Climate Strains and the Safety Net

Andrew Hammond[*]

ABSTRACT: As the climate crisis deepens, environmental pressures like extreme heat and worsening air quality are steadily degrading daily life in the United States. Distinct from climate shocks like hurricanes or wildfires, these climate strains impact all Americans, but do so unequally, depending on several factors, including people's geographic location, age, and whether they have the resources to adapt. These climate strains intensify inequalities in education, employment, health, and housing—as the poorest Americans bear the brunt of rising temperatures, declining air quality, and other climate strains.

After defining climate strains and showing their uneven effects on vulnerable populations, the Article critiques federal and state subsidies, investments, and regulations that inadequately address climate strains. It shows how existing programs like the Low Income Home Energy Assistance Program ("LIHEAP") remain ill-equipped for the climate crisis due to their block grant funding and outdated focus on cold weather rather than extreme heat. Meanwhile, tax credits largely sidestep poor Americans by making green investments inaccessible to those who need them most. And regulatory efforts to protect households and workers from utility disconnections and workplace hazards have stalled at both the federal and state levels.

To address these problems, this Article proposes a blueprint for reforming welfare programs, tax credits, and regulations to better address climate strains. Its recommendations include prioritizing cooling assistance, providing climate-focused tax credits to low-income households, and strengthening regulations to protect against utility disconnections and unsafe working conditions during extreme weather. This reimagined safety net would more effectively

[*] Professor of Law & Harry T. Ice Faculty Fellow, Indiana University Maurer School of Law. This Article benefited from feedback on earlier drafts during faculty workshops at Cincinnati, Cornell, and Indiana as well as at the Administering a Democratic Political Economy Conference at Yale Law School, the Law and Inequality Colloquium at the University of Virginia School of Law, and the Administrative Fairness Lab at York Law School. For their feedback, I thank Kate Andrias, Martha Davis, Stephanie Didwania, Deborah Dinner, Jessica Eaglin, Blake Emerson, Robert Fischman, Sarah Fox, Alison Gocke, Nicole Huberfeld, Katharine Jackson, Clare Johnson Raba, Ariel Jurow Kleiman, Emma Kaufman, Alexandra Klass, David Konisky, Aneil Kovali, Alexandra Lahav, Asaf Lubin, Leandra Lederman, Jed Meers, Joy Mulligan, Uma Outka, Jeff Rachlinski, Sabeel Rahman, Bertrall Ross, Gabriel Scheffler, Jeffrey Stake, Nelson Tebbe, Ryan Thoreson, Joseph Tomlinson, Deborah Widiss, Alvin Velazquez, and the students in my 2024 Poverty Law course. Thank you also to Lauren Spratt and Paige Wynkoop for their steadfast and thorough research assistance.

mitigate climate strains, particularly for the poorest Americans, at a time when more and more communities confront the daily strains of a changing climate.

INTRODUCTION

Rising temperatures and declining air quality increasingly define daily life in the United States. In 2023, Phoenix experienced thirty-one straight days of high temperatures at or above 110 degrees.[1] That persistent reality was not deemed a disaster by the federal government.[2] Rather, it was a new normal

1. *See* Anita Snow, *Arizona's Sweltering Summer Could Set New Record for Most Heat-Associated Deaths in Big Metro*, FOX10 PHOENIX (Sept. 23, 2023, 10:48 AM), https://www.fox10phoenix.com/news/arizonas-sweltering-summer-could-set-new-record-for-most-heat-associated-deaths-in-big-metro [https://perma.cc/DA82-KXYB] (exploring how "Phoenix experienced the hottest three months since record-keeping began in 1895").

2. Jake Frederico, *Heat Is Not Classified as a Natural Disaster. Arizona Officials Say That Needs to Change*, AZCENTRAL (Nov. 22, 2023, 4:28 PM), https://www.azcentral.com/story/news/local/arizona-environment/2023/08/31/arizona-officials-say-heat-should-be-classified-as-a-natural-disaster/70673087007 [https://perma.cc/DS7U-YDTJ] ("[D]espite the significant loss of life in Maricopa

to which residents had to adapt. Phoenix was not alone. A heat wave stretched from California to Florida, breaking both temperature and heat index records across the United States.[3] That same month, wildfires from Canada blanketed huge swaths of the United States with particulate matter. At one point, over one hundred million Americans were living under air quality advisories.[4] New York City had the worst air quality in the world.[5] Breathing that air, scientists estimated, was like smoking six cigarettes a day.[6] The wildfire smoke returned in July, triggering air quality advisories for seventy million Americans.[7] July 2023 was our planet's hottest month in recorded history.[8]

The calamities of rising temperatures and declining air quality were not confined to 2023 nor to the United States. The following September, sixty-five million Americans were under heat alerts in the western United States.[9] But the largest wildfires that summer and fall were not out west, they were in New Jersey. The most severe drought in four decades sparked unprecedented

---

County, the county does not receive any federal aid to prepare for heat or deal with its effects because FEMA does not classify heat as a major disaster.").

3. Matthew Cappucci & Dylan Moriarty, *Inside the Most Extreme Heat Wave the Southern U.S. Has Faced*, WASH. POST (July 21, 2023), https://www.washingtonpost.com/weather/2023/07/21/us-heat-wave-heat-dome-climate (on file with the *Iowa Law Review*).

4. Brendan O'Brien, *Canadian Wildfire Smoke Spreads, 100 Million Americans Under Air-Quality Alerts*, REUTERS (June 29, 2023, 1:17 PM), https://www.reuters.com/world/us/smoke-canadian-wildfires-settles-over-us-midwest-east-2023-06-29 [https://perma.cc/RJV5-76Y3].

5. Marika Katanuma, *New York Has World's Worst Air Pollution as Canada Wildfires Rage*, BLOOMBERG (June 7, 2023, 5:56 AM), https://www.bloomberg.com/news/articles/2023-06-07/new-york-has-world-s-worst-air-pollution-as-canada-wildfires-rage?embedded-checkout=true (on file with the *Iowa Law Review*).

6. Robyn White, *New York's Toxic Air Has Already Shortened People's Lives by 1 Hour*, NEWSWEEK (July 4, 2023, 5:54 AM), https://www.newsweek.com/health-risks-wildfires-smoke-new-york-city-1805254 [https://perma.cc/27CE-ZULM]; *see also* Molly Peterson, *Does Wildfire Smoke Cause Lung Cancer?*, N.Y. TIMES (Aug. 9, 2022), https://www.nytimes.com/2022/08/09/well/live/fire-smoke-lung-cancer.html (on file with the *Iowa Law Review*) (quoting the scientist, Dr. Kari Nadeau, who led the 2020 study, who now thinks wildfire smoke is worse, in part, because "[c]igarettes at least have filters").

7. Caitlin Kaiser, *Canadian Wildfire Smoke Puts Around 70 Million US Residents Under Air Quality Alerts*, CNN WEATHER (July 17, 2023, 8:19 AM), https://www.cnn.com/2023/07/16/weather/canada-wildfires-us-air-quality-alerts-sunday/index.html [https://perma.cc/7UYM-LNXT].

8. *See* Claire A. O'Shea, *NASA Clocks July 2023 as Hottest Month on Record Ever Since 1880*, NASA (Aug. 14, 2023), https://www.nasa.gov/news-release/nasa-clocks-july-2023-as-hottest-month-on-record-ever-since-1880 [https://perma.cc/YVU6-DXRU]; Scott Dance & Veronica Penney, *We Are Living Through Earth's Hottest Month on Record, Scientists Say*, WASH. POST (July 20, 2023), https://www.washingtonpost.com/weather/2023/07/20/earth-hottest-month-july-climate (on file with the *Iowa Law Review*).

9. *See* Ian Livingston, *The Widespread and Extreme Western U.S. Heat Wave in 5 Maps*, WASH. POST (Sept. 5, 2024), https://www.washingtonpost.com/weather/2024/09/05/western-heat-wave-forecast-maps (on file with the *Iowa Law Review*).

wildfires in the Garden State.[10] In 2024, Earth experienced its hottest August on record, followed by the first-ever White House Summit on Extreme Heat.[11]

Despite the increasing temperatures and declining air quality, it is hard to get the public and policymakers to pay attention to these climate strains. In part, these climate strains are overshadowed by the more dramatic climate shocks, such as the horrific fires in Los Angeles,[12] the unprecedented floods in Vermont,[13] and the devastatingly powerful Hurricane Helene that hit first Florida, then Georgia, and then the Carolinas and Tennessee.[14] The frequency and increasing severity of these climate-fueled disasters deserve sustained attention from policymakers, advocates, and academics.[15] But they should not be the sole focus of the public and scholarly discourse of how climate change is changing life in America. This Article extends a climate adaptation analysis from highly visible climate shocks to the less salient, but often devastating climate strains.[16]

Climate-fueled disasters like hurricanes and wildfires have and will continue to affect millions of Americans, but the climate crisis will put daily pressure on millions more. Extreme heat will make it harder for people to live at home, go to work, and do their jobs. Deteriorating air quality will make it more dangerous

---

10. *See* Hilary Howard, *Is the Northeast Entering Its Wildfire Era?*, N.Y. TIMES (Nov. 20, 2024), https://www.nytimes.com/2024/11/20/nyregion/new-york-wildfires-drought.html (on file with the *Iowa Law Review*).

11. *See* Press Release, White House, Readout of First-Ever White House Summit on Extreme Heat (Sept. 14, 2024), https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2024/09/14/readout-of-first-ever-white-house-summit-on-extreme-heat [https://perma.cc/JF6T-YCJU]; *Earth Had Its Hottest August in 175-Year Record*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Sept. 12, 2024), https://www.noaa.gov/news/earth-had-its-hottest-august-in-175-year-record [https://perma.cc/RZY4-CRUP]; *see also* Kristiane Huber, *The Era of Extreme Heat Is Here: Federal and State Governments Roll Out Strategies to Cope*, PEW (July 3, 2024), https://www.pewtrusts.org/en/research-and-analysis/articles/2024/07/03/the-era-of-extreme-heat-is-here-federal-and-state-governments-roll-out-strategies-to-cope [https://perma.cc/NVW8-GY7Z] ("[T]he National Oceanic and Atmospheric Administration (NOAA) predicts there is a 55% chance that 2024 will be . . . the hottest year since global records began in 1850.").

12. *See* Don Lee, *Economic Loss from L.A. Wildfires Could Top $50 Billion, Making It One of the Costliest U.S. Natural Disasters*, L.A. TIMES (Jan. 10, 2025, 7:17 AM), https://www.latimes.com/business/story/2025-01-09/loss-from-wildfires-could-surpass-50-billion (on file with the *Iowa Law Review*).

13. *See* Peter Banacos, *The Great Vermont Flood of 10-11 July 2023: Preliminary Meteorological Summary*, NAT'L WEATHER SERV. (Aug. 5, 2024, 8:45 AM), https://www.weather.gov/btv/The-Great-Vermont-Flood-of-10-11-July-2023-Preliminary-Meteorological-Summary [https://perma.cc/6CLT-2SKS].

14. *See Helene Was One of the Deadliest Storms in Recent History. How It Devastated the Southeast*, USA TODAY (Jan. 27, 2025, 3:03 PM), https://www.usatoday.com/story/graphics/2024/12/31/hurricane-helene-how-the-deadly-storm-devastated-the-southeast/77179217007 [https://perma.cc/C3EH-3RLS].

15. I have written about the need to adapt welfare programs so that federal, state, and local government can better respond to climate-fueled disasters. *See* Andrew Hammond, *On Fires, Floods, and Federalism*, 111 CALIF. L. REV. 1067, 1069–76 (2023) [hereinafter Hammond, *On Fires, Floods, and Federalism*].

16. *See* Adam B. Smith, *2024: An Active Year of U.S. Billion-Dollar Weather and Climate Disasters*, CLIMATE.GOV (Jan. 10, 2025), https://www.climate.gov/news-features/blogs/beyond-data/2024-active-year-us-billion-dollar-weather-and-climate-disasters [https://perma.cc/CSW3VBNH] (quantifying the costs of climate shocks).

for people to spend time outside. People will devote more of their own resources to mitigate these conditions. This kind of daily degradation will also strain our infrastructure in ways that undermine individual efforts to mitigate climate strains in homes and workplaces. Power outages, boil water advisories, air quality alerts, and heat advisories are becoming more frequent throughout the country. In short, climate strains are the ways in which our planet's changing climate degrades daily life.[17] These climate strains tend to linger, and they sometimes even require temporary relocation or shutting down of basic services.[18] Some obvious examples of climate strains are extreme heat and poor air quality.

While rising temperatures and declining air quality are global phenomena with ever widening and deepening impacts, people with fewer resources will experience these climate strains more acutely. Poor Americans have fewer resources to deploy to cool their homes.[19] They are more likely to have health conditions that climate strains exacerbate.[20] And they are more likely to work jobs that must be done outside or cannot be done from home—potentially exposing them more often to extreme heat and declining air quality.[21] As more Americans spend more time and money to deal with daily life amid the climate crisis, people with less will suffer the most.[22] As climate strains continue to grow in severity, the American welfare state will have to adapt.

This Article surveys the scope of climate strains and analyzes recent government efforts to deal with them through subsidies, investments, and regulation. For over forty years, the federal government has appropriated funding to states, territories, and tribes to provide home energy assistance, but that funding is not appropriately targeted. That funding was designed to assist households during the winter months and not during periods of extreme heat or poor air quality.[23] In short, federal energy assistance has not changed as the climate has.

Moreover, President Biden's signature climate legislation, the Inflation Reduction Act ("IRA"), bet heavily on subsidies for industry and tax credits for wealthy consumers to retrofit their businesses and homes.[24] The new Congress and President Trump have trimmed the lifespan of these green tax credits through Congress's recent reconciliation bill.[25] But even if many of these tax credits in the IRA had remained on the books as intended by former President Biden and the previous Congress, they would still not reach poor Americans. Roughly forty percent of American households do not have federal income tax liability in any given year, and the vast majority of Americans do not

17. *Climate Change Impacts on Air Quality*, U.S. ENV'T PROT. AGENCY (Mar. 27, 2025), https://www.epa.gov/climateimpacts/climate-change-impacts-air-quality [https://perma.cc/BJT9-32HW].

18. Rachel Looker, *US Schools Sending Students Home for 'Heat Days*,' BBC (June 20, 2024), https://www.bbc.com/news/articles/cv225xgy5xxo [https://perma.cc/S7C4-ZD6S].

19. *See infra* Section I.B.1.

20. *See infra* Section I.B.1.

21. *See infra* Section I.B.2.

22. *See infra* Section I.B.3.

23. *See infra* Section II.B.1.

24. *See infra* Section II.B.2.

25. One Big Beautiful Bill Act, Pub. L. No. 119-21, 139 Stat. 72 (2025).

itemize their tax deductions.[26] Poor people who own their homes may lack the funds to make these kinds of investments upfront. For poor people who rent, they will be dependent on landlords to make these investments.[27]

At the state level, some states are experimenting with new ways to help residents deal with climate strains.[28] Both the federal government and some states have considered how regulations like workplace standards for heat exposure and prohibitions on utility disconnections can help residents face the daily challenges of worsening air quality. But, by and large, those efforts have stalled.[29]

Moving beyond the particulars of climate strains, this Article is part of a broader shift in scholarship on climate change. For many years, legal academics have focused on mitigation, not adaptation—rightly betting that the United States and other countries could regulate and innovate in ways that would alter or at least slow the trajectory of a worsening climate on Earth.[30] While that scholarship on mitigation will and must continue, academics are also now working on problems associated with how to adapt legal systems for climate change.[31] In essence, this climate adaptation scholarship starts with the premise that our Earth's climate has already changed dramatically and will continue to do so for the foreseeable future.[32] As a result, it is incumbent on legal academics to address the climate effects happening right now all over our planet. That shift is evident in other fields. Last year, economist Jisung Park published *Slow Burn* to draw attention to "the largely invisible costs that may not raise the same alarm [as disasters], but which, in their pervasiveness and inequality, may be much more harmful than commonly realized, and call

26. *See infra* notes 248–60 and accompanying text.

27. *See generally* Kathryn A. Sabbeth, *(Under)Enforcement of Poor Tenants' Rights*, 27 GEO. J. ON POVERTY L. & POL'Y 97 (2019) (analyzing nonenforcement and underenforcement of landlord mandates).

28. *See infra* notes 299–303 and accompanying text.

29. *See infra* Section II.B.3.

30. *See* Albert C. Lin, *Making Net Zero Matter*, 79 WASH. & LEE L. REV. 679, 684–87 (2022) (discussing the focus on climate mitigation among academics and policymakers).

31. *See, e.g.*, Daniel E. Walters, *Tomorrow's Climate Law, Today*, 58 U.C. DAVIS L. REV. 2121, 2127 (2025) (arguing that in the past, "discussing adaptation was somewhat taboo—the fear being that too much focus on adaptation might lessen the imperative to curb emissions" but that "[t]hose days are now long past" and that "adaptation is what serious people spend their time on"); Mark Nevitt, *The Legal Crisis Within the Climate Crisis*, 76 STAN. L. REV. 1051, 1124 (2024) (warning that "the climate mitigation strategy is failing, our emissions gap grows, and the physical world is on the verge of irreversible and catastrophic harm"); Jim Rossi & J.B. Ruhl, *Adapting Private Law for Climate Change Adaptation*, 76 VAND. L. REV. 827, 833 (2023) ("[C]limate change has the potential to be as transformative for private law as was the Industrial Revolution."); J.B. Ruhl & Robin Kundis Craig, *4 °C*, 106 MINN. L. REV. 191, 196 (2021) ("There is now widespread agreement that both mitigation . . . and adaptation . . . must be *concurrent* governance efforts."). *See generally* Katherine Trisolini, *Holistic Climate Change Governance: Towards Mitigation and Adaptation Synthesis*, 85 U. COLO. L. REV. 615 (2014) (discussing the need for and benefits of holistic climate change governance that considers both mitigation and adaptation).

32. *See* IPCC, CLIMATE CHANGE 2023 SYNTHESIS REPORT 62 (2023), https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf [https://perma.cc/Z62A-635A] ("Without effective mitigation and adaptation, losses and damages will continue to disproportionately affect the poorest and most vulnerable populations.").

for swift action in ways you might not expect."[33] This Article seeks to add to that emerging literature on climate adaptation by introducing the concept of climate strains and applying it to public law that most directly affects poor people in the United States.

This Article makes three main contributions, one in each of the three parts that follow. First, it introduces and refines the concept of climate strains as a framework to think about climate challenges that have been insufficiently explored in legal scholarship. Second, the Article uses that climate strains framework to analyze and critique existing legal responses in the United States. Third, the Article offers a blueprint for how the United States could better respond to climate strains in a way that accounts for persistent poverty and inequality.

We are just beginning to grapple with the myriad ways in which climate change will challenge our nation's laws and upend our daily lives. This Article offers climate strains as a concept to help us do so and then applies that concept in an area where law reform could help more Americans, and especially the poorest Americans, deal with the climate strains that increasingly characterize life in the United States.

I. THE INEQUALITY OF CLIMATE STRAINS

This Part begins by defining "climate strains" in contrast to "climate shocks." It then proceeds to identify some illustrative examples of climate strains like extreme heat and deteriorating air quality. The Part then shows how climate strains, while impacting all Americans, pose particular challenges for poor people.

A. DEFINING CLIMATE STRAINS

Hurricanes, wildfires, and floods are some of the more dramatic manifestations of climate change. But these climate-fueled catastrophes should not distract us from other climate-related changes. The climate crisis degrades the air we breathe and the water we drink. Already, people all over the United States are facing record-breaking temperatures. We do not know all the ways in which the rise in global temperatures will impact American society in the years to come, but we do know that Americans will be under more frequent and intense pressure to adapt their daily lives. That reality calls out for increased attention, including by academics, to these "climate strains." By "climate strains," I mean phenomena accelerated, caused, and intensified by climate change that degrade daily life and force individuals and communities to adapt their routines. These strains may last a day or two or last for weeks or months. Two obvious examples of climate strains are extreme heat and poor air quality.

Climate strains can be hard to define. The distinction between shocks and strains may not always be so sharp. Rising temperatures may become so

33. R. JISUNG PARK, SLOW BURN: THE HIDDEN COSTS OF A WARMING WORLD 3 (2024); *see also id.* at 7 ("Regardless of whether we are able to reduce emissions rapidly starting today, some level of warming is essentially locked in, at least for the next several decades.").

hostile to human activity that, in its effects, it is better seen as a shock on the scale of a hurricane. For instance, according to a recent study, had Phoenix experienced a blackout last June, half of its residents would have required hospitalization.[34] And a climate disaster can create a shock for people nearby and strains for people thousands of miles away.[35] Under this framework, the climate strain of poor air quality in the United States in 2023 was caused by the climate shock of ongoing wildfires in Canada.[36] But when we distinguish climate shocks from climate strains, we can better understand how the government responses to each may differ. The federal government already has an apparatus, rickety and under threat though it may be, to respond to climate shocks.[37] Climate strains, however, are not necessarily discrete events in time or readily defined by location. And with the notable exception of home energy assistance for low-income families, there are few existing programs to support low-income households in dealing with climate strains.

Moreover, this Article does not provide a comprehensive account of climate strains. Instead, the Article focuses on extreme heat and air quality because they are immediate and widespread challenges in the United States and elsewhere. There are some other current examples of climate strains, like declining water quantity and water quality, but they have already received (and deserve further) in-depth treatment in legal scholarship.[38] Then there are other examples of climate strains that we have yet to comprehend because of the challenges that necessarily come from predicting a changing climate's

34. Brian Stone, Jr. et al., *How Blackouts During Heat Waves Amplify Mortality and Morbidity Risk*, 57 ENV'T SCI. & TECH. 8245, 8249 fig.4 (2023) (modeling different extreme heat scenarios in Atlanta, Detroit, and Phoenix); *see also* JEFF GOODELL, THE HEAT WILL KILL YOU FIRST 201 (2023) (interviewing a researcher at Arizona State University who has studied the possible impacts of a power outage in Phoenix and who asks, "What will the Hurricane Katrina of extreme heat look like?").

35. *See* PARK, *supra* note 33, at 63 (suggesting that air quality "example[s] suggest[] that sometimes the damages may accumulate in places and contexts far removed from the source of the more salient climate risk").

36. Joe Hernandez, *How Canadian Wildfires Are Worsening U.S. Air Quality and What You Can Do to Cope*, NPR (June 6, 2023, 3:50 PM), https://www.npr.org/2023/06/06/1180508544/heres-how-canadian-wildfires-are-worsening-air-quality-across-the-u-s [https://perma.cc/9CW6-BKLA].

37. *See* Gabe Cohen, *Trump Says He Plans to Phase Out FEMA After 2025 Hurricane Season*, CNN POLITICS (June 11, 2025, 9:11 PM), https://www.cnn.com/2025/06/11/politics/fema-hurricane-season-phase-out-trump [https://perma.cc/DJX3-DCKG]; Anna Phillips, Jake Spring, Kevin Crowe & Dan Diamond, *States Caught Unprepared for Trump's Threats to FEMA*, WASH. POST (Apr. 7, 2025), https://www.washingtonpost.com/climate-environment/2025/04/05/fema-disaster-states-funding (on file with the *Iowa Law Review*).

38. For example, Martha Davis has written about poor people's rights to assistance and services for decades, and she has recently turned to research water quality. *See generally* Martha F. Davis, *Hidden Burdens: Household Water Bills, "Hard-to Reach" Renters, and Systemic Racism*, 52 SETON HALL L. REV. 1461 (2022); Martha F. Davis, *Freedom from Thirst: A Right to Basic Household Water*, 42 CARDOZO L. REV. 879 (2021). And others are thinking through what the aridification of the Colorado River means for water quantity and quality in the American West. *See, e.g.*, Jason Anthony Robison, *The Changing Colorado*, 60 IDAHO L. REV. 375, 376 (2024); Harmukh Singh, *Dead in the Water? Addressing the Future of Water Conservation in the Colorado River Basin*, 124 COLUM. L. REV. 741, 774–75 (2024).

impacts given the so-called "Knightian" uncertainty of climate change.[39] Rather than attempting to cover all the current and possible examples of climate strains, this Article uses extreme heat[40] and deteriorating air quality[41] as illustrations of the challenges of using public law to protect people from climate strains. The rest of this Part explains how both of these environmental phenomena betray climate strains' unequal effects.

B. UNEQUAL STRAINS

Climate strains impact us all. Days of extreme heat make it harder for us to earn a living, care for ourselves and others, and even think.[42] When air quality degrades, people may skip work. Parents may keep kids home from school or not let them participate in outdoor activities. And even if people want to go to work and kids want to go to school, businesses may shut down, and schools may close.

But any analysis of climate strains cannot end with an admission of their widespread impact. People will experience climate strains differently depending on their age, health, location, and other circumstances.[43] For some, climate

39. The economist Frank Knight influentially distinguished risk, which is "susceptible of measurement," from uncertainty. *See* FRANK H. KNIGHT, RISK, UNCERTAINTY AND PROFIT 226–27 (1921). *But see* Cass R. Sunstein, *Knightian Uncertainty in the Regulatory Context*, 9 BEHAV. PUB. POL'Y 614, 625 (2025) (suggesting that Knightian "uncertainty is pretty rare, at least over significant time horizons").

40. The Centers for Disease Control and Prevention ("CDC") define extreme heat "as summertime temperatures that are much hotter and/or humid than average." *Extreme Heat: A Prevention Guide to Promote Your Personal Health and Safety*, CDC (Sept. 12, 2023), https://web.archive.org/web/20230923041407/https://www.cdc.gov/disasters/extremeheat/heat_guide.html [https://perma.cc/RY8N-T9R8]. According to the Fourth National Climate Assessment, extreme temperatures are projected to increase even more than average temperatures in the contiguous United States. R.S. Vose, D.R. Easterling, K.E. Kunkel, A.N. LeGrande & M.F. Wehner, *Temperature Changes in the United States*, *in* CLIMATE SCIENCE SPECIAL REPORT: FIFTH NATIONAL CLIMATE ASSESSMENT 185, 185 (2023) [hereinafter FIFTH NATIONAL CLIMATE ASSESSMENT].

41. *See* AM. LUNG ASS'N, STATE OF THE AIR 12 (2023) (suggesting that climate change's effects on air quality are erasing the gains of the Clean Air Act); *see also* Eric Niiler, *Wildfire Smoke Is Erasing Gains from Decades of Cleaner Air*, WALL ST. J. (Sept. 20, 2023, 12:29 PM), https://www.wsj.com/science/environment/wildfire-smoke-is-erasing-gains-from-decades-of-cleaner-air-e53c6559 (on file with the *Iowa Law Review*) (discussing study finding that "wildfire smoke has influenced trends in levels of particulate matter in nearly three-quarters of the contiguous United States, undoing around 25% of air-quality improvements made between 2000 and 2016"); Marshall Burke et al., *Wildfires Are Worsening Air Quality in the United States*, NATURE (Sept. 20, 2023), https://www.nature.com/articles/d41586-023-02794-0 [https://perma.cc/DU6X-MMEG].

42. *See, e.g.*, Eun Young Choi, Haena Lee & Virginia W. Chang, *Cumulative Exposure to Extreme Heat and Trajectories of Cognitive Decline Among Older Adults in the USA*, 77 J. EPIDEMIOLOGY & CMTY. HEALTH 728, 732 (2023) (finding that "[c]umulative exposure to extreme heat is associated with faster cognitive decline" for Black individuals and "for residents of socioeconomically disadvantaged neighbourhoods"); Jose Guillermo Cedeño Laurent et al., *Reduced Cognitive Function During a Heat Wave Among Residents of Non-Air-Conditioned Buildings: An Observational Study of Young Adults in the Summer of 2016*, PLOS MED., July 2018, at 3; Dhruv Khullar, *What a Heat Wave Does to Your Body*, NEW YORKER (Aug. 25, 2023), https://www.newyorker.com/news/annals-of-a-warming-planet/what-a-heat-wave-does-to-your-body [https://perma.cc/57YC-55P7].

43. *See, e.g.*, PARK, *supra* note 33, at 12 ("The more we learn about the socioeconomic details of climate vulnerability, the more it becomes clear that physical and economic risk are not one and the same, and often depend on complex institutional and structural factors.").

strains will be distracting. For others, climate strains will be debilitating. While there are numerous ways in which the impacts of climate strains are and will continue to be unevenly distributed, this next Section focuses on how poor people in the United States will experience climate strains. It explores how climate strains like extreme heat and declining air quality will disproportionately impact poor people because of where they live, where they work, and the few resources they have to respond to these changes.

1. Unequal Exposure at Home

Poor Americans cannot afford to modify their homes to withstand climate shocks or strains. Poor people are less likely to have access to air conditioning, thus increasing the risk of a litany of health issues like heat stroke[44] and rhabdomyolysis.[45] Poor people are more likely to have their power shut off for non-payment, which, in turn, makes it harder for them to deal with the climate strains of extreme heat and poor air quality.[46] Poor people are less able to evacuate from a threat of extreme weather.[47] And after climate shocks like fires and floods, poor Americans cannot afford to repair their homes, which, in turn, makes it harder to deal with climate strains like extreme heat.[48] In that sense, the aftereffects of climate shocks compound the challenges poor people face in dealing with climate strains.

Across the United States, poor people are more likely to live in areas with older or poorly maintained infrastructure, leaving them more susceptible to

---

44. *See* JANET L. GAMBLE ET AL., U.S. ENV'T PROT. AGENCY, ANALYSES OF THE EFFECTS OF GLOBAL CHANGE ON HUMAN HEALTH AND WELFARE AND HUMAN SYSTEMS 7 (2008); ALLISON CRIMMINS ET AL., THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH IN THE UNITED STATES: A SCIENTIFIC ASSESSMENT 21–23 (2016); David A. Dana, *Cooling Infrastructure, Cooling Security, and A Warming World*, 118 NW. U. L. REV. ONLINE 66, 70 (2023) (identifying "[t]he immediate challenge for cooling infrastructure is to ensure that people right now do not lose their lives and well-being because they lack any air conditioning or only have grossly inadequate air conditioning" and arguing that "[i]n the United States, the most vulnerable populations—low-income tenants, disabled people, and elderly people—face the greatest risk of death or illness from lack of air conditioning").

45. *See Rhabdomyolysis and Work*, NAT'L INST. FOR OCCUPATIONAL SAFETY & HEALTH (May 21, 2024), https://www.cdc.gov/niosh/rhabdo/about/index.html [https://perma.cc/YL8L-RQFA].

46. *See* Sonal Jessel, Samantha Sawyer & Diana Hernández, *Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature*, 7 FRONTIERS PUB. HEALTH 5–6 (Dec. 12, 2019), https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2019.00357/full [https://perma.cc/XYL8-N4GV].

47. *See* SUBSTANCE ABUSE & MENTAL HEALTH SERVS. ADMIN., GREATER IMPACT: HOW DISASTERS AFFECT PEOPLE OF LOW SOCIOECONOMIC STATUS 5 (2017); Heather Timmons, *People Too Poor to Evacuate Hurricane Florence Should Ask Neighbors for Help, FEMA Says*, GOV'T EXEC. (Sept. 13, 2018), https://www.govexec.com/management/2018/09/people-too-poor-evacuate-hurricane-florence-should-ask-neighbors-help-fema-says/151234 [https://perma.cc/C68E-Z7X4]; Lisa Wade, *Who Didn't Evacuate for Hurricane Katrina?*, PAC. STANDARD (Aug. 31, 2015), https://psmag.com/environment/who-didnt-evacuate-for-hurricane-katrina [https://perma.cc/HS5F-YRHQ].

48. *See* FIFTH NATIONAL CLIMATE ASSESSMENT, *supra* note 40, at 14–16. This inequality of climate vulnerability plays out in other countries, too. *See* Hessel C. Winsemius et al., *Disaster Risk, Climate Change, and Poverty: Assessing the Global Exposure of Poor People to Floods and Droughts*, 23 ENV'T & DEVELOPMENTAL ECON. 328, 334 (2018) (drawing on household survey data and hydrological riverine flood and drought data from 52 countries and finding "a disproportionally high exposure of poor people to floods").

climate shocks and strains.[49] Poor people are more likely to live in areas susceptible to flooding and wildfires.[50] Americans who live in mobile homes, many in rural areas, are less likely to be able to cool their homes.[51]

In American cities, poor people are more likely to live in "heat islands," areas that have many heat-absorbing surfaces like roads, parking lots, and buildings, and fewer cooling green spaces and trees.[52] Some research has connected today's heat islands in American cities to longstanding discriminatory housing practices like redlining and racially restrictive covenants.[53] These areas experience even higher temperatures, exacerbating climate strains like extreme heat and declining air quality. Poor Americans who live in cities are also more likely to live in neighborhoods near or containing highways or polluting facilities, which increase the amount of ground-level ozone. Breathing ground-level ozone can cause lung irritation, chest pain, coughing, and congestion, as well as breathing difficulties during outdoor exercise or activities.[54]

To make this concrete, consider what happened in Portland, Oregon four summers ago. In June 2021, the Pacific Northwest experienced extremely high temperatures over several days.[55] Portland set a record-high temperature of 116 degrees Fahrenheit, 42 degrees above normal.[56] Health clinics and hospitals in the area reported three times as many heat-related visits as usual, and dozens

49. *See* CRIMMINS ET AL., *supra* note 44, at 13.

50. *See, e.g.*, Thomas Frank, *Flooding Disproportionately Harms Black Neighborhoods*, SCI. AM. (June 2, 2020), https://www.scientificamerican.com/article/flooding-disproportionately-harms-black-neighborhoods [https://perma.cc/2DNZ-C2NV]; Leigh Hataway, *Wildfires Disproportionately Affect the Poor*, UGA TODAY (Sept. 19, 2022), https://news.uga.edu/wildfires-disproportionately-affect-poor [https://perma.cc/5L55-5D3S].

51. *See* Cory R. Bernard & Anthony Proano, *Too Hot to Handle: Curbing Mobile Home Heat Deaths in a Warming Climate*, 12 WASH. J. SOC. & ENV'T. JUST. 1, 4–5 (2022); LAUREN ROSS, ARIEL DREHOBL & BRIAN STICKLES, THE HIGH COST OF ENERGY IN RURAL AMERICA: HOUSEHOLD ENERGY BURDENS AND OPPORTUNITIES FOR ENERGY EFFICIENCY 4 (2018).

52. *See Climate Change Effects and Impacts*, N.Y. STATE DEP'T ENV'T CONSERVATION, https://www.dec.ny.gov/energy/94702.html [https://perma.cc/D3GA-M354]; *What Are Heat Islands?*, U.S. ENV'T PROT. AGENCY (Apr. 3, 2025), https://www.epa.gov/heatislands/what-are-heat-islands#impacts [https://perma.cc/4QJL-KP5G]; GAMBLE ET AL., *supra* note 44, at 3–7; *Heat Island Effect*, U.S. ENV'T PROT. AGENCY (June 26, 2025), https://epa.gov/heatislands [https://perma.cc/2PYW-GVJ7]; *see also* Dana, *supra* note 44, at 74–76 (discussing heat islands).

53. *Heat Islands and Equity*, U.S. ENV'T PROT. AGENCY (Jan. 19, 2021), https://19january2021snapshot.epa.gov/heatislands/heat-islands-and-equity_.html [https://perma.cc/A2WC-RPRP] (collecting sources on redlining and linking those practices to the creation of heat islands); Meg Anderson, *Racist Housing Practices from the 1930s Linked to Hotter Neighborhoods Today*, NPR (Jan. 14, 2020, 2:38 PM), https://www.npr.org/2020/01/14/795961381/racist-housing-practices-from-the-1930s-linked-to-hotter-neighborhoods-today [https://perma.cc/B8RM-JSH3].

54. *See Air Pollution: Everything You Need to Know*, NRDC (Oct. 31, 2023), https://www.nrdc.org/stories/air-pollution-everything-you-need-know [https://perma.cc/HAC4-P5FL]; *Air Quality and Climate Change*, WASH. STATE DEP'T HEALTH, https://doh.wa.gov/community-and-environment/climate-and-health/air-quality [https://perma.cc/6GPZ-RJBN]; *Climate Implications – Ground-Level Ozone and Health*, IND. U. ENV'T RESILIENCE INST., https://web.archive.org/web/20250421042921/https:/eri.iu.edu/erit/implications/ground-level-ozone-health.html [https://perma.cc/8K3H-WELE] (last updated Apr. 21, 2025).

55. *See generally* MULTNOMAH CNTY., FINAL REPORT: HEALTH IMPACTS FROM EXCESSIVE HEAT EVENTS IN MULTNOMAH COUNTY, OREGON, 2021 (2022).

56. *See generally id.*

of Oregonians died.[57] According to an official report about the impacts of the 2021 heat dome, "61% of the people who died lived in intra-urban heat islands,"[58] and "most [of the deceased] lived alone in homes with no working air conditioning or fans."[59] The 2021 heat dome in Portland, Oregon, is just one example of how residential inequality compounds climate strains.

2. Unequal Exposure at Work and School

When many Americans work, they work in buildings that are air conditioned. And more and more Americans can spend part, if not all, of their work week working from home. But not all Americans labor in those conditions. Amid the climate crisis, people who work outside have to work in increasingly warmer conditions with worsening air quality. Poor people are more likely to work in sectors of the economy that are vulnerable to climate risk, like agriculture, construction, fishing, and forestry, and they are more likely to have jobs with few protections against any employment disruptions, including climate-related ones.[60] The rise of gig work has only increased the number of Americans who work in ways that make their incomes more volatile and hence more vulnerable to disruptions.[61] And people with low incomes are more likely to rely on public transportation and less likely to have alternate means of transportation when climate-related disruptions of service occur.[62] One recent study found that when temperatures rise, American workers in poor counties lose more of their pay.[63] Since low-income workers have fewer assets, they are particularly reliant on any given paycheck. Their household budgets are sensitive to any reduction in hours.[64] As the Environmental Protection Agency ("EPA") explained, "some

57. *See generally id.*

58. *Urban Heat Islands in the Northwest*, U.S. DEP'T AGRIC., https://climatehubs.stg.platform.usda.gov/hubs/northwest/topic/urban-heat-islands-northwest [https://perma.cc/RK6K-3ATF].

59. OR. OFF. OF EMERGENCY MGMT., STATE OF OREGON INITIAL AFTER-ACTION REVIEW (AAR) OF THE JUNE 2021 EXCESSIVE HEAT EVENT 4 (2021).

60. Extreme weather might make it more difficult for people to work in these sectors. *See* Robin Leichenko & Julie A. Silva, *Climate Change and Poverty: Vulnerability, Impacts, and Alleviation Strategies*, 5 WIREs CLIMATE CHANGE 539, 542–44 (2014) (discussing the interplay between variability in climate and poverty).

61. André Dua, et al., *Freelance, Side Hustles, and Gigs: Many More Americans Have Become Independent Workers*, MCKINSEY & CO. (Aug. 23, 2022), https://www.mckinsey.com/featured-insights/sustainable-inclusive-growth/future-of-america/freelance-side-hustles-and-gigs-many-more-americans-have-become-independent-workers [https://perma.cc/YQN5-PWAP].

62. *See* Leichenko & Silva, *supra* note 60, at 543; *Climate Change Impacts on Transportation*, U.S. ENV'T PROT. AGENCY (June 17, 2025), https://www.epa.gov/climateimpacts/climate-change-impacts-transportation [https://perma.cc/M833-BSD8].

63. *See generally* A. Patrick Behrer et al., *Heat Has Larger Impacts on Labor in Poorer Areas*, 3 ENV'T RSCH. COMMC'NS 1 (2021).

64. *See* Avery Ellfeldt, *Extreme Heat Drives Demands for Payday Loans*, E&E NEWS (Jan. 10, 2024, 6:59 AM), https://subscriber.politicopro.com/article/eenews/2024/01/10/extreme-heat-drives-demand-for-payday-loans-00134637 (on file with the *Iowa Law Review*) (discussing recent study from the Bank of Canada and researchers at the University of Illinois and Santa Clara University that suggests demand for payday loans, late payments, and defaults increased during months with more extreme heat days—and that those results were strongest in counties with large Latino populations).

workers may opt to work during high-temperature days, if given the choice, thereby putting their health at risk."[65]

The situation of farmworkers in the United States illustrates the growing challenges that climate strains present. The federal government estimates there are roughly 2.4 million farmworkers nationwide.[66] The United States also permits employers, through the H-2A visa program, to hire migrant workers on a temporary basis if the employers anticipate a shortage of U.S. workers to fill temporary and seasonal jobs.[67] According to the U.S. Department of Labor, over ninety percent of H-2A workers are employed on crop farms, and the program has quadrupled over the last ten years.[68]

According to data from the most recent National Agricultural Workers Survey, twenty percent of farmworkers have incomes below the poverty threshold, and forty-four percent of migrant farmworkers live in poverty.[69] Only half have health insurance.[70] Agricultural workers are thirty-five times more likely to die from illnesses related to heat stress than U.S. civilian workers overall.[71] Meanwhile, the number of unsafe working days for farmworkers are estimated to double by 2050.[72] By then, the entire growing season in Florida and other states will be unsafe for outside work.[73]

Farmworkers have long been vulnerable to extreme heat, but other workers face these climate strains—and not just those who work outside.[74] In a recent report on the global economy, Moody's concluded that "[a]lmost all sectors face significant exposure to heat stress and water stress."[75] Recent

65. U.S. ENV'T PROT. AGENCY, CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE UNITED STATES: A FOCUS ON SIX IMPACTS 38 (2021).

66. U.S. DEP'T OF AGRIC., 2017 CENSUS OF AGRICULTURE 106 (2019).

67. *H-2A Temporary Agricultural Workers*, U.S. CITIZENSHIP & IMMIGR. SERVS. (Jan. 17, 2025), https://www.uscis.gov/working-in-the-united-states/temporary-workers/h-2a-temporary-agricultural-workers [https://perma.cc/9XQW-8F9R].

68. Daniel Costa, *How Many Farmworkers Are Employed in the United States?*, ECON. POL'Y INST. (Oct. 3, 2023, 2:53 PM), https://www.epi.org/blog/how-many-farmworkers-are-employed-in-the-united-states [https://perma.cc/E2H6-D5NT].

69. AMANDA GOLD, WENSON FUNG, SUSAN GABBARD & DANIEL CARROLL, JBS INT'L, FINDINGS FROM THE NATIONAL AGRICULTURAL WORKERS SURVEY (NAWS) 2019–2020: A DEMOGRAPHIC AND EMPLOYMENT PROFILE OF UNITED STATES FARMWORKERS 41–43 (2022).

70. *Id.* at 45–48.

71. Moussa El Khayat et al., *Impacts of Climate Change and Heat Stress on Farmworkers' Health: A Scoping Review*, FRONTIERS PUB. HEALTH 2 (Feb. 8, 2022), https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2022.782811/full [https://perma.cc/2SZJ-PAC7].

72. Michelle Tigchelaar, David S. Battisti & June T. Spector, *Work Adaptations Insufficient to Address Growing Heat Risk for U.S. Agricultural Workers*, 15 ENV'T RSCH. LETTERS, Aug. 2020, at 10 ("Climate change at the current pace will double crop worker heat risk by the middle of this century and triple it by the end of it.").

73. *See id.* at 4–5.

74. *See, e.g.*, Steven Greenhouse, *How Rising Temperatures Are Becoming a Labor Story*, NIEMAN REPS. (Jan. 19, 2023), https://niemanreports.org/articles/labor-beat-extreme-heat [https://perma.cc/LFH4-WFQJ]; Rob Jordan, *Stanford Researchers Discuss Extreme Heat's Impacts on Laborers*, STAN. REP. (July 20, 2022), https://news.stanford.edu/2022/07/20/extreme-heats-impact-labor [https://perma.cc/4NP8-TUR3].

75. MOODY'S ESG SOLS., CRITICAL INDUSTRIES HAVE SUBSTANTIAL EXPOSURE TO PHYSICAL CLIMATE RISKS 2 (2021).

reports of climate strains at work abound in the media, from people who work at airports to Amazon warehouse workers.[76] Amazon employs more than 1.5 million people[77] in the United States, many of whom work at one of the company's warehouses.[78] Incidents in California, the Pacific Northwest, the Midwest, and the Northeast paint a grim picture of what it's like to work in these warehouses during heat waves.[79] Amazon has repeatedly refused to provide sufficient cooling, water, or breaks.[80] On Amazon's much-advertised Prime Day in 2022, one of its warehouse workers in New Jersey died from the heat.[81]

This phenomenon is not limited to American workers. More and more children face similar extreme conditions at school. School districts across the country delayed the start of the 2023 school year because of extreme heat.[82]

---

76. Noah Weiland, *Workers Exposed to Extreme Heat Have Few Protections*, N.Y. TIMES (Oct. 5, 2023), https://www.nytimes.com/2023/10/05/health/heat-exposure-workers-osha.html (on file with the *Iowa Law Review*); Brittany Ford, *Workers at Hartsfield-Jackson International Airport Battle Blistering Heat*, ATLANTA NEWS FIRST (July 27, 2023, 5:44 PM), https://www.atlantanewsfirst.com/2023/07/27/workers-hartsfield-jackson-international-airport-battle-blistering-heat [https://perma.cc/SST5-5PH3].

77. Todd Bishop, *Amazon Tops 1M U.S. Employees*, GEEKWIRE (Feb. 9, 2022, 8:36 AM), https://www.geekwire.com/2022/amazon-tops-1m-u-s-employees [https://perma.cc/3RGH-QL9F].

78. Daniela Coppola, *Employees of Amazon from 2007 to 2024*, STATISTA (Feb. 2025), https://www.statista.com/statistics/234488/number-of-amazon-employees (on file with the *Iowa Law Review*); Jason Del Rey, *The Amazonification of the American Workforce*, VOX (Apr. 21, 2022, 5:00 AM), https://www.vox.com/the-highlight/22977660/amazon-warehouses-work-injuries-retail-labor [https://perma.cc/HD34-8QJB].

79. *See, e.g.*, *Inside Amazon's Warehouse*, MORNING CALL (Apr. 1, 2019, 10:21 PM), https://www.mcall.com/2015/08/17/inside-amazons-warehouse (on file with the *Iowa Law Review*); Suhauna Hussain, *What It's Like Working at Amazon During a Southern California Heat Wave*, L.A. TIMES (Sept. 21, 2022, 6:00 AM), https://www.latimes.com/business/story/2022-09-21/amazon-heat-wave-california-work (on file with the *Iowa Law Review*).

80. *See, e.g.*, Ariel Wittenberg, *OSHA Probe Could Put Amazon in Hot Seat*, E&E NEWS (Aug. 22, 2022, 1:27 PM), https://www.eenews.net/articles/osha-probe-could-put-amazon-in-hot-seat [https://perma.cc/7BG5-4JCX]; Grace Dean, *Amazon Gave Iced Scarves to Warehouse Employees to Keep Them Working During the Seattle Heatwave — but Some Staff Reportedly Left Early Because They Couldn't Cope*, BUS. INSIDER (June 29, 2021, 5:38 AM), https://www.businessinsider.com/amazon-warehouse-workers-heatwave-seattle-washington-kent-temperature-power-hour-2021-6 (on file with the *Iowa Law Review*); Bob Okon, *Joliet Amazon Facility Too Hot, Warehouse Workers Say*, SHAW LOC. NEWS NETWORK (Aug. 26, 2023, 8:00 AM), https://www.shawlocal.com/the-herald-news/news/2023/08/26/joliet-amazon-facility-too-hot-warehouse-workers-say [https://perma.cc/CX7H-MMZ9].

81. Matthew Korfhage, *Three NJ Amazon Warehouses. Three Weeks. Three Worker Deaths. Now, OSHA Is Investigating*, NORTHJERSEY.COM (Aug. 09, 2022, 5:21 PM), https://www.northjersey.com/story/news/local/new-jersey/2022/08/09/nj-amazon-warehouse-workers-deaths-osha-investigation/65395867007 [https://perma.cc/4FZX-KRC8]; Daniel Munoz, *Worker Deaths in NJ, Including Three at Amazon, Draw Attention to Heat Risks*, NORTHJERSEY.COM (Aug. 26, 2022, 4:15 AM), https://www.northjersey.com/story/news/state/2022/08/26/amazon-nj-warehouse-death-heat-related-injuries-dehydration/65415932007 [https://perma.cc/E59P-LTKL].

82. Eric Roston, *As School Started in the U.S., So Did the School Closures for Heat*, TIME (Sept. 9, 2023, 11:12 AM), https://time.com/6312416/as-school-started-in-the-u-s-so-did-the-school-closures-for-heat [https://perma.cc/7QSZ-3LLH]; Ernesto Londoño, Ann Hinga Klein & Colbi Edmonds, *Sweltering Temperatures Disrupt the New School Year*, N.Y. TIMES (Aug. 25, 2023), https://www.nytimes.com/2023/08/25/us/heat-wave-school-year.html (on file with the *Iowa Law Review*).

Others have closed because of declining air quality.[83] In response to both extreme heat and poor air quality, some schools have cut back on outdoor recess and after-school activities.[84] As economist Jisung Park writes, "Black and Hispanic students tend to live and go to school in parts of the country where heat during the school year is more frequent, and tend to learn in classrooms that are less likely to be air-conditioned"; as a result, Park has shown that "the disparate impacts of heat on learning may actually be contributing to racial academic achievement gaps."[85] School boards and administrators are often faced with tough choices as many school buildings lack central air conditions or functioning window units.[86] According to a recent study by the U.S. Government Accountability Office, "[forty-one] percent of school districts need to update or replace HVAC systems in at least half their schools (about 36,000 schools nationwide)."[87]

3. Fewer Resources to Adapt

Poor people in the United States will increasingly struggle to work and care for themselves and others amid climate strains, but they are not a monolithic group. Race, gender, age, and citizenship status all complicate and compound the vulnerability to climate strains identified above. One way of thinking through the various manifestations across groups is by identifying differentiated exposure and differentiated impact.[88]

Public health scholars, through their focus on social determinants of health, have shown how this compounded vulnerability exacerbates the challenges of climate strains. For instance, poor pregnant women are especially vulnerable to extreme heat, and extreme heat events are associated with adverse birth outcomes, including low birth weight, preterm birth, and infant

83. Apoorva Mandavilli, *Covid Closed the Nation's Schools. Cleaner Air Can Keep Them Open*, N.Y. TIMES (Aug. 27, 2023), https://www.nytimes.com/2023/08/27/health/schools-indoor-air-covid.html (on file with the *Iowa Law Review*).

84. *See* Sequoia Carrillo & Beth Wallis, *Extreme Heat Is Cutting into Recess for Kids. Experts Say That's a Problem*, NPR (Sept. 7, 2023, 2:57 PM), https://www.npr.org/2023/09/07/1198269007/extreme-heat-is-cutting-into-recess-for-kids-experts-say-thats-a-problem [https://perma.cc/3KG2-V3T2].

85. PARK, *supra* note 33, at 50; *see also* R. Jisung Park, Joshua Goodman, Michael Hurwitz & Jonathan Smith, *Heat and Learning*, 12 AM. ECON. J. 306, 336–37 (2020) [hereinafter Park et al., *Heat and Learning*] (connecting hotter temperatures to the Black–white achievement gap).

86. Laura Meckler & Anna Phillips, *Climate Change Is Forcing Schools to Close Early for 'Heat Days,'* WASH. POST (June 4, 2022), https://www.washingtonpost.com/education/2022/06/04/school-heat-days-climate-change (on file with the *Iowa Law Review*). There is also emerging evidence that extreme heat makes it harder for students to learn. R. Jisung Park, A. Patrick Behrer & Joshua Goodman, *Learning Is Inhibited by Heat Exposure, Both Internationally and Within the United States*, 5 NAT. HUM. BEHAV. 19, 19–23 (2021); Park et al., *Heat and Learning*, *supra* note 85, at 308.

87. U.S. GOV'T ACCOUNTABILITY OFF., GAO-20-494, SCHOOL DISTRICTS FREQUENTLY IDENTIFIED MULTIPLE BUILDING SYSTEMS NEEDING UPDATES OR REPLACEMENT 8 (June 2020), https://www.gao.gov/assets/710/707517.pdf [https://perma.cc/A79Q-RD4W].

88. *See, e.g.*, Richard L. Revesz, *Air Pollution and Environmental Justice*, 49 ECOLOGY L.Q. 187, 190, 211–25 (2022) (discussing how "[t]hese enormously serious adverse health consequences are borne disproportionately by communities of color and people of low socioeconomic status" (footnote omitted)).

mortality.[89] In neighborhoods in the United States, elevated temperatures disproportionately impact poor Americans.[90] Individuals without health insurance have also been found to experience higher rates of temperature mortality impacts.[91] Poor people have limited access to quality healthcare and limited access to healthcare services generally, which worsens outcomes due to climate-driven health issues like heat-related illness, mental health stress, cardiopulmonary illness, and food-, water-, and vector-borne illnesses.[92] Lack of access to healthcare makes it harder for households to support children in ways that promote healthy child development.[93]

By lumping together challenges around heat and air quality as climate strains, this Article risks elevating some examples of climate strains while deemphasizing others. It's important to remember, then, that these are just a few illustrations of what are likely to be pervasive strains in daily life. The climate crisis creates and intensifies many other strains on people's lives, such as extreme cold and threats to food systems.[94] Elsewhere in the United States, communities are facing challenges with declining water quantity and quality.[95] For instance, safe drinking water has been an issue for tribes for decades.

> Native American households are 19 times more likely than white households to lack indoor plumbing. . . . Navajo residents are 67 times more likely than other Americans to live without access to

89. *See* CRIMMINS ET AL., *supra* note 44, at 22; *see also* Margaret H. Zhang, *Pregnant Workers and the Climate Crisis*, 91 TENN. L. REV. 431, 461–79 (2024).

90. *See generally* Carina J. Gronlund, *Racial and Socioeconomic Disparities in Heat-Related Health Effects and Their Mechanisms: A Review*, 1 CURRENT EPIDEMIOLOGY REPS. 165 (2014); *see also* Sameed Ahmed Khatana et al., *Projections of Extreme Temperature-Related Deaths in the US*, JAMA NETWORK OPEN 8–11 (Sept. 20, 2024), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2823849 [https://perma.cc/7BBF-C8ZY].

91. U.S. ENV'T PROT. AGENCY, *supra* note 65, at 33.

92. *See Climate Change and Health Equity*, U.S. DEP'T HEALTH & HUM. SERVS. (May 6, 2022), https://web.archive.org/web/20220515130057/https:/www.hhs.gov/climate-change-health-equity-environmental-justice/climate-change-health-equity/index.html [https://perma.cc/V43D-SFXM].

93. Benjamin Gurrentz & R. Chase Sawyer, *New Community Resilience Estimates for Heat Identify Areas Socially Vulnerable to Extreme Heat*, U.S. CENSUS BUREAU (July 11, 2023), https://www.census.gov/library/stories/2023/07/almost-a-quarter-of-population-vulnerable-to-rising-heat.html#:~:text=Almost%201%20in%204%20people,new%20U.S.%20Census%20Bureau%20data [https://perma.cc/78TL-J5EG].

94. *See generally* Judah Cohen et al., *Linking Arctic Variability and Change with Extreme Winter Weather in the United States*, 373 SCIENCE 1116 (2021); *see also* Scott Dance, *Scientists Say Arctic Warming Could Be to Blame for Blasts of Extreme Cold*, WASH. POST (Dec. 23, 2022), https://www.washingtonpost.com/climate-environment/2022/12/23/climate-change-impact-cold-weather (on file with the *Iowa Law Review*) (discussing study).

95. *See* INTERGOV'T PANEL ON CLIMATE CHANGE, CLIMATE CHANGE AND WATER 3 (Bryson Bates, Zbigniew W. Kundzewicz, Shaohong Wu & Jean Palutikof eds., 2008). *See generally* Christopher B. Field et al., *North America*, *in* CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY 619 (Martin Parry, Osvaldo Canziani, Jean Palutikof, Paul van der Linden & Clair Hanson eds., 2007).

> running water. . . . [A]pproximately 75% of people living on Hopi land are drinking contaminated water.[96]

The climate crisis compounds this perennial challenge for tribes.[97] Nevertheless, it is useful to group these challenges together as climate strains because, as Part II and Part III suggest, the legal responses may be similar and the political will to address them would benefit from a coordinated, national response. What the Hopi and other tribes have experienced for decades will become more common for other marginalized groups.

What this Part has shown is that climate strains, while impacting us all, will be particularly challenging for poor people in the United States. As Miami-Dade's Chief Heat Officer put it a couple years ago, "[i]f you live in air-conditioning, work in air-conditioning and get around in an air-conditioned car, heat's not really an issue. But if you live in substandard housing, if you work either outside or in an undercooled indoor environment, it's quite dangerous."[98] Given these unequal climate strains, how does our government currently respond? That's the question to which the next Part turns.

II. SAFETY NET RESPONSES TO CLIMATE STRAINS

Acknowledging the myriad ways climate strains impact people's lives gives us added impetus to slow the pace and extent of climate change through decarbonization and climate mitigation. But government can also address climate strains with adaptation. The analysis in this Part builds on overlapping scholarly literatures—those of environmental justice and the just transition framework.

The environmental justice scholarship, only about thirty years old in the legal academy,[99] came out of civil rights protests in Warren County, North Carolina, about hazardous waste, which, in turn, led sociologist Robert Bullard to write arguably the first academic manuscript using environmental

---

96. Lanikque Howard, *Addressing Water and Wastewater Challenges in Tribal Nations*, ADMIN. FOR CHILD. & FAMS. (Aug. 25, 2022), https://www.acf.hhs.gov/blog/2022/08/addressing-water-and-wastewater-challenges-tribal-nations [https://perma.cc/9ZPV-MAE4]; *see also* Heather Tanana, Julie Combs & Alia Hoss, *Water Is Life: Law, Systemic Racism, and Water Security in Indian Country*, 19 HEALTH SEC. S-78, S-79 (2021) (discussing tribal drinking water infrastructure); Nina Lakhani, *Tribes Without Clean Water Demand an End to Decades of US Government Neglect*, GUARDIAN (Apr. 28, 2021, 5:00 AM), https://www.theguardian.com/us-news/2021/apr/28/indigenous-americans-drinking-water-navajo-nation [https://perma.cc/K9G8-7SGB] (same).

97. *See* Alejandro E. Camacho, Elizabeth Kronk Warner, Jason McLachlan & Nathan Kroeze, *Adapting Conservation Governance Under Climate Change: Lessons from Indian Country*, 110 VA. L. REV. 1549, 1572–1601 (2024) (enumerating the climate governance challenges for tribes); Alexandra B. Klass & Rebecca Wilton, *Local Power*, 75 VAND. L. REV. 93, 141–43 (2022) (discussing energy sovereignty for tribes).

98. Patricia Mazzei, *Miami's Chief Heat Officer, One of Only a Few in the Country, Warns of 'Chronic High Heat.,'* N.Y. TIMES (June 29, 2023, 12:01 PM), https://www.nytimes.com/live/2023/06/29/us/heat-wave-weather-forecast#jane-gilbert-miami-heat-officer (on file with the *Iowa Law Review*); *see also* PARK, *supra* note 33, at 16 ("[W]ithin the United States, the effect of such heat on health may vary by an order of magnitude, depending on highly localized and individual factors such as income, occupation, industry, and neighborhood.").

99. *See* Richard J. Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787, 790–91 (1993) ("Until very recently, the legal academic community has paid relatively little attention to these emerging issues of 'environmental justice.'").

justice as its unifying theory.[100] Shortly thereafter, Luke Cole, a legal aid lawyer, wrote about the need for an "environmental poverty law" that he used in conjunction with the framework of environmental justice.[101] Sheila Foster, a legal academic, also began exploring what environmental justice would mean for the practice of law and environmental law scholarship.[102] Cole and Foster co-authored the canonical book on the subject.[103] The environmental justice literature continues to inform recent scholarship by legal academics on a variety of climate-related topics including environmental disclosure and climate modeling,[104] disaster relief,[105] food supply,[106] land use,[107] and managed retreat.[108] The Biden Administration incorporated environmental justice explicitly in its Justice40 initiative and multiple executive orders.[109] Of particular use to this

100. *See* Paul Mohai, David Pellow & J. Timmons Roberts, *Environmental Justice*, 34 ANN. REV. ENV'T & RES. 405, 408–10 (2009) (providing a brief overview of the rise of environmental justice studies and identifying the Warren County protests as the catalyst). *See generally* ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY (1990) (exploring how the decision to locate hazardous waste in Black communities sparked a social movement); Cara Buckley, *At 75, the Father of Environmental Justice Meets the Moment*, N.Y. TIMES (Nov. 10, 2022), https://www.nytimes.com/2022/09/12/climate/robert-bullard-environmental-justice.html (on file with the *Iowa Law Review*) (discussing Bullard's influence).

101. *See* Luke W. Cole, *Empowerment as the Key to Environmental Protection: The Need for Environmental Poverty Law*, 19 ECOLOGY L.Q. 619, 683 (1992) (writing "to make the work of environmental and poverty lawyers more responsive to those communities bearing the brunt of environmental dangers"); Richard L. Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 HARV. L. REV. 553, 570 (2001) (discussing Cole's influence and conception of environmental justice).

102. *See, e.g.*, Sheila Foster, *Justice from the Ground Up: Distributive Inequities, Grassroots Resistance, and the Transformative Politics of the Environmental Justice Movement*, 86 CALIF. L. REV. 775, 776–77 (1998).

103. *See generally* LUKE W. COLE & SHEILA R. FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT (2001).

104. *See* Annie Brett, *Rethinking Environmental Disclosure*, 112 CALIF. L. REV. 1535, 1581 (2024) (arguing that "[t]he false promises of transparency throughout environmental law" among other things "intensify existing environmental justice concerns"); Madison Condon, *Climate Services: The Business of Physical Risk*, 55 ARIZ. ST. L.J. 147, 205 (2023) (discussing how "environmental justice and academic researchers are racing to understand the combined impacts of both climate change and the financial sector's response to climate risk" (emphasis omitted)).

105. *See* Abigail E. André, *Modern Disaster Fragmentation*, 93 FORDHAM L. REV. 557, 563 (2024) (admitting the "[a]rticle is grounded in environmental justice theory").

106. *See* Daniel Cornelius & Steph Tai, *Can We Save Our Foodways? The Inflation Reduction Act, Climate Change, and Food Justice*, 133 YALE L.J.F. 1053, 1086 (2024) ("These efforts are necessary to save our foodways in this climate emergency.").

107. *See* Danielle Stokes, *From Redlining to Greenlining*, 71 UCLA L. REV. 628, 633–35 (2024).

108. *See* Ruhan Sidhu Nagra, *Relocating Justice*, 74 DUKE L.J. 441, 457–63 (2024).

109. *See, e.g.*, Exec. Order No. 14,008, §223, 86 Fed. Reg. 7619, 7632 (Jan. 27, 2021) (calling on the OMB Director, the National Climate Advisor, and the Chair of the Council on Environmental Quality to "jointly publish recommendations on how certain Federal investments might be made toward a goal that 40 percent of the overall benefits flow to disadvantaged communities. . . . focus[ing] on investments in the areas of clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of critical clean water infrastructure"); Exec. Order No. 14,096, 88 Fed. Reg. 25251, 25251–61 (Apr. 21, 2023); *see also* Alexandra B. Klass & Hannah Wiseman, *Repurposed Energy*, 109 MINN. L. REV. 298–300 (2024) (discussing Justice40 Initiative and DOE's Community Benefits Plan); Hannah Perls, *How Durable Is President Biden's Environmental Justice Agenda?*, 50 HUM. RTS. MAG., Oct. 2024, at 37, 38 (same).

Article is work on energy justice, which attends to the distributive consequences and challenges of the green energy transition.[110]

Informed by the environmental justice literature, the just transition framework is "a theory of change that recognizes that those least culpable for the current climate crisis are most vulnerable to its effects."[111] The just transition framework tries to respond to criticisms of environmentalism from environmental justice scholars and others that it focused too narrowly on conservation, litigation, and regulation—and insufficiently emphasized the needs of poor people.[112] The just transition framework was originally shaped by concerns about nuclear war and toxic waste, not climate change, and has typically focused on forging alliances and a united agenda among organized labor and environmental groups.[113] Indeed, Ann Eisenberg has argued that the malleability of the just transition framework is a weakness, not a strength and that "in the context of climate change, the just transition concept should be defined as some form of help for fossil fuel workers."[114]

But the just transition framework has now been applied in various contexts—both here and abroad, by academics and policymakers.[115] Importantly for this Article, the just transition literature harnesses some of the insights of the environmental justice movement and applies them to the pressing challenges presented by climate change.[116]

---

110. *See, e.g.*, Gabriel Chan & Alexandra B. Klass, *Reckoning with Social Policy in Utility Regulation*, 106 B.U. L. REV. (forthcoming 2025) (manuscript at 26–34) (on file with the *Iowa Law Review*) [hereinafter Chan & Klass, *Reckoning with Social Policy in Utility Regulation*]; Klass & Wiseman, *supra* note 109, at 274–79 (drawing on the environmental justice framework); Nadia Ahmad, Uma Outka, Danielle Stokes & Hannah Wiseman, *Synthesizing Energy Transitions*, 39 GA. ST. U. L. REV. 1087, 1105–12 (2023); Gabriel Chan & Alexandra B. Klass, *Regulating for Energy Justice*, 97 N.Y.U. L. REV. 1426, 1431 (2022) [hereinafter Chan & Klass, *Regulating for Energy Justice*]; Sanya Carley, Caroline Engle & David Konisky, *An Analysis of Energy Justice Programs Across the United States*, 152 ENERGY POL'Y, Mar. 4, 2021, at 1, 1.

111. Elizabeth J. Kennedy, *Equitable, Sustainable, and Just: A Transition Framework*, 64 ARIZ. L. REV. 1045, 1050–51 (2022); *see* Ann M. Eisenberg, *Just Transitions*, 92 S. CAL. L. REV. 273, 274–75 (2019).

112. Jedediah Purdy, *The Long Environmental Justice Movement*, 44 ECOL. L.Q. 809, 811–12 (2018); *see also* Scott Cummings, *Catalytic Localism: What Is New About the Green New Deal?*, 97 CHI.-KENT L. REV. 291, 293 (2022) (characterizing the Green New Deal as "seek[ing] to address the 'triple crisis' revealed and exacerbated by the pandemic—defined by spiraling economic inequality, climate change, and systemic racial injustice—which threatens American democracy and wider global stability").

113. Kennedy, *supra* note 111, at 1051.

114. *See* Eisenberg, *supra* note 111, at 278.

115. *See, e.g.*, Paris Agreement, Dec. 12, 2015, T.I.A.S. No. 16-1104 (stating in the preamble that "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities"); *The Just Transition Mechanism: Making Sure No One Is Left Behind*, EUR. COMM'N, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism_en [https://perma.cc/GG7V-QXSY].

116. *See* Aysha Pamukcu & Angela P. Harris, *Health Justice and Just Transition*, 50 J.L. MED. & ETHICS 674, 675 (2022) ("In the climate justice context, Just Transition is a vision with a simple but transformational premise" that "[t]he key to leading longer and healthier lives lies in shifting from a profit-driven economy reliant on diminishing natural resources to one that supports the resilience of people and the systems that sustain them—without the costs of this shift falling on

Relying on the insights from environmental justice and the just transition framework, this Part analyzes current responses to climate strains. Current responses tend to fall in four categories: (1) *subsidizing* the costs associated with those strains; (2) making *investments* that will lessen the impact of those strains; (3) *regulating* individuals, organizations, and businesses in ways that mitigate climate strains; and (4) supporting those who *relocate* to avoid those strains. This Part looks at the first three. In future work, I will consider the fourth.

These four categories are not always easily delineated. For instance, the first and the second sometimes blur. The federal government subsidizes the energy costs of low-income households through the LIHEAP by contributing to their utility bills.[117] The federal government also recently created tax credits to incentivize investments in home improvements that reduce energy costs, like better insulation and heat pumps.[118] Both LIHEAP and the now expiring tax credits created by the IRA are aimed at reducing energy poverty by lowering costs. And from an economist's perspective, it might not matter whether that's through a direct subsidy or a tax credit.

However, as this Part explores, the legal response does matter to low-income households because each of these responses varies in terms of implementation, redistribution, and decarbonization. Analyzing the legal responses along two of these dimensions builds on my earlier work on welfare programs in the United States.[119] The federal government relies heavily on states, territories, and tribes to administer means-tested assistance. At times, state-level policymakers and bureaucrats will be unable or unwilling to deliver

---

the most vulnerable."); Sidney A. Shapiro & Robert R.M. Verchick, *Inequality, Social Resilience, and the Green Economy*, 86 UMKC L. REV. 963, 964 (2018) (writing "to recover the ideal of a united regulatory and social welfare state" in American environmentalism). For other recent legal scholarship using the just transition framework, see, e.g., Jeff Todd, *Carbon Pricing for a Just Transition*, 95 U. COLO. L. REV. 653, 681 (2024) ("[C]arbon pricing [can] have a minimal economic impact while fostering a just transition."); Craig Holt Segall, *Just Transitions for Oil and Gas Communities*, 39 VA. ENV'T L.J. 177, 178 (2021) ("As environmental authorities rapidly work to reduce demand for oil and gas, jurisdictions across the country lack a just transition framework for communities dependent on producing these resources."); Ann M. Eisenberg, *Distributive Justice and Rural America*, 61 B.C. L. REV. 189, 218 (2020) ("Although the concept of a just transition has not been widely recognized as a principle of distributive justice, the concentration of economic losses on rural communities signals its theoretical relevance."); Brigham Daniels, Michalyn Steele & Lisa Grow Sun, *Just Environmentalism*, 37 YALE L. & POL'Y REV. 1, 23 (2018) (stating that the principle of just transition "is one of the relatively rare principles that focuses explicitly and exclusively on a fair distribution of the burdens of environmental protection"); and J. Mijin Cha, *A Just Transition: Why Transitioning Workers into a New Clean Energy Economy Should Be at the Center of Climate Change Policies*, 29 FORDHAM ENV'T L. REV. 196, 198 (2017) ("[J]ust transition must be at the center of any climate change efforts.").

117. *Get Help with Energy Bills*, USAGOV (Mar. 18, 2025), https://www.usa.gov/help-with-energy-bills [https://perma.cc/ET3F-8BYC]; Uma Outka, *Energy Law and the Low-Income Household*, 54 ENV'T L. 720, 735 (2024).

118. *See Get Help with Energy Bills*, *supra* note 117.

119. *See* Hammond, *On Fires, Floods, and Federalism*, *supra* note 15; Andrew Hammond, *Territorial Exceptionalism and the American Welfare State*, 119 MICH. L. REV. 1639, 1664–67 (2021) (analyzing the ways in which Americans in the five territories are left out of the typical arrangements for Medicaid, SNAP, and SSI); Andrew Hammond, *Litigating Welfare Rights: Medicaid, SNAP, and the Legacy of the New Property*, 115 NW. U. L. REV. 361, 398–400 (2020) [hereinafter Hammond, *Litigating Welfare Rights*].

assistance to poor people.[120] As a result, any analysis of how the American welfare state should adapt to meet the challenges of climate strains should attend to the implementation challenges that this kind of cooperative federalism scheme abets.[121] Distributive challenges bedevil any transfer program. Legislatures and agencies need to understand how certain programs may inadvertently benefit the better off and not reach the people most in need.

The challenges of implementation and distribution are not new to questions of public benefits, but decarbonization is. Climate strains raise thorny issues about energy use and infrastructure. Some of the climate strain solutions risk exacerbating the very activity that fuels the climate crisis, namely, the use of fossil fuels.[122] Any reform proposal must address this conundrum so that the government, in its efforts to protect people from the ravages of the climate crisis, does not make the climate crisis worse. For decades, policymakers have not faced the extent to which the welfare state hinders decarbonization. Now, they cannot afford not to.[123]

Subsidies, investments, and regulations may have different effects on the mitigation of the climate crisis. LIHEAP has no clean energy requirement for utilities. [124] While LIHEAP may reduce energy poverty, as with all subsides of energy use, it could exacerbate the climate crisis if the United States continues to rely heavily on fossil fuels. All energy consumption is implicated by the energy sector's climate impact, but wealthy Americans use far more energy overall.[125] Thus, when adapting the American welfare state to the climate crisis, policymakers need to be mindful of how to design these programs across multiple dimensions: how the programs are implemented, whether the programs are redistributive, and whether the programs promote decarbonization. Table 1 illustrates how each category of government response analyzed in this Article

120. *See* Hammond, *On Fires, Floods, and Federalism*, *supra* note 15, at 1114–21.

121. While Jessica Bulman-Pozen and Heather Gerken have identified welfare administration as an example of "licensed dissent" in which state governments use flexibility in federal law as "bids for building a new kind of welfare system," the refusal to participate entirely in a federally funded program seems to stretch such a label. *Cf.* Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256, 1274–76 (2009) (discussing different implementations of "licensed dissent").

122. *See infra* note 240 and accompanying text; *see also* FIFTH NATIONAL CLIMATE ASSESSMENT, *supra* note 40, at 5–6 ("Extreme temperatures increase energy demands and stress electricity operations, leading to outages that disrupt societal services.").

123. This is not to suggest that welfare programs should be the primary way to decarbonize the American economy and our society, nor should the federal and state agencies that are the focus of this Article are necessarily the legal institutions most equipped to contribute to those changes. Much of the decarbonization of the energy sector will turn on decisions by state public utility commissions. *See generally* Chan & Klass, *Reckoning with Social Policy in Utility Regulation*, *supra* note 110; Chan & Klass, *Regulating for Energy Justice*, *supra* note 110, at 1437–52.

124. 42 U.S.C. § 8624 (2018) (providing requirements for state implementation of LIHEAP but omitting any reference to source of energy).

125. Benjamin Goldstein, Dimitrios Gounaridis & Joshua P. Newell, *The Carbon Footprint of Household Energy Use in the United States*, 117 PROCS. NAT'L ACAD. SCIS. 19122, 19124 (2020) (estimating that per capita carbon footprints of wealthier households are roughly twenty-five percent higher than low-income residents, due to their larger homes).

(subsidies, investments, and regulations) fit into each of these dimensions (implementation, redistribution, and decarbonization).

Table 1. Legal Responses to Climate Strains

Type of Legal Response	Example	Implementation	Redistribution	Decarbonization
Subsidies	LIHEAP	States, territories, tribes, and utility operators	Progressive	Neutral
Investments	IRA Tax Credits	Businesses and individuals	Regressive	Promotes
	IRA Energy Rebates	States, territories, tribes, and individuals	Progressive	Promotes
Regulation	Utility Disconnection	Utilities and courts	Progressive	Neutral
	Federal Workplace Heat Standard	Businesses, individuals, and courts	Progressive	Neutral

A. SUBSIDIES

Government can subsidize how poor people respond to climate strains in several ways. One way is to assist low-income people in affording their utility bills, whether they are for electricity, heating, cooling, or water. The federal program that best illustrates the strengths and weaknesses of these kinds of subsidies is LIHEAP. It also happens to be the program with the greatest reach: Roughly 5.4 million American households receive LIHEAP assistance each year.[126] This Section provides an overview of LIHEAP and assesses its ability to help Americans respond to climate strains. LIHEAP is a block grant program that was originally designed to help Americans heat their homes.[127] The history of the program is worth recounting.

Paying for electricity, heat, and water has been a challenge for people living in poverty for decades. In the midst of the oil shocks of 1973 and 1974,

126. For instance, in fiscal year 2022, LIHEAP assisted approximately 5.1 million households with heating assistance, 820,000 with cooling, and 59,000 with weatherization services. U.S. DEP'T OF HEALTH & HUM. SERVS., LOW INCOME ENERGY ASSISTANCE PROGRAM: REPORT TO CONGRESS FOR FISCAL YEAR 2022, at 34 (2023). Many households benefit from multiple types of assistance, making the total number of unique households served higher than those receiving heating assistance alone. *See* Outka, *supra* note 117, at 724–25 (discussing how analysis of LIHEAP and the topic of energy insecurity more generally "has long been sidelined within energy law regimes by a theoretical and practical framing of low-income energy policy as an extension of *poverty law*, rather than as an integral concern for *energy law*").

127. *See* Outka, *supra* note 117, at 735–36.

Americans began to pay much more for electricity and to heat their homes.[128] In response, Maine officials sought federal funds to subsidize low-income and elderly households to meet their energy needs. The federal Office of Economic Opportunity approved Maine's request in late 1973.[129] A couple of years later, Congress created the Emergency Energy Conservation Program, which provided funding for weatherization, conversion, and fuel vouchers.[130] Over the next few years, Congress expanded and modified the program to focus more and more on subsidies to low-income households.

Fuel prices continued to increase sharply in 1979 due to oil shortages.[131] In response, the Carter Administration implemented a "decontrol" plan, which reduced oil pricing controls to spur domestic oil production and increase conservation efforts.[132] Subsequently, Congress created the Low-Income Energy Assistance Program ("LIEAP") as part of the Crude Oil Windfall Profit Tax Act of 1980.[133] As part of this policy, Congress intended LIEAP to subsidize American energy consumption in the face of the increased prices associated with the decontrol program.[134]

A look at the legislative history of LIEAP suggests that its creation, not to mention its structure, was far from preordained. The House Ways and Means

128. *History of LIHEAP*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/sites/default/files/webfiles/docs/History_of_LIHEAP.pdf [https://perma.cc/8Z68-3C8U]; Donald E. Rigby & Charles Scott, *Low-Income Energy Assistance Program*, 46 SOC. SEC. BULL., Jan. 1983, at 11, 11 (noting that between 1972 to 1979 "[e]lectricity costs rose 84 percent, gas 150 percent, and fuel oil costs rose 258 percent"); Kenneth A. Manaster, *Energy Equity for the Poor: The Search for Fairness in Federal Energy Assistance Policy*, 7 HARV. ENV'T L. REV. 371, 371 (1983) (relating how "[h]igh energy costs" for Americans "have become especially acute since 1973, when an embargo by the Organization of Petroleum Exporting Countries (OPEC) triggered a sharp increase in petroleum prices").

129. S. REP. NO. 96-434, at 7 (1979) (discussing how "Maine successfully combined weatherization, crisis intervention, and energy assistance activities into one energy program for low-income persons in that state" and that the federal "Office of Economic Opportunity[] research and development funds were used to carry out these activities").

130. Manaster, *supra* note 128, at 383–84.

131. *See* Christopher R. Knittel, *The Political Economy of Gasoline Taxes: Lessons from the Oil Embargo*, 28 TAX POL'Y & ECON. 97, 122 (2014).

132. *See* 126 CONG. REC. 5826 (1980) (statement of Sen. Russell B. Long); W. CARL BIVEN, JIMMY CARTER'S ECONOMY: POLICY IN AN AGE OF LIMITS 163–77 (2002) (discussing President Carter's development of a policy of phased decontrol of oil prices).

133. *See* Crude Oil Windfall Profit Tax Act of 1980, Pub. L. No. 96-223, §§ 301–313, 94 Stat. 229, 288–99 (codified at 42 U.S.C. §§ 8601–8630). For two recent scholarly discussions of the energy crisis and its political and policy implications in the United States and elsewhere, see generally HELEN THOMPSON, DISORDER: HARD TIMES IN THE 21ST CENTURY (2022); and MEG JACOBS, PANIC AT THE PUMP: THE ENERGY CRISIS AND THE TRANSFORMATION OF AMERICAN POLITICS IN THE 1970S (2016).

134. *See* Crude Oil Windfall Profit Tax Act § 302. President Carter announced oil decontrol plans in a televised address and urged Congress to pass a tax plan. "Proceeds from the tax would go to an 'energy security fund' to help low income families pay for fuel . . . ." BIVEN, *supra* note 132, at 177; *see also* Warren Weaver Jr., *'Windfall' Profits Tax Nears Senate Showdown*, N.Y. TIMES, Nov. 12, 1979, at D1 ("The Administration proposed . . . that a share of the windfall tax revenues go to . . . help poor families pay the high cost of home heating. [This] program [is] expected to attract Senate votes.").

Committee report made no mention of an energy subsidy program.[135] The Senate Finance Committee, however, included a proposal for the creation of the LIEAP program,[136] among other programs aimed at reducing energy costs and encouraging conservation.[137] The Senate committee report discusses LIEAP as a "cash payment[] program," in which either the federal Social Security Administration or the relevant "[s]tate or local welfare agency" would make direct payments to households.[138]

The legislative history of LIEAP demonstrates that, from the program's inception, there have been debates over whether the program should prioritize heating costs over other energy expenditures. The proposed formula for determining LIEAP grants to states based fifty percent of the funding on the annual number of heating days in a state.[139] The rationale for this was that the energy crisis had placed "a particular hardship . . . on those households in the very coldest parts of the country."[140] However, some in Congress criticized the ways in which the program would prioritize heating. Senator Lloyd Bentsen criticized the distribution based on heating days because it failed to account for other necessary energy expenditures like "water heating, refrigeration of food, preparation of meals, and lighting."[141] Perhaps in response to these criticisms, the longtime chair of the Senate Finance Committee, Russell Long, indicated that this program would cover "cooling costs," despite there being no such evidence in the earlier committee or conference reports.[142]

LIEAP, as enacted, created some possibilities for states to cover cooling and other energy costs, but still reflected the priority of heating costs. First, states could choose among four different measures of home energy need.[143] While no options specifically favored states with greater cooling needs, "[t]he fourth option guaranteed states a minimum benefit of $120 for each household that received Aid to Families with Dependent Children (AFDC) or Food

135. The U.S. House of Representatives Committee on Ways and Means report focused exclusively on the Windfall Profit Tax and was substantially shorter than the committee report produced by the Senate Committee on Finance. *Compare* H.R. REP. NO. 96-304 (1979), *with* S. REP. NO. 96-394 (1979).

136. *See* S. REP. NO. 96-394, at 110–17.

137. Portions of the Senate committee report discuss creating a tax credit for users of residential energy to "provide relief from the burden of higher residential energy costs," and to expand residential energy credits for households that install equipment to reduce their energy consumption. *Id.* at 117, 87.

138. *Id.* at 112–13. The Senate report also discusses a "[b]lock grant option" to allow states with the "capacity and willingness" to operate a program to receive funding as a block grant to do so. *Id.* at 114.

139. *Id.* at 112.

140. *Id.*

141. *Id.* at 139.

142. *Compare* 126 CONG. REC. 5828 (1980) (statement of Sen. Russell B. Long), *with* S. REP NO. 96-394, H.R. REP. NO. 96-304 (1979), *and* H.R. REP. NO. 96-817 (1980) (Conf. Rep.). The legislative history does not tell us which Senators insisted on adding the minimum benefit option, only that it was added before the bill went to the Senate floor.

143. LIBBY PERL, CONG. RSCH. SERV., RL33275, THE LIHEAP FORMULA: LEGISLATIVE HISTORY AND CURRENT LAW 6 (2012).

Stamp benefits."[144] This adjunctive eligibility option was added at the committee level "in recognition of the fact that (in general) funds were not being provided for cooling costs."[145] Second, although funds were typically unavailable for cooling, states could provide cooling assistance to households that demonstrated medical necessity.[146]

As the rest of this Section demonstrates, LIHEAP's funding and its reliance on state administration portend significant challenges in adapting LIHEAP to respond to climate strains.

1. LIHEAP Funding

For over forty years, LIHEAP has provided grants to states, tribes, and territories to assist low-income households with heating and cooling expenses, energy crises, and home weatherization.[147] LIHEAP provides block grant funding to states on an annual basis using a statutory formula.[148] Federal law's formula for the LIHEAP block grant is confusing, in part, because it's really two formulas: the old and the new. The old formula, used exclusively to determine state allocations prior to 1984, benefits the heating needs of northern states.[149] Congress then created a new formula that allocates each state's funding based on the energy expenditures of the state's low-income households.[150] While Congress will use the "old" formula to allocate funding in years in which total regular LIHEAP funding falls at or below $1.975 billion, Congress has exceeded that funding threshold in the last several years and thus LIHEAP funds have been allocated using the "new" formula.[151] Congress also inserted "hold harmless" provisions in the "new" formula, which prevents states from losing significant amounts of funding due to the formula changes.[152] Over the

144. *Id.*

145. LIBBY PERL, CONG. RSCH. SERV., RL33275, THE LIHEAP FORMULA 29 (2019) [hereinafter PERL, LIHEAP FORMULA] ; *see also* 125 CONG. REC. 32561 (1979) (statement of Sen. Russell B. Long) ("When the majority of the committee voted to exclude such items as air-conditioning and anything related to cooling a house and limited that formula to heating, this Senator contended that, if that were to be the case, there should be at least a minimum on which people could depend.").

146. *See* Crude Oil Windfall Profit Tax Act of 1980, Pub. L. No. 96-223, § 307(c), 94 Stat. 229, 297 ("The State is authorized to make grants to eligible households to meet the rising costs of cooling whenever the household establishes that such cooling is the result of medical need pursuant to standards established by the Secretary."); *see* PERL, *supra* note 143, at 7.

147. 42 U.S.C. § 8624(b)(1). The act defines "energy crises" as "weather-related and supply shortage emergencies and other household energy-related emergencies." *Id.* § 8622(3). For an excellent overview of LIHEAP, see also Outka, *supra* note 117, at 734–44.

148. *See* 42 U.S.C. § 8623(a) (describing the funding formula for states).

149. PERL, LIHEAP FORMULA, *supra* note 145, at 18 ("The LIHEAP formula in FY1984 distributed funds by giving states the same percentage of funds that they received in FY1981 under . . . LIEAP.").

150. *Id.*

151. *See* 42 U.S.C. § 8623(a); LIBBY PERL, CONG. RSCH. SERV., RL31865, LIHEAP: PROGRAM AND FUNDING 2 tbl.1 (2018) [hereinafter PERL, LIHEAP: PROGRAM AND FUNDING].

152. *See* 42 U.S.C. § 8623(a)(2); *see also* PERL, LIHEAP FORMULA, *supra* note 145, at 15–17 (detailing the intricacies of the hold harmless provisions); SCOTT BECHLER, HOW A DECADES-OLD

last fifteen years, regular LIHEAP funding has consistently been above $2 billion, with average total funding reaching closer to $4 billion.[153] There were notable increases during years of economic hardship, such as during the 2009 financial crisis and ensuing recession and during the COVID-19 pandemic, when funding exceeded $5 billion and $6 billion respectively.[154]

However, the future of LIHEAP funding remains uncertain. During his first term, President Trump sought to eliminate LIHEAP.[155] Despite criticism,[156] the administration yearly requested no appropriations from Congress to be used for LIHEAP.[157] While LIHEAP funding was not cut as part of the budget reconciliation process, LIHEAP remains vulnerable to future cuts during this Congress.[158] This is particularly troubling when paired with the possible roll-

---

FEDERAL ENERGY ASSISTANCE PROGRAM FUNCTIONS IN PRACTICE: A DEEP DIVE INTO LIHEAP 2 n.5 (2021), https://nicholasinstitute.duke.edu/sites/default/files/publications/How-a-Decades-Old-Federal-Energy-Assistance-Program-Functions-in-Practice-A-Deep-Dive-into-LIHEAP.pdf [https://perma.cc/398A-6AL3].

153. *See LIHEAP Funding History*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/funding/energyprogs_gph.htm [https://perma.cc/R7U4-34HM]; *see also* PERL, LIHEAP FORMULA, *supra* note 145, at 21 tbl.C-1.

154. *See LIHEAP Funding History*, *supra* note 153; *see also LIHEAP Funding for States and Territories*, U.S. DEP'T HEALTH & HUM. SERVS., https://liheapch.acf.hhs.gov/Funding/funding.htm#:~:text=On%20May%204%2C%202021%20an,to%20provide%20payments%22%20for%20LIHEAP [https://perma.cc/9AGE-56PC] (pointing out that ARPA provided $4.5 billion in additional LIHEAP funding).

155. David Sharp, *Trump Once Again Wants to Cut Energy Assistance to the Poor*, ASSOCIATED PRESS (Feb. 18, 2018, 10:41 AM), https://apnews.com/national-national-general-news-3218910423c3415ba4dba6a6a5b25dbb [https://perma.cc/C2ZV-43E5]; U.S. DEP'T OF HEALTH & HUM. SERVS., FISCAL YEAR 2018 JUSTIFICATION OF ESTIMATES FOR APPROPRIATIONS COMMITTEES 15 (2017).

156. *See* SHARON PARROTT ET AL., CTR. ON BUDGET & POL'Y PRIORITIES, TRUMP BUDGET DEEPLY CUTS HEALTH, HOUSING, OTHER ASSISTANCE FOR LOW- AND MODERATE-INCOME FAMILIES 4 (2018); Press Release, Ctr. for Am. Progress, Trump's Elimination of Low Income Energy Assistance Will Cause Direct Harm to Already Vulnerable Americans (May 19, 2017), https://www.americanprogress.org/press/release-trumps-elimination-low-income-energy-assistance-will-cause-direct-harm-already-vulnerable-americans [https://perma.cc/QWT9-TWHL]; *Donald Trump's Budget Leaves Vulnerable Families Out in the Cold*, NAT'L WOMEN'S L. CTR. (March 17, 2017), https://nwlc.org/donald-trumps-budget-leaves-vulnerable-families-out-in-the-cold [https://perma.cc/A7RD-BYJF].

157. *See* U.S. DEP'T OF HEALTH & HUM. SERVS., *supra* note 155; PERL, LIHEAP: PROGRAM AND FUNDING, *supra* note 151, at 15.

158. *See* Lowell Ungar & Ben Somberg, *Project 2025 Reprises Effort to Eliminate Weatherization Assistance*, AM. COUNCIL FOR ENERGY-EFFICIENT ECON. (Oct. 8, 2024), https://www.aceee.org/blog-post/2024/10/project-2025-reprises-effort-eliminate-weatherization-assistance [https://perma.cc/ZR2E-Y2P4]; Robert Greenstein, *Trump Administration Budgets and Programs for People of Limited Means*, BROOKINGS (Sept. 3, 2024), https://www.brookings.edu/articles/trump-administration-budgets-and-programs-for-people-of-limited-means [https://perma.cc/5S7X-M6C5] (examining the program changes that would flow from previous Trump Administration budget requests if enacted as proposed). Congress did eliminate the "heat and eat" provision in the Food and Nutrition Act of 2008. Previously, a household receiving LIHEAP automatically qualified a household for a higher Standard Utility Allowance under SNAP, and consequently more SNAP benefits. The budget reconciliation bill eliminated that provision for LIHEAP recipients except those in households that include an older adult or a person with disability. *See* One Big Beautiful Bill Act, Pub. L. No. 119-21, § 10103, 139 Stat. 72 (2025).

back of environmental protections,[159] potentially subjecting low-income households to increasing temperatures while simultaneously reducing funding for energy assistance.

As with other welfare programs in the United States, the federal government provides LIHEAP block grant funding to territories and tribes differently from states, and in ways that may make the program less generous for territorial and indigenous Americans.[160] LIHEAP's funding allotment formula operates differently and inequitably to distribute funding to the territories; the combined allotments to all five U.S. territories may not exceed one-half of a percent of total LIHEAP funding annually.[161]

This leads to substantial disparities in funding between states and territories. For example, in 2024, Puerto Rico received less than half of the funding of similarly populated states,[162] despite Puerto Rico having over double the poverty rate.[163] Funding for tribes, on the other hand, is enmeshed with state grants. Tribes receive funding that would otherwise be allocated to the state where they reside.[164] The funding for a tribe is allotted through a formula that considers the number of low-income households residing on tribal lands as a proportion of low-income households in the state.[165] However, this formula relies on census population counts that chronically undercount tribal populations.[166] The underfunding of tribes is so commonplace that many

159. Michael Copley, *Trump's Victory Promises to Shake Up U.S. Energy and Climate Policy, Analysts and Activists Say*, NPR (Nov. 6, 2024, 2:57 PM), https://www.npr.org/2024/11/06/nx-s1-5181891/trump-win-climate-change-fossil-fuels-clean-energy [https://perma.cc/E28C-66QR]; Jennifer McDermott & Matthew Daly, *In New Term, Trump Set to Go After Measures That Are Doing the Most to Fight Climate Change*, ASSOCIATED PRESS (Nov. 11, 2023, 12:31 PM), https://apnews.com/article/trump-election-climate-pollution-oil-gas-clean-energy-f6ad39e23613396a7536fb1dc25fca62 [https://perma.cc/82D9-GMNX].

160. *See* 42 U.S.C. § 8623(b) (describing the formula for territories); *id.* § 8623(d) (describing the formula for tribes).

161. *See id.* § 8623(b).

162. Puerto Rico has over 3.2 million residents, similar to the population of Iowa. *See Total Population*, U.S. CENSUS BUREAU (Dec. 2020), https://data.census.gov/table?q=state%20population [https://perma.cc/P6H9-3E5Y]. However, in 2024, Puerto Rico's total regular LIHEAP allocation of $18.5 million pales in comparison to Iowa's $58.8 million in funding. *LIHEAP DCL 2024-07 Third Release to States and Territories FY 2024*, LIHEAP CLEARINGHOUSE (June 26, 2024), https://www.acf.hhs.gov/sites/default/files/documents/ocs/COMM_LIHEAP_1PercReleaseDCLTable_StatesTerrs_FY2024.pdf [https://perma.cc/7E2E-XAPR].

163. *See* CRAIG BENSON, U.S. CENSUS BUREAU, ACSBR-022, POVERTY IN STATES AND METROPOLITAN AREAS: 2023, at 3–4 (2023), https://www2.census.gov/library/publications/2024/demo/acsbr-022.pdf [https://perma.cc/C37V-6TN8].

164. 42 U.S.C. § 8621(d)(2).

165. *Id.*; PERL, *supra* note 143, at 10.

166. *See* 42 U.S.C. § 8621(d)(2); MEAGAN MEADOWS, ADMIN, FOR CHILD. & FAMS.: OFF. CMTY. SERVS., LIHEAP STATE-TRIBE AGREEMENTS 1 (2024), https://acf.gov/sites/default/files/documents/ocs/ACF-OCS-LIHEAP_AT_FY24_04_State-Tribe-Agreements.pdf [https://perma.cc/XV8K-4AGP] ("[Office of Community Services] will use the U.S. Census Bureau's American Community Survey (ACS) to determine the number of tribal eligible households in tribal communities. This ratio of tribal LIHEAP eligible households to statewide LIHEAP eligible households is used . . . to determine the tribal grant recipient's allocation . . . ."); Deborah Stempowski, *Counting Every Voice: Understanding Hard-to-Count and Historically Undercounted Populations*, U.S. CENSUS

tribes have entered contracts with states to receive additional funds, or to allow their members to receive funding administered by the state once tribal funding runs out.[167]

Federal law also permits LIHEAP to provide emergency contingency funds, which are allocated on a discretionary basis.[168] In addition to the regular LIHEAP funding detailed above, Congress may appropriate up to $600 million in emergency contingency funds annually.[169] Importantly, once appropriated, these emergency contingency funds can only be released if the President submits a formal budget request to Congress.[170] Congress added this crisis funding in 1994 "to meet the additional home energy assistance needs of one or more States arising from a natural disaster or other emergency."[171] Between 1994 and 2011, Congress appropriated nearly $6.5 billion in emergency contingency funds to LIHEAP—a significant sum, but less so in light of the annual block grant funding.[172]

This funding could be used to blunt the ways the climate crisis will deplete regular LIHEAP funds by allowing those funds to help low-income households adjust to rising temperatures. Historically, emergency contingency funds have been made available to states impacted by natural disasters. For

---

BUREAU (Mar. 12, 2025), https://www.census.gov/newsroom/blogs/random-samplings/2023/10/understanding-undercounted-populations.html [https://perma.cc/3S97-6SLE] (describing "American Indian and Alaska Native population[s] living on reservations" as "persistently undercounted" by the Census). The systemic undercounting of tribal populations is likely caused by a number of factors, including: greater fluidity among household structures, distrust of the government leading to reduced response rates, and methodological problems. Carol Chiago Lujan, *American Indians and Alaska Natives Count: The US Census Bureau's Efforts to Enumerate the Native Population*, 38 AM. INDIAN Q. 319, 321, 327–31 (2014). Lori Walking Eagle, former director of the Rosebud Sioux Tribe's LIHEAP, worked with the U.S. Census Bureau on efforts to more accurately count tribal populations. Admin. for Child. & Fams., *LIHEAP State-Tribe Agreements: Building Effective Relationships Webinar*, YOUTUBE (June 14, 2024), https://www.youtube.com/watch?v=Mind8JMLDzM [https://perma.cc/W9CH-VQE3]. She notes the challenges of low census participation rates due to "inter-generational mistrust." *Id.* Fears related to past injustices perpetuated by the federal government, particularly the forced removal of native children, may lead to lower census participation by native households. *Id.*

167. *See Tribal Contracts*, LIHEAP CLEARINGHOUSE (Jan. 14, 2025), https://liheapch.acf.hhs.gov/Tribes/agreements.htm [https://perma.cc/3VU6-FVLN]; *see, e.g.*, Memorandum of Understanding Between Blackfeet Tribe and the Mont. Dep't of Pub. Health & Hum. Servs. (Sept. 30, 2014), https://liheapch.acf.hhs.gov/docs/2024/tribal-contracts/Blackfeet%20-%20MT%20Agreement%20FY%202015-2023.pdf [https://perma.cc/4J77-VJWW] (setting a fixed percentage of LIHEAP funds, above the percentage of funding which would be provided under the LIHEAP formula); Memorandum of Agreement Between Coeur d'Alene Tribe and the Idaho Dep't of Health & Welfare (Dec. 2, 2003), https://liheapch.acf.hhs.gov/docs/2024/tribal-contracts/Coeur%20D'Alene%20-%20Idaho%20Agreement.pdf [https://perma.cc/P8NA-4KKS] (agreeing that once tribal funds are exhausted, tribal members may be referred to the state program).

168. *Compare* 42 U.S.C. § 8621(e) (authorizing emergency contingency funding), *with id.* § 8623(e) (authorizing the distribution of the emergency contingency funds).

169. *See id.* § 8621(e).

170. *Id.*

171. *Id.*

172. *See Emergency Contingency Funding History*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/Funding/emrgfund.htm [https://perma.cc/266X-XE5B].

example, in 2005, in the wake of Hurricane Katrina, $27.25 million was released to Alabama, Florida, Louisiana, and Mississippi.[173] And in both 2009 and 2010, Congress appropriated $590 million in emergency contingency funds to address household energy costs in the wake of the financial crisis and the ensuing recession.[174] In addition to disaster response, LIHEAP emergency contingency funds have been appropriated to respond to extreme temperatures. In 2000, over $41 million was released to eight southern states experiencing a heat wave and to Alaska in response to a low salmon run, and in 2002, $100 million was allocated to states experiencing extreme heat.[175]

Emergency contingency funds could assist states in responding to extreme heat today.[176] Yet, Congress has not appropriated emergency contingency funding since 2011.[177] As a result, in the face of the climate crisis, Congress has failed to provide the very crisis funding permitted by the statute. Why has Congress stopped appropriating emergency funding to LIHEAP in the face of more frequent and more powerful disasters, not to mention rising temperatures? Perhaps there are enough members of Congress who do not want to pass legislation that acknowledges rising temperatures because of the politics of climate change in the United States.[178] Or perhaps, this funding is yet another casualty of Capitol Hill's increasingly constrained and contentious budgetary negotiations. The Budget Control Act ("BCA") of 2011 imposed stringent caps on discretionary spending, aiming to reduce the federal deficit

173. *Id.*; *see also* WADE F. HORN, U.S. DEP'T OF HEALTH & HUM. SERVS., SSBG IM 01-2005, HURRICANE KATRINA AND HURRICANE RITA UPDATE (May 17, 2019), https://www.acf.hhs.gov/ocs/policy-guidance/ssbg-im-01-2005-hurricane-katrina-and-hurricane-rita-update [https://perma.cc/4A3N-UBEG].

174. Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, Pub. L. No. 110-329, § 155, 122 Stat. 3574 (2008); Consolidated Appropriations Act, 2008, Pub. L. No. 110-161, § 513, 121 Stat. 1844 (2007); *see* LIBBY PERL, CONG. RSCH. SERV., RL31865, THE LOW-INCOME HOME ENERGY ASSISTANCE PROGRAM (LIHEAP): PROGRAM AND FUNDING 5–7 (2011) (describing distribution of funds for fiscal years 2008 and 2009).

175. *Id.*; *see, e.g.*, ALASKA DEP'T OF FISH & GAME DIV. OF SUBSISTENCE, TECHNICAL PAPER NO. 398, SOCIOECONOMIC EFFECTS OF DECLINING SALMON RUNS ON THE YUKON RIVER (Caroline L. Brown & Anna Godduhn eds., 2015), https://www.adfg.alaska.gov/download/Technical%20Papers/TP398.pdf [https://perma.cc/L9GU-3XUP].

176. *See* CALEB SMITH, ANNIE CARFORO & JUANITA CONSTIBLE, NAT. RES. DEF. COUNCIL, LIHEAP NEEDS A LIFELINE: A CALL TO STRENGTHEN THE LOW INCOME HOME ENERGY ASSISTANCE PROGRAM IN A CHANGING CLIMATE 13 (2024) ("Congress should refill the contingency fund and put LIHEAP on a path toward annual appropriations of $40 billion . . . . That level of funding would[] . . . provide additional energy assistance to grantees and households during extreme heat events."); Justin Schott, *Optimizing $4 Billion of Low-Income Home Energy Assistance Program Funding to Protect the Most Vulnerable Households from Extreme Heat*, FED'N AM. SCIENTISTS (Apr. 4, 2024), https://fas.org/publication/liheap-extreme-heat [https://perma.cc/6DXJ-8DXF] ("HHS should release Emergency Contingency Funds to address extreme heat. In the 1990s and 2000s, these funds were regularly used, sometimes in excess of $700 million per year to direct cooling assistance to extreme heat events; these funds could also be used to provide cooling measures like fans, air conditioners, and insulation.").

177. *Emergency Contingency Funding History*, *supra* note 172.

178. *See* Oliver Milman & Dharna Noor, *Climate Change Deniers Make Up Nearly a Quarter of US Congress*, GUARDIAN (Aug. 5, 2024, 6:00 PM), https://www.theguardian.com/us-news/article/2024/aug/05/climate-change-denial-congress [https://perma.cc/ZRV2-7XZM].

by $1.5 trillion over a decade.[179] This led to automatic, across-the-board cuts through sequestration whenever spending exceeded the caps, significantly impacting non-defense discretionary programs like LIHEAP.[180] These spending restrictions reduced non-defense discretionary funding to historic lows, measured as a percentage of GDP, limiting resources for programs that provide direct assistance to low-income individuals.[181] Admittedly, Congress passed and the President signed legislation on an almost annual basis altering the BCA's discretionary spending limits.[182] Moreover, substantial supplemental funding of LIHEAP in recent years—like the $4.5 billion appropriated by the American Rescue Plan Act of 2021, the largest LIHEAP allocation to date—suggests that Congress is using broader relief packages passed via their increasingly unorthodox lawmaking at the expense of separate emergency appropriations.[183]

2. LIHEAP Eligibility

States, tribes, and territories establish their own LIHEAP eligibility guidelines, provided they abide by the requirements mandated by Congress.[184] LIHEAP utilizes two different eligibility schemes. First, states may determine eligibility through an income-based means test.[185] States have significant latitude in setting income limits and may choose between two different measures of income: a percentage up to 150% of the federal poverty level ("FPL") or 60% of the state median income ("SMI"), but no state can set the means test below 110% FPL.[186] More states use SMI than FPL. For heating, seventeen states use FPL, while thirty-three states and the District of Columbia use SMI.

179. *See* Balanced Budget and Emergency Deficit Control Act, 2 U.S.C. §§ 900–922 (2011).

180. *See generally* GRANT A. DRIESSEN & MARC LABONTE, CONG. RSCH. SERV., R42506, THE BUDGET CONTROL ACT OF 2011: BUDGETARY EFFECTS OF PROPOSALS TO REPLACE THE SEQUESTRATION (2021).

181. *See generally* RICHARD KOGAN, CTR. ON BUDGET & POL'Y PRIORITIES, CONGRESS HAS CUT DISCRETIONARY FUNDING BY $1.5 TRILLION OVER TEN YEARS (2012); SAMANTHA DANA & MATTEA KRAMER, NAT'L PRIORITIES PROJECT, HISTORY OF THE U.S. FEDERAL BUDGET, 2011-2013 (2014).

182. For instance, the Bipartisan Budget Act of 2019 raised the discretionary spending caps implemented by the BCA for FY2020 and FY2021. Pub. L. No. 116-37. In 2023, Congress passed the Fiscal Responsibility Act, which reinstituted enforceable discretionary spending limits for FY2024 and FY2025. While Congress increased the defense limits for both fiscal years, Congress decreased the limits on nondefense discretionary limits. Fiscal Responsibility Act , Pub. L. No. 118-5 (2013); *see also* DREW C. AHERNE & MEGAN S. LYNCH, CONG. RES. SERV., IN12183, THE FRA'S DISCRETIONARY SPENDING CAPS UNDER A CR: FAQS 1–5 (2023).

183. Press Release, White House, Biden Administration Announces State-by-State Funding to Address Home Energy Costs (Jan. 7, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/07/biden-administration-announces-state-by-state-funding-to-address-home-energy-costs [https://perma.cc/5K86-RCXK].

184. 42 U.S.C. § 8624(b) (requiring that states, tribes, and territories follow requirements such as use funds to "intervene in energy crisis situations," make payments to those who receive certain federal benefits or meet income requirements, and "treat owners and renters equitably" in administering LIHEAP). Importantly, homeownership is not required to receive LIHEAP benefits. *Id.* § 8624(b)(8). So long as they meet the means test, most renters will be eligible for benefits. *See* Steven Ferrey, *Solving the Multimillion Dollar Constitutional Puzzle Surrounding State 'Sustainable' Energy Policy*, 49 WAKE FOREST L. REV. 121, 167 (2014) ("There are thirty-five million households in the United States with incomes low enough to qualify for LIHEAP.").

185. *See* 42 U.S.C. § 8624(b)(2)(B).

186. *See id.*

For cooling, nine states use FPL, whereas nineteen states and D.C. use SMI. Of the states that use FPL, all set their means test at 130% or above.[187] All states that use SMI except one set their means test at 60% for heating, and all states using SMI for cooling set the level at 60%.[188] The LIHEAP statute does not define "income," thus states have broad latitude to determine what qualifies as countable income for eligibility purposes.[189] This has led to substantial variation in categories of countable income.[190] Only four states and one territory also use an assets test for LIHEAP eligibility.[191]

In addition to setting the means test, states may also create categorical eligibility rules. Under federal law, states may permit households to qualify for LIHEAP if one or more household members are receiving Temporary Assistance for Needy Families ("TANF"), Supplemental Nutrition Assistance Program ("SNAP"), Supplemental Security Income ("SSI"), or certain means-tested veterans' programs.[192] Based on the most recent fiscal year's plans submitted by states to the federal government,[193] twenty-four states and Washington, D.C. reported that they use some categorical eligibility to administer LIHEAP.[194]

---

187. Illinois, Iowa, and South Dakota have set their means test at 200% FPL for at least some households. *See* Andrew Hammond, *FY 2024 Eligibility Level by Grantee*, IND. U. BLOOMINGTON (2025), https://www.repository.law.indiana.edu/facdata/4/ (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/stateplans.htm).

188. *See id.*

189. *Defining Income*, LIHEAP CLEARINGHOUSE, https://web.archive.org/web/20250218075143/https://liheapch.acf.hhs.gov/delivery/income_defining.htm [https://perma.cc/6XSR-3JMZ].

190. While state definitions of income often capture expected sources like wages and self-employment income, states may interpret this to cover a broad variety of other sources including: strike pay, alimony, child support, insurance payments, veteran's benefits, and payments to foster children. *See, e.g.*, FLA. DEP'T OF COM., DETAILED MODEL PLAN, LIHEAP (2024), https://web.archive.org/web/20250402012031/https://liheapch.acf.hhs.gov/docs/2024/state-plans/FL_Plan_2024.pdf [https://perma.cc/J54B-5H8S]. Additionally, some states consider assistance received through other poverty programs as income, potentially reducing or eliminating a household's eligibility for LIHEAP benefits. *See, e.g.*, ALABAMA, DETAILED MODEL PLAN, LIHEAP 6 (2024), https://web.archive.org/web/20250402012017/https://liheapch.acf.hhs.gov/docs/2024/state-plans/AL_Plan_2024.pdf [https://perma.cc/4APU-YVDE] (including TANF benefits as countable income).

191. *See LIHEAP Eligibility Assistance: Assets Test for States and Territories*, LIHEAP CLEARINGHOUSE, https://web.archive.org/web/20250402034822/https://liheapch.acf.hhs.gov/tables/FY2024/assets.htm [https://perma.cc/5P6H-JSVR] (identifying Arkansas, Missouri, Montana, Oklahoma, and Puerto Rico's asset tests).

192. *See* 42 U.S.C. § 8624(2)(A)(i)–(iv).

193. Andrew Hammond, *FY 2023 Average Benefits per Household by Assistance Type*, IND. U. BLOOMINGTON (2025) [hereinafter Hammond, *FY Average Benefits per Household by Assistance Type*], https://www.repository.law.indiana.edu/facdata/8 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/stateplans.htm [https://perma.cc/B4FG-DGF4]); *see also* 42 U.S.C. § 8624(c)(1) (requiring states annually prepare and furnish a plan to the Secretary of Health and Human Services).

194. *See* Andrew Hammond, *FY 2024 Categorical Eligibility by State*, IND. U. BLOOMINGTON, col.D (2025) [hereinafter Hammond, *FY 2024 Categorical Eligibility by State*], https://www.repository.law.indiana.edu/facdata/6 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/stateplans.htm [https://perma.cc/B4FG-DGF4]). Even if states permit

Some states attempt to reduce the administrative burdens for individuals seeking assistance through LIHEAP through presumptive eligibility, which allows enrollees of other recognized programs to expedite the LIHEAP application process.[195] According to the most recent administrative data, nine states report that they "automatically enroll households [without a] direct annual application."[196] However, digging into those state plans suggests that many of these states do not automatically enroll households in LIHEAP benefits, but rather, automatically requalify households who have already been determined to be eligible in previous years.[197] A few states appear to offer more comprehensive automatic eligibility. For example, beginning last year, Marylanders who qualify for SNAP, SSI, TANF, or means-tested veterans benefits and meet LIHEAP qualifications will automatically be enrolled in LIHEAP without a separate application.[198] The Maryland legislature passed this law at the recommendation of the Maryland agency that administers the state's LIHEAP and other safety net programs.[199] The state agency urged the change in response to falling numbers of applications for energy assistance, and a steady decline in households served by energy assistance programs despite outreach efforts.[200] In a similar vein, New York automatically screens individuals receiving other benefits and automatically enrolls qualifying households.[201] Individuals receiving SNAP or TANF benefits will be screened to determine eligibility; those whose eligibility can be determined will be automatically enrolled in LIHEAP.[202]

---

categorical eligibility, states subject LIHEAP applicants to additional eligibility and verification requirements.

195. *See Outreach and Enrollment Definitions*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/Directors/outreach/definitions.htm#:~:text=Adjunctive%20eligibility,information%20in%20order%20to%20qualify [https://perma.cc/M96B-AX2L].

196. Hammond, *FY 2024 Categorical Eligibility by State*, *supra* note 194, col.D (listing Kansas, Maryland, Massachusetts, Michigan, Montana, New York, South Dakota, Vermont, and Washington).

197. *See, e.g.*, KAN. DEP'T FOR CHILD. & FAMS., DETAILED MODEL PLAN (LIHEAP) 5 (2024), https://liheapch.acf.hhs.gov/docs/2024/state-plans/KS_Plan_2024.pdf [https://perma.cc/57YH-YG36]; STATE OF MONT. DEP'T HEALTH & HUM. SERVS., DETAILED MODEL PLAN (LIHEAP) 5 (2024), https://liheapch.acf.hhs.gov/docs/2024/state-plans/MT_Plan_2024_rev2.pdf [https://perma.cc/HG9E-TVNN].

198. 2021 Md. Laws Ch. 638, at 1; MD. DEP'T OF HUM. SERVS., DETAILED MODEL PLAN (LIHEAP) 5 (2024), https://liheapch.acf.hhs.gov/docs/2024/state-plans/MD_Plan_2024.pdf [https://perma.cc/3HTY-LDJU] (discussing recent legislation that "established Categorical Eligibility and automatic enrollment into Maryland's Energy Assistance programs for households that have received [SNAP, TANF, SSI], or other means tested veterans benefits starting in January 2024").

199. MD. DEP'T OF HUM. SERVS., LOW INCOME AND UTILITY ASSISTANCE WORKGROUP FINAL REPORT 3 (2024), https://dlslibrary.state.md.us/publications/Exec/DHS/SB26Ch282HB111Ch283(2023)_2024.pdf [https://perma.cc/MA7H-S6R4].

200. *Id.* (suggesting that the change would reduce "inefficiencies and gaps in the processing of applications for financial assistance").

201. N.Y. STATE OFF. OF TEMP. & DISABILITY ASSISTANCE, DETAILED MODEL PLAN (LIHEAP) 5 (2024), https://liheapch.acf.hhs.gov/docs/2024/state-plans/NY_Plan_2024.pdf [https://perma.cc/4AJQ-NEG7].

202. *Id.* ("[TANF and SNAP] recipients who are in receipt of ongoing benefits are considered to be categorically income eligible, but these recipients must also meet all other eligibility criteria in order to be eligible for a Regular Benefit.").

However, unlike SNAP or Medicaid, states are not required to enroll every household that qualifies for LIHEAP benefits, and the federal government has never funded LIHEAP at a level that would permit them to do so.[203] LIHEAP funding is allocated as a block grant.[204] Block grant funding mechanisms distribute a fixed pool of resources under which the grantee, here, states, tribes, and territories, must administer their programs.[205] Medicaid and SNAP, on the other hand, are structured as entitlement programs, in which the federal government reimburses states, at a certain rate, for each participant of the program, without a fixed cap on funding.[206]

The block grant structure shapes both the federal funding and implementation of LIHEAP. Block grant funding tends to stagnate, causing the amount of funding, adjusted for inflation, to decrease over time.[207] For that reason, block grants may be appealing to those in Congress who seek to slash federal support for social programs.[208] While the nominal dollar amount of LIHEAP benefits has increased since the program was first implemented in 1981, the benefit amounts have actually declined.[209] This leaves the states, territories, and tribes in a double bind: As federal funding decreases in terms of real dollars, and as climate strains intensify the need for energy assistance,[210]

---

203. *Cf.* Hammond, *Litigating Welfare Rights*, *supra* note 119, at 385 ("Like Medicaid, SNAP benefits are considered an entitlement—meaning that a state needs to cover every eligible household that applies for the benefit."); *see also* David A. Super, *The Quiet "Welfare" Revolution: Resurrecting the Food Stamp Program in the Wake of the 1996 Welfare Law*, 79 N.Y.U. L. REV. 1271, 1285–86 (2004) (discussing how advocates preserved SNAP's entitlement structure).

204. *See* PERL, LIHEAP FORMULA, *supra* note 145, at 1.

205. *See* 42 U.S.C. § 8623. For more regarding the structure and function of block grants, as well as common criticisms, see KENNETH FINEGOLD, LAURA WHERRY & STEPHANIE SCHARDIN, THE URBAN INSTITUTE, BLOCK GRANTS: HISTORICAL OVERVIEW AND LESSONS LEARNED 3–5 (2004), https://www.urban.org/sites/default/files/publication/57626/310991-Block-Grants.PDF [https://perma.cc/AT8R-B5KY].

206. *See The Problems with Block-Granting Entitlement Programs*, CTR. ON BUDGET & POL'Y PRIORITIES, https://www.cbpp.org/the-problems-with-block-granting-entitlement-programs [https://perma.cc/QH93-ZH54] (discussing the limitations of block grant programs as compared to entitlement programs); *see also* Hammond, *Litigating Welfare Rights*, *supra* note 119, at 387–93 (discussing SNAP and Medicaid's entitlement structure).

207. *See* DAVID REICH, ISSAC SHAPIRO, CHLOE CHO & RICHARD KOGAN, CTR. ON BUDGET & POL'Y PRIORITIES, BLOCK-GRANTING LOW-INCOME PROGRAMS LEADS TO LARGE FUNDING DECLINES OVER TIME, HISTORY SHOWS 2 (2017), https://www.cbpp.org/sites/default/files/atoms/files/2-22-17bud.pdf [https://perma.cc/G43J-JJLQ].

208. JOSEPH V. JAROSCAK, CONG. RSCH. SERV., R40486, BLOCK GRANTS: PERSPECTIVES AND CONTROVERSIES 13–14 (2022) (discussing congressional interest in block grants to reduce spending on social programs).

209. PERL, LIHEAP: PROGRAM AND FUNDING, *supra* note 151, at 8 tbl.2.

210. "Degree days" are a commonly used measure to express how warm or cold a place is during a period of time. *See Units and Calculators Explained*, U.S. ENERGY INFO. ADMIN. (Oct. 29, 2024), https://www.eia.gov/energyexplained/units-and-calculators/degree-days.php [https://perma.cc/G5TY-332B]. Degree days are calculated by comparing the mean outdoor temperature per day to a standard temperature, usually sixty-five degrees Fahrenheit. *Id.* "Cooling degree days," are frequently used to represent the cooling needs of a place over time. *Id.* Cooling degree days are calculated by taking an average daily temperature above sixty-five degrees and subtracting sixty-five (e.g., a day with a mean temperature of eighty degrees has fifteen cooling degree days).

grantees must try to make funding dollars stretch further than ever before.[211] Consequently, states, tribes, and territories often deplete their LIHEAP funds before the end of the year.[212] The lack of an entitlement financing structure also means there are fewer opportunities for individuals to sue for benefits.[213] Most importantly, only roughly twenty percent of eligible households receive LIHEAP funding each year.[214]

The majority of LIHEAP funding goes to subsidizing low-income households' utility bills, often referred to as heating or cooling assistance.[215] The average annual heating benefit is roughly $634, and the average cooling benefit is slightly less.[216] The program has a significant impact on the households it serves. LIHEAP benefits, on average, offset more than seventy percent of a household's energy expenditures.[217] And the program appears to be quite

---

Id. Americans experienced nearly twenty-five percent more cooling degree days in 2023 than in 1981, the year Congress created LIHEAP. *See Total Energy*, U.S. ENERGY INFO. ADMIN., tbl.1.12, https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T01.12#/?f=A [https://perma.cc/R8Q7-GDGE] (documenting 1,109 cooling days in 1981, and 1,475 cooling degree days in 2023).

211. *See generally* Bruce Lesley, *Another Reason to Oppose Graham-Cassidy: Hurricanes*, MEDIUM (Sept. 11, 2017), https://medium.com/voices4kids/hurricanes-and-medicaid-caps-do-not-mix-f6350974fa51 [https://perma.cc/5HSK-P379] (discussing why block grants generally are particularly ill-suited to respond to climate-related disasters).

212. *See* Chan & Klass, *supra* note 110, at 1459 n.146 ("States manage annual LIHEAP allocations throughout the annual funding cycle, but if assistance needs outpace expectations, states can deplete funds before the end of the funding year and then are unable to assist additional households."); Carrie A. Scrufari, *The Lights Are On: Shining a Spotlight on the Retail Energy Market Reveals the Need for Enhanced Consumer Protections*, 29 FORDHAM ENV'T L. REV. 349, 360 n.50 (2018) (noting that "less than a quarter of families who meet LIHEAP eligibility requirements actually receive those benefits"); *see also* Kristen Underhill, *Purchasing Health? The Promise and Limits of Public Health Insurance*, 119 COLUM. L. REV. F. 302, 310–11 (2019) (floating the use of Section 1115 waivers to allow states to "spend Medicaid funds to supplement assistance from [LIHEAP]").

213. *See* Jesse Bedayn, *Millions Struggle to Pay AC Bills in Heat Waves. Federal Aid Reaches Only a Fraction*, ASSOCIATED PRESS (Aug. 9, 2023, 8:05 PM), https://apnews.com/article/heat-wave-air-conditioning-biden-federal-assistance-ce8a434e8fdd65a21b1426d0b731e289 [https://perma.cc/XZ7E-U7B8].

214. OLIVIA WEIN, NAT'L CONSUMER L. CTR., THE LOW INCOME HOME ENERGY ASSISTANCE PROGRAM (LIHEAP) 5–28 (2017), https://nlihc.org/sites/default/files/AG-2017/2017AG_Ch05-S08_Low-Income-Home-Energy-Assistance-Program_LIHEAP.pdf [https://perma.cc/D9W4-9FQT].

215. Far smaller amounts of LIHEAP funding go to crisis payments and weatherization. *See* 42 U.S.C. § 8624(k) (limiting the use of weatherization funds); U.S. DEP'T OF HEALTH & HUM. SERVS., LOW INCOME HOME ENERGY ASSISTANCE PROGRAM: REPORT TO CONGRESS FOR FISCAL YEAR 2021, at v fig.2 (2021), https://www.acf.hhs.gov/sites/default/files/documents/ocs/RPT_LIHEAP_RTC01BodyTTAProjects_FY2021.pdf [https://perma.cc/G7CJ-BN6E] (noting that only six percent of annual LIHEAP funding went to weatherization benefits).

216. Hammond, *FY Average Benefits per Household by Assistance Type*, *supra* note 193, row 53.

217. U.S. DEP'T OF HEALTH & HUM. SERVS., LOW INCOME HOME ENERGY ASSISTANCE PROGRAM: REPORT TO CONGRESS FOR FISCAL YEAR 2017, at ix (2017), https://www.acf.hhs.gov/sites/default/files/documents/ocs/RPT_LIHEAP_RTC01BodyTTAProjects_FY2017.pdf [https://perma.cc/BNG7-BBK5]. Some states have created additional programs to supplement LIHEAP. *See* Chan & Klass, *supra* note 110, at 1459–62 ("Many states have also created low-income assistance programs to supplement federal funds."); Rob Hubbard, *Legislators Consider Expanding Energy Assistance Program for Low-Income Minnesotans*, MINN. LEGISLATURE (Mar. 8, 2023, 6:05 PM), https://www.house.mn.gov/sessiondaily/Story/17776 [https://perma.cc/Y7TU-UXUC]; Tami Luhby,

targeted to poor households.[218] However, inadequate funding prevents many low-income households from receiving assistance. Among states that provide cooling assistance, on average, under eight percent of income-eligible households receive cooling benefits.[219] And the timing of LIHEAP funding exacerbates the inadequacy of cooling benefits—many states spend their funds to help households heat their homes during the winter months and consequently run out of money by the summer.[220]

3. LIHEAP and Climate Strains

From a climate adaptation perspective, LIHEAP has several weaknesses. First, states have far too much discretion in determining eligibility and benefit levels. As a result, average annual cooling benefits vary greatly across states: from $150 in Rhode Island to $1,751 in Texas.[221] Obviously, low-income households in, say, Providence have a different energy burden in the summer months than low-income households in Houston. However, these differences are not explained by geography alone. A state with one of the lowest cooling benefits borders the state with the highest: Arkansas's average cooling benefit

Nearly 20 Million Households Are Behind on Their Utility Bills, CNN (May 23, 2023 11:41 AM), https://www.cnn.com/2023/05/23/business/utility-bills-arrears-summer [https://perma.cc/WH75-LRSJ] ("New York, for instance, is providing $672 million in aid to help 478,000 residential customers and 56,000 small businesses settle their past due utility bills [and] California helped 1.4 million residents wipe out $647 million in overdue energy bills. It eliminated all the debt accrued by residential customers between March 2020 and the end of 2021.").

218. *See generally* U.S. DEP'T OF HEALTH & HUM. SERVS., 03Yo0471301D, LIHEAP ENERGY BURDEN EVALUATION STUDY, FINAL REPORT (2005), https://www.acf.hhs.gov/sites/default/files/documents/ocs/comm_liheap_energyburdenstudy_apprise.pdf [https://perma.cc/7SEU-CQ5Q] (evaluating program effectiveness using targeting performance measures). Other major uses of LIHEAP funds include weatherization and program administration. *See* 42 U.S.C. § 8624(k), (b)(9). States may allocate up to fifteen percent of their allotment towards weatherization but may receive a waiver from the Department of Health and Human Services to use up to twenty-five percent. *See id.* § 8624(k); *see also* JEFF COOK, JULIANA WILLIAMS, JENNA HARMON, KAIFENG XU & KATIE NISSEN, NAT'L RENEWABLE ENERGY LAB'Y, SOLAR PATHWAYS IN FEDERAL ENERGY ASSISTANCE PROGRAMS 2 (2024), https://www.nrel.gov/docs/fy24osti/88519.pdf [https://perma.cc/P2B6-EEUN] ("California, Idaho, Ohio, and Wyoming all received waivers to allocate 25% of LIHEAP funds to weatherization in 2023.").

219. Andrew Hammond, *Percentage Eligible Served by LIHEAP by Assistance Type 2020-2023*, IND. U. BLOOMINGTON (2025), https://www.repository.law.indiana.edu/facdata/3 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/stateplans.htm [https://perma.cc/B4FG-DGF4]); *see also* Thomas Frank, *States Withhold Cooling Aid for the Poor as Heat Gets Deadlier*, POLITICO (Sept. 6, 2023, 12:38 PM), https://www.politico.com/news/2023/09/06/states-withhold-cooling-aid-for-the-poor-as-heat-gets-deadlier-p-00111977 [https://perma.cc/G5SG-8AN8] ("[I]n 16 states, including some with significant heat risk, not a single household received money to pay cooling costs from 2001 through 2021.").

220. *See* Frank, *supra* note 219 ("States typically get their LIHEAP allocation in the fall, at the start of the federal fiscal year. They often spend it quickly, which means the money goes to heating programs.").

221. Hammond, *FY Average Benefits per Household by Assistance Type*, *supra* note 193, col.D.

is $181, compared to Texas's average benefit of $1,751.[222] Similarly, the percentage of total LIHEAP funding used by states for cooling assistance varies widely; for example, California uses just over three percent of total funding for cooling benefits, whereas neighboring Arizona uses over fifty percent of LIHEAP funding for cooling benefits.[223] As temperatures increase and air quality declines, the variance of LIHEAP benefits among states will become even harder to justify.[224]

Even if there was uniformity in benefit eligibility and generosity, LIHEAP, as currently designed, is not responsive to climate strains. In its forty-year history, LIHEAP has prioritized the heating needs of low-income Americans. In the next forty years, the challenge of cooling will be more and more pressing. 33.6 percent of federal LIHEAP funds go to heating assistance, compared to 6.6 percent for cooling.[225] Most households nationwide who benefit from the program do so through heating assistance. Roughly 4.5 million households receive heating assistance through LIHEAP compared to less than a million for cooling assistance.[226] Similarly, more households benefit from winter versus summer crisis payments.[227]

That asymmetry between past and future energy challenges is only more pronounced once we move from national data to state-level implementation of LIHEAP. All fifty states made winter crisis payments.[228] Only six states made summer crisis payments.[229] Similarly, fifty states offer heating benefits, but only twenty-five offer cooling benefits.[230] Further, while some states nominally

222. *Id.* According to the most recent data, the cost of electric per kilowatt-hour is slightly lower in Arkansas, but not enough to account for the difference in benefit levels. *Electric Power Monthly*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a [https://perma.cc/2XSX-LT55]. Additionally, other federal data suggest that residents of Arkansas and Texas have similar household expenditures for electricity (the primary fuel source for cooling). *CE2.6.ST Annual Household Fuel Expenditures in United States Homes by State—Totals and Averages, 2020*, U.S. ENERGY INFO. ADMIN. (June 2023), https://www.eia.gov/consumption/residential/data/2020/state/pdf/ce2.6.st.pdf [https://perma.cc/YK4P-VLG4].

223. Andrew Hammond, *Use of Funds by Grantee 2001-2023*, IND. U. BLOOMINGTON (2025) [hereinafter Hammond, *Use of Funds by Grantee 2001-2023*], https://www.repository.law.indiana.edu/facdata/1 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/stateplans.htm [https://perma.cc/B4FG-DGF4]).

224. *See* Bedayn, *supra* note 213.

225. U.S. DEP'T OF HEALTH & HUM. SERVS., *supra* note 126, at 16.

226. *Id.* at vii.

227. *Id.* (documenting that nearly 640,000 households received winter crisis benefits, whereas under 175,000 households received summer crisis benefits).

228. Andrew Hammond, *FY 2023 Households Receiving Crisis Assistance*, IND. U. BLOOMINGTON (2025), https://www.repository.law.indiana.edu/facdata/7 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/stateplans.htm [https://perma.cc/B4FG-DGF4]).

229. *Id.*

230. *LIHEAP Benefit Levels for Heating, Cooling and Crisis: States and Territories*, LIHEAP CLEARINGHOUSE (Dec. 13, 2024), https://liheapch.acf.hhs.gov/tables/benefits.htm [https://perma.cc/C2KB-FBRT]; *see also* Thomas Frank & E&E News, *As Heat Waves Worsen, Federal Aid Is*

offer cooling benefits, their programs reach less than one percent of income-eligible households.[231] In four out of five of the states with the highest rates of heat-related hospitalization, fewer households receive cooling assistance than heating assistance.[232]

Additionally, even where cooling benefits are available, low-income households without air conditioning may not benefit.[233] Although LIHEAP funding may be used to provide air conditioners, fans, and other cooling devices for participants, only fifteen states and Washington, D.C. provide air conditioners or funding to purchase air conditioners.[234] Even in those states, this assistance is often provided in very limited circumstances related to extreme heat, disaster, or documented medical need.[235] The U.S. Department of Energy does operate a program that assists low-income households in making their homes more energy efficient. This Weatherization Assistance Program, which received a large increase in funding as part of the 2021 infrastructure

Insufficient to Fund Cooling Needs, SCI. AM. (Sept. 6, 2023), https://www.scientificamerican.com/article/as-heat-waves-worsen-federal-aid-is-insufficient-to-fund-cooling-needs [https://perma.cc/E9BZ-ZB46] ("[I]n 16 states, including some with significant heat risk, not a single household received money to pay cooling costs from 2001 through 2021 . . . ."); Lanikque Howard, *LIHEAP American Rescue Plan Funding: Racial and Economic Justice Is Also Equity in Energy*, ADMIN. FOR CHILD. & FAMS. (May 4, 2021), https://web.archive.org/web/20210615154355/https://www.acf.hhs.gov/blog/2021/05/liheap-american-rescue-plan-funding-racial-economic-justice-also-equity-energy?f%5Bo%5D=blog_topic%3A1002 [https://perma.cc/Y2AV-WYDW].

231. *LIHEAP Benefit Levels for Heating, Cooling and Crisis: States and Territories*, *supra* note 230.

232. *Compare Climate Change Indicators: Heat-Related Illnesses*, U.S. ENV'T PROT. AGENCY (Aug. 2016), https://www.epa.gov/climate-indicators/heat-related-illnesses [https://perma.cc/V9T8-K39S], *with* Andrew Hammond, *Total Households Receiving Cooling and Heating Assistance 2001-2023*, IND. U. BLOOMINGTON (2025), https://www.repository.law.indiana.edu/facdata/2 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/statepla ns.htm [https://perma.cc/B4FG-DGF4]).

233. Nearly thirty percent of households with an income under $5,000 annually have home air conditioning, whereas only 7.5% of households making over $150,000 annually do not have air conditioning. *Table HC7.5 Air Conditioning in U.S. Homes, by Household Income, 2020*, U.S. ENERGY INFO. ADMIN. (March 2023), https://www.eia.gov/consumption/residential/data/2020/hc/pdf/HC%207.5.pdf [https://perma.cc/2987-HYGZ].

234. Andrew Hammond, *FY 2024 Cooling Info*, IND. U. BLOOMINGTON (2025) [hereinafter Hammond, *FY 2024 Cooling Info*], https://www.repository.law.indiana.edu/facdata/5 (on file with the *Iowa Law Review*) (data retrieved from *LIHEAP State and Territory Plans, Manuals, and Delegation Letters*, LIHEAP CLEARINGHOUSE (July 2, 2025), https://liheapch.acf.hhs.gov/statepl ans.htm [https://perma.cc/B4FG-DGF4]).

235. *See, e.g.*, TEX. DEP'T OF HOUS. & CMTY. AFFS., DETAILED MODEL PLAN (LIHEAP) 9, 11, 14 (2024), https://liheapch.acf.hhs.gov/docs/2024/state-plans/TX_Plan_2024.pdf [https://perma.cc/ZEN9-BMN4] ("When natural disasters result in energy supply shortages or other energy-related emergencies, LIHEAP will allow home energy related expenditures . . . which include . . . air conditioners, and generators."); KY. CABINET FOR HEALTH & FAM. SERVS., DETAILED MODEL PLAN (LIHEAP) 10 (2024), https://apps.legislature.ky.gov/CommitteeDocuments/262/30750/Jul%2018%202024%20LIHEAP%20Preliminary%20Plan%202024-25.pdf [https://perma.cc/S3NJ-L4ZH] (noting that air conditioners may be provided to households that have "a member with a health condition or disability that requires cooling to prevent further deterioration as verified by a physician's statement on letterhead").

bill,[236] could be used by states and territorial governments to help low-income Americans deal with rising temperatures.[237]

In July 2022, the U.S. Department of Health and Human Services ("HHS") Administration of Children and Families published guidance encouraging states, territories, and tribes to reopen their LIHEAPs and add or expand cooling assistance.[238] But until the statutes and appropriations that structure LIHEAP are amended to better support cooling assistance, this climate mismatch in the program will persist.[239] Moreover, LIHEAP, as currently designed, does not promote decarbonization. Fossil fuels like natural gas and coal make up the majority of heating energy sources for LIHEAP households, as they do for most Americans.[240]

B. INVESTMENTS

In addition to maintenance payments like LIHEAP that subsidize the costs of climate strains, government can also spur investment in technologies and adaptation strategies that lessen climate strains. The United States recently made a massive effort in this vein. When President Biden signed the IRA into law, he called it "the most aggressive action ever—ever, ever, ever—in confronting the climate crisis."[241] According to one influential projection, the IRA will improve, but not entirely close the gap so that the United States meets its commitment under the Paris Agreement to cut its greenhouse gas emissions by 2030.[242] To do that, the IRA includes nearly $400 billion in

236. Carlos Martín, *Harnessing the IIJA's Weatherization Assistance Program to Leave No Household in the Cold*, HARV. JOINT CTR. FOR HOUS. STUD. (Jan. 31, 2023), https://www.jchs.harvard.edu/blog/harnessing-iijas-weatherization-assistance-program-leave-no-household-cold [https://perma.cc/N29T-ZFS6].

237. CORRIE E. CLARK & LYNN J. CUNNINGHAM, CONG. RES. SERV., R46418, THE WEATHERIZATION ASSISTANCE PROGRAM FORMULA 1–2 (2021).

238. Lanikque Howard, *LIHEAP IM-2022-06 Heat Stress Flexibilities and Resources FY2022*, ADMIN. FOR CHILD. & FAMS. (July 19, 2022), https://web.archive.org/web/20220720190259/https://www.acf.hhs.gov/ocs/policy-guidance/liheap-im-2022-06-heat-stress-flexibilities-and-resources-fy2022 [https://perma.cc/98XW-NY88].

239. *See, e.g.*, Stay Cool Act, H.R. 4314, 118th Cong. § 307 (2023) (proposing that the HHS Secretary, in consultation with the Energy Secretary, submit a report to Congress on how to revise the LIHEAP formula "to account for the energy needs of all low-income households in States, including low-income households that do not use, or under-use, a source of heating or cooling" as well as providing funding for infrastructure like cooling centers); *see also* Outka, *supra* note 117, at 765–68 (discussing the challenges of addressing low-income needs through energy policy).

240. *See* U.S. DEP'T OF HEALTH & HUM. SERVS., LOW INCOME HOME ENERGY DATA FOR 2021, at 6–8, https://www.acf.hhs.gov/sites/default/files/documents/ocs/RPT_LIHEAP_HENo1HEData_FY2021.pdf [https://perma.cc/W9FF-4XAP].

241. Pres. Joe Biden, Remarks by President Biden at Signing of H.R. 5376, The Inflation Reduction Act of 2022 (Aug. 16, 2022), https://web.archive.org/web/20250110195346/https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/08/16/remarks-by-president-biden-at-signing-of-h-r-5376-the-inflation-reduction-act-of-2022 [https://perma.cc/59EC-SYEA].

242. *See* JESSE D. JENKINS ET AL., PRELIMINARY REPORT: THE CLIMATE AND ENERGY IMPACTS OF THE INFLATION REDUCTION ACT OF 2022, at 6–10 (2022), https://repeatproject.org/docs/REPEAT_IRA_Prelminary_Report_2022-08-04.pdf [https://perma.cc/V6EX-ZEZS]; *see also* John Bistline et al., *Emissions and Energy Impacts of the Inflation Reduction Act*, 380 SCIENCE 1324, 1325 (2023)

clean energy and climate investments, and it also strengthens various agencies' authority to regulate greenhouse gas emissions. Scholars are just now beginning to grapple with the ways in which the IRA and other efforts by the Biden Administration represent a shift away from emphasizing environmental regulation to mitigate climate change and towards a green industrial policy.[243] A detailed exposition on all those provisions would overwhelm this Article.[244] And President Trump and his allies in Congress have been successful in repealing and phasing out many provisions of the IRA.[245] Regardless of the short shelf life of the relevant provisions of the IRA, they still illustrate the challenges of using tax credits to respond to climate strains.[246] Thus while other scholars have questioned whether the shift from environmental regulation to green industrial policy can meaningfully address climate change, this Article focuses on whether these green investments meaningfully addressed poor people's needs.

The Congressional Budget Office ("CBO") has suggested that over two-thirds of the $271 billion in climate-related provisions of IRA were in the form of tax credits, such as encouraging clean electricity production, electric vehicles,

(estimating that the IRA will reduce U.S. emissions by approximately forty-three to forty-eight percent below 2005 levels by 2035). *But see* Adam D. Orford, *Overselling BIL and IRA*, 51 ECOLOGY L.Q. 19–36 (2024) (critiquing models estimating IRA's climate impact). Incidentally, the IRA also provided an additional $1 billion in LIHEAP funding.

243. *See* MICHAEL B. GERRARD ET AL., GLOBAL CLIMATE CHANGE AND U.S. LAW 24 (2023) (lumping the IRA, the Bipartisan Infrastructure Law, and the CHIPS Act as strategies "based on financial assistance and subsidies" and pointing out that "none enact or modify any climate-related regulatory programs (though the Inflation Reduction Act contains a fee on methane emissions)"); *see also* Amy Kapczynski & Joel Michaels, *Administering a Democratic Industrial Policy*, 18 HARV. L. & POL'Y REV. 279, 280–85 (2024) (advocating a "framework for implementing the new industrial policy as a democratic practice"). *But see* Nicholas S. Bryner, *The Once and Future Clean Air Act: Impacts of the Inflation Reduction Act on EPA's Regulatory Authority*, 65 B.C. L. REV. 1, 41–53 (2024) (exploring how the IRA could help the EPA return to technology-forcing regulations).

244. *See generally* JONATHAN L. RAMSEUR, CONG. RSCH. SERV., R47262, INFLATION REDUCTION ACT OF 2022 (IRA): PROVISIONS RELATED TO CLIMATE CHANGE (2023) (lengthy report); MARTIN C. OFFUTT, CONG. RSCH. SERV., IF12258, THE INFLATION REDUCTION ACT: FINANCIAL INCENTIVES FOR RESIDENTIAL ENERGY EFFICIENCY AND ELECTRIFICATION PROJECTS (2023) (summary).

245. *See* H.R. 1, 119th Cong., Pub. L. No. 119-21, §§ 70501–70515, 139 Stat. 72, 76–77 (2025); *see, e.g.*, Dino Grandoni, Evan Halper & Maxine Joselow, *12 Big Changes Trump Could Make to Climate and Environment Policy*, WASH. POST (Nov. 19, 2024), https://www.washingtonpost.com/climate-environment/2024/11/19/trump-environmental-policy-changes-climate (on file with the *Iowa Law Review*); Lisa Friedman, *Biden and Environmental Groups Try to Protect Climate Policies from Trump*, N.Y. TIMES (Nov. 9, 2024), https://www.nytimes.com/2024/11/09/climate/biden-environmental-groups-climate-policies-trump.html (on file with the *Iowa Law Review*); Kelsey Tamborrino, *Trump Vows to Pull Back Climate Law's Unspent Dollars*, POLITICO (Sept. 5, 2023, 3:48 PM), https://www.politico.com/news/2024/09/05/trump-inflation-reduction-act-00177493 (on file with the *Iowa Law Review*).

246. Riki Fujii-Rajani & Sanjay Patnaik, *What Will Happen to the Inflation Reduction Act Under a Republican Trifecta?*, BROOKINGS (Jan. 6, 2025), https://www.brookings.edu/articles/what-will-happen-to-the-inflation-reduction-act-under-a-republican-trifecta [https://perma.cc/UHY5-LR7F]; Oliver Millman, *Biden Trump-Proofs $74bn in Climate Funding but $20bn Remains Vulnerable*, GUARDIAN (Jan. 14, 2025, 6:00 PM), https://www.theguardian.com/us-news/2025/jan/14/biden-trump-climate-change-funds [https://perma.cc/X54C-SWWY].

and investments in clean home energy by individuals.[247] Of the tax credits that could be claimed by individuals, none of them were refundable.[248] As a result, these tax credits did not reach the forty percent of American households who paid no federal income taxes last year.[249] On top of that, many Americans, especially in the bottom half of the income distribution, do not own their homes. Instead, the progressivity of these investments depends, in large part, on landlords choosing to make these investments.

The IRA did include significant direct expenditures, according to the CBO's report, roughly $121 billion, but only a few of those expenditures are targeted to reach the low-income households that do not owe federal income taxes.[250] The IRA included $8.8 billion in rebate programs to help low-income households "save on energy bills, upgrade homes to include more clean energy equipment, and improve energy efficiency overall."[251] These rebate programs were be administered by the same state, territorial, and tribal agencies that administer LIHEAP. However, those same agency directors, criticized the ability of these rebates to reach enough low-income households. As they put it, "[t]he IRA provides only enough funding to upgrade about 320,000 households or about one percent of 34.2 million families eligible for energy assistance that will need help, assuming that families receive the maximum grant of $14,000."[252] And states were slow to reward rebates.[253]

Furthermore, unlike LIHEAP, which can reach homeowners and renters alike, the IRA rebate programs are difficult to implement in a way that impacts

247. *See* CONG. BUDGET OFF., SUMMARY ESTIMATED BUDGETARY EFFECTS OF PUBLIC LAW 117-169, TO PROVIDE FOR RECONCILIATION PURSUANT TO TITLE II OF S. CON. RES. 14, at 1–3 (2022), https://www.cbo.gov/system/files/2022-09/PL117-169_9-7-22.pdf [https://perma.cc/TVR5-7UTM].

248. *See* Priya Pandey, *How Advocates Can Make Energy Rebates Equitable and Accessible*, CLASP (Feb. 21, 2023), https://www.clasp.org/blog/how-advocates-can-make-energy-rebates-equitable-and-accessible [https://perma.cc/294L-5HG9].

249. *See Who Will Pay No Federal Individual Income Tax in 2025?*, TAX POL'Y CTR. (June 4, 2025), https://taxpolicycenter.org/fiscal-facts/who-will-pay-no-federal-individual-income-tax-2025 [https://perma.cc/K37N-DT2K]. *See generally* RACHEL JACOBSEN & SAMANTHA JACOBY, CTR. ON BUDGET & POL'Y PRIORITIES, STATES SHOULD SPUR USE OF "DIRECT PAY" TAX CREDITS TO ADVANCE CLEAN ENERGY IN LOW-INCOME COMMUNITIES (2024), https://www.cbpp.org/sites/default/files/9-26-24climate.pdf [https://perma.cc/7YX6-NLWX] (discussing limitations of tax credits).

250. John E.T. Bistline, Neil R. Mehrotra & Catherine Wolfram, *Economic Implications of the Climate Provisions of the Inflation Reduction Act*, BROOKINGS PAPERS ON ECON. ACTIVITY, Spring 2023, at 77, 92.

251. Pandey, *supra* note 248. The IRA authorized over $8 billion in rebates based on whole-home repairs and purchase or installation of high-efficiency home appliances and equipment. These rebates were available only to low- or moderate-income ("LMI") households, as identified by Area Median Income ("AMI"). Inflation Reduction Act of 2022, Pub. L. No. 117-169, §§ 50121–50122, 136 Stat. 1818, 2033–41. *But see* SYLVIA CHI, JUST COLLECTIVE SOLS., IRA: OUR ANALYSIS OF THE INFLATION REDUCTION ACT 5–8, https://justsolutionscollective.org/wp-content/uploads/2022/09/JSC-Analysis-of-the-Inflation-Reduction-Act.pdf [https://perma.cc/D4HQ-XVXM].

252. Press Release, Nat'l Energy Assistance Dirs. Ass'n, Families to Spend More for Summer Cooling (July 6, 2023), https://neada.org/wp-content/uploads/2023/07/summercoolingestPR.pdf [https://perma.cc/4XPJ-V4DT].

253. *Home Energy Rebates Progress Tracker*, U.S. DEP'T ENERGY, https://web.archive.org/web/20250127113812/https://www.energy.gov/scep/home-energy-rebates-progress-tracker [https://perma.cc/B4U9-NFHS] (identifying only thirteen states that had awarded rebates).

low-income households. Renters cannot choose to participate in these programs and will only benefit from them if their landlords choose to participate.[254] For example, while multifamily buildings qualify for these rebate programs, the Electrification Rebates Program requires that more than half of a building's occupants meet the income eligibility threshold.[255] This reliance on homeowners and businesses to access these rebates parallels similar implementation challenges for the IRA's tax credits. Their impact depends on consumption and investment decisions by households and businesses.[256]

There is a possibility, as Dan Farber and others have argued, that the IRA's "dynamic effects" could help the green transition reach low-income households.[257] Farber suggests that the IRA will spur "the creation or expansion of clean technology markets, such as solar and wind power, battery storage, and electric vehicles" through "a number of mutually reinforcing positive feedback loops."[258] Since little of the IRA will survive the current administration, we will never know if the legislation would have had such dynamic effects. But the evidence we do have suggests that the IRA's tax credits left low-income households behind. According to the U.S. Department of Treasury, only 2.5 percent of tax filers in 2023 took advantage of the IRA's energy efficiency and home solar credits.[259] Of those filers, households in the top quartile of the income distribution captured two-thirds of the benefits.[260] There is similar

254. *Cf.* Madison M. Schettler, *Closing the Renter-Sized Gap in the Inflation Reduction Act: How Housing Policy Can Help Climate Legislation Achieve Environmental Justice*, 56 CONN. L. REV. 605, 626–31 (2024) (arguing that the IRA provisions will promote gentrification unless they are coupled with state and local tenant-protective laws).

255. Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 50121(c)(2)(C), 136 Stat. 1818.

256. *See* CONG. BUDGET OFF., SUMMARY: ESTIMATED BUDGETARY EFFECTS OF PUBLIC LAW 117-169, TO PROVIDE FOR RECONCILIATION PURSUANT TO TITLE II OF S. CON. RES. 14, at 12 (2022), https://www.cbo.gov/system/files/2022-09/PL117-169_9-7-22.pdf [https://perma.cc/WY4C-L6HL]; *see also* Michelle D. Layser, *The Pro-Gentrification Origins of Place-Based Investment Tax Incentives and a Path Toward Community Oriented Reform*, 2019 WIS. L. REV. 745, 795–96 (making this point about tax incentives, albeit pre-IRA); *cf.* Lew Daly, *The Inflation Reduction Act: A Climate Down Payment, but Doubts on Environmental Justice*, ROOSEVELT INST. (Aug. 5, 2022), https://rooseveltinstitute.org/blog/a-climate-down-payment-but-doubts-on-environmental-justice [https://perma.cc/ZD5V-XVZD] ("[The IRA's] heavy reliance on energy tax credits, rather than direct investment in communities, curtails the potential for a just energy transition . . . .").

257. *See* Daniel A. Farber, *Turning Point: Green Industrial Policy and the Future of U.S. Climate Action*, 11 TEX. A&M L. REV. 303, 306–07 (2024).

258. *Id.* at 306. *But see* J.B. Ruhl & James Salzman, *What Happens When the Green New Deal Meets the Old Green Laws?*, 44 VT. L. REV. 693, 713–16 (2020) (suggesting, pre-IRA, that American environmental regulation impedes clean energy projects).

259. *See* Dharna Noor, *Tax Credits in Biden's Landmark Climate Law Disproportionately Benefit Well-Off*, GUARDIAN (Aug. 16, 2024, 8:00 AM), https://www.theguardian.com/us-news/article/2024/aug/16/biden-inflation-reduction-act-tax-benefit-wealthy [https://perma.cc/4Y6P-BNJW].

260. *See* Laura Feiveson, *The Inflation Reduction Act: Saving American Households Money While Reducing Climate Change and Air Pollution*, U.S. DEP'T TREASURY (Aug. 7, 2024), https://home.treasury.gov/news/featured-stories/the-inflation-reduction-act-saving-american-households-money-while-reducing-climate-change-and-air-pollution [https://perma.cc/P3WJ-S77C] (linking to and summarizing IRS data on 2023 take-up of some of the IRA tax credits); *see also, e.g.*, Daniel Aldana Cohen & Thea Riofrancos, Opinion, *Biden Left Us with a 'Prius Economy.' It's Time for Something Different*, N.Y. TIMES (Jan. 7, 2025), https://www.nytimes.com/2025/01/07/opinion/

evidence about the IRA's incentives for electric vehicles.[261] On the bright side, according to the Treasury Department, much of the IRA-spurred investments made by businesses have reached counties with below-average wages, possibly benefiting low-wage workers, but the labor force impacts could be quite small if we credit the Department of Energy's estimates that the IRA led to 400,000 new jobs in a national labor force of nearly 170 million workers.[262]

The IRA did include other investments to help low-income households adapt to climate strains. The EPA was set to administer $3 billion of Environmental and Climate Justice Block Grants, which will fund, among other things, "mitigating climate and health risks from urban heat islands, extreme heat, wood heater emissions, and wildfire events" as well as "reducing indoor toxics and indoor air pollution."[263] The IRA also provided $37.5 million for grants to monitor and reduce air pollution in low-income and disadvantaged communities as well as $12.5 million for technical assistance to schools in those communities to identify and mitigate ongoing air pollution hazards.[264] The IRA also made several investments in tribal climate resilience, including in clean electrification, retrofitting tribal homes, and direct financial assistance to address drinking water shortages.[265] But even if these programs had survived the current Congress,[266] they are on a much smaller scale than the roughly $180 billion in nonrefundable green tax credits the IRA created for businesses and wealthy or upper middle-class households.

In the end, the investments covered in this Section are the mirror image of the subsidies covered in the previous one. They hold real promise for decarbonization, but they are not progressive. The IRA's investments will help mitigate climate strains in the United States, though their impact will depend largely on individual decisions by wealthy households and businesses. Most of

---

electric-vehicles-tax-credits.html (on file with the *Iowa Law Review*); Noor, *supra* note 259. Keep in mind, that some criticized the IRA on these very grounds shortly after the bill was passed. *See, e.g.*, Rebecca Hersher, *The Spending Bill Will Cut Emissions, but Marginalized Groups Feel They Were Sold Out*, NPR (Aug. 17, 2022, 7:00 AM), https://www.npr.org/2022/08/17/1117725655/the-spending-bill-will-cut-emissions-but-marginalized-groups-feel-they-were-sold [https://perma.cc/UQN6-5HAQ]; Daly, *supra* note 256 ("Tax credits tend to reproduce, not reduce, existing economic inequities, especially by race, and the IRA does not do enough to address this problem.").

261. *See, e.g.*, Harold Meyerson, *Ford Says Electric Cars Just Aren't Affordable*, AM. PROSPECT (July 31, 2023), https://prospect.org/economy/2023-07-31-ford-electric-cars-arent-affordable [https://perma.cc/D3YR-H5VD]; Sam Brasch, *In Colorado, Electric Cars Are Mostly for Rich People. Could Federal and State Policy Change That?*, CPR NEWS (Dec. 31, 2021, 4:00 AM), https://www.cpr.org/2021/12/31/in-colorado-electric-cars-are-mostly-for-rich-people [https://perma.cc/UQM8-HJ89].

262. *Compare* Eric Van Nostrand & Matthew Ashenfarb, *The Inflation Reduction Act: A Place-Based Analysis*, U.S. DEP'T TREASURY (Nov. 29, 2023), https://home.treasury.gov/news/featured-stories/the-inflation-reduction-act-a-place-based-analysis [https://perma.cc/29U3-F6JD], *with Building America's Clean Energy Future*, U.S. DEP'T ENERGY, https://www.energy.gov/invest [https://perma.cc/6RJA-H3KX]. *See also* Cohen & Riofrancos, *supra* note 260 (voicing skepticism about the IRA's impact on the labor market so far in light of DOE's estimates).

263. Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 60201, 136 Stat. 1818.

264. *Id.* § 60106.

265. *Id.* §§ 80001–80004.

266. *See, e.g.*, H.R. 1, 119th Cong., Pub. L. No. 119-21, §§ 60004–60005, 60016, 139 Stat. 72 (2025) (rescission of funding to address air pollution including at schools as well as the termination of Environmental and Climate Justice Block Grants).

the investments will not reach low-income households because they have been designed as non-refundable tax credits. The investments that are intended for low-income households are much smaller in scale. Even those rebates may have difficulty reaching low-income Americans, since they will be accessed by the people who own their homes, and low-income Americans are more likely to rent. In that sense, the kinds of investments epitomized by the Inflation Reduction Act represented a serious decarbonization strategy, but one that risked compounding low-income Americans' vulnerabilities to climate strains.

C. *REGULATION*

Apart from subsidizing the costs of climate strains or spurring investment in mitigating those strains, government can also regulate individuals and corporations to achieve those ends. Federal climate-related regulation seems best summed up with the word "whiplash." On the one hand, the Biden Administration was the first in decades to revamp the use of cost-benefit analysis in the Office of Information and Regulatory Affairs ("OIRA") review of proposed regulations as well as incorporate an explicit focus on equity in that process.[267] And as mentioned above, the IRA creates additional authority for agencies like the EPA to regulate greenhouse gases.[268] But these encouraging developments in the political branches ran into significant obstacles in the federal judiciary. The Supreme Court in *West Virginia v. EPA* recently used its newfangled major questions doctrine to undermine environmental regulation and then, in *Loper Bright Enterprises v. Raimondo*, rejected judicial deference to agency statutory interpretation.[269] And the new Trump Administration is now poised to roll back several climate-related regulations.[270] Mindful of this broader regulatory context, this Section considers two examples of using regulation to mitigate climate strains: prohibiting utility disconnections and creating a heat workplace standard.

1. Utility Disconnections

When a household fails to pay their utility bills fully and on time, they accumulate arrearages with their local utility and risk the utility disconnecting them. Estimates suggest that more than 20 million Americans have utility

267. Modernizing Regulatory Review, 86 Fed. Reg. 7223, 7223 (Jan. 20, 2021) (discussing how agencies promulgating regulations need to consider impacts on "disadvantaged, vulnerable, or marginalized communities"); Exec. Order No. 13,985, 86 Fed. Reg. 7009, 7009 (Jan. 20, 2021); *see also* Daniel A. Farber, *Inequality and Regulation Designing Rules to Address Race, Poverty, and Environmental Justice*, 3 AM. J.L. & EQUALITY 2, 8–13 (2023) (canvassing these developments).

268. *See, e.g.*, David D. Doniger, West Virginia*, the Inflation Reduction Act, and the Future of Climate Policy*, 53 ENV'T L. REP. 10553, 10571–73 (2023); Kate Aronoff, *No, the Inflation Reduction Act Did Not "Overturn"* West Virginia v. EPA, NEW REPUBLIC (Aug. 24, 2023), https://newrepublic.com/article/167520/inflation-reduction-act-overturn-west-virginia-epa [https://perma.cc/ZY6W-7PN3].

269. *See, e.g.*, West Virginia v. EPA, 597 U.S. 697, 729 (2022); Loper Bright Enters. v. Raimondo, 603 U.S. 369, 413 (2024) ("[Reviewing courts] may not defer to an agency interpretation of the law simply because a statute is ambiguous.").

270. *Cf.* Albert C. Lin, *Climate Policy Buffers*, 39 YALE J. ON REGUL. 699, 718–42 (2022) (discussing how to strengthen institutional features that protect federal climate policy from future deregulatory efforts).

arrears.[271] Ultimately, utilities can disconnect the household's electricity, heating, and water. The U.S. Census Bureau's Pulse Survey found that twenty-seven percent of Americans surveyed had to reduce or forego expenses for basic household necessities to pay an energy bill in the last year.[272] Early in the COVID-19 pandemic, nearly ninety percent of residential electricity customers were protected temporarily from disconnection, whether due to a state moratorium or a voluntary utility practice.[273] However, almost all of those disconnection prohibitions were lifted by the end of 2021.[274] In 2022, utilities shut off electricity to at least three million Americans due to failed payments, and about a third of those disconnections occurred during the summer.[275] While some of those disconnections are brief, others can stretch on for days or even weeks, and they are not always a single occurrence.[276] One study found that half of all households whose electricity is shut off have faced multiple disconnections because of utility arrears.[277]

Utility disconnections make it harder for low-income households to deal with climate strains like extreme heat and poor air quality. And extreme heat may make disconnections more likely—by forcing residents to crank up the air conditioning or their fans. Recent research estimated that, in California, "each additional day with a maximum temperature of at least 95°F increases the relative risk of disconnection by 1.2%."[278] Today, forty-one states prevent

271. Press Release, Mark Wolfe, Nat'l Energy Assistance Dirs. Ass'n, Families Are Drowning in Utility Debt: NEADA Calls for Additional Funding for Energy Assistance (Apr. 26, 2022), https://neada.org/wp-content/uploads/2022/04/utilitydebtpr4-26.pdf [https://perma.cc/ZLG7-G6HQ] (citing research that arrearages "have increased from about $10.5 billion at the end of 2019, to about $23 billion at the end of February 2022" and that "[a]bout 20.1 million households were in arrears at the end of February 2022"); *see* Adam Chandler, *Where the Poor Spend More than 10 Percent of Their Income on Energy*, ATLANTIC (June 8, 2016), https://www.theatlantic.com/business/archive/2016/06/energy-poverty-lowincome-households/486197 (on file with the *Iowa Law Review*).

272. ASHLEY J. LAWSON & CLAIRE MILLS, CONG. RES. SERV., R47417, ELECTRIC UTILITY DISCONNECTIONS 2 (Jan. 31, 2023). For the current number of utility disconnections, see the *Utility Disconnections Dashboard*, IND. U. ENERGY JUST. LAB, https://energyjustice.indiana.edu/disconnection-dashboard/index.html [https://perma.cc/ZK9Q-KAAK].

273. LAWSON & MILLS, *supra* note 272, at 1.

274. *Id.*; *see, e.g.*, Kristen Thometz, *Illinois Attorney General: Contact Utility Companies Before Shut Off Moratorium Lifts*, WTTW (March 25, 2021, 12:05 PM), https://news.wttw.com/2021/03/25/illinois-attorney-general-contact-utility-companies-shut-moratorium-lifts [https://perma.cc/HS3V-DQLN].

275. *See* Sanya Carley & David Konisky, *America Faces a Power Disconnection Crisis Amid Dangerous Heat*, CONVERSATION (July 17, 2024, 8:26 AM), https://theconversation.com/america-faces-a-power-disconnection-crisis-amid-dangerous-heat-in-27-states-utilities-can-shut-off-electricity-for-nonpayment-even-in-a-heat-wave-234865 [https://perma.cc/DL3N-BB3K].

276. *See* David M. Konisky, Sanya Carley, Michelle Graff & Trevor Memmott, *The Persistence of Household Energy Insecurity During the COVID-19 Pandemic*, 17 ENV'T RSCH. LETTERS, Sept. 2022, at 5–6.

277. *Id.*

278. Alan Barreca, R. Jisung Park & Paul Stainier, *High Temperatures and Electricity Disconnections for Low-Income Homes in California*, 7 NATURE ENERGY, Oct. 2022, at 2; *see also* Trevor Memmott, David M. Konisky & Sanya Carley, *Assessing Demographic Vulnerability and Weather Impacts on Utility Disconnections in California*, 15 NATURE COMMC'NS, Nov. 2024, at 6 ("[H]ousehold characteristics such as race, ethnicity, and household composition are important predictors of disconnections, even after accounting for income, how much one pays for energy, and the condition of their home.").

utility companies from shutting off a customer's electricity during the winter as a penalty for nonpayment, but only eighteen states and the District of Columbia prohibit utility shutoffs during heat waves.[279] When a woman who needed an oxygen tank to breathe died after her power was shut off, New Jersey enacted legislation that requires utilities to check with all of their residential customers whether they rely on "life-sustaining equipment" that uses electricity.[280] It is not guaranteed that more states will prohibit disconnections during periods of extreme heat. Pennsylvania had such a prohibition since 2004, but the state legislature failed to reauthorize it last session and it expired at the end of last year.[281]

As temperatures rise, more poor Americans will be vulnerable to extreme heat in their homes and unable to cool themselves or their loved ones because of these gaps in state law. In 2022, members of Congress introduced legislation to amend the Public Utility Regulatory Policies Act of 1978 to encourage utilities to consider disconnection prohibitions during extreme heat or cold weather events, but those bills went nowhere.[282] Meanwhile, the need for federal and state regulation on utility disconnections will only become more urgent in the coming years.

2. Heat Workplace Standard

As discussed in Part I, low-income Americans are more likely to work outdoors as well as in poorly ventilated and cooled workplaces.[283] They are also less likely to have the flexibility to work from home.[284] As a result, it matters to low-income workers whether there are employer mandates to make workplaces cool during extreme heat. But there is no federal rule and only a

279. *See Seasonal Termination Protection Regulations*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/Disconnect/SeasonalDisconnect.htm [https://perma.cc/AJ8P-Q9MN]; *As Temperatures Soar, More States Should Enact This Lifesaving Protection*, WASH. POST (July 13, 2023), https://www.washingtonpost.com/opinions/2023/07/13/heat-wave-utility-shutoff (on file with the *Iowa Law Review*); *Utility Disconnections Dashboard*, *supra* note 272.

280. N.J. STAT. ANN. §§ 48:2-29.48 to 48:2-29.53 (West 2025); *see also* S.P. Sullivan, *Grandma on Oxygen Died After Utility Cut Her Power. N.J. Enacts 'Linda's Law' to Stop It from Happening Again*, NJ.COM (July 6, 2019, 12:32 AM), https://www.nj.com/essex/2019/07/grandma-on-oxygen-died-after-utility-cut-her-power-nj-enacts-lindas-law-to-stop-it-from-happening-again.html [https://perma.cc/8XVG-SQ9G].

281. *See* Sophia Schmidt, *A Pa. Utility Shutoff Law Is Expiring. Here's What You Need to Know*, WHYY (Dec. 23, 2024, 4:45 PM), https://whyy.org/articles/pennsylvania-shutoff-law-expiration [https://perma.cc/XR4K-5Y57]; Tami Luhby, *Sweltering Americans Have Fewer Protections Against Power Shutoffs This Summer*, CNN (July 11, 2023, 9:12 AM), https://www.cnn.com/2023/07/11/business/heat-waves-power-shutoffs/index.html [https://perma.cc/YLJ4-LPBV].

282. H.R. 9300, 117th Cong. (2022); H.R. 1364, 117th Cong. (2022); *see also* Heather Payne, *Unservice: Reconceptualizing the Utility Duty to Serve in Light of Climate Change*, 56 U. RICH. L. REV. 603, 641–42 (2022) (discussing increasing unaffordable utility bills for low-income households).

283. *See generally supra* notes 60–81 and accompanying text.

284. *See supra* notes 60–81 and accompanying text. Of course, the point is not that working from home will always be safer or better but that low-income Americans are less likely to have the option.

few states have adopted protections.[285] In October 2021, President Biden's Occupational Safety and Health Administration ("OSHA") published an advanced notice of proposed rulemaking for a heat workplace standard.[286] Nearly three years later, the Agency published a proposed final rule.[287]

The 376-page proposed rule would apply to all businesses subject to OSHA's jurisdiction in "general industry, construction, maritime, and agriculture sectors," with some exceptions,[288] that employ people in outdoor and indoor work to take steps to protect workers from extreme heat.[289] First, employers would need to regularly conduct heat risk assessments and monitor workplace temperature and humidity levels.[290] Employers would also be required to adopt several preventive strategies to mitigate heat-related risks, including providing workers with accessible drinking water at all times and scheduled rest breaks in cool or shaded areas—the frequency and duration of which would increase with rising temperatures.[291] Employers would also need to provide heat safety training[292] as well as acclimatization programs for new and returning workers.[293] Finally, employers would need to implement emergency response plans to prevent heat injury and illness.[294] To promote compliance and enforcement, employers would need to maintain records of monitoring data and heat-related incidents and conduct regular audits of the company's compliance with the new standards.[295] The rule also imposes additional requirements for high-risk industries, including agriculture and construction,[296] and mandates special considerations for vulnerable workers, such as temporary, seasonal, and immigrant workers.[297]

The Biden Administration's proposed heat workplace standard could have a significant impact for low-income workers across the country, but presumably, the Trump Administration will refuse to finalize it and rescind this proposed regulation. Even if OSHA promulgates the final rule, the new

285. Steven Greenhouse, *How Rising Temperatures Are Becoming a Labor Story*, NIEMAN REPS. (Jan. 19, 2023), https://niemanreports.org/articles/labor-beat-extreme-heat [https://perma.cc/Z2KP-K7WQ] (identifying the handful of "states that have adopted heat standards requiring employers to take specific steps in hot weather — such as giving periodic breaks to cool off").

286. *See generally* Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, 86 Fed. Reg. 59309 (advance notice provided Oct. 27, 2021).

287. *See generally* Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings, 89 Fed. Reg. 70698 (proposed Aug. 30, 2024) (to be codified at 29 C.F.R. pts. 1910, 1915, 1917, 1918, 1926, 1928).

288. The proposed rule exempts short-duration employee exposure to heat, "sedentary" employees, those in indoor job sites kept below eighty degrees, and remote workers—and, as with all OSHA rules, this workplace standard would not apply to any public employees. *Id.* at 70773–75.

289. *Id.* at 70698 ("It would more clearly set forth employer obligations and the measures necessary to effectively protect employees from hazardous heat.").

290. *Id.* at 70775–76.

291. *Id.* at 70778–81.

292. *Id.* at 70795–99.

293. *Id.* at 70784–85.

294. *Id.* at 70793–95.

295. *Id.* at 70720, 70723, 70799.

296. *Id.* at 70730.

297. *Id.* at 70735.

Congress could pass a resolution of disapproval pursuant to the Congressional Review Act.[298] Given that federal efforts have likely stalled, there may be some opportunities in individual states.

At the state level, California adopted state-wide regulations in 2006, over the opposition of the California Farm Bureau.[299] Washington State followed a couple of years later, and Colorado and Oregon adopted similar protections in 2022.[300] However, efforts in other states, including Florida, Nevada, New York, Virginia, and Texas, have stalled.[301] Meanwhile, cities who try to adopt standards at the municipal level risk "anticipatory preemption" from state government.[302] In 2024, Florida enacted legislation barring localities from requiring employers to provide outdoor workers with rest, shade, and water.[303] During the Biden Administration, OSHA stepped up its enforcement on heat-related hazards and is developing a National Emphasis Program on heat inspections, but that looks unlikely to continue during the Trump Administration.[304] And it is highly unlikely OSHA will promulgate a national workplace heat standard in the next few years.

Looking at both examples of regulations that could combat climate change, there are significant challenges to implementation, possible trade-offs with redistribution, and uncertain impacts on decarbonization. Federal regulations prohibiting utility disconnections or promulgating workplace heat standards could be powerful tools of redistribution, making utilities and employers bear the costs of the regulations. Of course, these regulations would run the risk that utilities pass on the costs of arrearages to other consumers, most of whom are moderate and low-income, and employers may respond to heat standards in ways that harm workers.

The heat workplace standard would probably be neutral as to decarbonization. The prohibition on utility disconnection could be worse. Like LIHEAP, the prohibition on utility disconnection could increase consumption in low-income households, which, in many states, would be from grids reliant on

298. *See* Congressional Review Act, 5 U.S.C. §§ 801–808; *see also* CHRISTOPHER M. DAVIS & MAEVE P. CAREY, CONG. RSCH. SERV., IN12408, CRA LOOKBACK PERIOD CURRENTLY ESTIMATED TO BEGIN IN AUGUST 1 TIME FRAME, at 2 (2024), https://crsreports.congress.gov/product/pdf/IN/IN12408 [https://perma.cc/4U98-RBC3] (estimating that rules submitted to Congress on or after August 1, 2024 are likely subject to possible nullification and that both houses will be able to introduce CRA resolutions starting around February 5, 2025).

299. Aryn Baker, *Extreme Heat Is Endangering America's Workers—and Its Economy*, TIME (Aug. 3, 2023, 8:00 AM), https://time.com/6299091/extreme-heat-us-workers-economy [https://perma.cc/PHE8-NEGT].

300. *Id.*

301. *Id.*

302. *See* Klass & Wilton, *supra* note 97, at 107–11 (discussing conflicts between states and cities).

303. FLA. STAT. § 448.106 (2024); *see also* Alejandra Borunda, *Florida Blocks Heat Protections for Workers Right Before Summer*, NPR (Apr. 12, 2024, 2:07 PM), https://www.npr.org/2024/04/12/1244316874/florida-blocks-heat-protections-for-workers-right-before-summer [https://perma.cc/T9BU-7EA6] (discussing statute).

304. Press Release, U.S. Dep't of Labor, U.S. Department of Labor Announces Enhanced, Expanded Measures to Protect Workers from Hazards of Extreme Heat, Indoors and Out (Sept. 20, 2021), https://www.osha.gov/news/newsreleases/national/09202021 [https://perma.cc/S6KF-HRLH].

fossil fuels.[305] As a result, a prohibition on utility disconnections could undermine attempts to decarbonize.

Even if most utilities and employers complied with the regulations, others would challenge these regulations in federal court. The prohibition on utility disconnections would be on firmer ground if Congress legislated it as opposed to an agency promulgating a similar regulation. OSHA has broad authority to regulate workplaces, but their recent experience in the Supreme Court suggests a federal heat workplace standard may not survive a federal court challenge. During the COVID-19 pandemic, OSHA promulgated an emergency temporary standard mandating that employers with more than 100 employees require those employees to obtain a COVID-19 vaccination or take weekly COVID-19 tests and wear a mask at the workplace.[306] The Supreme Court vacated OSHA's action on the grounds that the agency lacked clear congressional authorization.[307] The threat of vacatur would loom over both utility disconnection prohibitions and a heat workplace standard.

For both utility disconnection prohibitions and heat workplace standards, it is hard not to be discouraged by the recent record of fitful progress and more frequent failures. Fewer than half of states prohibit utility disconnections during heat waves, and only a handful of states have heat workplace standards. Nor should we expect federal regulations on either issue anytime soon. Meanwhile temperatures keep climbing in more homes and more workplaces, forcing low-income households to make hard choices between paying their utility bill and putting food on the table and forcing them to choose between foregoing a paycheck or working in dangerous conditions from extreme heat. The United States must decarbonize to mitigate these climate strains, but we must also help people to adapt to these strains. Informed by the analysis above, the next Part identifies ways to do the latter.

III. PROTECTING POOR PEOPLE FROM CLIMATE STRAINS

This Part moves from analyzing the status quo to identifying ways in which the United States could legislate and regulate to help low-income Americans cope with climate strains like extreme heat and declining air quality. American public law presents some obstacles for both legislation and administration. This Part identifies those challenges, proposes some changes to existing law based on the analysis in Part II, and then sweeps more broadly to consider other legal pathways for adaptation in the face of climate strains.

---

305. *Cf.* Alexandra Klass, Joshua Macey, Shelley Welton & Hannah Wiseman, *Grid Reliability Through Clean Energy*, 74 STAN. L. REV. 969, 1071 (2022) ("A *nationally* reliable, clean, interconnected grid would bring less expensive renewable energy to communities disproportionately facing energy poverty and the health impacts of fossil fuels.").

306. *See generally* COVID-19 Vaccination and Testing; Emergency Temporary Standard, 86 Fed. Reg. 61,402 (Nov. 5, 2021) (to be codified at 29 C.F.R. pts. 1910, 1915, 1917, 1918, 1926, 1928). OSHA's enabling statute, the Occupational Safety and Health Act, exempts these emergency temporary standards from the typical notice-and-comment procedures. *See* 29 U.S.C. § 655(c)(1).

307. *See* Nat'l Fed'n of Indep. Bus. v. OSHA, 595 U.S. 109, 113 (2022).

A. CLIMATE STRAINS AND THE CHALLENGES OF AMERICAN PUBLIC LAW

In an era of partisan polarization and legislative gridlock, any proposed statutory change should be met with some skepticism. But climate strains may be particularly ill-suited to the fitful and unorthodox ways in which Congress now legislates. In recent work with Ariel Jurow Kleiman and Gabriel Scheffler, I explored the limits of crisis-induced lawmaking, using the lessons from the U.S. response to the COVID-19 pandemic. That federal legislation, while having significant temporary effects on poverty and hardship, was unpredictable and evanescent.[308] The reliance on shocks to induce action also permits drift in social policy. As lawmakers fail to update social programs through subsequent amendments, these programs become less targeted and effective over time.[309]

Given these realities of the legislative process, climate strains are particularly challenging to address on Capitol Hill. For all the weaknesses and flaws in the American response to climate disasters, there is at least a legal apparatus for that response. The Stafford Act, the emergency disaster appropriations, and the regulations and waivers governing the specific anti-poverty programs at least create a pathway for significant assistance to people newly or further impoverished by climate disasters.[310] With climate strains, federal law does not guide a similarly coordinated response. And if extreme heat and declining air quality are experienced by constituents and lawmakers as a situation that gets steadily worse over time, it may not create the kinds of crises to which Congress responds. For instance, disaster SNAP is a one-time food assistance benefit intended to help those who must leave their homes temporarily in the face of floods or fires.[311] But a one-off benefit may be inadequate for families who are living in communities under months-long boil water advisories.[312]

On the other hand, the predictability of some climate strains, like extreme heat, could spur Congress to further subsidize climate adaptation in homes, workplaces, and public infrastructure like hospitals, schools, transit, and libraries so that people can withstand those strains when the heat inevitably comes. In that respect, it is encouraging that Congress was able to pass both the IRA and the Infrastructure Investment and Jobs Act.[313] A focus on investments also expands the welfare state's policymaking menu to a more effective government response to the climate crisis. But lawmakers and advocates will need to figure out ways to make sure these investments reach people living in poverty.

---

308. *See* Andrew Hammond, Ariel Jurow Kleiman & Gabriel Scheffler, *The Future of Anti-Poverty Legislation*, 112 GEO. L.J. 349, 357–69 (2023).

309. *See id.* at 353–57.

310. Hammond, *On Fires, Floods, and Federalism*, *supra* note 15, at 1085.

311. *Id.* at 1086–90 (analyzing disaster SNAP).

312. *See* Daniel Wolfe & Aaron Steckelberg, *L.A. Fires May Have Brought Cancer-Causing Chemicals into Drinking Water*, WASH. POST (Jan. 16, 2025), https://www.washingtonpost.com/climate-environment/interactive/2025/la-water-safe-no-boil-vocs (on file with the *Iowa Law Review*) ("Experts say it will take weeks for [Los Angeles] utilities to determine the extent of any contamination and months before remediation takes place.").

313. *See* Inflation Reduction Act, Pub. L. No. 117-169, 136 Stat. 1818 (2022); Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021).

Climate strains also create challenges for public administration. With climate shocks, federal and state agencies have mechanisms to identify people in need of public benefits. Typically, agencies can provide additional benefits to anyone who resides in a presidentially declared disaster area.[314] After a hurricane or wildfire, it is relatively straightforward to identify people in need.[315] However, given the diffuse and incremental nature of climate strains, it is less obvious how agencies should determine who needs assistance. In the United States, adults living in poverty typically must apply for benefits themselves. Increasingly, though, federal and state agencies have adopted policies that permit categorical or adjunctive eligibility. Categorical or adjunctive eligibility in welfare administration refers to procedures in which households currently receiving one benefit, such as Medicaid, are automatically enrolled in another, like SNAP.[316] The only new program to persist after the pandemic legislation, Summer EBT, a food assistance program for families with children during the summer months, relies on eligibility for free and reduced school meals to enroll families in the new program.[317] As explored in Part II, the federal LIHEAP statute permits states to create categorical eligibility for some families receiving other public benefits, and a more expansive use of adjunctive eligibility, coupled with more funding, could help federal and state agencies deliver more assistance to poor Americans trying to adapt to climate strains.[318] For the tax credits and rebates discussed in Part II, the federal government appears to be relying heavily on individual households and businesses to seek out these programs as ways to subsidize investments.[319] Government will need to make the needs that result from climate strains more legible to federal and state agencies—and make it easier for people to receive assistance.

Looking beyond Washington, D.C., state legislatures and agencies generally have fewer obstacles to amending statutes and promulgating regulations.

---

314. *See* Hammond, *On Fires, Floods, and Federalism*, *supra* note 15, at 1085–86 (explaining how the President declares disasters and triggers recovery provisions of the Stafford Act and federal welfare programs).

315. *See id.*

316. U.S. DEP'T OF AGRIC., FOOD & NUTRITION SERVS., BROAD-BASED CATEGORICAL ELIGIBILITY 1 (2025), https://fns-prod.azureedge.us/sites/default/files/resource-files/snap-bbce-statechart-apr2025.pdf [https://perma.cc/5A2T-LX2E] (explaining that individuals who qualify for TANF or state maintenance of effort funded benefits may be categorically eligible for SNAP benefits); U.S. DEP'T OF AGRIC., FOOD & NUTRITION SERVS., WIC PARTICIPANT AND PROGRAM CHARACTERISTICS 2022 FINAL REPORT, at v–vi (2024), https://fns-prod.azureedge.us/sites/default/files/resource-files/wic-ppc-2022-report.pdf [https://perma.cc/2CTR-R3VK] (explaining that under the Supplemental Nutrition Program for Women, Infants, and Children's ("WIC") authorizing legislation, participants in TANF, SNAP, or Medicaid automatically meet WIC's income requirements through adjunctive eligibility).

317. *See* 42 U.S.C. § 1762(c)(1); Establishing the Summer EBT Program and Rural Non-Congregate Option in the Summer Meal Programs, 88 Fed. Reg. 90230, 90257 (Dec. 29, 2023) (to be codified at 7 C.F.R. pts. 210, 220, 225, 292) ("Children that had an individual eligibility determination for school meal benefits during the immediately preceding instructional year will have their eligibility automatically carried forward into the summer operational period and no further action is required for families to receive Summer EBT benefits.").

318. *See supra* Section II.A.

319. *See supra* Section II.B.

Governors have arguably broader powers than Presidents to enact regulatory reform, not to mention fewer checks on those powers.[320] And forty of our fifty states are "one party trifectas"—where either the Democratic or Republican Parties control the governorship and both houses of the legislature—making it easier to reach agreement.[321] But some states may not be willing partners, let alone leaders, in the climate response.[322] The very features of flexibility in the administration of LIHEAP and the IRA that will empower states to reform those programs to respond to climate strains will also permit states to do nothing. In other words, for every state that may change how it disburses LIHEAP funding in the summer months, another state can decline to do so.[323] And unless the governing federal statutes and regulations change, the federal government has few levers to persuade those laggard states to do otherwise. Mindful of the hurdles to enacting statutory fixes and promulgating new regulations to address climate strains, the rest of this Part identifies ways in which to adapt safety net programs to meet the new challenges posed by climate strains.

B. A BLUEPRINT FOR ADAPTING THE SAFETY NET TO RESPOND TO CLIMATE STRAINS

More and more Americans have already and will continue to endure extreme heat and declining air quality. Individuals, organizations, and communities will expend more and more resources to manage life amid these climate strains. But not all people and places in the United States will have sufficient resources to make life livable in these conditions. As a result, there will be increasing pressure on government to respond. What follows is a brief sketch of how the federal government could respond to climate strains.

---

320. *See, e.g.*, Miriam Seifter, *Gubernatorial Administration*, 131 HARV. L. REV. 483, 499–514, 518–26 (2017) (canvassing the sweeping powers of today's governors and how a less robust separations of powers at the state level offers fewer checks on executive action); Miriam Seifter, *Further from the People? The Puzzle of State Administration*, 93 N.Y.U. L. REV. 107, 134–43 (2018) (exploring how civil society groups exercise less oversight over state agencies). *See generally* Jason Webb Yackee & Susan Webb Yackee, *Procedural Constraints and Regulatory Ossification in the US States*, REGUL. & GOVERNANCE (2024) (testing the ossification of rulemaking hypothesis and finding that, in fact, state agencies issue numerous rules and without significant delay).

321. On the rise of one-party rule in state government, see, e.g., Mary Ellen Klas & Carolyn Silverman, *This Is Why You Don't Recognize Your State Government*, BLOOMBERG (Oct. 22, 2024), https://www.bloomberg.com/graphics/2024-opinion-one-party-control-data-dominates-state-politics-disenfranchises-voters [https://perma.cc/B982-9P5J]; David Schultz, Opinion, *One-Party Rule Gets Things Done. That's Not Always a Good Thing.*, GOVERNING (June 5, 2023), https://www.governing.com/politics/one-party-rule-gets-things-done-thats-not-always-a-good-thing [https://perma.cc/S722-N2AH]; and Hari M. Osofsky & Jacqueline Peel, *Energy Partisanship*, 65 EMORY L.J. 695, 750–58 (2016) (exploring a possible shift for energy reform efforts to the state level in light of federal gridlock).

322. *See* Tracy J. Wholf, *45 States Are Now Covered by a Climate Action Plan. These 5 Opted Out.*, CBS NEWS (Mar. 12, 2024), https://www.cbsnews.com/news/climate-action-plan-states-emissions [https://perma.cc/9MUN-9RRM].

323. *See* Hammond, *On Fires, Floods, and Federalism*, *supra* note 15, at 1116–17 (identifying recent examples of states refusing federal funding for welfare programs).

1. *Fully Fund and Restructure Home Energy Subsidies.* LIHEAP provides crucial support for low-income Americans facing climate strains, but Congress must reorient the program to the climate crisis.[324] Congress should increase funding to LIHEAP so that states can serve more eligible households and not run the risk of running out of funds just as summer heat waves hit. Congress should also revise the LIHEAP funding formulas for territories and tribes to get closer to parity with funding for states. Congress should also use LIHEAP to incentivize states, territories, and tribes to reorient their programs to address home cooling, in addition to the grantees' traditional focus on heating. To minimize this additional funding's impacts on the use of fossil fuels, Congress should pair these increases with conditions to spur green investments by grantees and the relevant utilities. One could imagine Congress making LIHEAP funding conditional on utility decarbonization.

A more expensive, but more effective way to strengthen home energy would be to restructure LIHEAP as a new Climate Adaptation Payment ("CAP") for low-income and middle-income households. CAP's eligibility rules could be based on SNAP's entitlement and therefore, unlike LIHEAP's block grant, would not run out of funds.[325] CAP could avoid the implementation challenges of uncooperative state legislatures and agencies by using a federal agency to deliver assistance directly to households—similar to how the IRS administered the pandemic-expanded, but now-expired Child Tax Credit.[326] However, unlike the Child Tax Credit, it's not clear how a federal agency like the Treasury could disburse CAP payments accurately unless it was working closely with an agency with scientific expertise like the National Oceanic and Atmospheric Administration ("NOAA"). The benefit administration would need reliable and readily accessible data on extreme cold, extreme heat, and deteriorating air and water quantity and quality. As with the Child Tax Credit, the Treasury could always recoup overpayments through income tax filings.

2. *Enact Refundable Tax Credits and Expand Rebates.* Before their repeal, IRA's investments in green technology were unlikely to reach low-income Americans. Should Congress revisit home energy tax credits, those credits should be made refundable.[327] Congress could instead focus on rebate programs targeted at poor households, including how these investments could reach renters and not just homeowners.

3. *Prohibit or Otherwise Discourage Utility Disconnections.* The federal government would not have the authority under the Federal Power Act to prohibit utilities from disconnecting households during periods of extreme heat or cold, or deteriorating air quality.[328] However, Congress did include

---

324. *See supra* Section II.A.

325. *See supra* notes 168–72 and accompanying text.

326. *See Child Tax Credit*, INTERNAL REVENUE SERV. (Jan. 21, 2025), https://www.irs.gov/credits-deductions/individuals/child-tax-credit [https://perma.cc/R75Z-PZFW].

327. *See supra* notes 248–62 and accompanying text.

328. Federal Power Act, 16 U.S.C. §§ 791–828; *see also* ADAM VANN, CONG. RSCH. SERV., IF11411, THE LEGAL FRAMEWORK OF THE FEDERAL POWER ACT 1 (2020) ("[The Federal Energy Regulatory Commission]'s jurisdiction over the electric power industry as set forth in Part II of

among its preferred utility policies, which are essentially standards for retail utilities, a standard that discourages utility disconnections under certain circumstances.[329] Absent national action, state legislatures or the state public utility commissions could do so. Indeed, many did in response to the COVID-19 pandemic, and many states have seasonal moratoria on the books.[330] While some states prohibit disconnections during both extreme cold and extreme heat, some states only have winter prohibitions. More states could enact and expand utility disconnection prohibitions and follow the six states that prohibit disconnections when there is a National Weather Service heat advisory or warning.[331]

4. *Invest In and Regulate Workplace and School Safety.* OSHA should promulgate a federal heat workplace standard, and Congress should fund the agency to meaningfully enforce such a standard. Congress should also continue to spur investment in public infrastructure that will make them better suited to climate strains, including air conditioning in schools.

5. *Improve Data Collection.* The federal government needs reliable information on energy poverty, utility disconnections, and workplace hazards. In 2023, Congress appropriated $3 million to the U.S. Energy Information Administration to begin collecting monthly data on utility disconnections.[332] Congress should require and fund more data collection on these issues and mandate agencies make that data accessible to the public beyond the typical requirements of the Freedom of Information Act ("FOIA").

---

the [Federal Power Act] is limited. Pursuant to Section 201, Part II applies only to 'the transmission of electric energy in interstate commerce and to the sale of electric energy at wholesale in interstate commerce.' The FPA defines 'wholesale' as sale for resale. Intrastate transmission and distribution of electricity, as well as intrastate and/or retail sales of electricity, are largely regulated by state agencies." (citations omitted)).

329. 16 U.S.C. § 2625(g) (suggesting standards for "procedures for termination of electric service" that include prohibiting termination "during any period when termination of service to an electric consumer would be especially dangerous to health" and the consumer is unable to fully pay for their electric service).

330. ASHLEY L. LAWSON & CLAIRE MILLS, CONG. RSCH. SERV., R47417, ELECTRIC UTILITY DISCONNECTIONS 5 (2023) ("In response to the COVID-19 pandemic, many utilities and their regulators implemented moratoria on disconnections in certain cases . . . . Approximately 88% of U.S. residential customers were covered by a moratorium for at least some portion of the pandemic."); *see, e.g.*, IND. CODE § 8-1-2-121 (2024) (prohibiting termination of residential gas or electric service between December 1 and March 15 for "persons who are eligible for and have applied for [LIHEAP] assistance"). *See generally Seasonal Termination Protection Regulations*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/Disconnect/SeasonalDisconnect.htm [https://perma.cc/5SKQ-LWDC] (describing every state's seasonal termination protection regulation).

331. *Seasonal Termination Protection Regulations*, *supra* note 330 (Georgia, Minnesota, Oregon, Rhode Island, Texas, and Wisconsin have electricity termination prohibitions tied to excessive heat advisories, watches, or warnings).

332. Consolidated Appropriations Act, 2023, Pub. L. No. 117-328, 136 Stat. 4459; *see* Cong. Rec. S8363 (daily ed. Dec. 20, 2022) (explanatory statement submitted by Sen. Patrick Leahy regarding the Consolidated Appropriations Act, 2023) ("The agreement provides up to $3,000,000 to conduct a monthly survey of electric and heating service providers of final termination notices sent due to bill non-payment, service disconnections due to bill non-payment, and Service reconnections of customers disconnected for bill non-payment . . . .").

C. LOOKING BEYOND THE SAFETY NET

This Article has sought to demonstrate why we need to consider the effects of a changing climate not just as a series of shocks, like wildfires and floods, but also as a set of simmering challenges like extreme heat and deteriorating air quality. These latter climate strains also demand adaptation, and that adaptation cannot just be available to those who can afford it. The Article has modeled an adaptation analysis by canvassing the existing safety net programs that can be used to respond to those phenomena. But so far, the Article has hewed closely to the insights from the environmental justice and just transition literatures to focus on existing public law that impacts poor people. That emphasis, however, should not obscure opportunities in other areas of law that would benefit from scholars taking a clear-eyed look at the challenges of climate adaptation.[333] In that vein, here are some other possibilities to address climate strains that venture beyond the safety net.

First, many legal scholars who accept the framework of climate strains might reject the emphasis on public law. Instead, they might reach first for answers from private law.[334] Indeed, the framework of climate strains put forward in this Article necessarily recognizes the diffuse and complex characteristics of extreme heat and deteriorating air quality. To take the example from the start of the Article, plenty of people in Phoenix who endured a full month of record-breaking temperatures had the means to make their lives more livable. Instead of government interventions, perhaps private law mechanisms can help more and more Americans respond to these steady pressures from climate change.

One obvious area of private law that might offer strategies to deal with climate strains is insurance, especially through parametric insurance.[335] Unlike traditional indemnity policies, parametric insurance provides coverage by paying a fixed amount based on the occurrence and magnitude of a specific event, rather than the actual loss incurred.[336] Sometimes called index-based insurance, parametric insurance relies on predefined triggers or parameters, like water height on a flood gauge, typically using third-party (including government) data.[337] Because payouts do not need to be validated by adjusters, parametric policies can reach people quicker and be less expensive.[338] Recent

333. *See, e.g.*, Roger Michalski & Emily S. Taylor Poppe, *Civil Procedure for the Anthropocene*, 104 B.U. L. REV. 1729, 1733 (2024) (arguing climate change litigation will require adaptation of civil procedure); Irma Russell, John C. Dernbach & Matt Bogoshian, *The Lawyer's Duty of Competence in a Climate-Imperiled World*, 92 UMKC L. REV. 859, 869–71 (2023) (considering how climate change impacts attorneys' duty of competence because they must be able to advise their clients about the impact of climate change).

334. *See* Jim Rossi & Michael Panfil, *Climate Resilience and Private Law's Duty to Adapt*, 100 N.C. L. REV. 1135, 1138–42 (2022) (outlining a private, negligence-based climate change adaptation tort that could be brought against utlity and energy providers).

335. *See Parametric Insurance: What It Is & the Role It Could Play: Informational Hearing Before the Assemb. Ins. Comm.*, 2025–2026 Sess. 1 (Cal. 2024).

336. *See id.*

337. *See* Carolyn Kousky & Sarah E. Light, *Insuring Nature*, 69 DUKE L.J. 323, 359 (2019).

338. *See id.*

shortcomings in home and flood insurance should temper enthusiasm for private insurance to provide widespread coverage amidst climate change.[339] But parametric heat wave insurance should be on the menu for households, businesses, communities, and policymakers—nor would it be mutually exclusive of the reforms outlined above.[340]

Second, the Article focused on how we need to make the homes, workplaces, and schools of low-income Americans more livable in the face of climate strains. But extreme heat and declining air quality also impact mass transit, public spaces, and carceral facilities like jails, prisons, and detention centers.[341] As mentioned in Part I, low-income people in the United States are more likely to use public transit to get to work or school, or to go about their day.[342]

Policymakers should consider ways to make these transit systems more resilient in the face of climate strains. Third spaces, places different from home or work, are often open to consumers, but libraries are open to anyone.[343] As a result, more and more Americans are using libraries as a place to cool off.[344] Looking back to the example of the 2021 heat wave in Oregon,

339. *See* Daniel Schwarcz, *Obamacare for Homeowners Insurance: Fixing America's Broken Insurance Markets in a Time of Climate Change*, 49 HARV. ENV'T. L. REV. 525, 527–28 (2025) (discussing how insurance companies are "non-renewing policies, raising premiums, and reducing coverage for homeowners across the country" and "[s]ome insurers are even exiting state insurance markets altogether" in the face of climate change); Carolyn Kousky, *Financing Flood Losses: A Discussion of the National Flood Insurance Program*, 21 RISK MGMT. & INS. REV. 11, 15–17 (2018) (discussing possible reasons for the lack of private firms in the flood insurance market).

340. *See generally* Karl Larsson, *Parametric Heat Wave Insurance*, 31 J. COMMODITY MKTS. 100345 (2023) (proposing "a framework for structuring and pricing" parametric heat wave insurance). As an example of how private insurance and public law can be used together, California's Department of Insurance proposal to provide community-based neighborhood protection blends the innovations of parametric insurance without relying solely on individual's ability to pay. Deborah Halberstadt & Rabab Charafeddine, Cal. Dep't of Ins., Climate & Sustainability Branch, Climate Insurance Working Group Discussion Concept Paper: Neighborhood Protection from Heat (2022), https://www.insurance.ca.gov/01-consumers/180-climate-change/upload/Draft-Extreme-Heat-Neighborhood-Protection-Concept-November-2-2022.pdf [https://perma.cc/9NLT-BJNC].

341. *See, e.g.*, Nat Levy, *Extreme Heat Impacts Daily Routines and Travel Patterns, Study Finds*, U. TEX. AUSTIN, COCKRELL SCH. ENG'G (Oct. 16, 2024), https://cockrell.utexas.edu/news/archive/10071-extreme-heat-impacts-daily-routines-and-travel-patterns-study-finds [https://perma.cc/3B44-B976] ("On average, public transit trips fall by nearly 50% on extreme heat days, as individuals seek relief in air-conditioned private vehicles."); Ben Nevis Barron, Shawhin Roudbari, Phaedra C. Pezzullo, Shideh Dashti & Abbie B. Liel, *"Because We're Dying in Here": A Study of Environmental Vulnerability and Climate Risks in Incarceration Infrastructure*, 7 NATURE & SPACE 2437, 2244–49 (reporting findings from a series of interviews and focus groups with incarcerated individuals, who described experiencing fluctuating and extreme temperatures and poor air quality while incarcerated).

342. *See supra* note 62 and accompanying text.

343. *See generally* ERIC KLINENBERG, PALACES FOR THE PEOPLE (2019) (identifying libraries as an example par excellence of social infrastructure); RAY OLDENBURG, THE GREAT GOOD PLACE 16 (1991) (identifying third places that "host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work").

344. *See* John Ryan, *Five More Seattle Libraries to Become Extreme-Heat Refuges*, KUOW (Aug. 21, 2024, 5:56 PM), https://www.kuow.org/stories/five-more-seattle-libraries-to-become-extreme-heat-refuges [https://perma.cc/R554-SLMH].

Multnomah County turned nine air-conditioned libraries into cooling centers.[345] But like the school infrastructure discussed in Part I, many libraries have out-of-date and deteriorating infrastructure, causing air conditioning to fail in times of extreme heat.[346] Policymakers should prioritize how to use existing public infrastructure like libraries and public pools as climate resilience centers,[347] and just like parametric insurance, user fees can be waived when temperatures exceed a certain threshold.[348] Meanwhile, there is an additional set of legal and political challenges around making jails, prisons, and detention centers livable amid climate strains.[349]

Third, and perhaps most perplexing, is how the recognition of climate strains interacts with our understanding of managed retreat. Managed retreat refers to when government and communities decide to abandon flood-prone or fire-prone areas.[350] Just in the last year, several legal academics have begun focusing on managed retreat in a variety of contexts.[351] More scholars are thinking about what managed retreat means using the environmental justice

345. *See* Andrew Selsky, *Hundreds Believed Dead in Pacific Northwest Heat Wave Despite Efforts to Help*, PBS NEWS (July 1, 2021, 8:23 PM), https://www.pbs.org/newshour/nation/hundreds-believed-dead-in-pacific-northwest-heat-wave-despite-efforts-to-help [https://perma.cc/ZEY6-FH4X].

346. *See, e.g.*, Jeanette DeForge, *A Lack of Air Conditioning at Springfield Central Library Limits Patrons' Access, Leaves Staff Sweating*, MASSLIVE (Aug. 01, 2024, 8:16 PM), https://www.masslive.com/westernmass/2024/08/a-lack-of-air-conditioning-at-springfield-central-library-limits-patrons-access-leaves-staff-sweating.html [https://perma.cc/L3LK-V8J8]; Doug Williams, Natalie Duddridge & Jesse Zanger, *As NYC Faces Its Hottest Day of the Year, Some Libraries Have Broken Air Conditioning*, CBS NEWS (June 21, 2024, 5:26 PM), https://www.cbsnews.com/newyork/news/nyc-heat-hottest-day-of-the-year [https://perma.cc/5Z4V-VL7F].

347. *See* Juliette M. Randazza et al., *Planning to Reduce the Health Impacts of Extreme Heat: A Content Analysis of Heat Action Plans in Local United States Jurisdictions*, 113 AM. J. PUB. HEALTH 559, 559–67 (2023); *see also, e.g.*, Letter from Marta A. Segura, L.A. Chief Heat Officer & Dir., to Members of Los Angeles City Council Energy and Environment Committee (June 5, 2024), https://clkrep.lacity.org/onlinedocs/2023/23-1380_rpt_cemo_6-05-24.pdf [https://perma.cc/68T7-D7R5] (discussing efforts to make libraries effective cooling centers).

348. *See, e.g.*, *"Stay Cool Bloomington" Initiative Provides Free Pool Admission During Extreme Heat*, CITY OF BLOOMINGTON (June 13, 2024), https://bloomington.in.gov/news/2024/06/13/5957 [https://perma.cc/3E9L-2X2P]; Richard A. Friedman, *Go to a Pool*, ATLANTIC (June 5, 2024), https://www.theatlantic.com/health/archive/2023/07/public-pools-heat-wave-swimming/674830 (on file with the *Iowa Law Review*) (arguing that public pools excel at reducing heat exposure in communities).

349. *See* Cascade Tuholske et al., *Hazardous Heat Exposure Among Incarcerated People in the United States*, 7 NATURE SUSTAINABILITY 394, 394–98 (2024) (estimating that 1.8 million incarcerated people in the United States experience, on average, 100 days of extreme heat and humidity each year and that many of them in the 44 states that do not provide universal air conditioning in prison); *see also* Brianne Wylie, *Rising Temperatures, the Prison Litigation Reform Act, and the Heat Death of Human Dignity in Texas Prisons*, 119 NW. U. L. REV. 775, 777–83 (2024); Ufuoma Ovienmhada et al., *Spatiotemporal Facility-Level Patterns of Summer Heat Exposure, Vulnerability, and Risk in United States Prison Landscapes*, 8 GEOHEALTH, Sept. 24, 2024, at 1–2.

350. Mark Nevitt, *When Climate Change Forces Flight: Legal Duties in the Age of Retreat*, 111 IOWA L. REV. (forthcoming Mar. 2026) (manuscript at 13–18).

351. *See, e.g.*, Stephanie Stern & A. Dan Tarlock, *Managed Retreat of Agriculture in the Arid West*, 51 ECOLOGY L.Q. 1, 3 (2024); Luca Greco & Hannah Perls, *Just Relocation: Climate Change and the Opportunities and Limitations of the Uniform Relocation Act*, 37 HARV. HUM. RTS. J. 319, 321 (2024) (focusing on the implications of the United Nations Guiding Principles on Internal Displacement for the United States); Jonathan Rosenbloom, *Sacrifice Zones*, 24 NEV. L.J. 891, 931–41 (2024).

framework discussed above.[352] As with the moral hazard problem of insuring people in fire-prone and flood-prone areas, increased public subsidies and investments amid climate strains raise similar concerns.[353] At what point is government better off subsidizing people to relocate to areas with less climate risk instead of subsidizing them to stay put? This Article relies on the fact that climate strains are impacting millions of Americans every year and they will get worse. Managed retreat should be part of the analysis, but seems unlikely to work at the scale necessary to protect millions of Americans. Besides, the search for climate havens in the United States is, ultimately, a mirage.[354] That said, questions of public subsidies and investment must reckon with these adaption/retreat trade-offs.

There is no shortage of possible avenues for how to adapt public and private law in the face of climate strains. What this Article has done is focus on existing laws and explore ways to make our public law more responsive to climate strains. But reforms of existing statutes and regulations are only the start. The magnitude of climate strains demands legal adaptation beyond the limits of one law review article.

CONCLUSION

Americans will increasingly experience the climate crisis not simply as a series of catastrophic storms and fires, but as a gradual degradation of daily life. Extreme heat makes it harder for people to work and for children to learn in school. Poor air quality makes it harder for people to breathe when they walk out their front doors. Americans will need to spend more and more of their time and money to adapt to the realities of these climate strains. Government can subsidize, invest, and regulate in ways that will help us all adapt to these climate strains. This Article has outlined those possibilities with a focus on how government can not only make these improvements but do so in ways that will benefit those with fewer resources.

352. *See* Nagra, *supra* note 108, at 445 (exploring "the justice and equity implications of managed retreat" in light of the fact "that Black, Brown, and low-income communities are disproportionately vulnerable to climate hazards"); Diana Kenealy, *Climate Gentrification: Addressing Displacement from Sea Level Rise*, 32 GEO. J. ON POVERTY L. & POL'Y 135, 137 (2024).

353. *See, e.g.*, Albert C. Lin, *Public Insurance as a Lever for Semi-Managed Climate Retreat*, 58 GA. L. REV. 1535, 1553–58 (2024); Mark Nevitt & Michael Pappas, *Climate Risk, Insurance Retreat, and State Response*, 58 GA. L. REV. 1603, 1607–17 (2024).

354. *See, e.g.*, Julie Arbit, Brad Bottoms & Earl Lewis, *Looking for a US 'Climate Haven' Away from Disaster Risks? Good Luck Finding One*, CONVERSATION (Aug. 23, 2023, 8:28 AM), https://theconversation.com/looking-for-a-us-climate-haven-away-from-disaster-risks-good-luck-finding-one-211990 [https://perma.cc/D4KR-APMM] (offering evidence why supposed climate haven cities in the United States will struggle to withstand climate effects); Manuela Andreoni, *'Climate Havens' Don't Exist*, N.Y. TIMES (Oct. 1, 2024), https://www.nytimes.com/2024/10/01/climate/asheville-climate-change-flood.html (on file with the *Iowa Law Review*) (describing how the worst damage from Hurricane Helene occurred in places like Asheville, North Carolina that had been "expected to be relatively immune to the effects of climate change").