



VOTE SOLAR

COVID-19 and the UTILITY BILL DEBT CRISIS

COVID-19's public health and economic crises are already impacting our everyday lives: Since mid-March, 26 million U.S. households have lost their jobs,¹ and over 30 percent of households were not able to pay their rent in April 2020 due to economic disruption.² As families are encouraged to shelter in place, access to fundamental utilities like electricity, gas, water, and broadband are more critical than ever, but also less affordable. Emergency relief through the CARES Act does not replace regular income; many will need further assistance to keep the lights on. Compounding the issue, low-income and low-wealth households and families of color are simultaneously more likely to already pay more of their paycheck to their utility bills,³ more likely to be economically disrupted,⁴ and more likely to contract the disease.⁵ Addressing utility debt, disconnection and nonpayment is more critical than ever to ensure vulnerable families are able to stay safe, healthy, and economically secure.

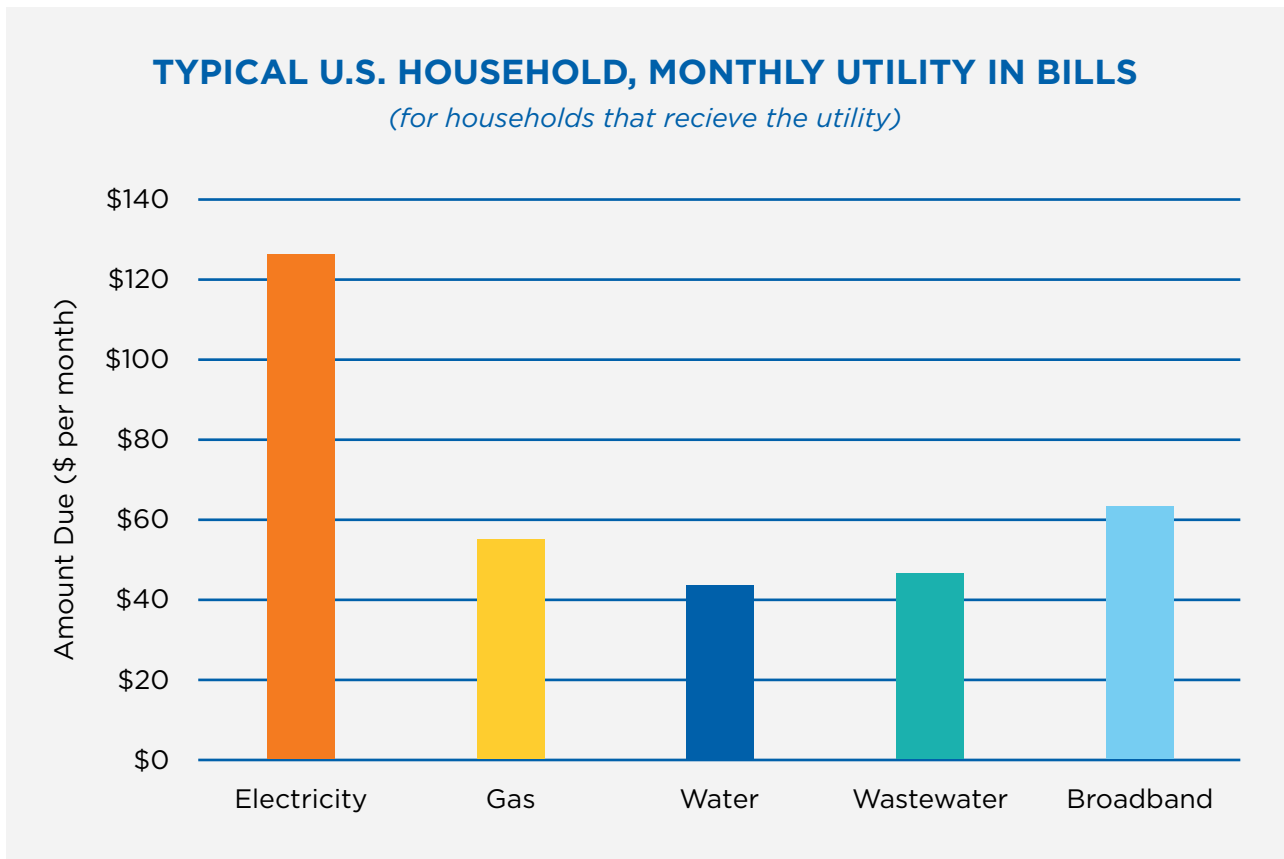
In many states, utility companies and lawmakers have worked quickly to ensure customers are not disconnected from their critical utilities, but these responses do not address recurring non-payment over the course of the crisis, or the mounting debt (called an "arrearage") that customers face. We can ensure that households are safe, healthy, and economically secure throughout this crisis by protecting consumers from these arrearages. In this white paper, we calculate the utility debt a typical household could accumulate over this crisis, and estimate the total need for debt relief for all impacted families across the country. We also provide some principles for addressing the current utility crisis, and for addressing the underlying causes of high utility burdens.

CONTACT

Tyler Fitch
Regulatory Manager
tyler@votesolar.org

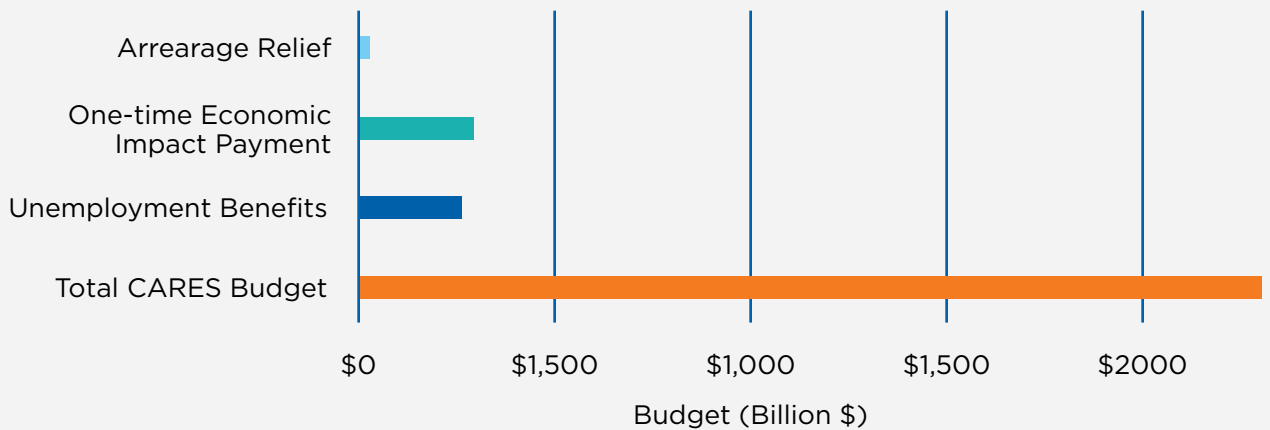
KEY FINDINGS

The *typical American household pays more than \$250 per month for critical utilities*, and over four months of non-payment, *average household debt to utilities would mount to almost \$1,100*.



Credible estimates of U.S. unemployment in this crisis have identified a peak at 20 percent of the workforce unemployed in mid-2020,⁶ and state unemployment agencies are already operating at capacity.⁷ We estimate that **24.6 million households** will be impacted at the height of this crisis. Assuming these households are unable to pay their utility bills for four months, we predict that **total arrearages for households over this period would accumulate to \$26 billion**. Based on total arrearages and an estimated cost of administering a federal program to provide relief, a utility arrearage relief program that provided households in need with support for four months would have a budget of **\$27.1 billion**. In the context of current federal relief efforts, this program would be only 1 percent of the total CARES Act budget.

TOTAL BUDGET, ARREARAGE RELIEF vs. CARES ACT PROGRAMS



Providing payments to households or utilities to mitigate arrearages represents a direct approach to solving an imminent crisis, but it does not address the fundamental utility affordability issues that pre-date this crisis and will be exacerbated by it. Over the long term, it's critical that we invest in long-term solutions for unaffordable utility bills and ensure that customers have opportunities to stay out of debt. A solution to this crisis must include a moratorium on disconnections and relief for utility debt. Utility companies should also report on the scale of arrearage and disconnection relief in their service areas, and waive late fees and negative credit reporting for a substantial period after the worst of the crisis. Finally, federal and state policymakers should ensure that we build back better by making strategic investments to reduce utility rates.

BACKGROUND

Even before the current crisis, as much as a third of households in the United States struggled to pay their energy bills.⁸ When customers are unable to pay their bills, they typically go into debt to the utility company, called an “arrearage.” When arrearages for a particular customer accumulate to a large amount or customers are unable to pay for several months, utilities disconnect their customers.

Economic disruption from the COVID-19 crisis promises to plunge households, and especially low-income households, further into precarity. Without a change to business-as-usual, unemployment and economic disruption could result in a wave of households disconnected from utility service at a critical time.

States and utilities have both responded to this humanitarian issue. As of April 16, 25 states and the District of Columbia have instituted moratoria on shutoffs or disconnections, at least for the duration of the acute COVID-19 crisis.⁹ Outside of state policy action, many electric utilities have voluntarily suspended disconnections in the short term.¹⁰

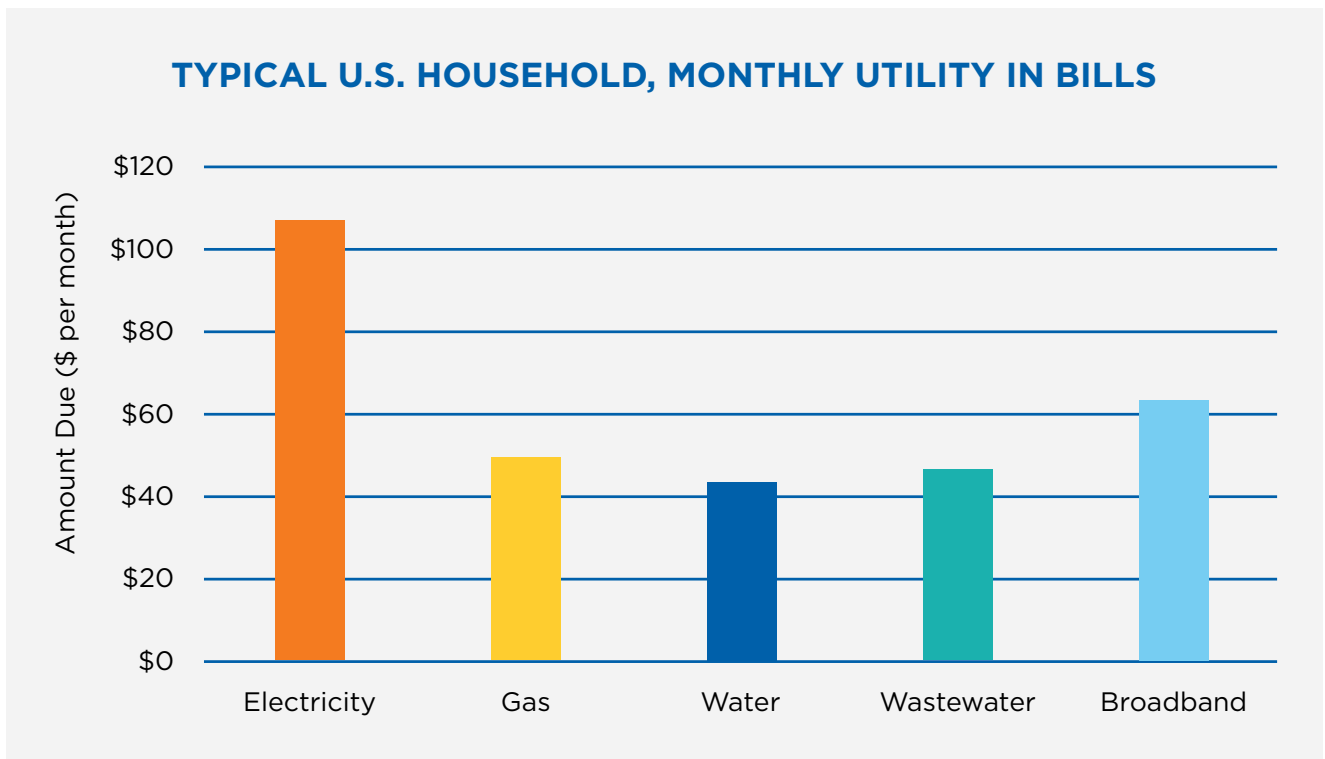
However, disconnection moratoria do not solve the problem; they only delay it. Throughout a disconnection moratorium, households who are contending with economic disruption may not be able to keep up with their bills, and as a result will continue to accumulate a balance on their account that they are unable to pay. Over the months covered by the moratorium, these customers are protected from disconnection, but they may face an unmanageable accumulation of bills and immediate, widespread shut-offs when the moratoria end.



HOW MUCH UTILITY DEBT DO WE EXPECT?

To estimate the size of oncoming utility debt we compiled national surveys that provide customers' monthly utility bills across electricity, gas, water and wastewater, and broadband. Then we looked at reasonable estimates of the magnitude of the economic disruption from COVID-19 to build a reasonable estimate of total utility non-payment. To account for the cost of administering a program that addresses these arrearages, we also include an administrative budget.

Most usage, cost, and household count data is taken from the U.S. Energy Information Administration 2015 Residential Energy Consumption Survey (RECS). Then, we account for the growth of households since 2015 using average growth estimates from the U.S. Census Bureau and inflation using the Consumer Price Index. The RECS does not track water and wastewater or broadband costs; for those, we used summary statistics from water utility trade organizations,¹¹ the 2018 National Digest of Education Statistics,¹² and an estimate of typical broadband costs from the Leichtman Research group.¹³ Electricity and gas payments are estimated for low-income customers, who are most likely to be impacted by economic disruption during the COVID-19 crisis.¹⁴



AVERAGE U.S. MONTHLY RESIDENTIAL PAYMENTS, BY UTILITY

UTILITY	HOUSEHOLDS ENROLLED <i>(Millions)</i>	AVERAGE MONTHLY PAYMENT <i>(\$/month)</i>
Electricity	123.0	\$106
Gas	71.4	\$47
Water	114.8	\$42
Wastewater	110.7	\$44
Broadband	103.4	\$62
	TOTAL	\$268*

We found that customers typically pay over \$250 per month to cover their utilities, or over \$3,200 per year. For 50 million low-income households in the U.S., this represents at least 10 percent of their total income--significantly greater than the 6 percent of a household's income that is commonly held as the threshold for a high energy burden.¹⁵ If any household were unable to pay utilities for four months due to economic disruption from COVID-19, they could accumulate arrears of almost \$1,100, before accounting for late payment fees or interest. Estimates of monthly utility bills by state are provided in the Appendix at the end of this paper.

There is inevitable uncertainty in estimating the length and depth of the economic crisis. The estimates used here are not intended to be an exact prediction of economic disruption, but an estimate of the magnitude of a reasonable response to the arrearage crisis. Our analysis estimates that the predicted 20 percent peak unemployment rate is roughly equivalent to the share of households who will be unable to pay their utility bills for four months, based on JP Morgan economic forecasting.¹⁶ This approach is validated by econometric studies that use unemployment as a useful proxy for estimating utility bill hardship.¹⁷ We estimate that 24.6 million households will require support. This analysis estimates coverage for four months as an initial benchmark, which is consistent with national legislation passed to support disrupted households with other economic impacts.¹⁸

Utility debt for 20 percent of U.S. households would accumulate to \$6.5 billion in total arrearages every month. Over four months, the total arrearage would be \$26 billion dollars. Electricity and water (including wastewater) arrearages would come to \$10.4 and \$7.7 billion over this period, respectively. For the electricity industry, this accumulated arrearage represents 5.5 percent of total residential revenues and 2.5 percent of total revenues from all sources.¹⁹ For both industries, the potential revenue shortfall for non-payment will likely coincide with a broader reduction in demand and revenues due to changing usage patterns.²⁰ Estimates of total arrearage accumulation at the state level are provided in the Appendix at the end of this report.

NATIONAL ARREARAGE RELIEF PROGRAM BUDGET

ARREARAGE RELIEF BY UTILITY IN BILLIONS	
Electricity	\$10.4
Gas	\$2.75
Water	\$3.9
Wastewater	\$3.8
Broadband	\$5.2
TOTAL ARREARAGE RELIEF	\$26.0
Administrative Costs	\$1.1
TOTAL PROGRAM BUDGET	\$27.1 billion

Any national program that might seek to reduce or eliminate these arrearages would also require staff and time to administer. This analysis estimates that administrative costs would comprise 4 percent of a total arrearage relief program budget, based on the comments of utility support program experts. Administrative costs add \$1.1 billion to the program budget, for a total of \$27.1 billion.

NEXT STEPS: PROTECTING FAMILIES AND BUILDING BACK BETTER

Policymakers should act swiftly to provide households with the protection they need to stay safe, healthy, and economically secure through this crisis. Supporting access to critical utilities through arrearage relief is a critical part of that protection. But short-term relief will not address the underlying drivers that already make utility bills unaffordable for one-third of Americans.²¹ Even as this economic crisis unfolds, utilities, advocates, and policymakers should look to put policies and programs in place that address the causes of utility unaffordability, both in terms of utility billing, rate design practices and the built environment. We outlined three time scales for action and point toward programs that can support families and businesses struggling to pay their utility bills during these periods. These interventions are intended for electric utilities specifically, but many of the same principles can be applied to other critical services.

SHORT TERM: DISCONNECTION PROTECTION AND DEBT RELIEF

Short-term solutions are policy changes with minimal obstacles to implementation that can respond to the urgent, short-term needs of households in crisis. Utilities and policymakers should put shutoff moratoria in place to ensure that households are not thrust into crisis. While many customers are already covered by a **shutoff moratorium**, the total scope and duration is inconsistent and unclear.²²

Policymakers should also enable **utility customer debt relief** to support customers over the most intense portion of the economic crisis. Debt relief, administered federally to utilities, would allow utilities the working cash they need to keep operating and relieve households in crisis.

MEDIUM TERM: CHANGING UTILITY PRACTICES

Medium-term solutions enabling an appropriate response begin to address the underlying causes of utility unaffordability. As the impact of the economic crisis continues, utilities can and should adjust their practices to minimize the burden on their customers.

As a baseline, utilities need **data reporting standards on disconnections and utility debt**, at a minimum, to ensure policymakers have the information they need to make informed decisions. This data is typically not accessible to decisionmakers because utilities are not obligated to report it or the obligated reporting may not be timely or accessible.²³ In the midst of this crisis, information on arrearages and shutoffs is critical for understanding the scope of the problem and getting people the support they need. Public service commissions and state governments in states like North Carolina²⁴ and Michigan²⁵ are already acting to ensure utilities report appropriate information and policymakers have the data they need to make decisions and support utility customers.

Second, utilities should **eliminate late fees and negative credit reporting** for customers who are behind on their bills, which often further exacerbate customers' burden. Right now, utility companies may respond to 30-day delays on payment by levying an additional fee on a customer's balance, or reporting a delinquent payment to the "Big Three" credit reporting agencies, which can in turn affect housing and employment applications and insurance rates.²⁶ These approaches only make the burden of paying off arrearages even greater. Utilities could strike a balance between supporting customers in making timely payments and managing total burden by setting rates according to customers' ability to pay (**percent-of-income payment plans**) or working with utility customers to set a reasonable timeline for repayment, according to their unique financial situation (**arrearage management plans**).²⁷ Arrearage management plans in Iowa, for example, set a timeline of a year or greater for utility customers to repay any accumulated balance.²⁸

Finally, electric utilities can and must equip their customers with the means to address the root causes of utility unaffordability by managing their usage and reducing their bills. Utilities can support customers by providing access to equipment to make their homes more efficient (**energy efficiency programs**), or empowering customers to reduce usage at peak times, saving money on their bill and for the whole system (**demand-side management programs**). As part of its demand-side management program, Steele-Waseca Cooperative Electric provides customers a free upgrade to their hot water heater when they subscribe to community solar. Together, the programmable water heater and community solar installation save money for customers and the cooperative as a whole.²⁹

LONG TERM: BUILDING BACK BETTER

Over the long-term, we need solutions that address the underlying factors that cause high utility burdens, while providing sustainable jobs and healthy communities. **Investing in the clean energy economy, and ensuring that low-income households and communities of color have access to distributed clean energy,** will provide the lower utility bills, healthier air, and economic growth that we will need to emerge from this crisis more resilient than we started. A clean energy economy will help us build back better.

The good news is there are already great examples out there to build on. Distributed, renewable energy has massive potential to not only reduce utility burdens for low-income customers, but mitigate climate & local air pollution and contribute to the clean energy economy at the same time. Rooftops of low-income households represent 42 percent of all potential residential rooftop solar. With access to supportive investments and financing, distributed solar can deliver bill savings for these households on day one.³⁰ When combined with energy efficiency and other distributed clean energy technologies, savings increase even more.³¹ Investing in a distributed, inclusive clean energy economy will provide communities the resilience to weather economic stresses through lower utility bills, as well as physical stresses from a changing climate. **Community solar and storage,** combined with programs allowing for community control and ownership, can provide local resiliency and income building opportunities. More such examples can be found in the Low Income Solar Policy Guide we developed in partnership with GRID Alternatives.³²

Any investment in an inclusive clean energy economy should also meaningfully include the voices of impacted communities. We recommend that as public and private decisionmakers weigh any of the programs above, they do so in **conversation with a wide array of stakeholders,** including frontline communities, and with an eye toward ensuring the most vulnerable benefit.

APPENDIX: STATE-LEVEL UTILITY BILL AND ARREARAGE ESTIMATES

To better understand how unpaid utility bills and arrearages will affect households across the country, we also estimated monthly utility bills, total economically disrupted households, and total accumulated arrearages at the state level. Expenditures data from EIA 2015 Residential Energy Consumption Survey was not available at a sufficient granularity for state-level estimation, and therefore estimations at the state level draw on other sources of household, price, consumption, and expenditure data. As a result, state-level estimates and the national estimates in this report may not match exactly. Nevertheless, we believe that the state-level estimates presented below are useful approximations of the utility bill debt crisis.

MONTHLY UTILITY BILLS, BY STATE

This analysis uses total residential customer and usage data and average price reporting from the U.S. Energy Information Administration for estimating monthly residential electricity³³ and natural gas³⁴ payments. This data is derived at an aggregate level from providers, rather than as a statistical sample from consumers; as such, the figures reported here are averages across the whole residential population over a year, rather than an estimate based on actual expenditure data. To account for relatively smaller usage by low-income households more likely to be at risk of economic disruption, these numbers were adjusted downward by the same factor used in the national-level analysis, derived from the 2015 Residential Energy Consumption Survey.

Wastewater bills are estimated based on National Association of Clean Water Agencies' Cost of Clean Water Index 2018 findings, which reported average residential wastewater bills on a regional basis.³⁵

At the time of publishing, state-level estimates on monthly water and broadband expenditures were not available. This analysis uses national average bill values for these utilities.

ECONOMICALLY DISRUPTED HOUSEHOLDS

We estimated the total number of economically disrupted households (i.e. households that would be unable to pay utility bills) by state using U.S. Department of Labor unemployment insurance claims data between March 14 and April 24,³⁶ and economic forecasting used in the national-level estimate from JP Morgan.³⁷ We project that the relative distribution of unemployment rates between states will remain consistent with rates reported on April 24, but that the average unemployment rate across all states will increase from 14% to 20% at the peak of the economic crisis. To calculate total impacted households, we multiplied the total number of households that pay for each utility by state by the state-specific economic disruption rate. Data on households specifically paying for water, wastewater, and broadband were not available at the time of publishing, so we assumed that the relative rate of subscription to electricity vs. subscription to broadband, water, and wastewater was consistent across states.

Table A-1, which shows average monthly utility expenditures and arrearages by state, is presented below. As a note, not every household is individually billed for each utility; apartment dwellers, for instance, may not pay a distinct water or wastewater bill. However, state-level and federal research indicates that a large percentage of households do pay for all listed utilities.

TABLE A-1. MONTHLY UTILITY BILLS, BY STATE

STATE	PROJECTED ECONOMIC DISRUPTION RATE	TOTAL HOUSEHOLDS DISRUPTED	SINGLE-HOUSEHOLD ARREARAGES		ALL DISRUPTED HOUSEHOLDS	
			PER MONTH (\$)	OVER 4 MONTHS (\$)	PER MONTH (\$, MILLIONS)	OVER 4 MONTHS (\$, MILLIONS)
Alaska	24%	68,945	\$374	\$1,497	\$20	\$79
Alabama	21%	459,087	\$330	\$1,322	\$124	\$495
Arkansas	16%	218,177	\$293	\$1,173	\$51	\$204
Arizona	16%	445,130	\$285	\$1,138	\$107	\$428
California	23%	3,166,901	\$264	\$1,055	\$730	\$2,919
Colorado	13%	299,478	\$240	\$961	\$62	\$247
Connecticut	16%	240,377	\$408	\$1,633	\$76	\$302
District of Columbia	21%	57,664	\$310	\$1,239	\$14	\$58
Delaware	20%	85,534	\$318	\$1,270	\$22	\$86
Florida	15%	1,416,978	\$297	\$1,189	\$335	\$1,340
Georgia	29%	1,256,377	\$338	\$1,354	\$335	\$1,341
Hawai'i	35%	1,51,892	\$348	\$1,393	\$40	\$159
Iowa	18%	2,49,683	\$293	\$1,172	\$62	\$248
Idaho	17%	122,894	\$274	\$1,097	\$28	\$112
Illinois	16%	824,078	\$288	\$1,150	\$201	\$804
Indiana	21%	589,616	\$298	\$1,190	\$148	\$591
Kansas	17%	216,107	\$313	\$1,253	\$58	\$231
Kentucky	33%	643,831	\$309	\$1,238	\$161	\$643
Louisiana	28%	593,180	\$283	\$1,131	\$140	\$560
Massachusetts	23%	641,218	\$389	\$1,555	\$200	\$801
Maryland	14%	334,950	\$329	\$1,314	\$90	\$359
Maine	20%	139,439	\$369	\$1,474	\$33	\$132
Michigan	32%	1,407,549	\$288	\$1,151	\$347	\$1,389
Minnesota	22%	527,897	\$286	\$1,145	\$126	\$504
Missouri	17%	476,658	\$319	\$1,275	\$124	\$497
Mississippi	17%	225,488	\$311	\$1,244	\$58	\$232
Montana	21%	105,611	\$251	\$1,003	\$22	\$87
North Carolina	17%	782,898	\$310	\$1,240	\$192	\$768
North Dakota	17%	65,307	\$271	\$1,083	\$14	\$57
Nebraska	12%	105,926	\$292	\$1,169	\$26	\$104
New Hampshire	25%	156,056	\$370	\$1,481	\$42	\$167
New Jersey	24%	865,233	\$297	\$1,189	\$222	\$889
New Mexico	15%	131,398	\$246	\$983	\$27	\$109
Nevada	30%	352,776	\$269	\$1,078	\$83	\$330
New York	20%	1,422,284	\$340	\$1,360	\$393	\$1,573
Ohio	22%	1,116,515	\$298	\$1,190	\$281	\$1,124
Oklahoma	17%	291,709	\$290	\$1,162	\$70	\$282
Oregon	15%	258,448	\$285	\$1,142	\$60	\$239
Pennsylvania	31%	1,664,976	\$327	\$1,306	\$438	\$1,751
Rhode Island	32%	141,315	\$380	\$1,522	\$43	\$172
South Carolina	20%	449,874	\$321	\$1,283	\$117	\$468
South Dakota	8%	32,525	\$273	\$1,091	\$7	\$29
Tennessee	15%	445,244	\$314	\$1,257	\$115	\$461
Texas	12%	1,389,521	\$295	\$1,179	\$340	\$1,360
Utah	10%	113,823	\$241	\$963	\$24	\$96
Virginia	15%	516,020	\$328	\$1,312	\$135	\$538
Vermont	20%	64,039	\$355	\$1,421	\$16	\$63
Washington	25%	754,462	\$289	\$1,156	\$172	\$687
Wisconsin	17%	460,918	\$271	\$1,084	\$105	\$420
West Virginia	16%	134,996	\$314	\$1,258	\$34	\$136
Wyoming	12%	32,108	\$258	\$1,034	\$7	\$28

ENDNOTES

- ¹ Bartash, J., (2020, April). "Jobless claims jump another 4.4 million--26 million Americans have lost their jobs to the coronavirus." MarketWatch. Retrieved at: <https://www.marketwatch.com/story/jobless-claims-jump-another-44-million-25-million-americans-have-lost-their-jobs-to-the-coronavirus-2020-04-23>.
- ² Parker, W., (2020, April). "Nearly a Third of U.S. Apartment Renters Didn't Pay April Rent." Wall Street Journal. Retrieved at: <https://www.wsj.com/articles/nearly-a-third-of-u-s-renters-didnt-pay-april-rent-11586340000>.
- ³ Mock, B., (2019, November). "Neighborhoods With More People of Color Pay Higher Energy Bills." Citylab. Retrieved at: <https://www.citylab.com/equity/2019/11/minority-utility-costs-burden-energy-discrimination-research/602452/>.
- ⁴ Ross, M., and Bateman, N., (2020, March). "COVID-19 puts America's low-wage workforce in an even worse position." The Brookings Institution. Retrieved at: <https://www.brookings.edu/blog/the-avenue/2020/03/19/covid-19-puts-americas-low-wage-workforce-in-an-even-worse-position/>.
- ⁵ Stafford, K., Hoyer, M., & Morrison, A., (2020, April). "Racial Toll of virus grows even starker as more data emerges." AP News. Retrieved at: <https://apnews.com/8a3430dd37e7c44290c7621f5af96d6b>.
- ⁶ National Rural Energy Cooperative Association (2020, April). Fact Sheet: Financial Impact of COVID-19 on Electric Cooperatives: \$7.4 Billion Hit on Operating Revenue and \$2.6 Billion in Unpaid Bills. Retrieved at: <https://www.electric.coop/wp-content/uploads/2020/04/Financial-Impact-of-Load-Loss-and-Unpaid-Bills-on-Electric-Cooperatives-042120.pdf>.
- ⁷ Brooks, K., (2020, March). "Millions wait for jobless pay as state agencies overwhelmed by claims." CBS News. Retrieved at: <https://www.cbsnews.com/news/unemployment-benefits-millions-wait-for-jobless-pay-as-state-agencies-seek-more-workers-from-stimulus/>.
- ⁸ U.S. Energy Information Administration (2018, September). One in three U.S. households face challenge in meeting energy needs. Retrieved at: <https://www.eia.gov/todayinenergy/detail.php?id=37072>.
- ⁹ National Association of Regulatory Utility Commissioners, (2020, April). State Response Tracker. Retrieved at: <https://www.naruc.org/compilation-of-covid-19-news-resources/state-response-tracker/>.
- ¹⁰ Pomerantz, D., (2020, April). "Caught in patchwork of policies and pledges, some utility customers may still be awaiting electricity restoration or racking up fees." Energy and Policy Institute. Retrieved at: <https://www.energyandpolicy.org/utility-coronavirus-disconnect-fees/>.
- ¹¹ American Water Works Association & Association of Metropolitan Water Agencies, (2020, April). The Financial Impact of the COVID-19 Crisis. Retrieved at: https://www.awwa.org/Portals/0/AWWA/Communications/AWWA-AMWA-COVID-Report_2020-04.pdf;
- National Association of Clean Water Agencies, (2019). Cost of Clean Water Index. Retrieved at: <https://www.nacwa.org/docs/default-source/news-publications/pub-5-index-1-web-final.pdf>.
- ¹² National Center of Education Statistics, (2018). Digest of Education Statistics. Retrieved at: https://nces.ed.gov/programs/digest/d18/tables/dt18_702.60.asp?current=yes.
- ¹³ Blumenthal, Eli (2018). Internet Bill Too High? Here's How to Save. USA Today. Retrieved at: <https://www.usatoday.com/story/money/personalfinance/budget-and-spending/2018/01/08/internet-bill-too-high-heres-how-save/429890001/>.
- ¹⁴ Hart, K., (2020, April). "The coronavirus pandemic threatens low-wage jobs." Axios. Retrieved at: <https://www.axios.com/coronavirus-low-wage-jobs-7897454f-427d-4e08-b319-28edb72c93e0.html>.
- ¹⁵ Drebohl, A., & Ross, L., (2016, April). Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities. American Council for an Energy Efficient Economy. Retrieved at: <https://www.aceee.org/sites/default/files/publications/researchreports/u1602.pdf>.
- *: Total payment is weighted by total number of households enrolled.
- ¹⁶ Parker, W.
- ¹⁷ Pilkauskas, N.V., Currie, J., Garfinkel, I., (2012, September). The Great Recession, Public Transfers, and Material Hardship. Social Service Review, 2012 September; 86(3): 401-427. Retrieved at: <https://www.ncbi.nlm.nih.gov/pubmed/24379487>

- ¹⁸ Luhby, T., (2020, March). “Stimulus bill offers \$600 a week to the unemployed for 4 months.” CNN. Retrieved at: <https://www.cnn.com/2020/03/25/politics/senate-stimulus-unemployment-benefits-coronavirus/index.html>.
- ¹⁹ From U.S. Energy Information Administration, Electric Power Annual 2018. Retrieved at: <https://www.eia.gov/electricity/data/state/>.
- ²⁰ Walton, R., (2020, March). “Utilities beginning to see the load impacts of COVID-19 as economic shutdown widens.” Utility Dive. Retrieved at: <https://www.utilitydive.com/news/utilities-are-beginning-to-see-the-load-impacts-of-covid-19-as-economic-sh/574632/>.
- ²¹ U.S. Energy Information Administration, (2018, September).
- ²² Pomerantz, D.
- ²³ Kasper, M. (2020, April). “As DTE and Consumers Energy Appear to Ignore Industry Suspension Pledge, Michigan PSC Opens Coronavirus Docket and Orders Utilities To Report Current Disconnect Data.” Energy and Policy Institute. Retrieved at: <https://www.energyandpolicy.org/michigan-psc-opens-coronavirus-docket-orders-current-disconnect-data/>.
- ²⁴ North Carolina Executive Order No. 124. Retrieved at: <https://governor.nc.gov/documents/executive-order-no-124>.
- ²⁵ Michigan Public Service Commission (2020, April). Order. Case No. U-20757. Retrieved at: <https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t000000BRC2YAAX>.
- ²⁶ National Consumer Law Center (2012). Full Utility Credit Reporting: Risks to Low-Income Customers. Retrieved at: https://www.nclc.org/images/pdf/energy_utility_telecom/consumer_protection_and_regulatory_issues/ib_risks_of_full_utility_credit_reporting_july2012.pdf.
- ²⁷ The National Consumer Law Center is leading the country in providing best practices for protecting customers over the course of the coronavirus crisis (https://www.nclc.org/images/pdf/special_projects/covid-19/IB_What_States_Can_Do_Coronavirus_Uilities.pdf) and creating a template for arrearage management programs (https://www.nclc.org/images/pdf/special_projects/covid-19/WP_Program_Design_Template.pdf).
- ²⁸ Iowa Legal Aid. Avoiding Gas and Electric Shutoff - Payment Plans and Other Remedies. Retrieved at: <https://www.iowalegalaid.org/resource/avoiding-gas-and-electric-shutoff-payment-pla>.
- ²⁹ Walton, R. (2015, February). “Why one electric co-op is offering their solar customers free water heaters.” UtilityDive. Retrieved at: <https://www.utilitydive.com/news/why-one-electric-co-op-is-offering-their-solar-customers-free-water-heaters/362898/>.
- ³⁰ Sigrin, B., & Mooney, M. (2018, April). Rooftop Solar Technical Potential for Low-to-Moderate Income Households in the United States. National Renewable Energy Lab. Retrieved at: <https://www.nrel.gov/docs/fy18osti/70901.pdf>
- ³¹ For example, the Connecticut Green Bank’s partnership with PosiGen, pairing solar with energy efficiency for participating low- and moderate-income households, yields an average savings of \$700 per year. Connecticut’s experience shows how inclusive financing coupled with smart deployment of distributed clean energy can effectively reduce energy burden and result in greater clean energy parity. See <https://cesa.org/assets/Connecticuts-Solar-Program-for-LMI-Homeowners-Fact-Sheet.pdf>
- ³² Vote Solar and GRID Alternatives. Low-Income Solar Policy Guide. Retrieved at: <https://www.lowincomesolar.org/>.
- ³³ U.S. Energy Information Administration (2018). Detailed State Data. Retrieved at: <https://www.eia.gov/electricity/data/state/>.
- ³⁴ U.S. Energy Information Administration (2018). Natural Gas Data. Retrieved at: <https://www.eia.gov/naturalgas/>.
- ³⁵ National Association of Clean Water Agencies (2019). Cost of Clean Water Index. Retrieved at: <https://www.nacwa.org/docs/default-source/news-publications/pub-5-index-1-web-final.pdf>
- ³⁶ U.S. Department of Labor unemployment claims data available at: <https://oui.doleta.gov/unemploy/claims.asp>
- ³⁷ National Rural Energy Cooperative Association (2020, April). Fact Sheet: Financial Impact of COVID-19 on Electric Cooperatives: \$7.4 Billion Hit on Operating Revenue and \$2.6 Billion in Unpaid Bills. Retrieved at: <https://www.electric.coop/wp-content/uploads/2020/04/Financial-Impact-of-Load-Loss-and-Unpaid-Bills-on-Electric-Cooperatives-042120.pdf>.