps in achieving clean energy goals that have the potential to alleviate energy insecurity but may also be beyond the control of many low- and moderate-income residents.[7]

Considering the magnitude of energy insecurity experiences in New York City, Vital Strategies' Partnership for Healthy Cities funded a subsequent project to conduct focus groups and interviews with residents of the Bronx and Queens on their lived experiences of energy insecurity and opinions on potential solutions to existing policy challenges. Just a few of these New Yorkers' insights are shared throughout this paper as quotes illustrating varying challenges and policy ideas.

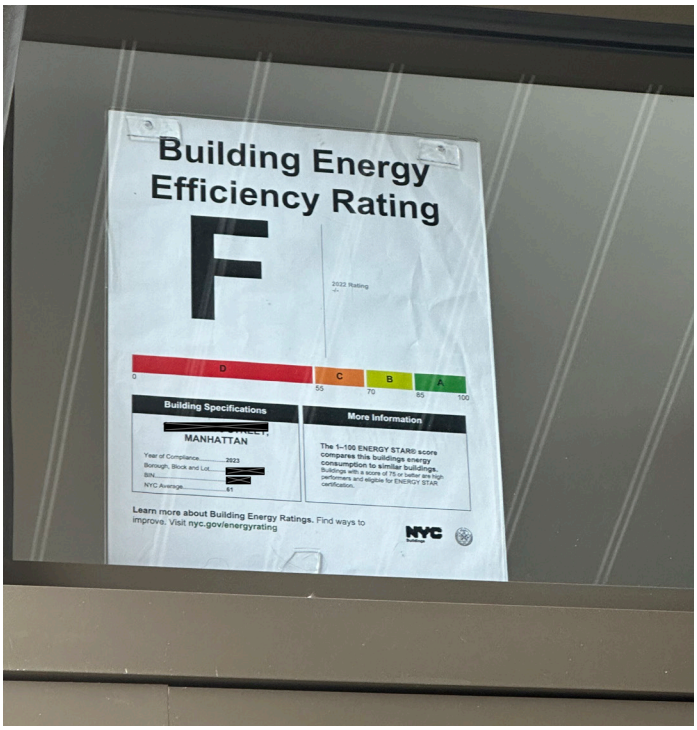
"It's just insane.... we already have high energy bills. We're in the Bronx. We don't have as many trees as the rest of NYC, because there's already a lot of environmental injustices going on. So not only are we experiencing hotter temperatures within our buildings [we experience them] outside as well [and] then it's like we have to pay more money for our ACs."

– Bronx resident

Responsibility for the production and distribution of energy, as well as the related markets, rests across federal, state and local authorities, with substantial variation by state under key national (and international) policies and regulations. Existing (and limited) safety net benefits to alleviate energy insecurity stem primarily from federal programs administered by lower levels of government. In addition, efforts to decarbonize buildings and energy production offer not just climate change mitigation but also present an unprecedented opportunity to reduce energy insecurity. However, threats to federal support for decarbonization and the limited federal infrastructure to support energy affordability began growing in 2025, making state and

local policy leadership even more critical to achieving equitable access to affordable, safe and reliable energy. In addition, existing government programs are unavailable to undocumented New Yorkers, excluding these vulnerable households from critical energy assistance even as they face disproportionate risks.

Given the complexity of energy insecurity in NYC, addressing this widespread phenomenon requires a comprehensive and layered approach that pairs energy and housing policy to prioritize public health and equity outcomes. In the sections that follow, we outline local and state pathways to alleviating energy insecurity across its economic, physical, and coping domains. In conclusion we offer recommendations to better monitor progress in reducing energy insecurity and related health impacts, and potential inequities in the transition to clean energy.



From left to right: 1) Efficiency grade of "F" in Manhattan building; 2) Heating, air conditioning unit and housing repair needs.

Economic Domain

> **"I've lived in the city all my life. Bills have gone from manageable to you need to take a loan to pay them."**
>
> *– Bronx resident*

High energy costs—encompassing electricity, natural gas, and fuel oil expenses—can impose significant economic burdens on households, especially those with low incomes. In 2016, New York State (NYS) established a goal to limit energy expenses, or "energy-cost burden," for low-income households making less than 200% of the Federal Poverty Level to no more than 6% of their income. Despite this target, a 2019 City report found that about 460,000 low-income NYC families continued to allocate more than 6% of their income to pay energy bills.[8]

The 2022 NYC survey found not only that 21% of residents reported a late, missed or partial payment in the past year, but also that 14% had utility debt in excess of $100. These figures mirror findings from another study of NYC residents that showed on average, one fifth (20%) of New Yorkers fell behind on utility payments because they did not have enough money to pay the bills.[9] Low-income New Yorkers faced the greatest risk of experiencing economic burdens in both studies. In a high-cost city like New York, residents often allocate a disproportionate share of their income to housing, with more than half of NYC residents classified as rent-burdened because they spend more than 30% of their income on rent, including utilities.[10] For NYC renters, heating and hot water costs are often included in rent; some tenants also pay gas and electricity through rent, but the majority pay those bills directly to utility companies.

Addressing energy affordability challenges can include:

1. Reforming and expanding NYC's existing energy safety net, including by increasing enrollment of eligible households into their entitled benefits;
2. Integrating energy assistance into health insurance programs; and
3. Rate redesign, including pathways to unburden households carrying unmanageable utility debt.

Reforming and Expanding NYC's Existing Energy Safety Net

The energy safety net in NYC consists primarily of two bill assistance programs: **a)** the Home Energy Assistance Program (HEAP), administered by the NYS government and primarily federally funded, and **b)** Energy Affordability Programs (EAP), administered by utility companies to subsidize costs or discount bills using ratepayer funds. The savings from these programs are substantial; however, their design, eligibility criteria, and administrative burdens serve as substantial access barriers for many New Yorkers in need.

Home Energy Assistance Program (HEAP)

HEAP is New York State's disbursement of the federal Low Income Home Energy Assistance Program (LIHEAP) funding and was historically designed to help New Yorkers heat their homes. HEAP includes a winter heating benefit up to $1,000 per calendar year (2025), emergency assistance to households at risk of a utility service shut-off, assistance with repairs, weatherization and replacement of heating equipment, and, in summer months, the purchase of cooling equipment. In the 2024-2025 LIHEAP plan, the state aimed to spend the majority of HEAP resources—over 50%—on heating benefits, followed by winter crisis assistance (20%), weatherization (15%), and cooling (4%).[11] In 2024, NYS supplemented HEAP winter funding with an additional $35 million, adding more resources to this important program.[12]

While electricity and gas bills are issued monthly, HEAP benefits – including purchase of equipment and modest utility subsidies – are typically disbursed only throughout the winter season or in response to winter season crises. Residents who do not pay for heat directly but do pay for other utilities, such as electricity, are also eligible for HEAP; however, the benefit level is substantially lower. In the summer, HEAP provides only cooling equipment for eligible households. Although HEAP is heavily skewed toward heating assistance, even the winter needs have recently exceeded the funding available.[12] Funding for cooling remains stagnant and well-below demand, despite record-breaking summer temperatures as the climate warms. As summers grow hotter, simply providing air conditioners without adequate means to run them is insufficient to address intensifying cooling needs.

To meet present and growing energy affordability concerns, HEAP in New York State needs to be a year-round program focused on crisis prevention rather than response. Solutions could involve bolstering funding for winter and summer season benefits, offering monthly subsidies to help households in peak energy use times or leveling support to anchor households throughout the year. Additionally, moderate-income households struggling with high monthly expenses would benefit from an expanded social safety net by raising HEAP income thresholds, as long as appropriations for the program are also increased. At the same time, threatened federal curtailment of social benefit programs including LIHEAP makes additional state, local, and utility resources critical to not only expand benefits but also maintain current levels to prevent increases in energy insecurity.

Energy Affordability Program (EAP)

As of 2024, approximately 2.7 million households in New York State were eligible for utility EAPs,[14] which provide financial relief to low-income consumers through monthly electric or natural gas bill discounts. EAPs are mandated by the state and administered by each utility company, with the goal of reducing energy burden for low-income households to 6% or less of their income. NYC offers automatic EAP enrollment for households participating in other means-tested benefits, such as HEAP and cash assistance, easing administrative and household

burdens to apply and access EAP benefits. However, eligible households—including those that are income-qualified but not linked to qualified means-tested benefits—face challenges with enrolling in EAP benefits. These EAP-eligible utility customers must follow a burdensome opt-in application process, requiring that they first learn of the program, understand that they are eligible, and then self-enroll by directly navigating the process with their utility. While the exact magnitude is unknown, the City estimates that the opt-in process results in thousands of eligible families missing out on much-needed utility discounts.

Expanding data matching could improve coverage of energy assistance benefits

Expanding data matching across means-tested programs, beyond HEAP and cash assistance to include, for example, Medicaid or housing subsidies, could improve energy benefit coverage for low-income New Yorkers through automatic EAP enrollment with an opt-out option. If opt-out data matching is not possible, another option would allow for low-income New Yorkers to consent to data matching for auto-enrollment in utility assistance when they enroll in or renew other qualifying benefit programs. Because of multiple threats proposed in 2025 at the federal level to reduce enrollment in social benefit programs, new mechanisms to close eligibility-enrollment gaps are necessary to support households in greatest need. For instance, utility customer lists could also be matched against New York State tax returns, ensuring wider identification of eligible households; use of state tax data for this purpose would need to be authorized through state legislation.

Utility data matching legislation was signed into state law in 2023 with the intent of expanding auto-enrollment via some means-tested social service benefits to the rest of New York State. Unfortunately, implementation of the legislation is being challenged by navigation of federal data use regulations that have the potential to reduce current matching in NYC, resulting in a significant number of eligible households potentially being dropped from enrollment in their utility's EAP. Contrary to the intent of the legislation and clear need for more affordable and accessible energy, any such restrictions without alternatives would further weaken the existing energy safety net.

Health Basis for Reforming and Expanding NYC's Energy Safety Net

Indoor Temperatures: Many New Yorkers resort to unsafe coping strategies including underconsumption of energy because they cannot pay their energy bills. In our study, 14% of people limited their use of air conditioning, even when it was very hot outside, due to cost. In addition, 7% of people reported going without heat in the cold season because of an inability to pay the bill. Exposure to extreme indoor temperatures has multiple documented[14] health consequences.[15,16] In addition, 21% used a stove or oven for supplemental heat, which increases the risk of carbon monoxide poisoning.[17] Energy assistance can help these households stay safer throughout the year and can support thermal comfort and overall well-being.

Co-Occurring Material Hardships: Food, housing, and access to medical care are essential to health. From 2015-2022, the vast majority (96%) of New Yorkers who fell behind on utility payments or who had a utility shutoff experienced at least one other form of hardship, such as trouble paying the rent or mortgage (82%), purchasing food (37%), or seeking medical care (66%).[8] About 10% of children experiencing energy insecurity also experience food insecurity.[18] According to the Center on Budget and Policy Priorities, prior to 2020 82% of New Yorkers across the state who were eligible for SNAP received it,[19] however, federal efforts have recently been focused on reducing access to benefit programs.

The presence of co-occurring hardships highlights the need to connect households across existing benefits and resources to achieve comprehensive support. Such support might include cross referrals between food and energy programs, for example having Regional Clean Energy Hubs provide referrals to food banks and assistance programs. Prior research shows that households accessing multiple food-related programs, such as SNAP, and Women Infants and Children (WIC) nutrition programs, are more likely to achieve energy security and, as noted above, receipt of LIHEAP benefits can increase food security.[20] Increased access to assistance can also close racial equity gaps in energy insecurity, which disproportionately affects people of color.[2,4]

Crisis Prevention: Our proposed approach to reforming and expanding energy assistance lifts barriers and provides wider access before a crisis occurs (i.e., high arrearages and disconnection due to non-payment), which is more efficient and cost-effective, much like preventative care in medicine. In contrast, conditioning energy assistance on receiving a disconnection notice or experiencing a shutoff poses significant health risks for affected households. Such crisis response is comparable to addressing untreated chronic illnesses in the emergency room, where patients arrive with more severe symptoms, and treatment becomes both more costly and potentially less effective. Broadening eligibility and expanding benefits for HEAP and making access to EAP more seamless will ensure that high energy burdens and associated health impacts do not escalate to crisis levels. In addition, creating energy pantries—similar to food pantries—could help prevent crises by allowing donations of energy assistance without onerous documentation requirements.[1,21]

Integrating Energy Assistance into Health Insurance Programs

Our research found that medically vulnerable households are more likely than other groups to experience energy insecurity. New Yorkers reporting energy insecurity were more likely to be living with chronic health conditions, including mental health conditions, cardiovascular disease, and respiratory conditions, as well as use of an electric medical device. Medically vulnerable individuals may face work- or wage-limiting conditions, heightened sensitivity to thermal discomfort, and severe health risks, including life-threatening situations, due to power loss from outages and disconnections.

Expanding public health insurance (Medicaid and Medicare) to include utility assistance would help address the critical overlap among housing quality, energy affordability, and health. Incorporating utility support into a program such as the Medicaid 1115 waiver in New York State, for example, could help low-income households maintain consistent access to essential services like heating, cooling, and electricity, reducing the risk of energy insecurity. This integration would enhance health outcomes by alleviating the stress and health risks associated with energy-related crises, advancing the waiver's goal of supporting vulnerable populations by addressing this socio-environmental determinant of health.

> **"I'm always concerned about cooling …, because that will affect [my child's] allergies, that will affect her seizures, because [the cost] does get incredibly, incredibly high. The jump between one month to another, especially during summer, with heat waves is a real concern…."**
>
> *– Bronx resident and parent of child with disabilities*

Health Basis for Integrating Energy Assistance into Health Insurance Programs

The evidence base on the relationship between health and energy insecurity is well-established and growing, thereby requiring action by Medicaid and other health insurers. Ensuring that individuals with medical vulnerabilities receive utility protections and technological support, such as backup battery options, alongside medical coverage through insurance is critical to health maintenance, chronic disease management and survival. Additionally, since many individuals with social vulnerabilities also experience medical vulnerabilities, implementing proper screening for energy insecurity in clinical settings can help connect households to the multiple benefits and services necessary to support their health and well-being. For example, increases in SNAP benefits in Massachusetts were associated with reduced hospital admissions and decreased Medicaid costs.[22] Expanding support for energy needs may round out services that can more comprehensively reduce adverse health outcomes.

Energy Rate Redesign and Strengthening Utility Debt Assistance Programs

In 2023, New York State's Public Service Commission approved rate hikes for Con Edison[23] that increased the average customer's gas and electricity bill by $780 per year through the end of 2025.[24] Electric and gas prices are expected to continue to rise with the recent conclusion of yet another Con Edison rate case and as evidenced by national trends. Rising utility costs place additional financial strains on low- and moderate-income (LMI) households. Rate hikes are applied uniformly across large service classes, i.e., across all residential rate payers, creating an uneven

burden between high and low-income customers.[25] Moreover, existing energy affordability benefits are applied to utility bills of eligible New Yorkers after the bill is calculated under a uniform rate, which is less optimal than having a lower rate to begin with for qualified customers.

In addition to expanding benefit programs, New York State must consider upstream interventions through rate design to balance utility costs that maintain utility companies' financial sustainability with equitable affordability for low- and moderate-income households.[26-28] The current approach to rate design in NYS is centered around *cost causation*. Customers pay for costs they cause the utility to incur to provide service. The existing structure does not consider a customer's socioeconomic status or ability to pay for energy used. While cost-of-service ratemaking is not set in law, it is the foundational principle the Public Service Commission (PSC) has used since its inception.

Time-of-Use (TOU) rates also fall within the cost-of-service rubric because they are designed to collect the amount of money needed to serve the system needs with customer behavior driving energy use. TOU rates adjust prices based on the time of day of energy consumption, respectively, encouraging energy use during off-peak hours. TOU rates, however, have high summer costs that are difficult to manage around, particularly for low- and moderate-income customers who generally have the least ability to shift demand. Moreover, greater energy literacy and access to and adoption of technological tools that track energy consumption can help optimize cost savings but remain barriers to overcome.

These types of rate structures are not the only possible approach to a publicly regulated, privately administered energy system.[25] Among potential alternatives that could offer greater affordability, tiered rates charge customers incrementally more as their energy demand rises (i.e. inclining block rates), incentivizing efficiency while protecting lower-usage customers. Income-based rates could establish a volumetric energy cost tied to household income, easing the burden on LMI households, and/or a fixed energy delivery charge tied to household income.[25-27] All of these solutions have meaningful benefits, but also limitations and trade-offs that must be better understood. Furthermore, utility companies do not have access to customer income data, so rate policy designed to support affordability would need to overcome this limitation.

Minimizing debt accumulation among low- and moderate-income residential customers should be a goal of rate reform. In our study, we found that nearly 15% of NYC residents carried utility debt in excess of $100. As noted above, New York State has programs to assist households with utility costs, including EAP bill credits, which are subsidies paid by all ratepayers, and Emergency Energy Assistance, which is a one-time grant for those who have exhausted other options. In addition, in response to unprecedented customer debt across NYS during the COVID-19 pandemic, the State created the Electric and Gas Bill Relief Program,[29] a one-time arrears forgiveness for households in low-income Energy Assistance Programs, which was subsidized by all ratepayers and also included funding from the state and utility shareholders.[30] The program also allowed a one-time

credit for unpaid balances up to $2,750 for all other residential customers. While beneficial for the individuals who participated, these programs were available on a limited basis and have not addressed the underlying issue of energy unaffordability. As of February 2025, about 443,000 residents of New York City and Westchester County were more than two months behind on their energy bills, owing a total of roughly $1 billion.[31] ConEd has since implemented aggressive post-pandemic shutoff efforts to collect arrearages.[32] However, without addressing the root problem of energy unaffordability, this cycle of arrears and disconnections will persist and likely worsen.

To be most impactful, rate redesign that supports affordability should go hand in hand with creating pathways to alleviate unmanageable utility debt for energy-insecure households. Recommended strategies include expanding eligibility criteria for existing assistance, restoring expired programs like the Electric and Gas Bill Relief Program[29] (the statewide program that provided Covid-era arrears relief) and implementing flexible repayment plans tailored to income levels. The Percentage of Income Payment Plan (PIPP) Plus is a particularly effective model implemented in several U.S. jurisdictions[1,33] that combines an energy cost burden cap through bill discounts and debt forgiveness. The programs are funded by ratepayers through public benefits or universal service funds and administered through utilities. In Ohio, for example, PIPP Plus customers receive monthly credits toward old debt on their utility bills when they pay a predetermined percentage of their household income on time; successful participation for 24 consecutive months results in the removal of outstanding balances.[34] Finally, identifying other funding sources beyond rate revenues to support energy affordability programs for low- and moderate-income New Yorkers could also help relieve costs.

Health Basis of Rate Redesign and Utility Debt Assistance

Rate redesign and debt assistance will directly decrease energy insecurity and associated health impacts by making bills more affordable and reducing the risk of disconnection. In addition, rate structures that ensure energy affordability and promote debt avoidance can improve overall financial well-being and alleviate the heat-or-eat dilemma—the choice between paying energy bills or buying food and other necessities—thereby promoting better physical and psychological health. Increasing evidence shows that programs targeting financial security and upstream social factors that influence health are likely to be successful in improving health outcomes.[35] For example, the introduction of social security was associated with decreased mortality rates,[36] one of many upstream interventions with positive health consequences.[37]

Table 1: Financial policies and programs to promote energy affordability

Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Reform and expand New York's energy safety net by bolstering the Home Energy Assistance Program (HEAP)* to cover equipment and energy costs for both heating and cooling year-round and increase overall funding levels. **Expand Energy Assistance Programs (EAPs)** by allowing auto-enrollment based on other means-tested benefits or other income verification processes, along with outreach campaigns to increase self-enrollment. ***Responsible Entity: Federal / State***	Expansions will support healthy indoor temperatures, address co-occurring hardships, and avert crises, preventing health impacts similar to preventive care in medicine.	Current cooling benefit covers only equipment (AC). Including energy costs would address inability to pay to run AC, a significant barrier to safe residential temperatures in warm months. Cross-enrollment and auto-enrollment can reach more people more effectively and efficiently than campaigns that put the onus on eligible individuals to enroll in benefit programs.	Availability of federal and state funding. Eligibility- enrollment gaps. Cross-enrollment requires political investment in efficient access to a robust safety net. Changing climate requires increase in warm season benefits. Seasonal disbursement of funds to cover heating are inconsistent with monthly billing.
Integrate energy assistance into public health insurance coverage, such as **Medicaid and Medicare.** ***Responsible Entity: Federal / State***	Utility assistance through medical insurance could alleviate health impacts and potentially decrease health care costs through avoided care utilization.	Connects low-income people, who are more likely to be energy insecure, to utility assistance.	Insurance companies and other payers will have to recognize the health impacts of energy insecurity. Efficient implementation will require approved data use for auto-enrollment into existing energy assistance programs.

continued on next page

Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Redesign utility rates to make energy more affordable for low- and moderate-income customers and provide avenues for utility debt prevention and arrearage management. ***Responsible Entity: State***	Increasing evidence shows that programs targeting financial security and upstream social factors that influence health are more likely to be successful in improving health outcomes.	Bill affordability is a prerequisite to debt and disconnection avoidance. Debt can be forgiven and coupled with payment programs to encourage debt prevention. Affordable utility rates require less reliance on energy assistance programs and are more proactive. Since means-testing is challenging to implement for energy benefits, rate redesign centering affordability that does not rely on income verification has the potential to more effectively reach eligible groups than EAP programs.	Approval for rate redesign requires state-level political will. Existing legal constructs around "non-discriminatory" ratemaking (within rate classes) must be reconsidered with respect to high-energy usage and cost-burdened groups. Energy literacy and user-friendly technologies that help optimize energy savings are critical for time-of-use rates structures to be most beneficial. Debt forgiveness programs should avoid regressive approaches, such as evenly distributed costs across ratepayers, that would additionally burden low- and moderate-income households.

** Denotes proposed changes to an existing policy or program.*

Physical Domain

The physical condition of a home plays a critical role in energy insecurity and represents an important point of intervention. Deteriorating building envelopes, such as cracks, gaps, or poor insulation, make it difficult to maintain comfortable indoor temperatures, leading to higher energy use and costs. Inefficient or poorly maintained heating and cooling systems further increase costs, while plumbing leaks add to water costs and contribute to mold growth. Older appliances typically consume more energy compared to newer, more efficient models. By contrast, well-maintained housing and energy-efficient appliances can alleviate energy insecurity by reducing household energy demand and providing greater thermal comfort.

NYC's current housing landscape presents unique challenges for weatherization and efficiency modifications, due to the age of homes (i.e., 54% built before 1947) and housing tenure structure, with 68% of residents renting homes.[38] In 2023, the NYC housing vacancy rate for rentals reached 1.4% overall, with even less availability at the lowest rents.[38] In this tight housing market, renters have limited ability to move from homes that are in disrepair. At the same time, there is little incentive for landlords to improve housing, because they may not benefit directly from those measures, unless they are able to increase the rent, further restricting the low-income housing market.

Housing improvements in underserved areas can support health and neighborhood equity. Our survey found that people living in areas that were formerly redlined, a housing policy that discouraged housing investment in neighborhoods of color, were more likely to be energy insecure. Residents in small multi-family buildings with 2-4 units were also disproportionately impacted by energy insecurity. The larger context of energy sources and delivery infrastructure also influences energy use, access, and costs. A poorly maintained electric grid that is not resilient to severe weather often leads to unanticipated service outages, which will have amplified effects in poorly weatherized homes and for residents at increased risk of health impacts from energy insecurity.

Addressing energy insecurity challenges related to physical infrastructure can include:

1. Expanding access to the weatherization, housing repairs and energy-efficiency upgrades necessary to implement and maximize gains from other policy interventions;
2. Continuing ongoing investments in energy systems to ensure clean, reliable energy availability; and
3. Swiftly adopting clean energy technology while prioritizing low- and moderate-income households to ensure equitable access and healthier homes.

Expanding Weatherization and Energy-Efficient Housing Improvements

Weatherization

Weatherization improves a building's foundational structure to increase protection from outside elements with the added benefit of more energy efficiency. For example, weatherization to improve building envelope insulation would reduce air leaks. Energy-efficiency measures, a complement to weatherization, can include non-structural upgrades such as installing energy-efficient lighting and appliances.

While weatherization saves money in the long term and is an intervention that addresses physical causes of energy insecurity, it is also more expensive in the short term than providing financial assistance for energy costs. As a result, and because these programs are often underfunded and underutilized, the reach of weatherization is much more limited than bill assistance. For example, the 2023-2024 NYS Weatherization Assistance Program (WAP), which is funded with federal dollars, aimed to weatherize 7,700 low-income housing units across 62 counties, while disbursing regular HEAP heating benefits to 1.56 million recipients.[39] Importantly, WAP cannot be accessed by renters without landlord participation and, for rentals in multi-unit buildings, a minimum percent of qualified occupants must agree to participate to undergo building-wide improvements. In 2022, only 1.1% of energy insecure NYC residents reported accessing any weatherization program.

In addition to WAP, the New York State Energy and Development Authority (NYSERDA)'s Empower+ program helps low- and moderate-income New Yorkers insulate and weatherize their homes. According to a 2024 Pratt Center for Community Development report, only 7% of

From left to right: 1) Baseboard heating unit in need of repair, 2) Light switch in disrepair

small residential low- and moderate-income energy-efficiency retrofits funded by NYSERDA occurred in NYC, despite NYC having 863,000 1-4-family buildings and a disproportionate share of disadvantaged communities in the state.[40] Although the PSC has directed Empower+ to shift from using State Median Income (SMI) to determine eligibility to Area Median Income (AMI) going forward, which should make more NYC households eligible, the program's funding was reduced.[41] An additional option to expand these services in NYC would be to increase the NYC Department of Housing Preservation and Development's (HPD) **HomeFix** budget. HomeFix is a program that funds community-based organizations to help residents make home repairs, including roof, heating system, hot water heater, electrical system, and energy efficiency upgrades, among other items.[42] Finally, the state recently set aside $5 billion of ratepayer funds to support energy efficiency and building electrification over five years (2026-2030) but only earmarked 30% of those dollars for low- and moderate-income New Yorkers.[43]

Another barrier to weatherization or energy-efficiency upgrades is that they first require remediation of mold, asbestos, lead, and other hazards. Many NYC buildings are also unable to participate in the clean energy transition due to existing deficiencies, particularly older homes with low- or moderate-income owners. Building owners and operators may struggle to afford these prerequisite interventions since most weatherization and energy-efficiency programs do not provide sufficient funding. One potential solution is to develop a tax abatement program to cover these out-of-reach weatherization and energy efficiency upgrades in affordable housing, similar to the current tax abatement for green roofs. Such assistance for landlords would reduce their need to raise rents or switch to market rates and can be stipulated as part of a tax abatement.

Beneficial Electrification

Pairing weatherization and energy-efficiency improvements with electrification, often referred to as "*beneficial electrification*," offers greater benefits than either approach alone. This holistic strategy delivers multiple, long-term gains: lower energy costs, improved housing quality, and reduced emissions. For example, upgrading insulation and ventilation while replacing combustion-fuel systems with electric alternatives such as heat pumps not only enhances efficiency but also provides cooling, improves indoor air quality, and increases thermal comfort. These upgrades collectively reduce greenhouse gas emissions and create healthier living environments for residents.

Heatpumps, along with weatherization, can offer NYC residents greater thermal comfort and lower heating/cooling costs.

Buildings with rent-stabilized and rent-controlled units or low-income renters receiving public rental assistance, such as Section 8 Housing Choice Vouchers, could benefit substantially from beneficial electrification interventions but may require financial assistance to undertake costly improvements as well as protections to prevent cost shifting that might push tenants out of their homes. Owners of rent-stabilized units are required to make tenants aware of changes in service that could affect their bills and cost shifting requires rent re-structuring. Owners of units accepting individual section 8 vouchers, however, are not subject to the same restrictions. Electrification retrofits could result in tenants facing additional costs, particularly for heating expenses that were included in their rent prior to upgrades. Protections against such cost shifting and regulations to require transparency in costs (and who will be paying them) are needed, while also balancing the need for additional supports to housing operators that provide affordable housing to New Yorkers.

Routine upkeep can fall behind in rent-stabilized or voucher-supported buildings that generate less rental income than their market-rate counterparts, thereby contributing to deferred maintenance and deficiencies that impact health and quality of life. At the same time, costly upgrades could qualify buildings for rent increases or move them to market-rate status, potentially resulting in displacement of low- and moderate-income tenants. External funding programs for upgrades and weatherization need to balance owner and tenant needs, including incentives and protections to maintain housing affordability. For example, a Green Affordable Pre-Electrification (GAP) Fund, proposed by some NYS legislators, would provide funding for landlords to address deferred maintenance issues and remediate environmental hazards while preserving affordability for tenants.[44]

Health Basis for Weatherization and Energy-Efficient Housing Improvements

In our survey, New Yorkers in housing with three or more housing deficiencies were more likely to be energy insecure than those with none (42% vs 18%). More than half of New Yorkers with two or more home energy-system deficiencies were energy insecure (51%). In addition, over half of residents with any housing deficiency reported feeling too hot or cold at home. Among people with three or more housing deficiencies, a third reported being so hot or cold at home that they felt sick (34%).[5] Improving building conditions and energy efficiency addresses the health of NYC's housing stock, ensuring that it is equipped to serve New Yorkers for decades to come. At the same time, doing so helps prevent health risks at home, allowing residents to breathe easier and live more comfortably in well-maintained, efficient dwellings.

Equitable Investments in Energy Infrastructure and Grid Modernization

Investments in energy systems can strengthen and modernize the power grid for equitable and reliable access to energy. Service interruptions for electricity, gas, heat, and hot water can occur due to factors outside a resident's control—such as extreme weather, construction, or maintenance issues—but access to utilities is necessary for everyday living. We found that service outages unrelated to the ability to pay impacted 20% of NYC residents in the previous year, with renters twice as likely to face outages as owners and high-poverty households experiencing two times as many hot water outages as low-poverty households.[6] Information on the spatial distribution of service outages is limited, but NYC 311 complaints for power outages suggest they are inequitably affecting poorer neighborhoods, communities home to more people of color, and areas with higher heat vulnerability.[45] Our survey also found that renters were twice as likely to face outages as owners. Ongoing equitable investments in the electric grid to ensure it is reliable and resilient to climate change can help reduce outages. Increasing clean energy generation and distribution, through offshore wind farms, solar and storage, and thermal energy networks, can contribute to larger climate mitigation goals, while increasing building-level resilience.

Health Basis for Investments to Strengthen and Modernize the Power Grid

Power outages threaten health. During an August 2003 citywide power outage, mortality rates increased by 28 percent,[46] respiratory hospitalization rates were five times higher than normal, and hospital admissions due to electric medical equipment failure spiked.[47] In addition, our survey showed that residents with mental health conditions experienced more electricity outages in 2022 than those without (11% vs. 5%).[6] Strengthening the grid can support current essential energy needs of residents, as well as future increasing demand spurred by climate-induced extreme weather and electrification.[48]

Accelerating Clean Energy Technology Uptake in Homes

Solar panels can reduce energy costs and support equitable access to renewable energy. The majority of New Yorkers (77%) were interested in using solar. However, only about 5% had solar at their residence.[7] Those not interested said they lacked agency, were confused about how residential solar operates, and were concerned about the cost.[6] Residents who cannot install solar panels because of infrastructure limitations can join community solar collectives to realize the solar benefits, though

> **"Why can't we have proper solar panels that can also decrease the electricity bill when it comes to things like air conditioners?"**
>
> *– Bronx resident*

there are not enough of these projects to meet the need. Some states are also investigating smaller portable solar generation, such as balcony solar.[49] However, in 2025 the federal government reversed residential solar tax incentives, which may significantly hinder growth in the rooftop solar market and limit low- and moderate-income households from being able to access solar.

Targeted strategies to phase out gas stoves can also support healthier indoor air quality[50] and equitable electrification. However, installing electric stoves in buildings designed for gas is expensive because costly electrical upgrades are usually required. This process is also generally outside the control of renters. Most NYC adults (86%) had gas stoves, but only 14% were interested in switching from gas to electric stoves, with a preference for gas cooking most pronounced among white and higher income New Yorkers.[7] Energy insecure residents, however, were more likely than energy-secure New Yorkers to be resistant to switching due to concerns about increased costs.

Phasing out gas stoves requires overcoming technical and logistical hurdles as well as shifting consumer preferences.

Different strategies and supports are needed for different populations to transition away from gas cooking. Induction cooktops are low-cost and can be placed on top of gas ranges, for example, for those who want to switch but are concerned about the cost and logistics of doing so.[46] However, given the high costs of electrical upgrades that are almost always needed for current induction technology, fully transitioning to an electric stove is most feasible when electrifying a building. Providing financial support and technical guidance to those who already are open to transitioning but cannot afford it, can also speed the transition.

Health Basis for Faster Adoption of Clean Energy Technology

Participating in residential solar—whether located on someone's building or via community solar programs—can reduce energy costs over time and alleviate energy insecurity which, as noted above, is associated with multiple health conditions. Phasing out gas stoves can support healthier indoor air quality, which in turn supports healthier homes. Gas stoves release nitrogen oxides (NOx), ultrafine particulates, and carbon monoxide. NOx exposure can lead to the development of asthma and exacerbate respiratory problems.[51] Gas stoves can leak methane (a powerful greenhouse gas) even when they are turned off,[52] and unburned natural gas can release small amounts of the carcinogen, benzene.[53]

Table 2: Policies and programs to address housing and energy infrastructure

Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Invest in weatherization, energy-efficient housing improvements*, and beneficial electrification to improve housing quality. For example, create programs to designate funding and incentives for landlords to repair or improve building envelopes (exterior walls, windows, and roofs) and insulation without increasing rents. Expanded access to energy-efficient heating and cooling equipment can reduce costs and improve thermal comfort and health outcomes if coupled with protections against harmful cost-shifting to low- and moderate-income tenants. Regulations to require transparency in costs can support tenants and enforcement agencies. ***Responsible Entity: Federal / State / City***	Half of New Yorkers in housing with three or more housing deficiencies were more likely to be energy insecure than those with none (42% vs 18%). Half of New Yorkers with two or more home energy-system deficiencies were energy insecure.	Co-occurring improvements (e.g., envelope improvements with installation of energy-efficient heating and cooling systems) would decrease energy costs and provide the most health benefits. An emphasis on supporting low- and moderate-income homeowners and tenants would allow more households to participate in the clean energy transition.	Requires more funding for weatherization and new pathways for tenants to directly enroll. States and local jurisdictions may need to exponentially increase funding if federal support remains stagnant or decreases. Improvements that result in rent increases can displace low- and moderate-income tenants. In cases where landlords do not benefit directly, incentives are needed.

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Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Strengthen and modernize the power grid* to support electrification, make energy infrastructure more resilient in areas in need of improvement, prevent overloading, and reduce power outages, while also containing costs to consumers. On a larger scale, prioritize building off-shore wind farms, solar and storage, & thermal energy networks. ***Responsible Entity: Federal / State / City***	Power outages are associated with higher mortality rates, as well as increased hospitalization rates respiratory conditions and electric medical equipment failure. Our survey showed that residents with mental health conditions experienced more electricity outages in 2022 than those without (11% vs. 5%).	Prioritizing Environmental Justice neighborhoods can support equitable grid resilience. Grid reliability and modernization are key to realizing decarbonization goals, since fuel switching from gas to electricity will put increased pressure on the existing grid.	Costs of modernization are passed on to customers through increased utility rates, making energy more expensive and driving energy insecurity risks.
Faster adoption of clean energy technology.* At a local scale increase household participation in individual and community solar, and adoption of induction stoves. ***Responsible Entity: Federal / State / City***	Solar participation can alleviate energy insecurity through reduced costs, greater reliability and bill subsidies.	Wider participation in community solar programs can help all residents directly benefit from solar, overcoming barriers around costs and renters' lack of agency. Electric stoves support equitable electrification and provide health benefits to individuals. Over time, renewable energy sources at the household level should reduce energy costs.	Will require financial investment in helping energy insecure residents adopt and access clean energy. People in homes in need of upgrades and repairs, such as those with damaged electrical systems, will not be able to fully benefit from clean energy technology. Electricity costs are currently higher than natural gas, so costs will increase in the short-term. Electrification is generally a building-level process and agency resides with owners.

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Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Shift public perception of clean energy technology by educating the public on how electric stoves are better for health and, for induction electric stoves, are quicker and more precise for cooking than gas stoves. ***Responsible Entity: State / City***	Phasing out gas stoves, which release nitrogen oxides (NOx), ultrafine particulates, and carbon monoxide, can support healthier indoor air quality, which in turn supports healthier homes.	Overcoming preferences of higher income households will support acceptance of new technology and faster uptake will support reduced indoor air pollution.	Lower-income households face significant financial barriers. Costly electricity upgrades will be needed unless more efficient technology comes on the market.

** Denotes proposed changes to or acceleration of an existing policy or program.*

Coping Domain

To confront the economic and physical impacts of energy insecurity, many households adopt coping responses when faced with the inability to afford utilities or achieve thermal comfort at home. Coping strategies may negatively affect health via increased exposure to hazardous conditions such as extreme indoor temperatures or the underconsumption of energy to save on bills. In 2022, nearly 4 in 10 New Yorkers (39%) reported reducing their energy use due to cost.

> **"In winter, I don't turn on the heating at all. ...I put on two or three pants and ... I wrap myself well so as not to use it."**
>
> *– Queens resident*

Coping behaviors and related health risks vary by season, as households struggle to maintain safe indoor temperatures. During the cold season, 7% of New Yorkers went without heat because of cost, and 1 in 5 New Yorkers (21%) reported using a stove, oven or space heater as an alternative heat source. This strategy may compensate for inadequate indoor heating due to building conditions such as low-quality insulation or violations of heating standards on the part of owners and operators. However, alternative heating practices can be unsafe, including posing fire risks and increasing indoor air pollution exposure (e.g., fine particulate matter, carbon monoxide). Indoor air pollution has documented health consequences, including worsened cardiovascular[54] and respiratory risks.[55] Mirroring winter struggles, an even greater number (14%) of NYC households reduced or avoided using their air conditioner during the summer months, heightening risks for heat-related illnesses.

Managing energy insecurity results in households simultaneously engaging in health-affecting coping behaviors while also dealing with compounding economic burdens and low-quality physical environments. Policy approaches to support households forced to cope with energy insecurity must focus on reducing the energy burden carried by these families, as well as increasing awareness about available resources.[56]

Equitable approaches to increasing access to affordable energy to prevent the need for coping behaviors include:

1. Increased utility disconnection protections so families are not threatened by energy crises that trigger high-effort and dangerous coping responses.
2. Increased education and residential demand-response programs related to both over- and under-consumption of energy at the household level. These programs must allow low- and moderate-income families who are often hypervigilant about their energy use to benefit from lower costs while not compromising health. Residential programs should be paired with

responsible use regulations for the commercial and industrial sectors and financially well-resourced households to promote energy-saving behavior (e.g., higher rates for excessive use, minimum indoor summer temperature regulations for commercial buildings).

3. Dedication of necessary City resources for 311 heat and hot water enforcement and education about the 311 complaint process for increased thermal comfort and safety; coupled with awareness campaigns about the hazards (i.e., poor indoor air quality) and risks (i.e., fire and injury) associated with alternative heating and cooling methods.
4. Creation of a maximum indoor temperature policy to ensure thermal comfort for renters during the summer months, consistent with winter indoor thermal protections already in place.

Increasing Utility Disconnection Protections

Like access to potable water, energy is essential to healthy living, so residential disconnections of electricity or other utilities become a major threat to safety and health, particularly among those already facing medical, environmental, and social burdens. Current regulations provide limited protections based on medical vulnerabilities. The New York State Home Energy Fair Practices Act prohibits utilities from disconnecting service without special effort to contact the customer if they and others in the household are blind, permanently disabled, 62 years or 18 or younger.[57] In addition, if someone has a serious illness or medical condition, they can receive a 30-day disconnection prohibition with certification by a doctor or local board of health stating that disconnection will worsen their health condition. The disconnection protection can be renewed with re-certification by a medical provider. Those on a life-support system do not have to recertify but must demonstrate every 3 months to the utility provider that they cannot pay their bill.

NYS utility regulators have also established disconnection prohibitions based on environmental vulnerability. Between November 1 and April 15, the utility must make special efforts to ensure that any disconnection will not endanger a resident's health or safety. In NYC during the winter, disconnections by Con Edison (the city's main utility service provider) for non-payment are prohibited for all residential customers on days when the high temperature, factoring in wind chill, is forecasted to be 32°F or lower. In the warm season, electricity disconnections are prohibited for all Con Edison residential customers on days when the heat index is forecast to reach 90°F or higher, including one day before and two days after.

However, existing protections leave significant gaps in addressing socially driven vulnerabilities. Current protections do not thoroughly account for poverty, which can increase health risks via inadequate, unsafe housing. Appropriate economic reforms to make energy affordable for all customers would eliminate the intractable risks to customers' health from disconnection threats. For example, an issued threat (disconnection) to individuals living in poverty may *not* accomplish the desired action (bill payment). Instead, the disconnection could actively harm that individual

as they live without power for extended periods or take other aggressive measures to find the resources to pay, which could in turn further diminish life and health prospects while not resulting in repayment. Until comprehensive protections can be achieved via rate restructuring and increased utility benefits (see Economic Domain section above), steps can be taken to expand current protections to include low- and moderate-income customers with demonstrated need.

Health Basis for Increasing Utility Disconnection Protections

Health risks of energy insecurity are compounded by chronic illnesses (i.e., diabetes, cardiovascular disease, hypertension, cancer and respiratory conditions), with particularly strong associations between energy insecurity and use of electricity-powered medical equipment (EME). In NYC, EME users are more than three times as likely to be energy insecure.[3] However, any household facing the inability to pay energy bills is vulnerable to health impacts. Pregnant people, households with children, and the elderly, for example, can also face acute health challenges based on health sensitives to temperature and psychosocial stress. Utility providers must ensure that before any disconnection, all eligible customers and household members who are facing defaults on bills are enrolled into existing disconnection protection measures and energy assistance programs.

Electronic medical device- electric wheelchair.

In addition, weather-related disconnection protections should be strengthened. Protections should be in place for the entire warm season—May through September in NYC—given that approximately 80% of heat-related deaths occur on hot but not extremely hot days.[58] All New Yorkers need to have access to cooling for a safe home environment at temperatures above 82°F, which is not possible without the energy to run air conditioning. Similarly, home heat is required to maintain health in the winter. Cold temperatures are associated with increased mortality from all causes, highlighting the importance of using energy to heat the home during the winter season.[59,60] Extending shutoff protections in both warm and cold seasons would extend health and safety protections to all New Yorkers. As emphasized in the section on debt above, it is necessary to address the root issue of energy unaffordability to break the cycle of disconnections due to non-payment and arrears.

Addressing Both Over- and Under-Consumption of Energy

Exploring changes to rate design to encourage conservation, such as block rates, may help reduce over-consumption. Utility residential usage programs should also raise household awareness of energy consumption patterns, including information on energy levels needed for safe home temperatures by season. Education and access to information regarding average household consumption could help families find optimal but still safe levels of energy usage, even while balancing their difficulties in paying bills.

> **"When I cook, [I'm] thinking how much I'm using and how much it's going to cost. I cook for me and my son, we are just two but for me to save a little, [I cook in bulk] then it is only to heat up a little bit, fast and it's done."**
> *– Bronx resident*

Work to address residential consumption must be paired with policy that promotes responsible use of cooling in commercial settings. Commercial buildings tend to be larger and consume more energy than residential buildings. Policies to limit over-consumption of energy in commercial buildings on high-demand days can alleviate strain on the power grid. For example, an indoor minimum temperature regulation for commercial settings would discourage excess cooling and help to prevent overload of the electrical grid, especially during hot weather. Campaigns and other initiatives around responsible energy use can also help alleviate the urban heat island effect by reducing waste heat from commercial buildings.

Existing demand-response programs provide monetary incentives for reduced energy consumption during peak usage periods for commercial and residential customers. However, energy insecure residential customers may already be severely constraining energy use,[61] and there is a risk that those participating in residential demand-response programs will be pressured to further constrain use in unsafe ways, for instance by not using cooling on the hottest days. Residential demand-response programs must be designed to ensure there are guardrails for energy insecure households, so they are able to stay safe during peak load periods while also benefiting from participation in demand-response. In addition, programs could be designed to allocate some portion of the overall energy saved by demand-response free-of-cost to energy insecure households to ensure their health and safety, though this type of program would need to be designed with input from energy companies, regulators, and community stakeholders.

Health Basis for Programs to Prevent Over- and Under-Consumption of Energy

Consumption-focused programs must be designed to encourage "energy sufficiency" (neither too much nor too little energy)[62] to maintain health, while also incentivizing efficiency. As discussed

previously, we found that 1 in 7 NYC households reduce their use of heat in the winter and 1 in 14 reduce their cooling in the summer due to payment concerns. Limiting energy use on cold or hot days can result in unsafe indoor temperatures that can worsen multiple health conditions, as already enumerated. Educating households on "healthy" indoor temperatures while also redirecting resources from efficiency savings in well-resourced residential and commercial buildings to support affordable and adequate energy access could reduce energy insecurity and its related health consequences.

Robust City Resources to Enforce Residential Heating Regulations

NYC law requires that all New Yorkers have adequate heat in their homes. The Department of Housing Preservation and Development (HPD) enforces regulations for landlords, ensuring tenants are warm enough at home and have access to hot water based on dates and outdoor/indoor temperature thresholds. HPD responds to thousands of no heat/no hot water complaints each cold season. HPD issues violations to landlords and follows up with residents about heat and hot water problems, requiring significant time and resources to investigate these matters on site. They issue warnings or violations depending on the circumstances of the offense.

Tenants, particularly those struggling with energy insecurity, may not be aware of their rights or how to make a viable complaint related to unsafe indoor temperatures. Making current HPD enforcement processes known and accessible to tenants experiencing energy insecurity could improve indoor thermal comfort and safety by holding landlords accountable to minimum temperature standards, though stronger protections against tenant retaliation are also needed. In addition, both complaint and enforcement protocols could benefit from referral processes for landlords to related energy-efficiency benefit programs, perhaps enhancing existing approaches for buildings with repeated complaints or other prioritization strategies. Heating violations can be a gateway to services by supporting building owners and operators with accessing energy efficiency, weatherization, boiler and hot water heater repair and replacement services as well as beneficial electrification. These calls for help can signal larger issues and be used to better target resources for buildings occupied by low- and moderate-income tenants.

Health Basis for Robust City Resources to Enforce Residential Heating Regulations

Problems related to heat and hot water need to be resolved swiftly and thoroughly to minimize residents' risk of cold temperature health impacts and fatalities. We found that 3 in 10 adult New Yorkers (30%) experienced being extremely cold in their home in the past year, demonstrating the significant health risks and enforcement challenge. In our survey, among renters with heating and hot water problems, 21% contacted 311. Among renters who did not contact 311, the most common reason (37%) was that the problem was fixed quickly; 13% did not know they could contact 311, 12% did not think 311 would be effective, and 12% did not want to get in trouble with the landlord. In addition to safeguarding physical health, ensuring that tenants are aware of the 311 resource and trust that it can effectively resolve issues without risking tenancy is important for empowerment and stress management.

Space heaters are an alternative method many New Yorkers rely on in lieu of safe and adequate home heating

Creating a Warm Season Maximum Temperature Policy for Residential Buildings

While NYC law protects tenants in their homes from the cold during winter months, there is no equivalent regulation or enforcement during the summer against homes that are too hot. Climate change-driven increases in temperatures combined with NYC's urban heat island effect is increasing exposure to extreme heat. Many buildings in NYC, which has an aged housing stock are not equipped with central cooling functions or air-conditioning units. Without mechanical cooling, indoor temperatures can be more than 10 degrees hotter indoors compared to outdoors. Moreover, indoor temperatures can also remain hotter than outdoor temperatures for up to 3 days after outdoor temperatures have cooled.[63] Citywide, about 10% of households lack air conditioning at home, but in some neighborhoods, it can be as high as 25%.[64]

To address the gap in thermal safety at home due to rising temperatures, New York City committed in its 2023 climate action plan, PlaNYC, to developing a maximum indoor temperature policy that would protect tenants against unsafe high temperatures by requiring landlords to

ensure homes are equipped with cooling units.[65] While this measure may ensure access to an air-conditioning unit, for many, ACs go unused even on the hottest days due to cost concerns. Therefore, one of the largest barriers to access to residential cooling for all New Yorkers is the cost of energy. Since it would be beyond the scope of a maximum temperature regulation to also reform energy costs for low- and moderate-income households, success depends on the multiple parallel policy avenues outlined above to address equitable access to affordable energy.

"Sometimes I can't afford to pay the rent, and I have to pay more, so it's a matter of not putting the air on or being hot. Especially last year, because it was very hot, I had heat stroke, and I almost fainted in the street."

– Queens resident

Health Basis for Creating Warm Season Maximum Temperature Policy

Prior studies in NYC found that increased summer temperatures could increase premature heat-related deaths by 47%,[66] and already every summer, there are more than 500 heat-related deaths in NYC.[57] Other health outcomes such as heat stroke, heat exhaustion, and kidney, mental health, and respiratory hospitalizations[67] are also of concern. The NYC Panel on Climate Change projects up to 6 times as many days above 90 degrees and 5 times as many heat waves annually by the 2080s.[68,69] The health consequences of heat in NYC also inequitably burden those dealing with poverty or poor housing conditions, characteristics that co-occur with energy insecurity.[70] Implementing a maximum temperature policy will reduce exposure to indoor extreme heat, especially among households coping with energy insecurity during summer months

Cooling options including open windows, fans and an air conditioning unit. Compared to heat, cooling standards are lacking in NYC.

Table 3: Health, safety, and thermal conditions Safeguards

Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Increase **protections against utility disconnections** for residential customers.* ***Responsible Entity: State, utility regulators***	Health risks of energy insecurity are compounded by comorbidities, with particularly strong associations between energy insecurity and use of electricity-powered medical equipment.	Equitable access to energy is essential to a healthy lifestyle, making the act of denying residents access to power due to affordability challenges inherently inhumane.	Utility providers often rely on disconnection policies as a cost-recovery strategy or a "stick" to force payment on delinquent accounts. Focusing on affordability instead of this punitive approach requires a change in perspective and practice.
Promote safe and sufficient energy consumption through utility provider programs to address both over- and under-consumption, such as residential demand-response paired with educational outreach on average and safe levels of energy usage. Pair residential programs with campaigns and initiatives to promote responsible use of cooling by discouraging excess cooling in commercial spaces with an indoor and industrial buildings minimum temperature regulation. ***Responsible Entity: City, State, utility regulators, utilities***	1 in 7 households reduce heat in the winter and 1 in 14 reduce cooling in the summer due to payment concerns, increasing risk of adverse health consequences	Households experiencing energy insecurity are already reducing their consumption to uncomfortable, inconvenient and health-compromising levels, while better resourced households and commercial customers need to be encouraged to reduce wasteful energy use to achieve energy sufficiency.	Establishing appropriate guardrails for demand-response programs so energy insecure participants can access the energy they need to maintain health and safety during peak periods. Effectively communicating benefits of socially responsible energy consumption in addition to customer-level bill reductions for resourced households in demand-response programs.

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Policy Description	Health Relevance	Key Considerations for Equitable Implementation	Barriers to Overcome
Increase City resources for no heat or hot water complaint enforcement* to reduce unsafe coping behaviors and increase thermal comfort and safety while routing buildings to appropriate resources ***Responsible Entity: City***	30% of adult New Yorkers were extremely cold in their home in the past year, 21% used a stove, oven or space heater to warm their homes demonstrating significant health burden.	Supporting landlords to implement energy efficiency renovations will help reduce heat and hot water outages.	Identification of enforcement resources, including follow-up activities and resource matching for eligible buildings. Implementation of tenant rights education and protections against retaliation.
Ensure **universal access to home cooling** through maximum indoor temperature regulation in hot weather ***Responsible Entity: City***	Each summer there are hundreds of heat-related deaths in New York City (more than 500 in 2024) and rising temperatures threaten 47% increases in premature heat-related mortality.	Regulation can set safety standards in warm weather as done for cold. Measures should be paired with multiple policy avenues to avoid burdening low-income households with cooling-related costs for both equipment and energy use.	Energy costs associated with a maximum temperature threshold are likely to be the responsibility of renters without appropriate controls. Cost for equipment and ongoing implementation of AC benefit program that includes sufficient subsidies to ensure that people can use the energy they need on the hottest days.

** Denotes proposed changes to an existing policy or program.*

Screening and Surveillance

Public health surveillance is critical for improving population health. The collection of data allows for the characterization of disease, exposure burden, health impacts and adaptation, and informs policy and programmatic work at the local, state, and federal levels. Energy insecurity metrics should be collected within traditional public health surveillance methods on a routine, standardized basis to track the path of progress or regression.[71] This should include demographic, socioeconomic, and clinical data that impact climate-sensitive health outcomes.[72] Given federal actions starting in 2025 to dismantle many traditional public health surveillance efforts, state and local surveillance mechanisms will be even more essential to effective tracking of energy insecurity and its related health impacts.

A standardized definition and measurement strategy for energy insecurity is needed, however, to allow for comparison of energy insecurity prevalence and relation to health outcomes across jurisdictions. This could be done by modeling definition development on food insecurity. Many years ago, the US Department of Agriculture requested that the Committee on National Statistics (CNSTAT) of the National Academies convene a cross-disciplinary, expert panel to study and make recommendations for the operationalization and measurement of food insecurity.[73] The panel made recommendations to ensure that measurement was conceptually sound and relevant to those using statistics for policy-making.

Electronic medical device, nebulizer, used by an NYC resident living with asthma

At the population-level, data collection needs to bridge the gap between health, social, and environmental data. Data collection efforts at multiple levels of government should be utilized to track indicators of energy insecurity and associated health outcomes. At the local level in NYC, the Health Department conducts a community health survey each year that collects self-reported health data from a representative sample of New Yorkers, including information about housing and neighborhood conditions. At the state level, the Health Department conducts similar surveys of self-reported health. At the federal level, the Department of Energy (DOE) collects relevant energy use and access data through its Residential Energy Consumption Survey (RECS),[74] and the Centers for Disease Control and Prevention (CDC) collects data on self-reported health status and risk factors through the Behavioral Risk Factor and Surveillance System (BRFSS).[75] Only the

RECS, however, routinely collects energy insecurity information though it lacks detailed health information and is administered infrequently (~every 4-5 years). The local, state and federal health surveys contain rich health information but do not routinely collect energy insecurity data.

In addition, the widespread adoption of electronic health records empowers healthcare providers to standardize information, ask more precise questions at the point of care, and refer to existing resources (for example, HEAP or energy assistance programs). There are tools to screen for energy insecurity in clinical settings.[76,77] To avoid overburdening physicians and patients, screening tools used during medical visits need to be short and aimed at connecting people with resources. Alternatively, clinic settings with social or community health workers could involve these parties in energy insecurity screening while undertaking other assessments and referrals to related safety net benefits.

Table 4: Screening and surveillance actions to embed energy equity into public health

Policy Description	Key Considerations	Barriers to Overcome
Standardize operationalization of energy insecurity, ensuring measurements are conceptually valid and relevant for policy-makers. ***Responsible Entity: US DOE/ HHS/CDC***	Utilizing standard definition can allow for comparisons across states and jurisdictions	Researchers need funding and convening capacity to undertake validation.
Public health surveillance to track energy insecurity metrics routinely, for example, by integrating into NYC Health Department community health profiles or at the national level, the CDC's Behavioral Risk Factor and Surveillance System (BRFSS) or the DOE's Residential Energy Consumption Survey (RECS). ***Responsible Entity: US DOE/ CDC/state & local health departments***	Ongoing tracking can provide data to evaluate energy insecurity interventions and better surveillance of prevalence and related health impacts of policy and programmatic interventions.	10-indicator definition[2] requires 20 questions, which is onerous on participants, time-intensive and expensive. Shorter questionnaires are needed that still fully encompass the multi-dimensional energy insecurity phenomenon. More validation of existing and new indicators is needed.

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Policy Description	Key Considerations	Barriers to Overcome
Broaden and encourage greater clinical screenings and referrals to benefits. ***Responsible Entity: City and State health departments; health care providers, clinics, systems; health insurers.***	Clinicians and health care support staff have unique relationships with patients and are in a good position to evaluate needs.	Clinicians are already overburdened and may need additional information and support to refer patients to appropriate resources.

Conclusion

The persistent problem of energy insecurity facing many NYC households is likely to worsen without intentional intervention. The evidence base on the impacts of energy insecurity on health is well-established and growing, and it highlights the critical need for cross-sectoral and coordinated action to address this social and environmental factor that affects individual and public health. Even as political will for climate change mitigation and social safety net benefits at the federal level shifted as of 2025, the clean energy transition and a focus on affordability still provide key opportunities at state and local levels to address energy insecurity. Still, multiple interventions are needed, coupled with coordinated policy efforts to address upstream influences on energy insecurity in NYC. The comprehensive and practical solutions outlined in this report to reduce energy insecurity can help close long-standing gaps in health equity, supporting a more climate-resilient city of healthier, more efficient homes for healthy people.

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