‘Billed to the Breaking Point’:

Harms from Indiana's High Electricity Costs

CITIZENSACTIONCOALITION
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INDIANA COMMUNITY ACTION POVERTY INSTITUTE

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"We have been billed to the breaking point for our utility energy."

– **Edith Hardcastle,** Public Testimony at the March 12, 2024 Field Hearing held in IURC Cause Number 45990

Executive Summary

- Hoosier households' rising electricity costs outpace wages, with increasing electricity burdens felt across the state. These increasing prices have yielded lucrative profit margins and CEO compensation packages, even as Hoosiers struggle to afford this necessity.
- Electricity burdens reinforce inequalities, harm the physical and mental well-being of our communities, and create dangerous living conditions for millions of Hoosiers.
- Climate change has exacerbated the need to update policies on disconnection moratoriums, particularly during seasonal extremes.
- The lack of state energy affordability assistance perpetuates a status quo in which available crisis-focused funding is insufficient to meet Hoosiers' dire need.
- A dearth of public data complicates efforts to understand and add transparency to the current crisis.

Key Terms

Energy Burden – A metric that can be used to compare the affordability of a household's total energy consumption, inclusive of both electricity usage and other energy sources, calculated as the proportion of a consumer's income needed to pay their energy bills.

Disconnection – The termination of a household's utility service for non-payment. This can be done either in person or remotely depending upon the electricity provider and infrastructure they have.

Disconnection Notice – The written notice that a utility must provide to a customer before it disconnects a customer's service. This can be sent via mail, email, text, and/or phone.

Investor-Owned Utility – A utility company that is a corporation-owned by shareholders with responsibilities to increasing stock market performance.

Municipal Utility – A utility company that is owned and managed by cities and towns.

Rural Electric Membership Cooperatives – A member-owned non-profit entity that provides electricity to individuals in highly rural areas.

Indiana Utility Regulatory Commission (IURC) - Indiana's administrative agency that regulates certain utilities to ensure safe and reliable service at just and reasonable rates.

Energy Affordability: Murky and Expensive Waters

Americans rely on access to reliable and affordable energy for a variety of essential household services, from the electricity that powers appliances and lighting, to the fuels like natural gas that are used by many for heating and cooking. Yet rising energy bills have outpaced overall inflation and wages, leading to severe consequences.[i] A private-sector poll by GO Banking Rates found that nearly half (44 percent) of Americans are struggling to pay their utility bills with 35 percent of respondents citing electricity as the cost they are struggling with the most.[ii] When households fall behind on energy bills, they are often disconnected from service, which can lead to snowballing impacts of health harms, financial distress, evictions, and social isolation.

Residential electric utility costs are experiencing sharp increases in Indiana. In May 2024, the U.S. Energy Information Administration placed Indiana 29th in the nation for electric utility costs, less affordable than Midwest peers Ohio and Illinois.[iii] Estimates indicate that Hoosiers' electric utility costs have increased an astounding 33 percent between 2012 and 2022, a number that towers above the national average of 19 percent.[iv] Electricity is not the sole component of energy bundles, but its prominent role in household usage and budget make it important to understand and regulate. This report examines the impact of rising electric costs on Hoosier households and offers policy suggestions for federal and state lawmakers' consideration.

Defining and Understanding the Need for Affordable Electricity

Tracking and ensuring the affordability of necessities is critical because deprivation of these goods has more devastating effects than the deprivation of non-essential goods and services. Access to electricity is a vital need alongside medication, healthcare, housing, food, and water. The absence of access to these necessities deprives individuals of basic resources required to function; lack of electricity means individuals cannot adequately protect themselves from overheating or freezing in extreme temperatures, and prevents them from refrigerating necessary medication, preparing and storing food, and engaging with society in ways that fulfill their potential, such as completing homework, seeking a job, or paying bills.[v]

Heating and cooling homes accounts for nearly a third (31 percent) of electricity consumption, the largest combined need for consumers nationwide.[vi] This raises significant concerns about the well-being of the 13 percent of Hoosier households who experience at least one electric disconnection each year.[vii] Even for families who are not disconnected, the number of households considered "energy burdened," meaning households that spend over six percent of their income on energy costs, has increased.[viii] Disconnections and energy burden impact household well-being and exacerbate existing inequalities.

> **In Hoosiers' Own Words:**
>
> *"Considering electricity is a basic need for communities, [affordability] should outweigh extraordinarily high compensation for CEOs and company officers and disproportionate returns for investors and stockholders."*
>
> – **Madeline Harris,** Public Testimony at the March 12, 2024, Field Hearing held in IURC Cause Number 45990

Shining a Light on High Electricity Prices

High prices on electricity harm Hoosiers across income brackets, races, genders, abilities, ages, and places. While effects are felt disproportionately on individuals along existing lines of inequality, nobody wins from high electricity costs except investor-owned electric providers and their shareholders.

High Corporate Revenues at the Expense of Hoosiers

The five investor-owned providers that serve Indiana are: Indiana Michigan Power Company (I&M), AES Indiana, Northern Indiana Public Service Company (NIPSCO), Duke Energy Indiana (Duke), CenterPoint Energy Indiana (CenterPoint). While there are also 72 municipal electricity providers (accountable to voters rather than shareholders) and additional Rural Electric Membership Cooperatives (not-for-profit customer-owned electric utilities providing electricity to many rural Hoosiers), the majority of Indiana's households receive electric service from investor-owned providers.[ix] The difference between these providers is not just in ownership but also in cost: municipal-owned utilities were on average $35 cheaper per month from 2021 to 2023.[x] As a result, the largest critique of prices rests on the investor-owned utilities, which gain high profits from consumers while enjoying the protection of monopoly status in their respective service areas. The investor-owned utilities in Indiana earned an estimated $3.8 billion in revenue from residential electricity sales in 2022 alone.[xi] Subsequently, in 2023, these investor-owned utilities disconnected Hoosier households from power over 174,000 times while still providing their CEOs with an average compensation package of $18 million. In 2022, this amounted to 146 times the median wage of CenterPoint employees.[xii] Table 1 shows the CEO compensation for Indiana's investor-owned utilities in number of median employees' salaries and reflects the revenue reported from residential electricity sales.

Table 1: Investor-Owned Electric Parent-Corporation CEO Compensation and Subsidiary Revenues from Residential Electricity Sales

Provider	Number of Median Employees' Wages Equal to Parent CEO Compensation	Subsidiary Revenue from Residential Electricity Sales
AES Indiana	277	$688,487,000
CenterPoint	146	$242,159,800
Duke Energy	171	$1,429,517,100
Indiana Michigan Power	137	$872,376,000
NIPSCO	49	$592,426,100

Note: Calculations for the number of median employees' salaries necessary to equal CEO compensation for parent companies of the Indiana utility subsidiaries sourced from AFL-CIO's "Paywatch" database for 2022. Subsidiary revenue available from the U.S. Energy Information Administration's 2022 Utility Residential Sales Spreadsheet.

Hoosiers are stuck with a much less glamorous reality: hefty bills and dire consequences for failing to pay up. The impacts of energy unaffordability are experienced across income brackets, with Table 2 reflecting this using data from Hoosier respondents to the U.S. Energy Information Administration's 2020 Residential Energy Consumption Survey. Over one in ten (13.25 percent) respondents report having been disconnected at least once in the past year, with households in every income bracket experiencing disconnections. The average number of disconnects among low-income households is six times more than the number of high-income ($100,000 and more in income) households, yet even among high-income households, the disconnect rate is 5.62 percent, not zero. While this is likely influenced by other factors, such as household size, location, housing costs, and debt, the outcome remains the same: Hoosier households across income brackets get shut off from their electricity access even in summers, when temperatures have reached increasing highs. This is despite disconnection moratoriums for customers who qualify for and receive the federally funded Low Income Home Energy Assistance Program (LIHEAP) in the coldest parts of the winter, who will still be left to foot the bill for any electricity used during that period.

Table 2: Energy Experiences of Hoosiers by Income Bracket

Energy Experiences	Income of Respondents' Households:						
	Less than $20,000	$20,000 to $39,999	$40,000 to $59,999	$60,000 to $74,999	$75,000 to $99,999	$100,000 and Higher	Total Population
Average Energy Bill (Annually)	$1,341.27	$1,351.90	$1,378.59	$1,490.39	$1,621.58	$2,126.73	$1,584.87
Estimated % of Income Spent on Electricity	>7%	7%	3%	2%	2%	2%	-
% Disconnected	32.69%	16.67%	12.90%	8.93%	7.02%	5.62%	13.25%
% Homes at Unhealthy Temperature (Summer and Winter)	13.46%	11.90%	9.68%	7.14%	3.51%	3.37%	8.00%
% Households Forgoing Other Necessities for Electricity	48.08%	28.57%	17.74%	14.29%	12.28%	5.62%	20.00%

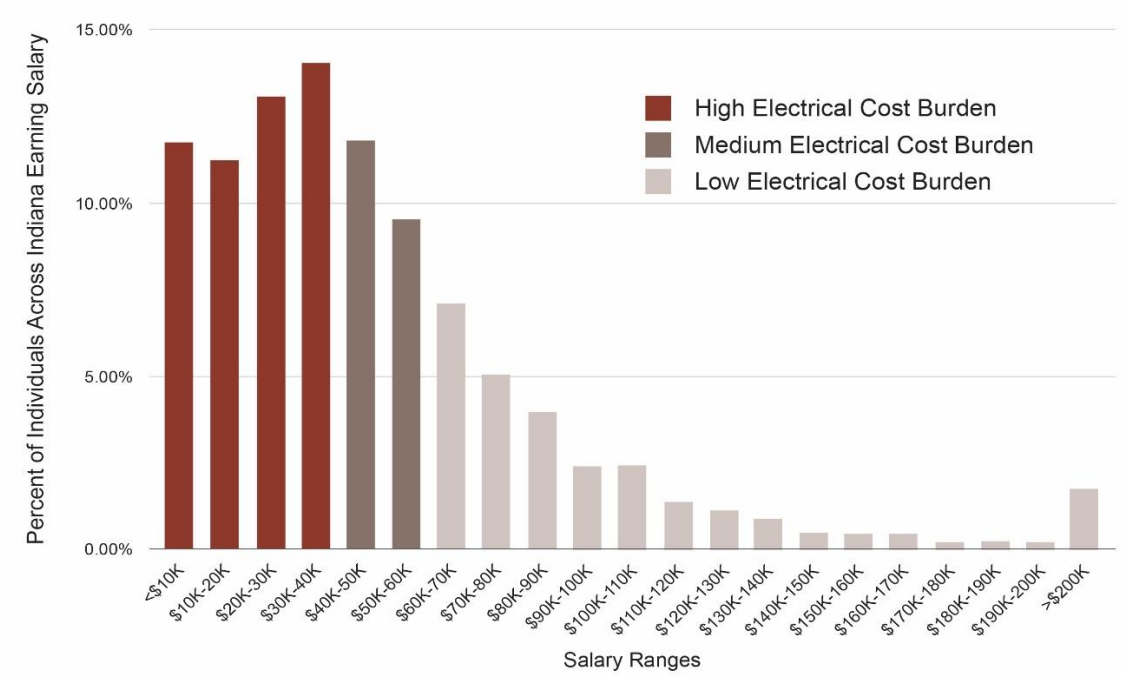
Notes: Data from the U.S. Energy Information Administration's Residential Energy Consumption Survey (RECS) of 2020, with sample size limited to respondents within Indiana. Binary variables were constructed to assess the energy experiences of individuals, meaning that individuals who reported multiple disconnections were counted the same as individuals who reported only one disconnection (the same being true for household temperature and forgoing other necessities). High estimates of the percentage of household income spent on electricity were constructed using the low estimate for income brackets divided by the cost of the electric bill. Household income estimates are not net, and thus do not have taxes subtracted.

Despite using less electricity and having smaller average electric bills, lower-income households are disproportionately burdened by rising electric bills. In addition to experiencing disconnections at higher rates, almost half (48 percent) of low-income Hoosier households earning below $20,000 annually report foregoing other necessities to pay their electric bill. This is nearly ten times the rate of those earning $100,000 or more. Even this highest income bracket, despite being less impacted, is still not left unscathed by high energy costs.

Table 2 presents electricity costs as a percentage of household income that is unscaled for the number of members or earners. However, single-income households present a particularly vulnerable subset of the population, both as a result of additional caring responsibilities when in a multi-member household or simply due to the mismatch between increased costs of living and lack of additional financial support.[xiii] Figure 1 reflects the percentage of income that single-income households would expect to pay for electricity, using a breakdown of individual incomes available from the American Community Survey (ACS) Public Use Microdata Sample (PUMS) 2022 estimates. Over 50 percent of households would pay at least seven percent of their income each year on electricity bills (not including gas, water, or other utilities) if they were single-income households. Single-income households earning $40,000 to $60,000 each year

(21.44 percent of the population) could expect to pay three percent of their annual income on electricity in a single-income household. Only individuals in a single-income household making over $60,000 would have a lower energy burden, spending around two percent of their income on electricity.

Figure 1: Indiana Mean Income Distribution and Single-Income Electricity Burden Level



Notes: Data from ACS-PUMS 2022 Estimates, with calculations of affordability made from average electric costs reported by respondents from the U.S. Energy Information Administration Residential Energy Consumption Survey (RECS) of 2020. Electricity cost burden is defined as the percentage of income spent on electricity using average bills for that income bracket. High electricity cost burden is defined as spending over 6 percent, while low electricity cost burden is defined as spending 2 percent of income or less on electricity, with medium cost burden encapsulates the households in between. Figure 1 burden estimates assume single-income household and do not account for households with multiple incomes.

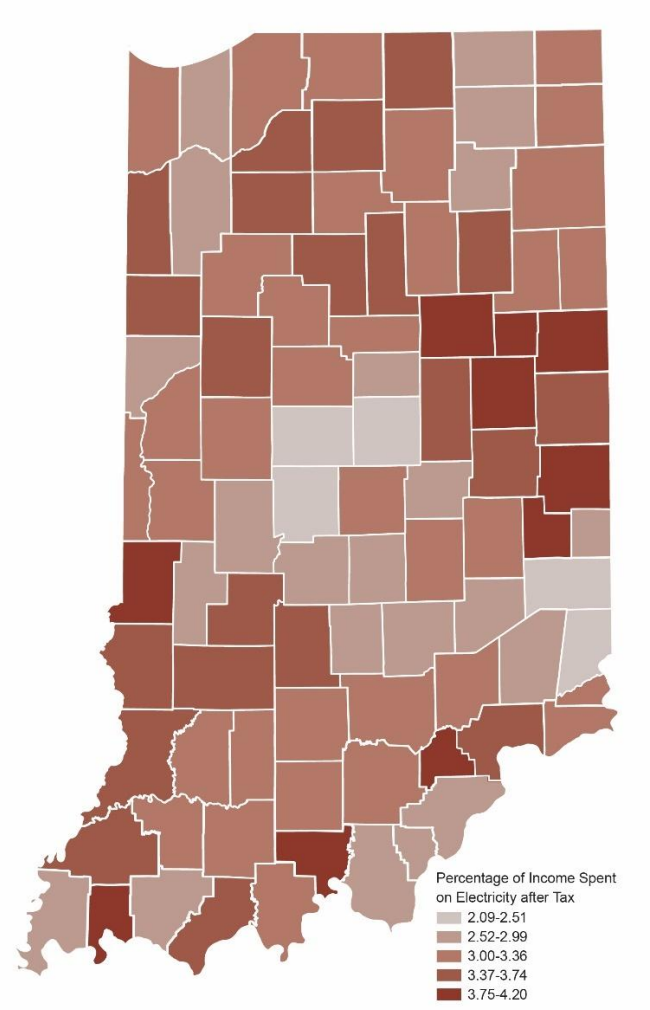
While Figure 1 attempts to assess the impact of energy costs on single-income households, it likely underestimates the current reality faced by such households as it uses data from 2020 to estimate electricity costs while salary data comes from 2022. The mismatch of years means that increased electricity costs from 2021 to 2024 are not reflected in the energy burden displayed in Table 2 or Figure 1. Instead, Hoosiers in single-income households making the incomes presented above likely pay higher in present electricity bills than is demonstrated, as electricity costs have outpaced wages in growth. Figure 1 also excludes taxes and additional costs associated with single-income households, such as solo-parenting or adult dependent care. Being a caregiver, for example, would also likely result in higher electricity costs due to the usage of medical equipment and medication storage devices, reflecting again how single-income households are particularly vulnerable to outsize electricity utility costs.

Geographic and Demographic Distribution of Outsize Electricity Costs

The burden of electricity cost on households also varies geographically. Figure 2 estimates costs by county when compared with median income of households in the same county to demonstrate this geographical variation. For this calculation, only investor-owned utilities are included, excluding cost estimates for the minority of Hoosiers who can access more affordable electricity through municipal-owned entities.

A clear trend in the map is the outsize burden of costs experienced by rural counties. Statewide high costs for electricity interact negatively with lower household incomes in rural areas to create this burden. Duke Energy (average bill of $1,743.36 per year) and Indiana Michigan Power (average bill of $1,815.06 per year) serve most of the counties indicated in red in Figure 2. While other costs, such as housing, vary by location, electric costs are largely similar across the state. Rural communities in Indiana disproportionately represent most of the top high heat risk areas highlighted by the U.S. Centers for Disease Control and Prevention's (CDC) Health and Heat Tracker, with these counties spending three percent or more of net median income on electricity.[xiv] Electricity affordability is not just a financial issue but has real life human impacts. Policies regulating electric access should consider the value of human life, and not just the chance to profit off households as present investor-owned utilities have treated it.

Figure 2: Map of Electricity Burden on Net Median Household Income



Notes: Author's calculations from median income data in the 2022 American Communities Survey, less taxes using tax rates available from the Indiana Department of Revenue and Federal Internal Revenue Service and are combined with average electric costs available from providers for 2021-2023 in the Residential Bill Surveys from the Indiana Utility Regulatory Commission. Averages for each electric supplier from 2021-2023 were used to account for increased gas prices during the July 2021-2022 billing cycle arising from conflict-based supply chain disruptions and to account for the billing cycles of July not lining up with annual income cycles. These averages were lined up with a map from the Indiana Energy Association that displays providers for each county. In the case of multiple providers in a county, the dominant provider was chosen to represent the average price. Shapefile for Indiana adapted from the Electric Service Territories (IURC). Mapfile available through IndianaMap GIO.

It is important to note that Figure 2 represents the percentage of income that the median or "middle" household pays. In other words, 50 percent of households would pay a higher percentage of their income for electricity, and these households would be more likely to be energy burdened given that electricity is only a part of the energy bundle. Income is not a random distribution across demographics, as lower incomes are more prevalent for female-headed households, households with individuals with disabilities, and households identifying with Black, American Indian, Biracial, or Hispanic individuals rather than white, male-headed, and households without individuals with disabilities.[xv] This pattern of unequal burden can be seen in Census data with increased average percentages of income used by these identity groups to pay for their electricity needed to survive. Table 3 reflects a breakdown of net median household income by race and ethnicity.

Table 3: Electricity Burden on Households by Race/Ethnicity

Race/Ethnicity	Median Income	Electricity Burden on Net Income (State)	Electricity Burden on Net Income (Investor-Owned)
White	$70,740	2.77%	2.99%
Black or African American	$42,067	4.43%	4.78%
American Indian and Alaska Native	$56,868	3.32%	3.59%
Asian	$78,490	2.50%	2.70%
Hispanic or Latino origin (of any race)	$59,341	3.19%	3.45%

Note: Estimates of median income derived from ACS 2022 5-year estimates. Electricity cost for the state based on average household cost reported by the Energy Administration Information for 2022. Electricity cost for investor-owned accounts unweighted based on population distribution in service areas due to lack of available data and derived based on an average of prices from July 2021 to July 2023 to account for variation in billing cycles of available data from the Indiana Utility Regulatory Commission.

Table 3 reflects how high electricity costs disproportionately harm households from Black/African American, Native American, and Hispanic communities. While White households spent an average of 2.77 percent of median income on electric bills, Black and African American households spent an average 4.43 percent, more than 1.5 times higher.

To account for municipal-owned utilities being cheaper than investor-owned utilities, and the fact that investor-owned utilities service most Hoosiers, second estimates of energy burden are provided using the average reported bills from July 2021 to July 2023 for the top five investor-owned energy utilities. These new calculations across race and ethnicity mark an increase in energy burden on households, with these estimates indicating that, after taxes, 4.78 percent of the median income of a Black or African American household is spent on electricity alone.

These percentages again represent the amount that earners of the median wage pay, meaning that 50 percent of households in each category pay a higher percentage of their annual income. Table 3 also does not account for additional risk factors that are relevant when considering energy burden and that also fall unequally along racial lines, including increased difficulties in accessing banking systems (necessary for the payment of electric bills) and biased treatment in healthcare settings (necessary for recovering from health conditions exacerbated by extreme temperatures).[xvi] This presents a further understatement of the likely impact of energy insecurity given other systematic issues.

In Hoosiers' Own Words*:*

"[My son] is four years old, and he's on a ventilator. He needs that to live to breathe. He cannot live without it. It has to be plugged in. It has to use electricity. He also has a feeding tube. He has many, many other pieces of medical equipment. They all require electricity…As a one-income family of five, we already face financial challenges in providing the necessary medical support and equipment for my son. The additional financial burden if this rate increase happens puts an immense strain on our already stretched budget."

– **Louise Johnson**, Public Testimony at the March 12, 2024, Field Hearing held in IURC Cause Number 45990

Case Studies of Electricity Burden

Examining specific counties offers additional insight into the dynamics between racial inequalities, income inequalities, the needs of rural residents, and the current profit prioritization of electric providers in Indiana. Table 4 reflects comparative statistics for the counties of Vigo, Vanderburg, Howard, and Lake, with an analysis presented on the subsequent page.

Table 4: County Case Studies' Characteristics of Electric Usage, Income, and Demographics of Race and Ethnicity

County Name	Vigo	Vanderburg	Howard	Lake
County Income Statistics				
Net Median Income	$44,572.10	$52,641.67	$52,279.86	$57,740.67
Poverty Rate	19.2%	15.6%	15.2%	14.7%
County Electric Information				
Electric Provider	Duke Energy	CenterPoint Energy	Duke Energy	NIPSCO
Average Percent of Net Median Income Spent on Electricity	3.9%	3.8%	3.3%	3.3%
CDC Heat and Health Risk Percentile (Maximum)	58.1%	95.1%	97.1%	92.9%
Percent Relying on Electricity for Heat (Renters)	60.6%	60.2%	40.2%	21.6%
Percent Relying on Electricity for Heat (Homeowners)	37.4%	25.1%	17.8%	5.7%
County Household Race and Ethnicity Demographics				
White	84.8%	82%	83.6%	82.9%
Black	6.9%	9.7%	7.7%	9.4%
Asian	2.0%	1.4%	1.3%	2.1%
Hispanic	3.0%	3.4%	3.3%	5.3%

Note: Poverty rate, race/ethnicity demographic information, and the percent of individuals relying on electricity as key sources of heat for rental and ownership properties derived from ACS 2022 5-year estimates. Net median income derived from ACS 2022 5-year estimates. Heat and Health Risk percentile from the U.S. Centers for Disease Control and Prevention Health and Heat Tracker and taken for the highest estimate from each county to reflect the risk faced within the county relative to the rest of the nation. Percent of net median income spent on electricity is calculated using average electricity bill for a given provider from July 2021 to July 2023 to account for variation in billing cycles of available data from the Indiana Utility Regulatory Commission.

The Indiana counties of Vigo, Vanderburg, Howard, and Lake all have a poverty rate above the state average of 12.9 percent. Estimated net median income is lowest in Vigo, which has the highest poverty rate of the four counties (19.2 percent and the highest estimated percentage of income paid for electricity at 3.9 percent. Excluding other utilities, this indicates that likely half of residents are energy burdened through the cost of electricity alone, and pay over six percent in total for the combined utilities. This estimate remains consistent across counties, with higher overall energy burdens expected for Howard and Lake counties, as fewer residents use electricity to heat their homes and thus would have higher expenditures on other energy sources.

Across all counties, renters are more likely than homeowners to pay for electricity to heat their homes. This suggests that renters will experience higher electric bills per square foot than homeowners. The rental-homeowner disparity in usage of electricity for heat also highlights the fact that many of those burdened with higher electric bills likely lack the assets that less burdened individuals have, including homeownership. Homeownership and housing quality also tie into historical inequalities along lines of race, ethnicity, and gender.

Examining heat risk in the years ahead, all counties selected as case studies have zip codes in the top 50th percentile for Heat and Health risk as defined by the Centers for Disease Control and Prevention (CDC) when compared to other zip codes nationwide. This ranking calculates factors such as available green space, heat temperatures, community infrastructure, healthcare accessibility, and residential demographics, which in combination is used to determine the risk of dangerous heat events. According to this risk assessment, each of these counties will likely experience events of dangerous heat in the coming years that local infrastructure, including housing and electricity, is not prepared for. State legislation to require disconnection moratoriums for periods of intense heat is an urgent need in the face of the very real risk highlighted by the high Heat and Health percentile scores for these counties.

Community Impact in Their Own Words:

> **Vanderburgh County:**
>
> *"Charities throughout the City are being depleted as they try to help our residents cope with their utility bills. It is an amoral and perverted system in which charities are being drained in order to provide a guaranteed profit to a distant corporate monopoly."*
>
> **– Fred Mulfinger**, a member of the All Saints Council of the Society of Saint Vincent de Paul, Public Testimony at the March 12, 2024, Field Hearing held in IURC Cause Number 45990

Vanderburgh County:

"People are hurting. People are crying for help. People who have not had to ask for help even though they have a job have asked for help for assistance financially because of CenterPoint…This is dehumanizing for people."

– Sister Mary Rogers, a Daughter of Charity from Evansville in Vanderburg, Indiana, Public Testimony at the March 12, 2024, Field Hearing held in IURC Cause Number 45990

Vigo County:

"We are Republican and Democrat, black and white, rich and poor, and most of us just want to live healthy lives and be able to afford a decent home, quality food, and a little cushion just in case, but massive corporations like Duke insist on charging us astronomical rates for basic necessities while raking in profits beyond what most of us can even imagine."

– Emily TeKolste, Sister of Providence, Public Testimony at the June 4, 2024, Field Hearing held in IURC Cause 46038

Vigo County:

"I'm elderly. I pay $240 a month for electricity, and I'm -- Me and my daughter is the only one that lives there. I can't afford that. I'm on a fixed income. How do you think all these other people on Social Security is going to make it? They're going to do without lunch, dinner, supper. Some of them will have lights out before it's over with. They won't be able to afford it."

– Terry Hamilton, Public Testimony from June 4, 2024, Field Hearing held in IURC Cause 46038

The Impact of Unaffordable Electricity

Immediate Financial Harms to Households

Unaffordable electricity costs translate to two immediate impacts: first, consumers who cannot pay are forced into electric arrears, meaning that the account holder (and their household) is behind on payments and must make up the amount they owe in addition to any future bills to continue receiving services. They are also likely to incur late fees. The second of these impacts is disconnection, whereby after receiving written notice, account holders are shut off from their electric supply. Figures 3 and 4 demonstrate the percentage of accounts from each investor-owned utility in arrears and receiving disconnection notices, respectively, while Figure 5 reflects the number of disconnected households over time by electricity provider.

Figure 3: Percentage of Accounts in Arrears by Provider for 2023

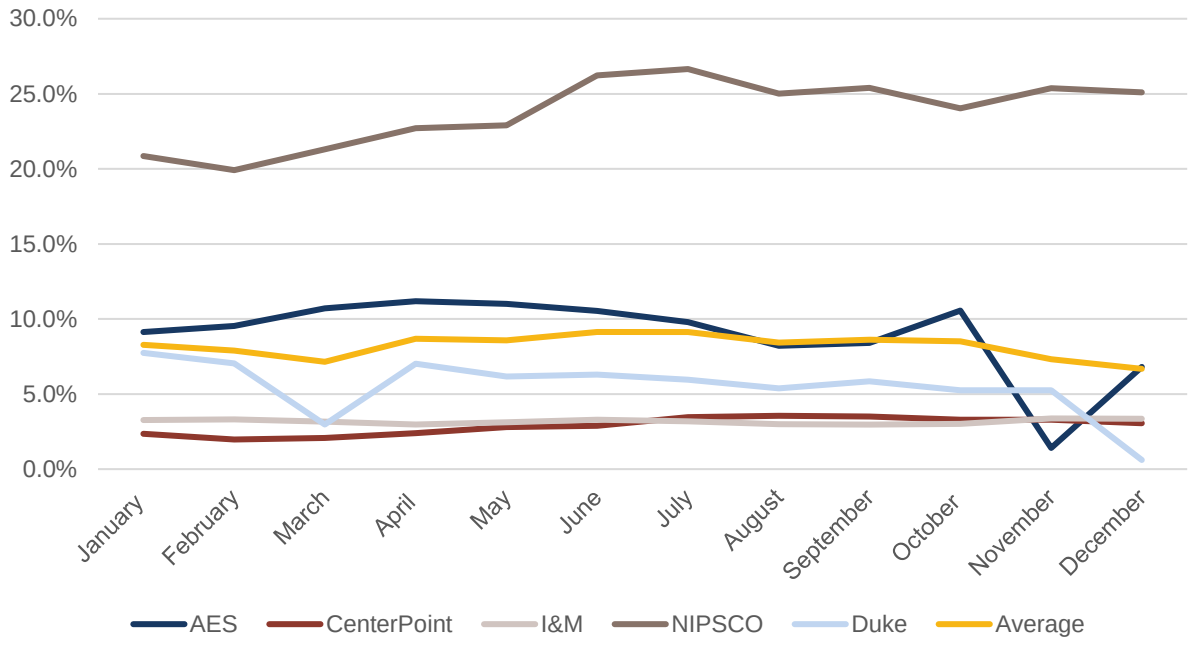


Figure 4: Percentage of Accounts Receiving Disconnection Notices by Provider for 2023

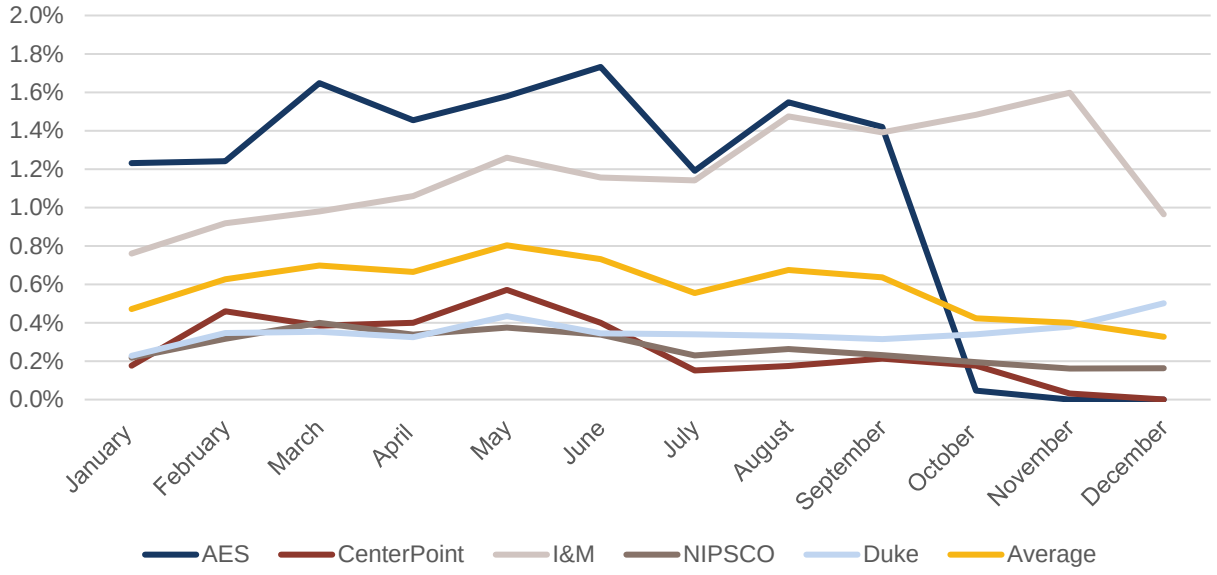
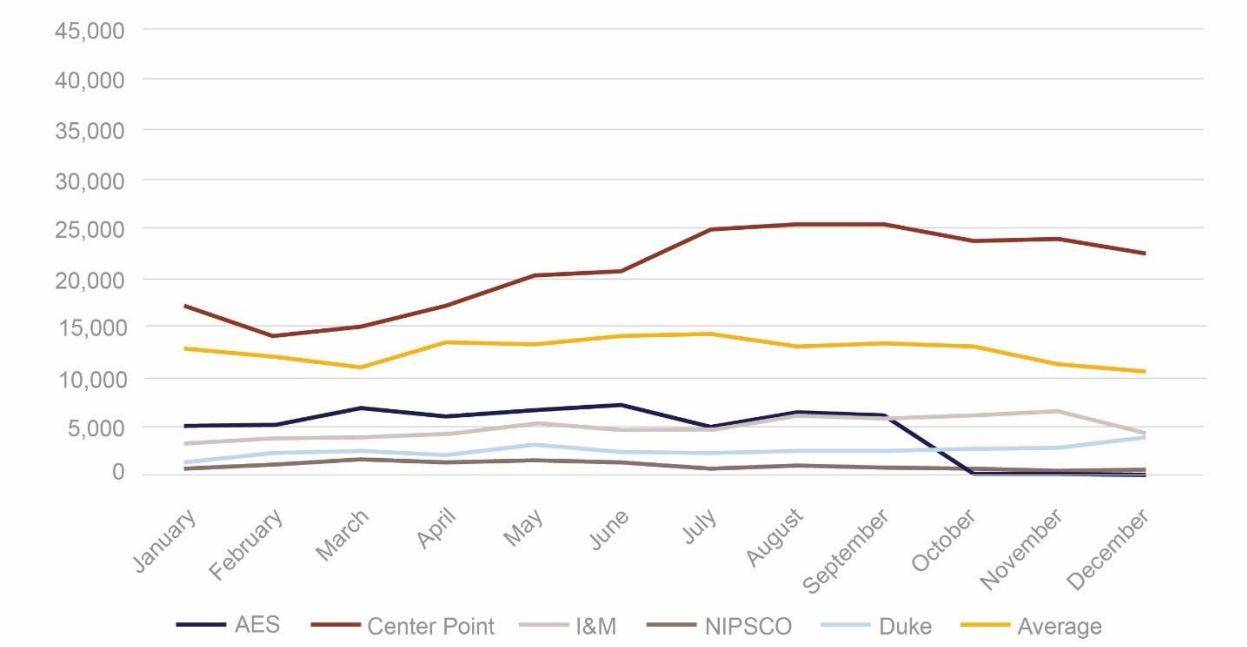


Figure 5: Number of Accounts Disconnected by Provider for 2023



Note: Data for Figures 4-6 from the Indiana Office of Utility Consumer Counselor's "Arrearage & Disconnection Data Reporting" for the year 2023. Percentages calculated as the number of accounts listed with arrears, having received disconnect notices, or being disconnected divided by the total number of electric accounts. AES is listed as having no disconnect notices starting in October 2023 and no disconnections starting in November 2023 due to a temporary disconnection suspension arising from the need to stabilize their new billing system. Winter moratorium months from December 1 through March 15 mean that qualified LIHEAP customers cannot be disconnected during that period.

In 2023, a total of 174,015 disconnections across the five investor-owned electric utilities happened statewide. This translates to as many as 11 percent of households with electric accounts at these investor-owned companies receiving disconnection notices during some months of the year, with 0.8 percent of all households then being cut-off from their electricity service. Arrears, which are when individuals are behind on electricity payments, impacted a minimum of 6.7 percent of households at investor-owned utilities, and a maximum of 9.1 percent of households in July. There are several possible explanations for this, including the high costs associated with cooling or fluctuating fuel costs, although currently there is not enough data to definitively determine a causal link. One provider AES, prior to enacting a temporary disconnection suspension in November 2023 to stabilize their new billing system, consistently ranked among the highest for companies sending disconnect notices and disconnecting Hoosier households. NIPSCO, however, consistently had the highest rate of accounts in arrears, indicative of how households struggle to pay.

Deciding What to Pay for When Costs are High

To mitigate the impact of costly electricity access, households often make painful decisions on how to spend their limited incomes. This is reflected most simply in the summary statistics presented in Table 2, with an average of one in five Hoosiers reporting that they had to forgo other necessities to pay for their electric bill. Documenting the impacts of cold weather on energy consumption and household expenditures, one study finds that while both low-income and high-income households increase expenditures to keep their dwellings warm, high-income households also increase expenditures on food by an average of $11 for a 10-degree decline in temperatures.[xvii] Conversely, low-income households decreased their expenditures on food by $9, suggesting a household reallocation away from food and towards energy consumption during times of extreme cold.[xviii] Another study notes that low-income households experiencing energy insecurity reduce caloric intake by 10 percent during winter months, largely due to increased heating costs during this time.[xix] The fact that these households must reallocate household resources is particularly important given that low-income households already spend higher proportions of their income on food and struggle more with food insecurity and accessing fresh foods.[xx] In other words, electricity costs appear to eat into households' food budgets in ways that are likely damaging to other facets of their lives.

Dangers from Alternative Energy Sources

Low-income households, particularly during winter, also report coping behaviors that include alternative measures for adequately heating or cooling a house–or simply not doing so at all.[xxi] Examining metrics of deprivation for households foregoing a level of home temperature adjustment in either summer or winter reveals an “energy equity gap” whereby households with more income keep temperatures at more comfortable temperatures, while their low-income counterparts do not.[xxii] This gap has been documented in Arizona, where low-income residents let temperatures rise between four and seven degrees higher than high-income households before even turning on the air conditioning.[xxiii] While such a strategy may save money in the short run, it poses health risks in the longer term from heat exposure including heat stroke, cardiovascular harms, and other heat-related diseases.[xxiv]

Just as heat is tolerated at uncomfortable and even dangerous levels in the summer to save money, so too do low-income households cope during the winter by living in unhealthily frigid conditions.[xxv] Those households are also more likely to cope through less healthy and unsafe but cheaper heating alternatives, including using space heaters or ovens as heat sources.[xxvi] These insufficient means of warmth often pose hazards and health risks of their own due to the potential for carbon monoxide poisoning or fire risks.[xxvii] However, many low-income Hoosier households often exhaust other financing options, including short-term loans, to pay for heat when required.[xxviii] In part, housing issues exacerbate the problem, given that low-income households are more likely to be living in housing with hazards such as dampness, mold, or insufficient weatherization, all of which are worsened during winter months and storms.[xxix]

Physical and Mental Health Harms

The combination of shifting consumption away from other necessities, living in uncomfortable or unsafe temperatures, and the psychological stress reported by respondents experiencing energy insecurity leads to decreased physical and mental health outcomes. Individuals unable to live in a warm home for the winter are 49 percent more likely than their counterparts to report hypertension, depression, and/or anxiety.[xxx] Reduced sleep and heightened stress levels are the likely culprits behind cardiovascular and mental health declines among individuals who struggle to afford energy.[xxxi] At the same time, increased rates of asthma and respiratory distress have also been found in households experiencing energy insecurity, likely because of respiratory distress during prolonged exposure to extreme temperatures and worse indoor air quality.[xxxii] Each of these causal relationships remains robust when using public health models that control for demographic and income characteristics.[xxxiii]

Children in households experiencing energy poverty are particularly vulnerable, with increased risks of experiencing developmental delays and hospitalizations as a result.[xxxiv] Households with children, as well as those with elderly individuals or individuals with a pre-existing health condition, are more likely to engage in risky heating behavior to try and mitigate the impacts of the cold during winter or to seek out risky financial products such as predatory loans that may ultimately harm the household's immediate and long-term financial wellbeing.[xxxv] Healthcare costs because of electric instability likely further exacerbate economic distress experienced by households, ultimately creating a downward financial spiral.

Hoosiers in Their Own Words:

> *"What [electric companies are] willing to take is food from my table and gas from my tank because that's where the money's going to come from if I have to pay extra each month for electricity just for something that should be right."*
>
> **– Andrew Martin,** Veteran, Public Testimony at the March 12, 2024, Field Hearing held in IURC Cause Number 46038

"*My husband and I are retired teachers. We live in a 100-year old house. We have done some things to make it more efficient. We've had the energy study done. We work hard to manage our bills. One of the ways we do this is to put aside money during the summer when the bills are lower typically. We air condition very, very sparingly so that we have enough money to pay for our bills during the higher billing months in the winter. We keep our thermostat at 64 or 65 in the winter. We are nearly 75 years old, and every single night this winter, we turned our furnace off. We turned our furnace off every single night last winter in order to keep our bills down.*"

– Barbara Rodenberg, Public Testimony at the June 4, 2024, Field Hearing held in IURC Cause Number 45990

"*There are days -- months where they are deciding if they're going to pay for their oxygen or their CenterPoint bill. There are months where they are deciding if they're going to pay for groceries or their CenterPoint bill. There are months where they have to decide if I am going to pay for my Eliquis blood thinner or my CenterPoint bill. Choosing between electric and a blood thinner puts an individual at risk of rehospitalization which increases their medical costs which then starts them on this revolving door of health versus home. People heal better at home, but how can they do that when home has become too expensive to maintain?*"

– Brittney Short, licensed social worker, Public Testimony at the March 12, 2024, Field Hearing held in IURC Cause Number 45990

"What good is it to make one of the most vulnerable groups, the elderly, of which there are a large and growing number in Vigo County, choose between being able to afford their medicine and the electricity they have to have to keep it usable? Will Duke shareholders face hunger, poverty, or death if they don't get this rate increase? Absolutely not, but members of my community will."

– Whitney Boyce in Public Testimony at the June 4, 2024, Field Hearing held in IURC Cause Number 46038

"When we moved...we were in for a surprise how much a total electric home costs. So, we cut back as much as possible. We didn't turn on our air until it got above 80 for several days and got too hot in the house; so, we just now started getting our air conditioning."

– Ruth Sluder in Public Testimony at the June 4, 2024, Field Hearing held in IURC Cause Number 46038

How Climate Change Increases the Need for Policy Intervention

Climate change intersects with how electricity insecurity threatens households, further clarifying the need for additional regulation within the policy sphere. Researchers examining the intersection between energy and human well-being emphasize the increased urgency around regulations that will ultimately save lives and prevent household economic collapse. Climate change creates greater uncertainty and extremes within weather patterns, leaving low-income households in an even more vulnerable position.[xxxvi]

In Indiana, costs associated with climate change are projected to increase in the coming years as a combination of severe weather patterns, shorter growing seasons, and more extreme temperatures push the state's infrastructure and economy in new ways. In Midwest neighbor Illinois, residential electricity costs are projected to increase by an average of 7.7 percent based on increased demand due to erratic weather and not accounting for electric utility rate increases.[xxxvii] This is concerning, as within the past year alone (2023 to 2024), three of Indiana's investor-owned utilities—CenterPoint, Duke, and NIPSCO—have petitioned the Indiana Utility Regulatory Commission for rate increases of that would cost consumers an average of $47, $42, and $8 per month respectively.[xxxviii] With usage and costs of electricity projected to increase, this problem, without intervention, will spiral to deadly magnitudes.

Driven by climate change and lack of infrastructure, the number of temperature-related deaths in Indiana may double by 2050, in part because of the many Hoosiers who lack reliable and affordable temperature regulation options for their home.[xxxix] Electricity is also a non-linear cost when associated with rising temperatures: to keep an inside temperature of 75 degrees when it is 90 degrees outside requires 125 percent more energy consumption than if it were 85 degrees outside, escalating the cost of electricity required to keep cool in the face of more dramatic climate swings.[xl] Increasing temperatures make it harder for air conditioning systems to perform efficiently, particularly older models, which degrade in efficiency over time and cost households precious electricity.[xli] Given that many low-income individuals cannot afford or have access to new air conditioning equipment, this also further exacerbates energy inequalities and outsized electric costs for those who cannot afford it most.[xlii] Creating policies for affordable electricity thus becomes an imperative aim to both prevent loss of life and invest in equitable sustainability in this uncertain era of weather and climate patterns.

The Inadequacy of Current Policies and Programs

Statewide data and deep dives into particular counties show the same reality: energy costs are increasingly burdensome and this has dire consequences for Hoosiers. We turn our attention now to the existing policies and programs intended to support Hoosiers experiencing high energy burdens to examine their adequacy.

Stretched Thin: The Low-Income Home Energy Assistance Program

Federal affordability programs have struggled to bridge the gap between low-income families and high-cost electric bills, particularly given the lack of robust state and utility affordability programs across the nation. The Low-Income Home Energy Assistance Program (LIHEAP) is a federal assistance program established in 1981 to support low-income individuals in paying energy bills, in addition to offering weatherization assistance. In Indiana, an estimated 74 percent of its allocated LIHEAP budget goes towards heating crisis assistance.[xliii] LIHEAP serves approximately 109,750 Hoosier households each year**,** yet these households comprise only 16 percent of those who qualify as per the income requirement of earning less than 60 percent of the state median income (SMI).[xliv]

That means 84 percent of the state's households who qualify for LIHEAP do not receive it. This should be a warning sign to both federal and state policymakers as to the need for legislative action. Worse still, however, is the unrealistic expectation that earning over 60 percent of the SMI is sufficient for energy costs, as the threshold only includes individuals making less than $29,755 per year, or families of four making below $57,223. As shown in Figure 1, $60,000 earning households still spend around 3 percent of their income on electricity alone, a number that rises to 7 percent for households earning $40,000, households that still need assistance even though they are technically above the cutoff line for federal programs. This need is reinforced by other metrics of necessary income to survive in Indiana, such as the Self Sufficiency Standard (SSS), which recognizes that while 11 percent of working-age Hoosier households are in poverty, 27 percent fall below the SSS, meaning they do not make enough to exist at the most basic level without public or private support.[xlv] The high costs of electricity play a large role in this, as there is minimal support for even households who are critically struggling, let alone those at the margins who must make difficult choices on what basic needs to forgo to pay electricity bills.

Underfunded Utility-Operated Crisis Funding

Some of the investor-owned utilities make crisis funding available to Hoosiers in need. These funds are often one-off and time dependent sources of emergency relief. Not all utilities have crisis funding programs, and each program comes with different restrictions and qualifications, making it a patchwork system of relief for Hoosiers. Two semi-consistent programs, Neighbor to Neighbor (Indiana Michigan Power Company) and Power of Change (AES Indiana), will be examined here as case studies for program design and implementation lessons from which future programs could learn.

First, the utilities provided very limited funding from their parent companies to the charity endeavor. In its starting year, Indiana Michigan Power Company (I&M) contributed a mere $50,000 to their Neighbor to Neighbor fund (a mere 0.0057 percent of their $872,376,000 in revenue from residential electricity sales in 2022), while AES contributed $100,000 to their Power of Change launch (a slightly higher 0.0145 percent of their $688,487,000 in revenue from residential electricity sales in 2022). This clearly fails to meet the significant needs in respective communities.

Second, the design of the primary source of the programs' funding was also flawed. The utilities utilized opt-in funding structures, whereby individuals paying their electric bills must manually opt-in to round up their energy bill to the nearest dollar as a donation. This generates far less revenue than opt-out structures, which automatically enroll individuals in these small donations but allow for the ability to opt out from rounding up their bill to the nearest dollar. NIPSCO attempted to move forward with an opt-out structure, estimating that 75 percent of account holders would continue to round up and generate an annual $2 million in revenue. While the Indiana Utility Regulatory Commission ultimately refused to endorse this plan, even low estimates of customers rounding up their bills via this opt-out mechanism would have been significantly higher than that of Power of Change (in 2021, only 116 account holders opted in to contribute) and Neighbor to Neighbor (2018 to 2019 estimates indicate 37 to 225 account holders opted in to contribute). While low uptake is to be expected for opt-in programs, the exceptionally low participation in these programs also indicates poor marketing and advertising of the program to customers and other potential contributors. More fundamentally, basing energy access on the tipping behaviors of other energy consumers is a fundamentally flawed structure. It is already typical for Indiana electric customers to involuntarily fund items like economic development discounts to large corporations. The same should be explored to fund low-income electricity support programs, using existing revenues rather than seeking further rate hikes.

The present struggle to fund electricity crisis affordability programs within utilities leads to small windows of funding availability. When I&M's Neighbor to Neighbor soft-launched on April 8, 2019, it ran out of funding not even two months later in Mid-May. Once the program funds were replenished in October 2020, it saw an equally swift dry-up of funding due to severe need. The AES Power of Change program ran out of funds at a similar rate, with funds entirely drained before the halfway mark of the program's first year.

While limited data again hinders the capacity to assess these programs fully, the current Power of Change website touts having assisted 597 accounts with an average amount of $209.10. Given that AES had 432,686 accounts in April 2024,[xlvi] this means that the program helped only about 0.14 percent of all account holders. This indicates the program is drastically underperforming relative to what Hoosier households need.

Outside of the funding shortfalls, many factors likely hold back households in need from accessing this crisis assistance from Indiana Michigan's Neighbor to Neighbor or AES Indiana's Power of Change programs. Like with federal programs, utility-run crisis funds require income at or below 60 percent of the state median income (SMI), meaning that a one-person household would have to make below $29,755 annually to even consider applying for assistance. This overlooks individuals with debt but slightly higher-earning jobs, individuals who are energy-burdened but not below the threshold (as examined in Table 1 above), and individuals who might face sudden additional economic costs such as medical expenses.

After meeting the income requirement, it is then necessary for households to prove a "sincere effort of payment" by paying at least $75 (Neighbor to Neighbor) or $60 (Power of Change) towards their bill. For an individual with a disability relying on Supplemental Security Income in Indiana, this would be about 7.5 percent of their monthly income.

Time restrictions further limit individuals to one grant per year, wherein an application must be submitted within the open application window and before funds run out. This creates additional hurdles for households seeking support for energy costs. It also undermines the programs' effectiveness by assuming that individuals can time their financial crises to fall within a given portion of the year when applications are accepted, and funds are available. The single-use nature of funding also assumes that the one-time top up, of which up to $100 could be spent on a reconnection fee alone, will be enough to support families struggling with high electric utility costs.

Finally, while the existence of a crisis fund is better than not having one, it also glosses over the daily struggle of many Hoosiers on the cusp of a crisis. Exorbitant monthly energy costs exacerbate financial distress experienced by households and restrict their capacity for upward mobility. Even flexible repayment plans overlook the fact that most households cannot continue dedicating significant amounts of their monthly income to electricity. In addition to a crisis fund, electric providers and regulators should reexamine rates and affordability subsidies for non-crisis situations through the lens of equity, recognizing that a high electricity burden comes at a high human cost for Hoosiers across the state.

> **In Hoosiers' Own Words:**
>
> *"Duke's philanthropy has been mentioned here, but I would like to point out that that philanthropy comes at our expense [through high electricity costs]."*
>
> **– Mike Evans,** Public Testimony at the June 4, 2024, Field Hearing held in IURC Cause Number 46038

The Data Crisis in Electricity Provision and Support

In each of the above analyses, data was sourced from federal data gathering operations, including the American Community Surveys, Bureau of Labor Statistics, and U.S. Energy Administration Information; however, such data is ultimately insufficient to deeply understand the nuances of energy poverty in a world increasingly impacted by climate change.

During the pandemic, the Indiana Utility Regulatory Commission required regulated utilities to report basic affordability data, including data on disconnections for nonpayment and arrearages, which has extended, in part, through 2024 though with more limited data.[xlvii] However, such data was not aggregated with any demographic information or location.

There is a need for more detailed affordability data intersecting with household demographics (race, age, income, and disability status, to name a few). This information should also show the minimal support offered by electric service providers, the government, or other entities to provide a snapshot of the affordability data alongside information about how to access any available assistance. Given that electricity is a household necessity, the industry should not be allowed to operate within a black box; rather, it should be subject to reporting requirements that would increase opportunities to compare across utility service areas and understand how Hoosier households are impacted to better find assistance for households in need.

Increased data on assistance programs operated by electric utility companies (including AES' Power of Change and I&M's Neighbor to Neighbor) is also necessary to assess their strengths and areas for improvement. Currently, there is a lack of post-implementation assessment of the utilities' programs that would allow for robust evaluation and analysis of the shortfalls. Furthermore, these programs frequently run out of funding, yet it does not appear AES or I&M track unmet need (i.e. those customers who call in but do not receive assistance because funds are depleted). The lack of reflection prevents the state and advocates from improving support systems for those in need of crisis funding.

Policy Recommendations

As temperatures are expected to grow more extreme, household electricity prices are unlikely to fall, and the mortality of climate-related events is projected to rise, a variety of changes are needed in the electric utility sector around affordability and the transparency and accessibility of affordability data.

Expand Federal LIHEAP Funds:

Currently, only 16 percent of eligible Hoosier households receive LIHEAP; thus, the most immediate need is to expand federal program funding to ensure all eligible individuals can be covered. As discussed above, the marker of 60 percent of the SMI represents an outdated metric of poverty, with new alternatives such as the Self Sufficiency Standard[xlviii] or Massachusetts Institute of Technology Living Wage calculator[xlix] offering updated insights into financial resources necessary to live above survival. A secondary step of expansion would be redefining and expanding the LIHEAP income qualifications or offering a state-level program that would fill in the gaps. Finally, to ensure that all qualified households are able to receive this program, LIHEAP should automatically enroll eligible households through receipt of other government programs, including SNAP, WIC, and TANF.

State-Level Affordability Assistance:

The data that is available paints a clear picture of the need for state-level intervention. The state should cap payments on gas and electricity, particularly for those utilities with state-authorized monopoly service areas, to ensure that no household pays more than six percent of net annual income on their energy bills. There are two best practice ways in which to implement such a program: through a Percentage of Income Payment Plan (PIPP) or through tiered pricing systems, both done with automatic enrollment alongside other anti-poverty programs (including SNAP, TANF, etc.) to minimize administrative overhead. Our Midwest neighbor Ohio has been successfully implementing PIPPs for years for all customers at or below 175 percent of the FPL. While this threshold for assistance is too high for many struggling Hoosiers who make more than 175 percent of the Federal Poverty Level (FPL) but still cannot afford current electricity bills, it provides a sample model upon which Indiana could build. An alternative to PIPPs are tiered payment plans, where each household receives a reduction in their utility bill along different “tiers” of income, with the top tier of income receiving a zero percent reduction. This sliding scale approach effectively ensures a similar cap is placed on expenditures but also recognizes the need for assistance for low-income or financially precarious households who may earn more than traditional assistance caps and as a result fall through policy cracks. Funding for implementing either of these options could come from additional electricity and tax revenue generated by data processing centers seeking to open their doors in Indiana.

Expand Moratoriums on Disconnections during Extreme Temperatures:

Climate change has already arrived in Indiana, with a year of record temperatures, storms, and erratic weather. Continued greenhouse gas emissions mean that Indiana will experience more record-setting years in the future, along with a projected increase in heat-related illnesses and deaths. The state must establish guidelines to cease disconnections for nonpayment during heat waves. This will ensure that low-income Hoosiers are able to keep on necessary cooling

devices, and that such devices will be able to work in times of climate extremes. Additionally, while present guidelines on disconnection moratoriums during the winter season apply only to those who receive or have qualified and applied for government energy assistance[l], this is an insufficient threshold for providing lifesaving protections. As examined above, the current qualifications for energy assistance exclude many Hoosiers who still need support with skyrocketing electric bills. Protecting these individuals from utility service disconnections during harsh winters and heat waves in the summer will save lives, particularly when paired with additional affordability measures. Midwest states Illinois and Missouri already have such a disconnection moratorium for summers, as do other states including but not limited to Arizona, Georgia, Louisiana, Mississippi, Nevada, Oklahoma, Texas, and Wisconsin.

Increase Energy Assistance during Extreme Weather:

The state and utilities should collaborate to ensure that electricity during extreme weather events, including heat waves and cold snaps, will have subsidized rates for those who already pay high percentages of their income on energy. This would ensure that individuals do not refrain from using electricity when it is most necessary and that low-income households can keep on lifesaving utility service during weather crises.

Investor-Owned Crisis Funding:

While appreciated, existing crisis funds collected by investor-owned utilities are insufficient to address the severe need experienced by Hoosier households. Just as rate-payers for electricity pay into streetlight tariffs that fund public goods of streetlights, so too should tariffs contribute to increased accessibility of and funding towards electricity assistance programs, with the important caveat that these extra costs not arise at the expense of consumers.

Increase Data Access:

To fully understand the impacts of energy insecurity, it is necessary to have complete, detailed, and consistent data over time on residential arrearages, disconnections, uncollectible account write-offs, usage/bill cost, and intersection with anonymized demographic (race, gender, household type, zip code) and income data. This data should be made publicly available and provided monthly by each electric utility company to ensure robust information for future policy responses in a changing era of energy needs.

Increase Future Research on Effects of Energy Poverty:

Understudied areas for future research include the impact of energy costs on the ability to participate in remote learning environments or engage with the digital workforce, additional expenditures arising from food spoilage after disconnections, capacity to use lifesaving medical machines or to refrigerate medicine, and perception of social stigma and exclusion arising from energy insecurity. All these likely impacts have gone underexplored and warrant further investigation, particularly within the context of Indiana and the Midwest. Understanding these harms in greater detail allows for the building of future policy solutions.

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Works Cited

[i] U.S. Bureau of Labor Statistics (2024, June 12). *Consumer Price Index Summary.* https://www.bls.gov/news.release/cpi.nr0.htm

[ii] .Taylor, H., & Ray, A. (2024, June 23). *Nearly Half of Americans Struggle To Pay Their Utility Bills: 5 Ways To Save.* Go Banking Rates. https://www.gobankingrates.com/saving-money/home/why-your-utility-bills-have-been-so-high-and-tips-to-lower-them/

[iii] U.S. Energy Information Administration (2024, June 1*). Rankings: Average Retail Price of Electricity to Residential Sector, May 2024*. https://www.eia.gov/state/rankings/?sid=IN#series/31

[iv] Martin, R. (2023, September 06). *Indiana once had some of the cheapest electric bills. Not anymore*. State Affairs. https://stateaffairs.com/indiana/politics/utilities-electric-energy-bill-increase/

[v] Brady, D., & Burton, L. M. (Eds.). (2016). *The Oxford handbook of the social science of poverty*. Oxford University Press.

[vi] U.S. Energy Information Administration, *Residential Energy Consumption Survey*. https://www.eia.gov/energyexplained/use-of-energy/electricity-use-in-homes.php

[vii] Graff, M., Carley, S., Konisky, D. M., & Memmott, T. (2021). Which households are energy insecure? An empirical analysis of race, housing conditions, and energy burdens in the United States. *Energy Research & Social Science*, 79, 102-144.

[viii] Drehobl, A., Ross. L., & Ayala, R. (2020). How High Are Household Energy Burdens? *American Council for an Energy-Efficient Economy*. https://www.aceee.org/sites/default/files/pdfs/u2006.pdf.

[ix] Citizens Action Coalition (2024). *Indiana Energy Utility Background.* https://www.citact.org/campaign/indiana-energy-utility-background?__im-QbfVHsxz=3365620242971446584

[x] Indiana Utility Regulatory Commission (2023). *2023 Residential Bill Survey. https://www.in.gov/iurc/files/2023-Electric-Residential-Bill-Survey-Complete-1.pdf*

[xi] U.S. Energy Information Administration (2022). *2022 Utility Bundled Retail Sales – Residential*. https://www.eia.gov/electricity/sales_revenue_price/pdf/table_6.pdf

[xii] Energy Justice Lab (2023, December 31). *Utility Disconnections Dashboard. https://http-149-165-173-211-80.proxy-js2-iu.exosphere.app/*

[xiii] Kucklick, A., & Manzer, L. (2022). Overlooked & Undercounted: Hoosiers Struggling to Make Ends Meet. *Indiana Community Action Poverty Institute.* https://iiwfs.memberclicks.net/assets/docs/Self-Sufficiency/IN2016-2020_Demo_CA.pdf.

[xiv] U.S. Centers for Disease Control and Prevention. *Heat and Health Tracker.* https://ephtracking.cdc.gov/Applications/heatTracker/

[xv] Kucklick, A., & Manzer, L. (2022). Overlooked & Undercounted: Hoosiers Struggling to Make Ends Meet. *Indiana Community Action Poverty Institute*. https://iiwfs.memberclicks.net/assets/docs/Self-Sufficiency/IN2016-2020_Demo_CA.pdf.; National Women's Law Center (2023, November 1). *National Snapshot: Poverty among Women & Families in 2022.* https://nwlc.org/wp-content/uploads/2023/02/National-Snapshot-Poverty-Among-Women-Families-in-2022-1.pdf*;* Peter G. Peterson Foundation (2023, November 9). *Income and Wealth in the United States: An Overview of Recent Data*. https://www.pgpf.org/blog/2024/05/income-and-wealth-in-the-united-states-an-overview-of-recent-data.; Popkin, S.J., Hermans, A., Oneto, A.D., Farrell, L., Connery, M., & Cannington, A. (2022). People With Disabilities Living in the U.S. Face Urgent Barriers to Housing. *The Urban Institute.* https://www.urban.org/sites/default/files/2022-10/People%20with%20Disabilities%20Living%20in%20the%20US%20Face%20Urgent%20Barriers%20to%20Housing_0.pdf

[xvi] Broady, K., McComas, M., & Ouazad, A. (2021, November 2). *An analysis of financial institutions in Black-majority communities: Black borrowers and depositors face considerable challenges in accessing banking services.* Brookings Institute. https://www.brookings.edu/articles/an-analysis-of-financial-institutions-in-black-majority-communities-black-borrowers-and-depositors-face-considerable-challenges-in-accessing-banking-services/.; Gonzalez, D., Karpman, M., Kenney, G.M., & McDaniel, M. (2023, July 31). To What Extent Are Parents and Children Exposed to Bias and Unfair Treatment in Health Care? *The Urban Institute.* https://www.urban.org/research/publication/what-extent-are-parents-and-children-exposed-bias-and-unfair-treatment-health-care.

[xvii] Bhattacharya, J., DeLeire, T., Haider, S., & Currie, J. (2003). Heat or eat? Cold-weather shocks and nutrition in poor American families. *American Journal of Public Health*, *93*(7), 1149-1154.

[xviii] Bhattacharya, J., DeLeire, T., Haider, S., & Currie, J. (2003). Heat or eat? Cold-weather shocks and nutrition in poor American families. *American Journal of Public Health*, *93*(7), 1149-1154.

[xix] Hernández, D. (2013). Energy insecurity: A framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.

[xx] Lewis, M., Herron, L. M., Chatfield, M. D., Tan, R. C., Dale, A., Nash, S., & Lee, A. J. (2023). Healthy Food Prices Increased More Than the Prices of Unhealthy Options during the COVID-19 Pandemic and Concurrent Challenges to the Food System. *International Journal of Environmental Research and Public Health*, *20*(4), 3146. https://doi.org/10.3390/ijerph20043146.; Katre, A., & Raddatz, B. (2023). Low-Income Families' Direct Participation in Food-Systems Innovation to Promote Healthy Food Behaviors. *Nutrients*, *15*(5), 1271. https://doi.org/10.3390/nu15051271.

[xxi] Siegel, E. L., Lane, K., Yuan, A., Smalls-Mantey, L. A., Laird, J., Olson, C., & Hernández, D. (2024). Energy insecurity indicators associated with increased odds of respiratory, mental health, and cardiovascular conditions: Study examines energy insecurity and health conditions. *Health Affairs*, *43*(2), 260-268.

[xxii] Cong, S., Nock, D., Qiu, Y. L., & Xing, B. (2022). Unveiling hidden energy poverty using the energy equity gap. *Nature Communications*, *13*(1), 24-56.

[xxiii] Cong, S., Nock, D., Qiu, Y. L., & Xing, B. (2022). Unveiling hidden energy poverty using the energy equity gap. *Nature Communications*, *13*(1), 24-56.

[xxiv] Siegel, E. L., Lane, K., Yuan, A., Smalls-Mantey, L. A., Laird, J., Olson, C., & Hernández, D. (2024). Energy insecurity indicators associated with increased odds of respiratory, mental health, and cardiovascular conditions: Study examines energy insecurity and health conditions. *Health Affairs*, *43*(2), 260-268.; Bentley, R., Daniel, L., Li, Y., Baker, E., & Li, A. (2023). The effect of energy poverty on mental health, cardiovascular disease and respiratory health: a longitudinal analysis. *The Lancet Regional Health–Western Pacific*, *35*.

[xxv]Hernández, D. (2013). Energy insecurity: a framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.; Siegel, E. L., Lane, K., Yuan, A., Smalls-Mantey, L. A., Laird, J., Olson, C., & Hernández, D. (2024). Energy insecurity indicators associated with increased odds of respiratory, mental health, and cardiovascular conditions: Study examines energy insecurity and health conditions. *Health Affairs*, *43*(2), 260-268.

[xxvi] Carley, S., Graff, M., Konisky, D. M., & Memmott, T. (2022). Behavioral and financial coping strategies among energy-insecure households. *Proceedings of the National Academy of Sciences*, *119*(36), e2205356119.; Hernández, D. (2013). Energy insecurity: a framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.

[xxvii] Carley, S., Graff, M., Konisky, D. M., & Memmott, T. (2022). Behavioral and financial coping strategies among energy-insecure households. *Proceedings of the National Academy of Sciences*, *119*(36), e2205356119.

[xxviii] Carley, S., Graff, M., Konisky, D. M., & Memmott, T. (2022). Behavioral and financial coping strategies among energy-insecure households. *Proceedings of the National Academy of Sciences*, *119*(36), e2205356119.; Levy, R., & Sledge, J. (2012). A complex portrait: An examination of small-dollar credit consumers. *Center for Financial Services Innovation, Report*.

[xxix] Hernández, D. (2013). Energy insecurity: a framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.

[xxx] Bentley, R., Daniel, L., Li, Y., Baker, E., & Li, A. (2023). The effect of energy poverty on mental health, cardiovascular disease and respiratory health: a longitudinal analysis. *The Lancet Regional Health–Western Pacific*, *35*.

[xxxi] Bentley, R., Daniel, L., Li, Y., Baker, E., & Li, A. (2023). The effect of energy poverty on mental health, cardiovascular disease and respiratory health: a longitudinal analysis. *The Lancet Regional Health–Western Pacific*, *35*.; Siegel, E. L., Lane, K., Yuan, A., Smalls-Mantey, L. A., Laird, J., Olson, C., & Hernández, D. (2024). Energy insecurity indicators associated with increased odds of respiratory, mental health, and cardiovascular conditions: Study examines energy insecurity and health conditions. *Health Affairs*, *43*(2), 260-268.

[xxxii] Carley, S., Graff, M., Konisky, D. M., & Memmott, T. (2022). Behavioral and financial coping strategies among energy-insecure households. *Proceedings of the National Academy of Sciences*, *119*(36), e2205356119.; Hernández, D. (2013). Energy insecurity: a framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.

[xxxiii] Hernández, D. (2013). Energy insecurity: a framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.

[xxxiv] Hernández, D. (2013). Energy insecurity: a framework for understanding energy, the built environment, and health among vulnerable populations in the context of climate change. *American Journal of Public Health*, *103*(4), e32-e34.

[xxxv] Graff, M., Konisky, D. M., Carley, S., & Memmott, T. (2022). Climate change and energy insecurity: a growing need for policy intervention. *Environmental Justice, 15(2), 76-82.*

[xxxvi] Graff, M., Konisky, D. M., Carley, S., & Memmott, T. (2022). Climate change and energy insecurity: a growing need for policy intervention. *Environmental Justice, 15(2), 76-82.*

[xxxvii] Citizens' Utility Board. (2021). *The Impact of Climate Change on Future ComEd Electricity Demand and Costs: New Evidence from Advanced Metering Infrastructure Data.* Working Paper available at https://www.citizensutilityboard.org/wp-content/uploads/2021/06/Cost-of-Climate-Change-Paper.pdf

[xxxviii] Citizens Action Coalition (2024). *NIPSCO Gas Wants You To Pay $8 More Per Month On Your Natural Gas Bill!.* https://www.citact.org/nipsco-gas-45967.; Citizens Action Coalition (2024). *CenterPoint Electric wants you to pay an outrageous $47 MORE per month on your electric bill!* https://www.citact.org/cpt2024.; Citizens Action Coalition (2024). *Duke Energy Wants You To Pay An Egregious $42 MORE Per Month On Your Electric Bill so they can double down on burning coal.* https://www.citact.org/duke-rate-hike-2024.

[xxxix] Flaherty, M., Carley, S., & Konisky, D. M. (2020). Electric utility disconnection policy and vulnerable populations. *The Electricity Journal*, *33*(10), 106-859.; Widhalm, M., Hamlet, A. Byun, K., Robeson, S., Baldwin, M., Staten, P., Chiu, C., Coleman, J., Hall, B., Hoogewind, K., Huber, M., Kieu, C., Yoo, J., Dukes, J.S. (2018). *Indiana's Past & Future Climate: A Report from the Indiana Climate Change Impacts Assessment.* Purdue Climate Change Research Center, Purdue University. DOI:10.5703/1288284316634

[xl] Osaka, S. (2024, July 12). *Why your air conditioning bill is about to get even higher.* The Washington Post. https://www.washingtonpost.com/climate-solutions/2024/07/12/air-conditioning-efficiency-heat/

[xli] Fenaughty, K., Parker, D., & the Florida Solar Energy Center. (2018, August 17). *Evaluation of Air Conditioning Performance Degradation: Opportunities from Diagnostic Methods.* 2018 ACEEE Summer Study on Energy Efficiency in Buildings, Washington, D.C, United States. https://publications.energyresearch.ucf.edu/wp-content/uploads/2018/09/FSEC-PF-474-18.pdf

[xlii] Cardoza, J. E., Gronlund, C. J., Schott, J., Ziegler, T., Stone, B., & O'Neill, M. S. (2020). Heat-Related Illness Is Associated with Lack of Air Conditioning and Pre-Existing Health Problems in Detroit, Michigan, USA: A Community-Based Participatory Co-Analysis of Survey Data. *International Journal of Environmental Research and Public Health*, *17*(16), 5704. https://doi.org/10.3390/ijerph17165704

[xliii] National Energy & Utility Affordability Coalition. *Indiana LIHEAP FY 2022 State Profile*. https://neuac.org/wp-content/uploads/2023/12/FY2022IndianaProfile-508Compliant.pdf.

[xliv] National Energy & Utility Affordability Coalition. *Indiana LIHEAP FY 2022 State Profile*. https://neuac.org/wp-content/uploads/2023/12/FY2022IndianaProfile-508Compliant.pdf.

[xlv] Kucklick, A., & Manzer, L. (2022). Overlooked & Undercounted: Hoosiers Struggling to Make Ends Meet. *Indiana Community Action Poverty Institute.* https://iiwfs.memberclicks.net/assets/docs/Self-Sufficiency/IN2016-2020_Demo_CA.pdf.

[xlvi] Indiana Office of Utility Consumer Counselor (2024, August 8). *Arrearage & Disconnection Data Reporting.* https://www.in.gov/oucc/featured-topics/arrearage-and-disconnection-data-investigation/

[xlvii] Indiana Office of Utility Consumer Counselor (2024, August 8). *Arrearage & Disconnection Data Reporting.* https://www.in.gov/oucc/featured-topics/arrearage-and-disconnection-data-investigation/

[xlviii] Kucklick, A., & Manzer, L. (2022). Overlooked & Undercounted: Hoosiers Struggling to Make Ends Meet. *Indiana Community Action Poverty Institute.* https://iiwfs.memberclicks.net/assets/docs/Self-Sufficiency/IN2016-2020_Demo_CA.pdf.

[xlix] Glasmeier, A., and Massachusetts Institute of Technology (2024). *Living Wage Calculation for Indiana.* https://livingwage.mit.edu/states/18

[l] Indiana Office of Utility Consumer Counselor (2024). *Winter Disconnection Moratorium: Frequently Asked Questions.* https://www.in.gov/oucc/about-your-rates/winter-disconnection-moratorium-frequently-asked-questions/.