ELEVATE

Why Extreme Heat Is an Energy Equity Issue

When we think about energy affordability, winter often comes to mind first. For decades, conversations about energy assistance and utility protections have largely focused on keeping the heat on during dangerously cold temperatures. But as summers get hotter and extreme heat becomes more frequent, access to affordable cooling is increasingly important.

Air conditioning can be lifesaving during extreme heat, but only if people have access to it and can afford to use it. For households already struggling with high energy costs, turning on the air conditioner can mean facing an even higher utility bill. For others, inefficient housing or malfunctioning cooling equipment can make it difficult to keep their homes at a safe temperature.

Extreme heat, therefore, is not just a weather issue. It is an energy equity issue.

Extreme heat does not affect everyone equally

Extreme heat is dangerous. In 2024, 2,391 heat-related deaths were reported in the United States.[1] Heat can also contribute to cardiovascular, kidney, and respiratory illnesses and lead to increased hospital admissions.

Illinois knows these dangers particularly well. During the 1995 Chicago heat wave, more than 700 people died in the Chicago area.[2] Research following the disaster found that people who lived alone or lacked access to air conditioning were among those at greatest risk. Having a working air conditioner, on the other hand, was associated with a substantially lower risk of heat-related death.

Thirty years later, the challenge of extreme heat has not disappeared.

In northeastern Illinois, the number of days above 95°F is projected to increase substantially. Under a high-emissions scenario, the region could go from historically averaging about two days above 95°F each year to about 18 by mid-century and more than 45 by late century.[3]

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[1] https://www.cdc.gov/nchs/blog/bulletin/quickstats-percentage-distribution-of-heat-related-deaths-by-age-group-united-states-2024.html?

[2] https://dph.illinois.gov/topics-services/environmental-health-protection/hot-weather.html?

[3] https://cmap.illinois.gov/wp-content/uploads/dlm_uploads/Transportation-Resilience-Improvement-Plan-2026.pdf

But experiencing the same outdoor temperature does not mean experiencing the same risk.

Where someone lives, the condition of their home, their income, and whether they have access to affordable cooling can all affect their ability to stay safe. Buildings and pavements can also trap heat, contributing to higher temperatures in some communities through the urban heat island effect.[4]

That is where extreme heat and energy equity intersect.

Having air conditioning and being able to use it are two different things

For many households, staying safe during a heat wave means using more electricity. But the cost of staying cool is not felt equally.

Energy burden, the percentage of household income spent on home energy costs, is already significantly higher for households with low incomes. Nationally, the average energy burden for low-income households is approximately 6%, compared with 2% for households that are not low-income.[5] Research from the American Council for an Energy-Efficient Economy has also found that low-income, Black, Hispanic, and other disadvantaged households experience disproportionately higher energy burdens.

As a result, many families face a difficult choice during extreme heat: run the air conditioner and risk a utility bill they cannot afford, or limit cooling and risk unsafe indoor temperatures.

Research in northern Illinois provides evidence that this tradeoff affects how people use air conditioning. A study of more than 400,000 households found that when households began using air conditioning differed based on income. Low-income households used less electricity for cooling and used it for shorter periods of time than higher-income households. The study also found a larger cooling gap in majority-Black neighborhoods than in majority-white neighborhoods, based on an analysis of small geographic areas define by the U.S. Census Bureau, known as census block groups.[6]

In other words, access to an air conditioner does not necessarily mean equal access to cooling. Affordability can determine whether people feel its affordable to even turn it on.

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[4] https://cmap.illinois.gov/focus-areas/climate/climate-resilience/
[5] https://www.energy.gov/cmei/scep/low-income-energy-affordability-data-lead-tool?
[6] https://www.sciencedirect.com/science/article/pii/S0301421523003336

Illinois has started recognizing cooling as an essential energy need

Illinois policy has traditionally provided strong protections against utility disconnections during cold weather. More recently, the state has extended similar protections to periods of extreme heat.

Since January 2024, Illinois law has prohibited utilities from disconnecting residential gas or electric service for nonpayment when that service is the home's only source of cooling, or operates the home's only cooling equipment, on days when temperatures are forecast to reach 90 degrees or higher. The protection also applies when the National Weather Service issues an excessive heat watch, heat advisory, or excessive heat warning.

The change reflects a growing recognition that electricity for cooling is not simply a matter of comfort. During extreme heat, it is essential for health and safety.

Preventing a disconnection on the hottest days is only one piece of the puzzle. A household may still accumulate utility debt from running an air conditioner. Someone may limit their cooling because they're worried about the next bill. An older or inefficient home may require significantly more energy to maintain a comfortable temperature. And some households may not have adequate cooling equipment in the first place.

Existing assistance programs also continue to reflect the historic emphasis on winter heating. Illinois describes the Low-Income Home Energy Assistance Program, or LIHEAP, primarily helping households with heating costs during the winter months. The state currently does not anticipate administering a separate summer cooling program.

As extreme heat becomes more common, we need to ask an important question: How should our energy policies evolve when cooling is increasingly necessary to keep people safe?

Energy efficiency is part of the solution

Protecting households from extreme heat requires more than helping people manage higher summer utility bills. Making homes more energy efficient can help address the problem at its source. Better insulation, air sealing, efficient heat pumps and air conditioners, weatherization, and other home improvements can make it easier to maintain safe indoor temperatures while using less energy.

For households with high energy burdens, those improvements can provide multiple benefits at once: lower energy use, more manageable bills, healthier and more comfortable homes, and greater resilience during periods of extreme temperatures. This is especially important as we prepare communities for a changing climate.

Elevate's work on extreme heat resilience in Chicago has shown how research, policy, community engagement, and building improvements can work together to help communities prepare for rising temperatures.

The goal should not simply be to make sure everyone has an air conditioner. We also need homes that can maintain safe, comfortable temperatures efficiently, along with energy systems and programs that make cooling affordable.

Rethinking what energy affordability means

Extreme heat is changing the way we need to think about energy affordability. Keeping energy affordability accessible has never been just about the number at the bottom of a utility bill. It is about whether people can afford the energy they need to live safely and comfortably in their homes.

As Illinois experiences hotter summers and more frequent periods of extreme heat, cooling will become an increasingly important part of that equation. Utility disconnection protections are an important safeguard, but they are only one tool. Energy assistance, energy efficiency, weatherization, access to efficient cooling, and policies that reduce household energy burdens all play a role. Thirty years after Chicago's devastating 1995 heat wave, we know that extreme heat does not affect everyone equally. We also know more about the solutions available to us.

As our climate changes, our definition of energy security needs to change with it. Keeping people safe during extreme heat means making sure everyone, not just those who can afford a higher summer energy bill, has access to reliable and affordable cooling.

Learn more

Learn more about Elevate's work to protect communities from extreme heat and ensure everyone has access to a safe and comfortable home:

- How Can We Protect Chicago Homes Against Heat Waves?
- Advancing Extreme Heat Resilience in Chicago