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Keeping All The Lights On: A Roadmap to Affordable, Universal Electricity Service In the Clean Energy Transition

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The COVID-19 pandemic, the ongoing reckoning with structural racism, and an emerging focus on justice in the clean energy transition have combined to spotlight utility disconnections and the related issues of energy access, affordability, and security. Recent empirical scholarship has demonstrated that electricity disconnections of lower-income people are relatively common, disproportionately affect people of color, and cause significant harm. This Article describes how a number of U.S. states are fashioning an emerging policy model that makes significant progress toward truly affordable and accessible electricity service for all. It also describes how these state actions are consistent with U.S. utility law and an emerging international human right to energy services.

The Article identifies state innovations in four categories that go beyond widely adopted "baseline" policies. They include policies that: establish affordability and access policy goals, provide express legal authority, and require data collection; reduce electricity demand through efficiency and renewable programs targeted to the most vulnerable; make electricity affordable, for example, through rates or credits guaranteeing affordability for particular income levels; and reduce disconnections, especially by providing help with arrears. The Article also identifies and compares the different ways states pay for these policies where necessary—through utility rates, universal service charges, climate program revenues, taxes, or one-time windfalls. The

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Article concludes by identifying important policy considerations related to this emerging model.

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INTRODUCTION

In February 2021, five New Mexico state representatives sponsored a bill to provide a pathway out of arrearages for tens of thousands of New Mexicans during the COVID-19 pandemic. All five—all women—spoke on the house floor about their childhood experiences receiving disconnection notices or dealing with utility disconnections in households that sometimes struggled to make ends meet. "I remember getting that notice in the mail—'Final Disconnection Notice' in big red letters—or even coming home to a dark house, and I knew that it meant my mom was going to have to make tough decisions to find money she didn't have to get the lights back on," said Rep. Kristina Ortez.[1]

These experiences are common for lower-income Americans. Millions receive utility disconnection notices every year, often forcing them to choose between maintaining utility service or forgoing other necessities.[2] Millions are, nevertheless, ultimately disconnected from utility service.[3] These disconnections are more than just an inconvenience—they interfere with children's schooling, exacerbate physical and mental health issues, and sometimes lead to homelessness.[4]

The COVID-19 pandemic brought the challenge of utility disconnections into sharp focus throughout the United States. Over twenty-two million people lost work—unemployment reached 14.8 percent—leaving them short of the means to pay utility bills.[5] Under normal circumstances, these customers would eventually be disconnected from their utilities. During the COVID-19 pandemic, however, the threat of mass disconnections posed a risk of exacerbating the public health crisis because families shut off from utilities frequently move into crowded conditions with relatives. Moreover, mass disconnections threatened to

1. Author's notes from hearing (on file with author).
2. *See* Part I.B.
3. *Id.*
4. *See* discussion *infra* accompanying notes 47–54.
5. GENE FALK ET AL., CONG. RSCH. SERV., R46554, UNEMPLOYMENT RATES DURING THE COVID-19 PANDEMIC 1 (2021).

further disrupt schooling, as millions of children relied on remote schooling and needed access to the internet, and of course, electricity.[6]

Because retail electricity service is chiefly regulated at the state level, governors, state legislatures, and public utility commissions—the state bodies that regulate most electric utilities—were under tremendous pressure to prevent widespread utility disconnections. They largely settled on disconnection moratoriums as an initial tool to stem the looming crisis. Thirty-four states implemented mandatory moratoria.[7] Together with voluntary action by utilities in remaining states, 88 percent of U.S. residential customers were ultimately protected from disconnections at the height of the pandemic.[8] Later, the federal government provided additional support with two rounds of federal COVID-19 relief funds—totaling over $46 billion nationwide—that could be used by qualifying renters to pay for either back rent or utility arrears.[9] These actions were critical tools for preventing disconnections and stemming the spread of COVID-19,[10] though it is still too early to tell how successful they were in the long run.

These actions also shone an unprecedented spotlight on utility disconnections and related energy access, affordability, and security issues. Moreover, they demonstrated that utility regulators and legislators can take meaningful actions to prevent disconnections—at least during a crisis. And this COVID-19 disconnection crisis occurred at a time when advocates and scholars were increasingly focusing on "energy justice" as a critical component of a just transition to a zero-carbon energy economy.[11]

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6. Kevin McElrath, *Nearly 93% of Households With School-Age Children Report Some Form of Distance Learning During COVID-19*, U.S. CENSUS BUREAU (Aug. 26, 2020), https://www.census.gov/library/stories/2020/08/schooling-during-the-covid-19-pandemic.html.

7. *Map of Disconnection Moratoria*, NAT'L ASS'N OF REGUL. UTIL. COMM'RS, https://www.naruc.org/compilation-of-covid-19-news-resources/map-of-disconnection-moratoria/ (last updated Sept. 9, 2021).

8. RICHARD J. CAMPBELL & ASHLEY J. LAWSON, CONG. RSCH. SERV., COVID-19 ELECTRIC UTILITY DISCONNECTIONS 3 (June 9, 2020).

9. *Emergency Rental Assistance Program*, U.S. DEP'T OF THE TREASURY, https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/emergency-rental-assistance-program (last visited Mar. 22, 2023).

10. A study published by the National Bureau of Economic Research found that "moratoria on utility disconnections reduce COVID-19 infections by 4.4% and mortality rates by 7.4%." Kay Jowers et al., *Housing Precarity & the COVID-19 Pandemic Impacts of Utility Disconnection and Eviction Moratoria on Infections and Deaths Across US Counties* 1 (Nat'l. Bureau of Econ. Rsch., Working Paper No. 28394, 2021).

11. *See generally* Gabriel Chan & Alexandra B. Klass, *Regulating for Energy Justice*, 97 N.Y.U. L. REV. 1426 (2022); SHALANDA BAKER, REVOLUTIONARY POWER: AN ACTIVIST'S GUIDE TO THE ENERGY TRANSITION (2021); Subin G. DeVar, *Equitable Community Solar California & Beyond*, 46 ECOLOGY L.Q. 1017 (2020); Shelley Welton & Joel Eisen, *Clean Energy Justice Charting an Emerging Agenda*, 43 HARV. ENV'T L. REV. 307, 324 (2019); Felix Mormann, *Clean Energy Equity*, 2019 UTAH L. REV. 335 (2019); Kirsten Jenkins et al., *Energy Justice A Policy Approach*, 105 ENERGY POL'Y 631 (2017); Aladdine Joroff, *Energy Justice What It Means and How to Integrate It into State Regulation of Electricity Markets*, 47 Env't L. Rep. (Env't Law Inst.) 10,927 (2017); Uma Outka, *Fairness in the Low-Carbon Shift Learning From Environmental Justice*, 82 BROOK. L. REV. 789 (2016); Melissa Powers, *An*

Addressing climate change will require dramatic economic changes, particularly to the electricity system.[12] A key strategy of the clean energy transition is to "electrify everything," including home heating and personal vehicles, and to decarbonize electricity generation by moving from fossil fuels to renewables and other zero-carbon power generation sources.[13] This will require sweeping changes to the technologies, business models, and regulations that form and govern the electric grid.[14]

The concept of energy justice is concerned with ensuring the fair provision of energy services and a fair transition to a low-carbon energy system.[15] According to one definition, energy justice requires that "all people should have a reliable, safe, and affordable source of energy; protection from a disproportionate share of costs or negative impacts or externalities associated with building, operating, and maintaining electric power generation, transmission, and distribution systems; and equitable distribution of and access to benefits from such systems."[16]

While the threat and fact of utility disconnections have always raised justice concerns, a combination of changing circumstances and new information makes addressing utility disconnections and affordable electricity service more important than ever.

First, as the COVID-19 crisis has demonstrated, access to electricity—and the internet—is now critical for an ever-growing number of workers and students. Workers are increasingly being asked to look for jobs and even work remotely.[17] Schools are moving online during snow days or periods of pandemic exposure.[18] The climate strategy of "electrifying everything" will also make electricity more central to contemporary American life. Households will

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Inclusive Energy Transition Expanding Low-Income Access to Clean Energy Programs, 18 N.C. J.L. & TECH. 540 (2016); Kirsten Jenkins et al., *Energy Justice A Conceptual Review*, 11 ENERGY RSCH. & SOC. SCI. 174 (2016); BENJAMIN K. SOVACOOL & MICHAEL H. DWORKIN, GLOBAL ENERGY JUSTICE: PROBLEMS, PRINCIPLES, AND PRACTICES (2014); Shalanda H. Baker, *Mexican Energy Reform, Climate Change, and Energy Justice in Indigenous Communities*, 56 NAT. RES. J. 369 (2016); Darren McCauley et al., *Advancing Energy Justice The Triumvirate of Tenets*, 32 INT'L ENERGY L. REV. 107 (2013); Deborah Behles, *From Dirty to Green Increasing Energy Efficiency and Renewable Energy in Environmental Justice Communities*, 58 VILL. L. REV. 25 (2013).

12. *See generally* WHITE HOUSE, UNITED STATES MID-CENTURY STRATEGY FOR DEEP DECARBONIZATION (2016) [hereinafter MID-CENTURY STRATEGY].

13. *Id.* at 48.

14. *See generally* William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA. L. REV. 1614, 1693 (2013).

15. *See* Welton & Eisen, *supra note* 11, at 324–25 (cataloging justice concerns related to the transition to clean energy).

16. Joroff, *supra note* 11, at 10927.

17. Bryan Robinson, *Remote Work Is Here To Stay And Will Increase Into 2023, Experts Say*, FORBES (Feb. 1, 2022), https://www.forbes.com/sites/bryanrobinson/2022/02/01/remote-work-is-here-to-stay-and-will-increase-into-2023-experts-say/?sh=30c315b020a6.

18. Danielle Abril, *Back in the Classroom, Teachers are Finding Pandemic Tech Has Changed Their Jobs Forever*, WASH. POST (Oct. 1, 2021), https://www.washingtonpost.com/technology/2021/10/01/virtual-teaching-hybrid-learning-coronavirus/.

increasingly shift to electric-powered heating and electric cars in the future, making electricity disconnections even more disruptive.[19]

Moreover, climate change will make many areas hotter. In the past several summers, we have seen record-breaking numbers of 100+ degree days in many jurisdictions.[20] In Europe, where residential air conditioning is much less common, thousands of people died during a recent heat wave.[21] Therefore, electric-powered cooling will become more critical for many households as climate change creates hotter summers.

Unfortunately, electricity has become more expensive in the past decade and may continue to get more expensive as we transition the grid away from fossil fuels.[22] This is not because *renewable energy* is more expensive—new renewable power plants are generally less expensive than coal- or gas-fired power plants—but because *change* itself is expensive. Shutting down and remediating fossil fuel-fired power plants and replacing them with new renewable energy-powered power plants will require investments that electricity consumers will ultimately bear.[23] These increased costs can have regressive rate consequences and can therefore exacerbate an inability to pay bills among lower-income ratepayers and increase the threat, and fact of, disconnection.[24]

In some jurisdictions, disconnections are increasing as rates go up. In California, for example, the public utility commission found that in a five-year period starting in 2011, the monthly disconnection rate doubled, while the revenue that utilities were allowed to collect from customers at roughly the same time increased faster than the rate of inflation.[25]

Thanks to recent research, we now know that the threat and fact of utility disconnections disproportionately fall on households of color.[26] As highlighted by the Black Lives Matter movement, many of our societal institutions continue to demonstrate patterns of structural bias, and the provision of energy services is

19. *See* MID-CENTURY STRATEGY, *supra* note 12, at 48.

20. *See, e.g.*, Tim Mclaughlin & Brendan O'Brien, *Record-Breaking U.S. Heat Wave Bakes Americans*, REUTERS (July 22, 2022), https://www.reuters.com/world/us/coast-coast-us-heat-wave-threatens-tighten-its-grip-2022-07-20/.

21. Ivana Saric et al., *Heat Wave Kills More than 2,000 people in Spain and Portugal*, AXIOS (Jul. 21, 2022), https://www.axios.com/2022/07/18/heat-wave-europe-death-toll.

22. Ivan Penn, *Get Ready for Another Energy Price Spike High Electric Bills*, N.Y. TIMES (May 3, 2022), https://www.nytimes.com/2022/05/03/business/energy-environment/high-electric-bills-summer.html.

23. *Id.*

24. *See* Welton & Eisen, *supra* note 11, at 318–19, 325.

25. We drew this conclusion by comparing authorized revenue requirement divided by total kilowatt-hour (kWh) sales for Southern California Edison Company (SCE) from 2013 to 2017 with statewide monthly disconnection rate for customers not participating in California Alternate Rates for Energy program. *See* Cal. Pub. Utils. Comm'n, Order Instituting Rulemaking to Develop Methods to Assess the Affordability Impacts of Utility Rate Requests and Commission Proceedings, R.18-07-006, at 8–9 (July 23, 2018).

26. *See infra* Part I.B.

one of them.[27] We therefore have a moral obligation to reform these institutions to address this structural bias.

Finally, although this Article focuses on disconnections and affordability in the United States, it also notes that there is an increasing international focus on providing affordable, universal electricity service. Arguably, this includes an emerging human right to energy services.[28]

While these factors add urgency to addressing energy access and affordability issues, this is also a time of opportunity. As the electricity system is being significantly restructured, now is the time to reconsider how we address access and affordability.

Fortunately, diverse states have been implementing policy innovations that seek to address the different components related to affordability and access: setting statewide policy; reducing demand for electricity in low-income households; making bills affordable for low-income people, and preventing disconnections. These innovations layer on top of widespread existing "baseline policies"—such as traditional state winter disconnection moratoriums and the federal Low-Income Home Energy Assistance Program (LIHEAP)[29]—that are critical but insufficient to address energy affordability and access fully.

These state-level innovations reflect evolutions of policy from three broad eras. The first era was in the 1980s, when states were responding to rising energy costs from the energy crisis of the 1970s and requirements in the federal Public Utility Regulatory Policies Act (PURPA) to consider affordability and access policies. And beginning in the mid-1990s, a second wave of affordability and access policies was implemented chiefly by states who were restructuring their system of electricity regulation to introduce more competition. Finally, we have seen a wave of states implementing affordability and access policies in recent years.[30] Many of these more recent actions are implemented by legislation that aims to facilitate the transition to clean electricity. For example, in the past several years, California, Colorado, Maine, Massachusetts, Oregon, and Washington have enacted laws requiring utility commissions to take equity into account.[31]

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27. BAKER, *supra* note 11, at 37.

28. *See infra* Part II.B.

29. *See infra* Parts III.C.1, III.D.1.

30. *See infra* Part III.

31. *See* 2017 Cal. Legis. Serv. Ch. 362 (2017) (S.B. 598) (amending CAL. PUB. UTIL. CODE §§ 718, 779.3, 910.5) (requiring utility commission to "develop policies, rules, or regulations with a goal of reducing, by January 1, 2024, the statewide level of gas and electric service disconnections for nonpayment by residential customers"); 2021 Colo. Legis. Serv. Ch. 220 (2021) (S.B. 21-272) (amending COLO. REV. STAT. §§ 40-2-108) (requiring Public Utilities Commission to promulgate rules requiring the Commission to, in all of its work, "provide equity, minimize impacts, and prioritize benefits to disproportionately impacted communities and address historical inequalities"); 2021 Me. Legis. Serv. Ch. 279 § 3 (2021) (amending ME. STAT. tit. 35-A, §§ 101, 103-A) (requiring Office of Policy Innovation and the Future to "develop methods of incorporating equity considerations in decision making" at the Public Utilities Commission and other agencies); 2021 Mass. Legis. Serv. Ch. 8 (2021) (S.B. 9) (amending MASS.

This Article catalogs these different innovations and explains how they provide necessary enhancements to baseline policies to provide a credible roadmap to truly affordable, universal electricity service for the first time. Table 1 below summarizes how state innovations have addressed critical limitations of baseline policies in each of these four categories.

Figure 1: Summary of Baseline Policies, Limitations, and State Innovations

		Baseline Policies	Limitations of Baseline	State Innovations
A. Set Policy		N/A	• No clear mandate, obligation for PUCs to implement affordability/access issues • Insufficient data • No incentive/mandate to measure progress	• Express authority / obligation to address affordability and access • Detailed reporting requirements • Measurable affordability/access goals
B. Lower Demand	**Efficiency**	Weatherization assistance program (federal) Utility efficiency programs	• Insufficient funding • Ineffective targeting of vulnerable customers • Documentary barriers prevent most vulnerable from applying • Limitations on what improvements can be made • Utility profit incentive not aligned with effective program	• Efficiency programs targeting most vulnerable users, providing more flexibility for efficiency improvements • Tasking non-profit entity with aligned mission
	Community Solar	State shared-solar programs	• Programs lack effective incentives to effectively engage highest energy-burden populations	• Financial incentives prioritize participation by vulnerable customers
C. Make it Affordable		LIHEAP (federal heating subsidy) State lifeline/low-income rates/credits	• Limited LIHEAP funding, only applies to heating • Most existing low-income rates don't guarantee affordability for individual customers	• Rates/credits guarantee affordability for specific customers or income tiers

GEN. LAWS ch. 25, § 1A) (requiring Department of Public Utilities to "prioritize . . . affordability, equity" as two of six factors to meet statewide greenhouse gas emission limits).

D. Reduce Disconnects:	**Traditional Protections**	State: • winter disconnection moratoriums • Protections for vulnerable groups • Payment plan requirements	• Insufficient to prevent substantial disconnections for non-payment	Enhanced protections including: • summer disconnection moratoriums (when cooling necessary) • disconnection moratoriums for vulnerable groups • no disconnection, reconnection fees
	Arrears	N/A	• Past-due payments (arrears) critical factor in many disconnections	• Arrears management/forgiveness provides pathway back to regular payments without disconnection

This Article draws on many prior and contemporaneous pieces of scholarship that have focused on narrower aspects of this topic to provide the first comprehensive account of this emerging state model.[32] Among its novel contributions are providing the first description of how these state policies evolved through three different eras; the first account of how each policy type addresses critical deficiencies in the "baseline" of the existing federal and state landscape; and the first discussion of benefits and drawbacks to various funding options. It also articulates for the first time how this emerging state model is consistent with an emerging human right to energy services and identifies critical questions related to these policies for further research.

The Article begins in Part I with background on what is known about the threat and fact of utility disconnections and who is most affected.

Part II situates disconnection, affordability, and access issues in U.S. and international law. U.S. utility law has historically been concerned with affordability and access, although some key concepts, such as what is the "public interest" and what is "undue discrimination," have sometimes been interpreted narrowly by courts. However, most of the innovations discussed in this Article have been expressly authorized by state legislation, and the law clearly states that state legislatures may mandate such policies. Part II.B. outlines the emerging international human right to energy services, which would require countries to "take steps . . . to the maximum of their available resources" to progressively

32. Only two legal articles that the author is aware of broadly address electric utility affordability policies, and both have a substantially different focus. *See* Chan & Klass, *supra* note 11, at 1505–06 (focusing primarily on the question of whether such policies should be authorized by traditional utility regulatory principles); Adrienne L. Thompson, *Protecting Low-Income Ratepayers as the Electricity System Evolves*, 37 ENERGY L.J. 265, 268 (2016) (focusing on how modern rate structure reforms could impact such programs).

achieve the right.[33] While few would argue that this right imposes an immediate binding obligation on the United States, it provides a moral norm that supports the state roadmap presented in this Article.

Part III describes the baseline policies and the innovations in each of the four categories. For each innovation, it describes the baseline policies' limitations and how the innovations provide critical enhancements to making electricity service universally affordable and accessible.

Part IV describes six ways that states have funded affordability and access policies—through utility rates, public benefit charges, climate program revenues, general tax revenues, and one-time funds such as from rate-case settlements—and identifies benefits and drawbacks to each.

Finally, Part V identifies questions and considerations related to this emerging roadmap, including whether this amounts to good, or at least pragmatic, policy. The Part does not seek to answer these questions, but rather, presents potential critiques and rebuttals that may be valuable to policymakers, stakeholders, and researchers.

I. BACKGROUND: TERMINOLOGY AND DATA

A. Terminology

It is valuable to first introduce some of the social science terminology related to electricity disconnections, affordability, and access. "Energy affordability" refers to the cost of energy utility services and how affordable those costs are to low-income people. One widely used measure of energy affordability is "energy burden," defined as the share or percentage "of a household's income that is spent on energy utilities."[34] Several studies have identified "energy poor households" as those with an energy burden of more than 6 percent. This is premised on the theory that a "household should not spend more than 30 percent of its income on housing expenses, and the utility costs should not exceed 20 percent of these expenses."[35]

Another widely used term is "energy insecurity," which refers to "the uncertainty that a household might face in being able to make utility bill payments, which can ultimately result in being disconnected from energy

33. International Covenant on Economic, Social and Cultural Rights art. 2.1, Dec. 16, 1966, 993 U.N.T.S. 3; *see* discussion in Part II.B.

34. MARILYN A. BROWN ET AL., OAK RIDGE NAT'L LAB'Y, U.S. DEP'T OF ENERGY, ORNL/TM-2019/1150, LOW-INCOME ENERGY AFFORDABILITY: CONCLUSIONS FROM A LITERATURE REVIEW 7 (2020).

35. *Id.* at 8. "Household energy expenditure is usually measured by looking at the total spending on household utility bills for heating, cooling, and other home energy services." *Id.* at 7 (citing Chip Berry et al., Who's Energy Insecure? You Might be Surprised (2018 ACEEE Summer Study on Energy Efficiency in Buildings: Making Efficiency Easy and Enticing, 2018), *available at* https://aceee.org/files/proceedings/2018/index.html#/paper/event-data/p393).

services either permanently or temporarily."[36] In this context, energy security focuses on "a family or individual's ability to pay its energy bills and keep its power on."[37]

A final term useful term is "energy access," which generally refers to the ability of people to access "affordable, reliable, sustainable and modern energy."[38] In its use here, energy access means households' ability to connect to various utility services.

Throughout this Article, the term "affordability and access" is used as a shorthand to refer to policies that help all people, regardless of their ability to pay, maintain secure access to electricity service.

B. Disconnections are Common, Disparately Impact People of Color, and Have Substantial Consequences

Before the COVID-19 disconnection crisis, most utility regulatory bodies did not require utilities to report data about disconnections publicly,[39] and until recently, there has been relatively little empirical study of energy access and affordability issues.[40] Recent studies, however, show that the threat and reality of disconnections are common occurrences for lower-income people, that they disparately impact households of color, and that they have substantial consequences on health and well-being.

Energy bills are a substantial cost for most households, ranking as the fourth largest household expense.[41] Those living below the federal poverty level spend, on average, between 12 and 29 percent of their income on energy costs depending on which state they live in.[42]

A 2015 nationwide federal survey found that nearly one-third of U.S. households "reported facing a challenge in paying energy bills or sustaining adequate heating and cooling in their home in 2015." The same survey found that "about one in five households reported reducing or forgoing basic necessities like food and medicine to pay an energy bill and 14 percent reported receiving a disconnection notice for energy service."[43]

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36. BROWN ET AL., *supra* note 34, at 8 (citing Berry et al., *supra* note 35; Kristen Verclas & Eric Hsieh, *From Utility Disconnection to Universal Access*, 31 ELEC. L.J. 1 (2018)).

37. Michelle Graff et al., *Which Households are Energy Insecure? An Empirical Analysis of Race, Housing Conditions, and Energy Burdens in the United States*, 79 ENERGY RSCH. & SOC. SCI. 102,144, 102,144 (2021).

38. *Id.* at 102, 151–52.

39. Verclas & Hsieh, *supra* note 36, at 1.

40. Graff et al., *supra* note 37, at 102, 145.

41. *Id.*

42. *See Low-income Energy Affordability Data Tool*, U.S. DEP'T OF ENERGY, https://www.energy.gov/eere/slsc/maps/lead-tool (last visited Apr. 10, 2023).

43. *One in Three U.S. Households Faced Challenges in Paying Energy Bills in 2015*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/consumption/residential/reports/2015/energybills/#:~:text=Transportation-,One%20in%20three%20U.S.%20households%20faced%20challenges%20in%20paying%20energy,in%20their%20home%20in%202015 (last visited Apr. 10, 2023).

A more recent nationwide study of households below 200 percent of the federal poverty level found that 25 percent could not afford to pay an energy bill in the past year, and 25 percent received a disconnection notice for non-payment. Over 10 percent had their utility service disconnected.[44]

Current scholarship has also confirmed that these measures of energy insecurity, such as receipt of disconnection notices and actual disconnections, disproportionately affect people of color and vulnerable households, such as those with young children or medical conditions.[45]

For example, a study of lower-income people in Indiana concluded that "Black and Hispanic households are less likely to be able to pay an energy bill, more likely to receive a disconnection notice from their utility provider for lack of payment, and more likely to be disconnected from their electricity service than white households."[46]

In another example, a recent report published by the Lawrence Berkeley National Laboratory found that households of color are subject to heating and cooling loss much more frequently than white households. Ten percent of Black households and 11 percent of Native American households reported losing heat, compared with 4 percent of white households.[47] The study also found that Black and Native American households more frequently forego necessities to pay for home energy services than white households, as do Latino households compared to non-Latino households.[48] Low-income households similarly reported disproportionately losing heating and cooling and forgoing necessities.[49] The report authors concluded that a "consistent, unmistakable theme" in the data is that "[h]ouseholds with low incomes and households of color are particularly vulnerable to the challenges of maintaining secure access to affordable home utility service, posing risks to health, safety, and well-being."[50]

Scholars have also documented that utility disconnections correlate with physical and mental health harms. "[H]ouseholds that cannot afford to pay their energy bills are more likely to suffer from depression and anxiety, physical discomfort, including increased rates of asthma and

44. Trevor Memmot et al., *Sociodemographic Disparities in Energy Insecurity Among Low-Income Households Before and During the COVID-19 Pandemic*, 6 NATURE ENERGY 186, 187 (2021). Similarly, a separate study by some of the same researchers of Indiana adults below 200 percent of the federal poverty level found that "30 percent of households were unable to pay an electricity bill, 33 percent received a disconnection notice, and 13 percent had been disconnected from the electric grid." Graff et al., *supra* note 37, at 102, 149. This study notes that the time period covered included some of the early months of the COVID-19 crisis, and that this likely affected some outcomes.

45. *See* Memmott et al., *supra* note 44, at 188.

46. Graff et al., *supra* note 37, at 102, 149.

47. John Howat & Jenifer Bosco, *A Consumer Advocate's Perspective on Equity in Electric Regulatory Decision-Making*, *in* GRID MODERNIZATION LAB'Y CONSORTIUM, U.S. DEP'T OF ENERGY, FUTURE ELECTRIC UTILITY REGULATION REPORT NO. 12, ADVANCING EQUITY IN UTILITY REGULATION 21 (2021).

48. *Id.* at 24.

49. *Id.* at 21–26.

50. *Id.* at 26.

respiratory infection, and, in more extreme but certainly not rare situations, lower life expectancies or premature death."[51]

In extreme heat or cold, disconnections have resulted in deaths, especially of the elderly. For instance, a seventy-two-year-old woman died in Arizona in 2018 after her utilities had been disconnected in a 108-degree heat wave.[52] She had been making partial payments on her bill at the time of disconnection.[53]

A lack of electricity or natural gas service increases fire and carbon monoxide risks, as families without these services may turn to space heaters, candles, or gas-powered generators.[54]

Moreover, utility bills and utility disconnections exacerbate the plight of families in poverty. Studies have shown that poor households often go without adequate food in high heating and cooling periods.[55] The elderly in particular often forgo adequate food during high heating and cooling periods.[56] In addition, a study conducted in Boston, Massachusetts found that the number of extremely low-weight infants increased after cold months.[57]

Researchers also found that utility bills were the second leading cause of homelessness in families in a 2007 Colorado study.[58] Similarly, a pilot project providing a payment to people in precarious housing situations in Albuquerque, New Mexico anecdotally reported that many recipients use funds to pay utility bills.[59]

II. UNIVERSAL SERVICE IS CONSISTENT WITH BOTH U.S. UTILITY LAW AND INTERNATIONAL HUMAN RIGHTS LAW

As discussed below, the law of utility regulation in the United States was developed by Progressive Era reformers who were particularly concerned with the just provision of "necessary" services. Therefore, the statutes that govern state regulation of retail electricity service typically include broad mandates requiring utility commissions to ensure "just and reasonable" rates and the provision of utility service to all who can pay a reasonable rate. These legal concepts are supported by Constitutional due process and equal protection

51. Graff et al., *supra* note 37, at 102, 144.

52. *Id.*

53. *Id.*

54. Verclas & Hsieh, *supra* note 36, at 2.

55. *See generally* NAT'L CONSUMER L. CTR., JUGGLING BASIC NECESSITIES AND THE DIRE CONSEQUENCES OF UNAFFORDABLE ENERGY (2014); *see also* Shuchen Cong et al., *Unveiling Hidden Energy Poverty Using the Energy Equity Gap*, 13 NATURE COMMC'N 2456, 2457 (2022).

56. *See generally* Mark Nord & Linda S. Kantor, *Seasonal Variation in Food Insecurity is Associated with Heating and Cooling Costs Among Low-Income Elderly Americans*, 136 J. NUTRITION 2939 (2006).

57. Deborah A. Frank et al., *Heat or Eat The Low Income Home Energy Assistance Program and Nutritional and Health Risks Among Children Less Than 3 years of Age*, 118 PEDIATRICS e1293, e1294 (2006).

58. COLO. INTERAGENCY COUNCIL ON HOMELESSNESS, FINAL REPORT: COLORADO STATEWIDE HOMELESS COUNT SUMMER 2006, at ix, 24 (2007).

59. Email from Meghan Mead, Dir. of L. & Pol'y, N.M. Appleseed Poverty Advoc. Lab, to author (June 8, 2022) (on file with author).

jurisprudence that recognizes the seriousness of arbitrarily or discriminatorily being deprived of service. Nevertheless, some courts have narrowly interpreted traditional utility commission-enabling legislation, sometimes prohibiting commissions from enacting affordability and access provisions without express statutory authority. State legislatures, however, have enlarged and broadened the scope of utility commission oversight over time, with utility commissions now tasked with oversight of energy planning, environmental compliance, and economic development. Many legislatures have similarly expressly authorized affordability and access provisions, and such authorizations are clearly legal.

In the international context, there is an increasing emphasis on the importance of—and arguably, the *human right* to—energy services. Several scholars and advocates have argued that existing rights, such as the "right to life" and the "right to an adequate standard of living," require a right to energy services. International institutions have increasingly focused on the importance of universal access to energy services as a component of sustainable development. Most notably, the United Nations declared "access to affordable, reliable, sustainable, and modern energy" to be a Sustainable Development Goal. In sum, there is arguably an emerging human right to energy services and an increased emphasis on the right to such services for all people, regardless of their ability to pay.

Neither domestic nor international human rights law creates an *obligation* that U.S. utilities provide service regardless of a customer's ability to pay. This Article argues, however, that the foundational concepts of U.S. utility law are consistent with and support the use of policies to minimize disconnections and promote universal, affordable access. Such actions are also consistent with the emerging universal human right to affordable energy services.

A. U.S. Utility Law Relevant to Affordability and Access

1. Legal Doctrines for Rate-Regulated Utilities

Electric, natural gas, and water utilities are unique among U.S. industries in that they often hold government-enforced monopolies and are, in turn, subject to economic regulation, including regulatory approval of rates. This Part describes key legal concepts as they relate to rate-regulated utilities. Part 2 below addresses utilities that are not subject to such regulations.

The traditional U.S. utility regulatory regime traces back to English common law, which limited common carriers "affected with a public interest" to "reasonable and moderate" rates.[60] Shortly before the turn of the twentieth century, the U.S. Supreme Court affirmed that states could similarly regulate the price of industries "clothed with a public interest."[61] The Court subsequently

60. Munn v. People of Illinois, 94 U.S. 113, 150 (1876) (quoting Sir Matthew Hale's seventeenth-century treatise *De Portibus Maris*).

61. *Id.* at 126.

clarified that states had the authority to determine which industries were "affected with a public interest" and, therefore, should be regulated.[62] Regulatory theory holds that where a monopoly structure is inevitable or preferred, competition cannot be relied on to prevent exorbitant monopoly pricing, and some alternative is required.[63] Historically, policymakers consequently determined that regulation was appropriate for industries where the exercise of monopoly power is either inevitable or efficient (for example, because of the amount of capital that must be invested) and where the services provided by these industries are "necessities."[64]

In the early decades of the twentieth century, state legislatures, power company executives, and progressive reformers coalesced around the idea that a system of regulated monopolies was generally the best fit for electric utilities.[65] Following a federal model for railroads, states established public utility commissions to regulate electric utilities that had been granted a monopoly franchise over a specific geographic service territory.[66] Today all states have such commissions.[67]

Under this system, a utility holding a monopoly franchise has specific legal rights and obligations—often referred to as the regulatory compact.[68] Among a utility's rights, in addition to its exclusive franchise, are the right to exercise eminent domain, a limitation on negligence liability, and a right to "charge rates set by the regulator, designed to provide a reasonable opportunity to earn a fair return on equity investment."[69] In turn, the utility must meet a standard of providing adequate service to its customers and, central to this Article, to charge

62. *See* Nebbia v. New York, 291 U.S. 502, 531 (1934).

63. JAMES C. BONBRIGHT ET AL., PRINCIPLES OF PUBLIC UTILITY RATES 7–8 (2d ed. 1988).

64. *See, e.g.*, *id.; Munn*, 94 U.S. at 150 (quoting Sir Matthew Hale's seventeenth-century treatise *De Portibus Maris* for the English common law requirement that reasonable and moderate rates apply where a facility is the sole provider or where it holds a charter from government).

65. Gabriel Pacyniak, *Greening the Old New Deal Strengthening Rural Electric Cooperative Supports and Oversight to Combat Climate Change*, 85 MO. L. REV. 412, 432–34 (2020).

66. *Id.* The scope of a utility monopoly could be established in state statutes, franchise agreements, or requirements for obtaining a certificate of public convenience and necessity. *See, e.g.*, SCOTT HEMPLING, REGULATING PUBLIC UTILITY PERFORMANCE: THE LAW OF MARKET STRUCTURE, PRICING AND JURISDICTION 17–29 (2013).

67. *See Regulatory Commissions*, NAT'L ASS'N OF REGUL. UTIL. COMM'RS., https://www.naruc.org/about-naruc/regulatory-commissions/ (last visited Apr. 10, 2023). The Federal Power Act generally authorizes the Federal Energy Regulatory Commission (FERC) to regulate the interstate transmission of electricity and the wholesale electricity transactions, and leaves states to regulate "any other sale of electric energy." 16 U.S.C. § 824(b)(1); *see also* William Boyd & Ann E. Carlson, *Accidents of Federalism Ratemaking and Policy Innovation in Public Utility Law*, 63 UCLA L. REV. 810, 824 (2016).

68. *But see* Comment of Ari Peskoe, Senior Fellow in Elec. L., Harv. Env't Pol'y Initiative, to Quadrennial Energy Rev. Task Force, U.S. Dep't of Energy, *available at* http://eelp.law.harvard.edu/wp-content/uploads/Harvard-Environmental-Policy-Initiative-QER-Comment-There-Is-No-Regulatory-Compact.pdf (arguing use of the term "regulatory compact" should be avoided because it presupposes that regulators have an obligation to maintain the status quo for incumbent utilities).

69. HEMPLING, *supra* note 66, at 14–15.

"just and reasonable rates" and fulfill the "obligation to serve."[70] Public utility commissions often have broad authority to regulate disconnection policies of utilities, although the details vary state by state.[71]

As Shelley Welton and Joel Eisen note, the development of this model of utility regulation was driven in part by Progressive Era reformers with deep commitments to ensuring a "just" system for providing electric service.[72] These reformers sought to ensure that rates were reasonable and that electricity service was extended as broadly as possible as quickly as possible, especially to poorer and more rural communities.[73]

a. Just and Reasonable Rates

The core principle behind utility rate regulation is the idea that where private firms are allowed a complete or partial monopoly, some regulation is required to keep the utility from using its coercive power to engage in monopoly pricing that would not be sustainable if competition was present.[74]

Statutes mandating utility commissions to regulate the rates of utilities are nearly universal in directing that rates must be "just and reasonable."[75] Yet what is a just and reasonable rate is notoriously imprecise.[76] The Supreme Court has ruled that the standard establishes a "zone of reasonableness" within which a utility commission may permissibly fix a rate.[77]

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70. *Id.*

71. Matthew Flaherty et al., *Electric Utility Disconnection Policy and Vulnerable Populations*, 33 ELEC. J. 106,859, 106,860 (2020).

72. Welton & Eisen, *supra* note 11, at 319; *see also* Boyd, *supra* note 14, at 1614, 1647–48 (describing how origin of U.S. regulation reflected "broad concept of public utility advanced by progressives and legal realists thus embodied a pragmatic approach to competition and markets in an era of rapid industrial change"). Progressive reformers applied the same values to the development of telecommunications utilities, with the difference that federal government plays a more direct role in retail telephone and internet service. In 1934 Congress enacted the Communications Act to establish Federal Communications Commission and task it with regulating all "interstate . . . wire or radio communication." Communications Act of 1934, 47 U.S.C. § 152. The Act included as its goal "to make available, so far as possible, to all the people of the United States, without discrimination . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges." *Id.* § 151.

73. *See* Pacyniak, *supra* note 65, at 430–33.

74. *See* BONBRIGHT ET AL., *supra* note 63, at 17 (noting general, though not uniform, consensus that primary distinguishing feature of utilities is that they lead to a complete or partial monopolies, and that therefore regulation is required to "be a substitute for competition").

75. For a history of the development of this concept, *see generally* William Boyd, *Just Price, Public Utility, and the Long History of Economic Regulation in America*, 35 YALE J. REGUL. 721 (2018).

76. *See, e.g.*, Farmers Union Cent. Exch., Inc. v. Fed. Energy Regul. Comm'n, 734 F.2d 1486, 1501 (D.C. Cir. 1984) ("The 'just and reasonable' statutory standard is, of course, not very precise."); HEMPLING, *supra* note 66, at 257.

77. Fed. Energy Regul. Comm'n v. Pennzoil Producing Co., 439 U.S. 508, 517 (1979). Although the Supreme Court had previously required a utility commission to originally consider certain factors in arriving at a just and reasonable rate, *Smyth v. Ames*, 169 U.S. 466, 546–47 (1898), in 1944 the Court reversed itself and held that "it is the result reached not the method employed which is controlling," Fed. Power Comm'n v. Hope Nat. Gas Co., 320 U.S. 591, 602 (1944).

Setting a just and reasonable rate "involves a balancing of the investor and the consumer interests."[78] In fairness to the utility, the rate must provide enough revenue to not only cover operating expenses but also to provide a return on equity invested that is "commensurate with returns on investments in other investments that have corresponding risks," that is sufficient maintain the company's credit, and that will "attract capital."[79] To provide less revenue would be "confiscatory" of the utility's property—that is, it would amount to a regulatory taking under the Fifth Amendment of the U.S. Constitution or similar state provisions.[80]

However, a rate must also be fair to consumers, protecting them from "economic harm," resulting from the coercive power of the monopoly utility to set prices.[81] Moreover, a number of states have explicitly stated in their utility enabling statutes that because the services provided by utilities are "necessities," utilities should prioritize affordable rates.[82]

There is much debate and criticism of this system of utility rate regulation and widespread recognition that this system of regulation creates incentives to make unnecessary capital investments that will result in higher profit—and, ultimately, higher rates.[83] Yet, the roots of this system are based partly on concerns that without regulation, specific industries that provide *necessary* services will be able to set prices that are unreasonable or unaffordable.

b. Duty to Serve

A utility also has a "duty to serve."[84] As with other public utility obligations, this was originally an English common law duty applied to common carriers.[85] Although scholars differ in explaining the rationale and development

78. *Hope Nat. Gas Co.*, 320 U.S. at 603.

79. *Id.*

80. *See* U.S. CONST. amend. V; *see also, e.g.*, Duquesne Light Co. v. Barasch, 488 U.S. 299, 307 (1989) (noting that utility regulation creates "its own set of questions under the Takings Clause of the Fifth Amendment"); HEMPLING, *supra* note 66, at 21.

81. *Farmers Union Cent. Exch., Inc.*, 734 F.2d at 1504.

82. *See e.g.*, CAL. PUB. UTIL. CODE § 739(d)(2) ("In establishing residential electric and gas rates . . . the commission shall ensure that the rates are sufficient to enable the electrical corporation or gas corporation to recover a just and reasonable amount of revenue from residential customers as a class, while observing the principle that electricity and gas services are necessities, for which a low affordable rate is desirable and while observing the principle that conservation is desirable in order to maintain an affordable bill.").

83. *See e.g.*, George L. Priest, *The Origins of Utility Regulation and the "Theories of Regulation" Debate*, 36 J. L. & ECON. 289, 292–93 (1993) (summarizing longstanding economic criticisms of utility regulation); Jim Rossi, *The Common Law "Duty to Serve" and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring*, 51 VAND. L. REV. 1233, 1275–78 (1998) (outlining arguments that utility regulation fails at setting prices); BAKER, *supra* note 11, at 52–54 (criticizing IOU for-profit business model as a barrier to an equitable energy system).

84. HEMPLING, *supra* note 66, at 14–15.

85. Rossi, *supra* note 83, at 1242.

of this duty, certain classes of "common carriers" were required to "serve all who applied."[86]

This duty was particularly important in the early years of electrification. At that time, for-profit utilities did not want to provide service to poor rural communities because serving them required higher levels of capital investment in poles and wires to reach distant customers yet promised lower revenues because those customers could not afford electric appliances.[87]

U.S. courts affirmed that this old common-law duty applied to public utilities, holding that "the primary duty of a public utility is to serve on reasonable terms all those who desire the service it renders."[88] Because a utility has an exclusive monopoly franchise to provide a *necessary* service, it must provide service to all who seek it within its territory. The utility cannot "pick and choose and to serve only those portions of the territory which it finds most profitable, leaving the remainder to get along without the service which it alone is in a position to give."[89] This duty has been explicitly incorporated into some utility commission enabling statutes, but courts have found that it exists regardless of whether it is in a statute.[90]

Admittedly, this duty historically applies only to those customers who can afford to pay the "reasonable" costs of such service. Nevertheless, the centrality of this duty to utility law highlights that the law recognized the need for unique consumer protections for "necessary" services.

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86. Norman F. Arterburn, *Origin and First Test of Public Callings*, 75 U. PA. L. REV. 411, 420, 425 (1926); Rossi, *supra* note 83, at 1244–45, 1248 (explaining the duty of "common carriers" to "provide access to all customers on an equal basis").

87. Pacyniak, *supra* note 65, at 419–21.

88. United Fuel Gas Co. v. R.R. Comm'n of Ky., 278 U.S. 300, 309 (1929). The duty to serve has two components: an obligation to extend service to customers within a utilities service territory, and an obligation to continue service after it has commenced. Rossi, *supra* note 83, at 1236, 1252–53. Heather Payne argues that climate change will make it more challenging to continue to serve some customers because of impacts such as wildfire or sea level rise, and that the duty to serve should be reconceptualized to allow for cessation of service in some contexts. *See generally* Heather Payne, *Unservice Reconceptualizing the Utility Duty to Serve in Light of Climate Change*, 56 U. RICH. L. REV. 603 (2021).

89. *United Fuel Gas Co.*, 278 U.S. at 309. At least one court has found that a utility commission could authorize a utility to extend service to an area merely because it had held itself out as a monopoly in the area, even when there was no franchise agreement. Ga. Pub. Serv. Comm'n v. Ga. Power Co., 186 S.E. 839, 844 (Ga. 1936) (turning on whether the utility "actually or impliedly dedicated its property in such a manner as to amount to a profession to serve" area).

90. In the words of one court, the duty to serve "arise[s] from the public nature of a utility, and statutes providing affirmatively therefor are merely declaratory of the common law." Overman v. Sw. Bell Tel. Co., 675 S.W.2d 419, 424 (Mo. Ct. App. 1984); *see also* CHARLIE HARAK ET AL., NAT'L CONSUMER L. CTR., ACCESS TO UTILITY SERVICE: DISCONNECTIONS, METERING, PAYMENTS, TELECOMMUNICATIONS, AND ASSISTANCE PROGRAMS § 2.1.2 (6th ed. 2018) [hereinafter NCLC TREATISE] (citing 64 AM. JUR. 2D *Public Utilities* § 21 (2001)) (explaining that the duty is "implied at common law and need not be expressed by statute, or contract, or in the charter of a public utility.").

c. No Undue Discrimination

One important element of a "just and reasonable rate" is that the rate may not be unduly discriminatory.[91] Some courts and critics have charged that this principle prohibits some affordability and access policies such as low-income rates.

As with rate regulation generally, the prohibition on undue discrimination is grounded in concerns about the coercive use of market power to charge some customers more than others. In the seminal Supreme Court case *United States v. Illinois Central Railroad Company*, a railroad was prohibited from charging higher rates in an area where it provided exclusive service as compared to an area where it competed with other carriers to provide service.[92]

At the same time, regulators and courts have recognized that this principle is not one of *no* discrimination, but rather, of no *undue* discrimination. Indeed, the foremost treatise on utility regulation states that "as long as the prices charged by any given enterprise must exceed marginal costs, complete avoidance of discriminatory relationships among these prices is simply impossible."[93]

For example, courts have held that where rate discounts are necessary to keep industrial customers from leaving a service territory, such discounts may be permissibly discriminatory because they serve to both reduce costs to customers as a whole (because there will be more revenue to pay fixed costs) and improve economic efficiency (because the overall volume of sales is close to economically optimal volume).[94]

Historically, utilities prevented undue discrimination in rates by applying the cost-causation principle: "customers who cause similar costs should face similar cost-based rates."[95] Critics have sometimes charged that some low-income access and affordability policies violate this principle in that they can result in "cross-subsidization" where revenue from one class of customers is used to pay the service costs to another class of customers. For example, critics have argued that ratepayers as a whole should not bear the cost of the forgiveness of any arrears of low-income people.[96] In a number of jurisdictions, courts have agreed that absent express statutory authorization, some affordability and access

91. HEMPLING *supra* note 66, at 34–36.

92. United States v. Ill. Cent. R.R. Co., 263 U.S. 515, 524 (1924) ("Self-interest of the carrier may not override the requirement of equality in rates."); HEMPLING, *supra* note 66, at 288–89.

93. BONBRIGHT ET AL., *supra* note 63, at 525; *see also* NCLC TREATISE, *supra* note 90, § 7.5.3.2 ("It is quite common for courts and public utilities commissions (PUCs) to conclude that, while public utilities are generally prohibited from discriminating in their rates, this does not mean that every single customer must be charged the same rate.").

94. *See* Associated Gas Distribs. v. Fed. Energy Regul. Comm'n, 824 F.2d 981, 1011 (D.C. Cir. 1987); HEMPLING, *supra* note 66, at 293.

95. HEMPLING, *supra* note 66, at 288–89.

96. BONBRIGHT ET AL., *supra* note 63, at 170.

policies would violate this prohibition,[97] although at least one state supreme court has disagreed.[98]

Notably, at least twenty state legislatures have effectively determined that allowing some form of low-income rates or other special rates for vulnerable customers is either not discriminatory or is permissible discrimination.[99]

This Article further discusses this criticism, and responses to it, in Part II.A.2.

d. Limits on Denial of Service

There are some near-universal limits regarding when and how customers may be denied utility service. These limits are generally justified on the grounds that utilities have been awarded a monopoly franchise to provide a necessary service, and utilities should not be allowed to use their monopoly power to help them recover bad debts in unrelated matters.

Under state law, utilities are generally prohibited from denying service to a customer because of a "collateral matter"—for example, a utility may not deny electricity service because of a debt for garbage collection service.[100] Courts usually ground this well-established principle in the duty to serve all customers without undue discrimination.[101] Because electricity service is a public necessity, it would be undue discrimination to deny service because the utility was owed money in another matter.

Similarly, in many jurisdictions, utilities may not deny service because of a debt by the same customer from another time and place.[102] Here again, where courts apply this rule through common law, they justify it based on the utility's unique duty to serve.[103] The common law rule prohibited a monopoly utility from using its coercive power to gain an edge in bill collection. "[A] past-due indebtedness [that] was incurred at some other place of residence and was a

97. *See, e.g.*, Mountain States Tel. & Tel. Co. v. Pub. Serv. Comm'n of Utah, 754 P.2d 928, 932 (Utah 1988) (finding that subsidized universal service program "cannot be justified as part of the Commission's broad rate-making authority" and that "the appeal to save the program must be made to the state legislature); *see also* discussion *infra* at Part II.A.3.b.

98. *See* Am. Hoechest Corp. v. Dep't of Pub. Utils., 399 N.E.2d 1, 3–5 (Mass. 1980).

99. This includes bill discount programs, bill credit programs, and percentage of income payment programs. The states are: Arizona, California, Colorado, Hawaii, Illinois, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Vermont, Washington, Wisconsin, and West Virginia. STATE OF OR., LOW INCOME UTILITY PROGRAM WORKING GROUP REPORT 24–35 (2018) [hereinafter OREGON REPORT].

100. *See* Owens v. City of Beresford, 201 N.W.2d 890, 892–93 (S.D. 1972) (holding that "a public utility . . . cannot refuse to render the service which it is authorized by its charter (or by law) to furnish, because of some collateral matter not related to that service," and invalidating a city ordinance allowing such disconnections); 73B C.J.S. *Public Utilities* § 8; NCLC TREATISE, *supra* note 90, § 2.2.1.

101. *See Owens*, 201 N.W.2d at 892; 73B C.J.S. *Public Utilities* § 8.

102. This was a widespread common law rule but has been narrowed or eliminated by statute or regulation in many states. NCLC TREATISE, *supra* note 90, § 2.2.2. A somewhat related provision usually bars termination for a third-party debt, for example someone living with the customer. *Id.* § 6.5.1.

103. NCLC TREATISE, *supra* note 90, § 2.2.2.

wholly separate transaction, [] must be collected in the usual way in which debts are collectable, and the defendant cannot force from the plaintiff his present right . . . to the gas service which is a necessity."[104]

The Supreme Court has also held that the Constitutional due process clause prohibits the disconnection of customers of *government-owned* utilities without notice and a hearing.[105] This Constitutional protection, however, likely does not apply to for-profit utilities that serve most residential customers.[106]

These traditional protections did little to protect a customer who could pay what was deemed a reasonable rate. But they are notable because they make clear that the law has long recognized that utility service for *necessities* warrants special protections.

2. Utility Obligations for Other Types of Utilities (Retail Competition, Coops, Public Power)

Not all electric utilities are for-profit utilities holding an exclusive monopoly franchise. This Part describes two other types of electric utilities: for-profit utilities operating in a system of retail competition and cooperative or government-owned utilities exempted from many regulatory provisions implemented by PUCs. Both types of utilities, however, are subject to government regulation and may be subject to the types of state affordability and access policies described here.

a. Utilities in Retail Competition States

Eighteen states and Washington D.C. allow for retail competition among electric utilities,[107] resulting from a regulatory restructuring movement in the 1990s.[108] In these states, PUCs still play a regulatory role, for example, by certifying utility service providers and setting prices for grid use.[109] Incumbent utilities also maintain a monopoly on distribution services—the poles and wires

104. Elwell v. Atlanta Gas Light Co., 181 S.E. 599, 601 (Ga. Ct. App. 1935).

105. Memphis Light, Gas and Water Div. v. Craft, 436 U.S. 1, 22 (1978); *see* discussion *infra* accompanying notes 390–393.

106. *See* discussion *infra* accompanying notes 390–393.

107. Wei-Ming Chen, *The U.S. Electricity Market Twenty Years After Restructuring A Review Experience in the State of Delaware*, 57 UTILS. POL'Y 24, 25 fig.1. Thirteen states and the District of Columbia operate retail electricity markets where all customers have opportunities to select the electricity generator they prefer. In five other states—California, Oregon, Michigan, Georgia, and Virginia—some retail customers have this opportunity. *Id.* at 29 (2019).

108. The restructuring movement resulted in changes to two separate market segments: electricity generation and the retail market. A number of states required, authorized, or incentivized monopoly utilities to divest their generation assets to independent power producers that would compete in a wholesale market. Many of these same states—but not all—also created mechanisms that allowed customers to choose their retail electricity provider. *Id.* at 26; *see also* Boyd & Carlson, *supra* note 67, at 837–39 (discussing restructured and hybrid models). This Article highlights retail market restructuring, as opposed to generation restructuring, as it is more pertinent to affordability and access policies.

109. HEMPLING, *supra* note 66, at 87–90.

that bring electricity to customers.[110] But unlike in monopoly-regulation states, retail electricity suppliers compete for customers on retail price and other factors.[111]

Even in these states, however, regulators have kept in place the "obligation to serve." States typically require one utility—often the utility that formerly held the full monopoly franchise—to serve as the "utility of last resort" or "standard contract" utility.[112] This utility maintains an obligation to provide service to customers who miss deadlines for choosing utility providers, who were rejected for service by their preferred utility, or whose utilities may have stopped providing service in the market.[113]

In retail competition states, the competition between service providers is presumed to result in a just and reasonable price.[114] Utility commissions, therefore, do not typically regulate prices offered by "retail electricity suppliers" to customers.[115] However, utility commissions regulate the rates for these "last resort" or "standard" contracts because they are, by definition, rates for customers who are not participating in a competitive market.[116]

As described in Part III, many states with retail competition expressly authorized affordability and access policies in their electricity restructuring legislation. As a result, some restructured states like New Hampshire, New Jersey, and Pennsylvania now have some of the most robust affordability and access policies.

In sum, while electricity suppliers in retail competition states are generally not subject to price regulation, they are still subject to utility commission oversight and are collectively subject to the duty to serve because they provide a necessary utility service. States that have gone through restructuring have often charged utility commissions with implementing robust access and affordability programs.

110. Chen, *supra* note 107, at 26.

111. HEMPLING, *supra* note 66, at 87–90.

112. *Id.*; NCLC TREATISE, *supra* note 90, § 2.1.4 (noting that "nearly all restructuring statutes refer to the need to preserve universal service" but vary in how that service is to be maintained); *see generally* Rossi, *supra* note 83.

113. HEMPLING, *supra* note 66, at 87.

114. *See* Boyd, *supra* note 75, at 727 (noting that introduction of wholesale competition by Federal Energy Regulatory Commission was based on assumption that "competitive markets—what it sometimes refers to as 'the forces of competition'—can be relied upon to ensure that prices for natural gas and electricity satisfy the statutory just and reasonable standard."). *But see* HEMPLING, *supra* note 66, at 268–75 (utilities in competition may still be able to exert market power, and therefore in some contexts the regulator is required to monitor and screen for exercise of market power that would not result just rates).

115. PUCs in retail competition states do set rates for utility provision of distribution services.

116. Boyd & Carlson, *supra* note 67, at 838; HEMPLING, *supra* note 66, at 88–89.

b. Public Power and Cooperative Utility Obligations

For-profit utilities serve only three-quarters of residential utility customers;[117] leaving government-owned utilities or rural electricity cooperatives to serve the remaining residential customers.

Government-owned utilities—often referred to as public power—are chiefly owned and operated by city or county governments.[118] In addition, electric distribution cooperatives—member-owned, non-profit entities—serve most rural land areas in the United States.[119]

Neither government-owned nor distribution cooperative industries have a profit motive. A municipal- or county-owned utility is a public entity whose chief purpose is to provide reliable, low-cost utility service to its residents; a cooperative utility's chief purpose is to provide such service to its member owners.[120] Because they lack a profit motive and have no reason to engage in monopoly pricing, these utilities are often exempted from utility commission regulation or subject to less rigorous regulation.[121]

But while government-owned or cooperative utilities may not be subject to state statutes codifying requirements for just and reasonable rates and the duty to serve, they are generally still subject to these duties.[122] Courts have found municipal utilities are still subject to the duty to serve, for example.[123] In addition, even where state law codifying these principles does not apply, municipal law or a cooperative organizing document may codify such principles.

In addition to not having a profit motive, these utilities are often smaller, serving fewer customers. Sometimes they also serve a lower-income customer base, given that rural areas tend to have relatively high poverty levels.[124]

For all these reasons, these utilities are sometimes exempted from public benefit programs, including low-income programs, that apply to other utilities in

117. Three quarters of U.S. utility customers get their electricity from IOUs. CAMPBELL & LAWSON, CONG. RSCH. SERV., *supra* note 8, at 1-2.

118. *Public Power*, AM. PUB. POWER ASS'N, https://www.publicpower.org/public-power (last visited Apr. 10, 2023).

119. *See Electric Co-op Facts & Figures*, NAT'L RURAL ELEC. COOP. ASS'N (Apr. 13, 2023), https://www.electric.coop/electric-cooperative-fact-sheet.

120. *Public Power*, *supra* note 118; *see* Pacyniak, *supra* note 65, at 425–26, 436.

121. Pacyniak, *supra* note 65, at 437–45 (describing why cooperatives are lightly regulated); Paul A. Meyer, *The Municipally Owned Electric Company's Exemption from Utility Commission Regulation The Consumer's Perspective*, 33 CASE W. RSRV. L. REV. 294, 294 (1982).

122. "The city having undertaken to furnish a public utility is to be governed in its duties and obligations . . . by the same rules as those which apply to . . . corporations doing the same class of service . . . A municipality is under a duty to supply the services that it offers to all persons who apply, without discrimination and at reasonable rates." 12 MCQUILLIN *Municipal Corporations* § 35:50 (3d ed.) (citations omitted).

123. *See, e.g.*, Reid Dev. Corp. v. Parsippany-Troy Hills Twp., 89 A.2d 667, 669 (N.J. 1952) ("A public water company is under a duty as a public utility to supply water to all inhabitants who apply for the service.").

124. *See Rural Poverty & Well-Being*, U.S. DEP'T OF AGRIC., https://www.ers.usda.gov/topics/rural-economy-population/rural-poverty-well-being/ (last updated Nov. 29, 2022).

a state. For example, PUCs sometimes regulate disconnection policies of rural electricity cooperatives and government-owned utilities, but more often, these utilities are left to "self-regulate."[125]

As with for-profit utilities in competitive states, there is no inherent legal barrier preventing a state legislature from extending access and affordability requirements to cooperative and government-owned utilities even if it has not been prior practice.[126]

3. Is Addressing Affordability, Access within the Scope of Utility Regulatory Authority?

Historically, some stakeholders have raised questions about whether a utility commission's legal authority extends to issues of affordability and access. Such questions usually focus on broad grants of authority in enabling statutes that authorize regulation in the "public interest." Some courts have interpreted "public interest" to be focused more narrowly on the economic regulation of utilities. At the same time, states have consistently expanded the regulatory mission of utility commissions over the past several decades, usually through legislative action. A few states have implemented robust affordability and access programs under "public interest" authority alone; more often, states have done so through express legislative action.

a. Evolution of Scope of Utility Regulatory Authority

Historically, utility commissions focused on setting rates, assuring non-discriminatory service, setting utility service standards, controlling market entry and exit, and preventing financial risk.[127] Over time, however, states tasked utility commissions with expansive roles.

In the 1970s, many utilities proposed and were approved to build nuclear power plants.[128] But many of these projects ended with substantial cost overruns, and some were abandoned.[129] At the same time, the energy crisis spiked fuel costs for coal- and oil-fired power plants.[130] Utility commissions recognized that they did not have a good mechanism for ensuring that utilities were prudent in

125. *See* Flaherty et al., *supra* note 71, at 106, 861 tbl.2 (showing that many states only require disconnection protections of IOUs and not of electricity cooperatives or municipal utilities).

126. It is possible that some state Constitutions prohibit a state legislature from regulating locally owned utilities under home-rule type provisions or similarly prevent legislative regulation of cooperatives.

127. ERIC FILIPINK, NAT'L REGUL. RSCH. INST., 10–02, SERVING THE "PUBLIC INTEREST"—TRADITIONAL VS. EXPANSIVE UTILITY REGULATION 12 (2009).

128. *See* LARRY PARKER & MARK HOLD, CONG. RSCH. SERV., RL33442, NUCLEAR POWER: OUTLOOK FOR NEW U.S. REACTORS 3 (2007).

129. *Id.* (Noting that "120 reactor orders were ultimately cancelled" by the end of the 1970s); CHERYL HARRINGTON ET AL., REGUL. ASSISTANCE PROJECT, INTEGRATED RESOURCE PLANNING FOR STATE UTILITY REGULATORS 4–7 (1994).

130. Robert D. Lifset, *A New Understanding of the American Energy Crisis of the 1970s*, 39 HIST. SOC. RSCH. 22, 24, 36–38 (2014).

deciding what generation resources to build to cost-effectively meet demand in a variety of long-term scenarios.[131] As a result, many state legislatures or utility commissions imposed requirements that utilities file and receive approval for long-term "integrated resource plans" (IRPs).[132] For the first time, utility commissions oversaw individual investments *and* a utility's long-term planning.

At around the same time, customers, utilities, and regulators became more interested in energy conservation to reduce electricity demand in response to rising fuel costs during the energy crisis. In 1978, Congress enacted PURPA, requiring that state public utility commissions "bring energy conservation considerations into their rate-making practices."[133] Utility commissions began to require that utilities consider or implement conservation programs in a variety of ways, often after express legislative action. For example, many state laws require utilities to consider conservation as a strategy to meet demand in integrated resource planning and authorize or mandate utility-funded programs that invest in strategies that reduce electricity demand (*i.e.*, energy efficiency programs).[134]

In the late 1990s and early 2000s, many states began to adopt renewable portfolio standards or requirements that electric utilities source a percentage of electricity from renewable generation resources such as solar and wind.[135] Again, these were typically adopted through state legislation, and these laws tasked utility commissions with adopting implementing regulations.[136]

More recently, many utility commissions have been tasked with authorizing rates that promote economic development or prevent companies from leaving the state[137] and with overseeing utility investment into electric vehicle infrastructure or energy storage.[138]

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131. HARRINGTON ET AL., *supra* note 129, at 4–7.

132. IRPs generally require utilities to forecast future loads, identify potential resource options (e.g., power plants or energy efficiency measures) to meet those loads, and analyze what set of resources will create the optimal, lowest cost mix for meeting those requirements. *Id.*; *see also* Boyd, *supra* note 14, at 1693 (asserting that although IRPs formalized resource planning, such planning "has long been at the heart of traditional utility regulation"). In 1992, Congress enacted the Energy Policy Act requiring each state utility commission to consider adopting an IRP mandate. *See* 16 U.S.C. § 2621(c)–(d).

133. Kenneth Gillingham et al., *Retrospective Examination of Demand-Side Energy Efficiency Policies* 15 (Res. for the Future, Discussion Paper No. 10,477, 2004); 16 U.S.C. § 2621(d)(6) (requiring state regulatory authorities to considering authorizing utilities to implement load management techniques).

134. *See* NANCY WASSERMAN & CHRIS NEME, REGUL. ASSISTANCE PROJECT, POLICIES TO ACHIEVE GREATER ENERGY EFFICIENCY 20 (2012) (describing how most IRPs require consideration of energy efficiency or conservation as a resource); WESTON BERG ET AL., AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., THE 2020 STATE ENERGY EFFICIENCY SCORECARD 19 (2020) (finding that most states have utility-funded programs to provide energy efficiency services); *see also* discussion *infra* Part III.B.1.

135. The first RPS was enacted in 1983, but they did not become popular policies until the late 1990s. Vicki Arroyo et al., *State Innovation on Climate Change Reducing Emissions from Key Sectors While Preparing for a "New Normal"*, 10 HARV. L. & POL'Y REV. 385, 397–99 (2016).

136. *Id.*

137. Chan & Klass, *supra* note 11, at 1470–77.

138. *See, e.g.*, Peter Behr, *Major U.S. Utilities Plan Coast-to-Coast, EV-Charging Network*, E&E News: EnergyWire (Dec. 7, 2021), https://www.eenews.net/articles/major-u-s-utilities-plan-coast-to-

In each of these cases, utility commissions have had to expand their mission—and expertise—beyond what was viewed as the traditional purview of "economic regulation."[139] Utility commissions similarly have the capacity to expand their focus to include affordability and access—indeed, as Part III describes below, many have done so.[140]

b. Legal Authority for Commissions to Address Affordability, Access

State legislatures can clearly authorize a utility commission to address affordability and access through the types of policies described below unless a state constitution somehow constrains the legislative body. The U.S. Supreme Court has stated that the power of a legislature to broadly "regulate [business] in the common interest" is "fundamental."[141] There have been no successful legal challenges to state laws granting explicit authority to utility commissions to take on broader roles.[142] On the contrary, courts have sometimes expressly stated that it is the role of legislatures to authorize low-income rates or other types of "social ratemaking."[143]

In contrast, a more complicated question is whether a utility commission may undertake actions to address affordability and access under a commission's typically broad authority to regulate "in the public interest" where such actions are not explicitly authorized by legislation.

Most importantly, the U.S. Supreme Court held in *National Association for Advancement of Colored People (NAACP) v. Federal Power Commission* that a legislative authorization to regulate utilities in the "public interest" has significant constraints.[144] In that case, the Court was considering the Federal Power Commission (FPC)'s denial of an NAACP rulemaking petition that would prohibit employment discrimination by FPC-regulated utilities.[145] The FPC reasoned that such a rule would exceed its authority under its enabling acts, because even though those statutes broadly authorized FPC regulation "in the

coast-ev-charging-network/#:~:text=According%20to%20the%20administration's%20plan,propane%20and%20natural%20gas%20infrastructure.

139. *See generally* FILIPINK, *supra* note 127. Some commentators have argued that utility regulation should remain limited. *See generally, e.g.*, Troy A. Rule, *Utility Mission Creep*, U.C. DAVIS L. REV. 591 (2022) (arguing regulated utilities should be prohibited from entering new areas such as public electric vehicle charging, rooftop solar infrastructure, or home energy storage as not being cost-justifiable).

140. *See also* examples listed *supra* in note 31.

141. Nebbia v. People of New York, 291 U.S. 502, 523 (1934); *see also* Nat'l Ass'n for Advancement of Colored People v. Fed. Power Comm'n, 425 U.S. 662, 665 (1976) (stating Congress "clearly could . . . authorize the Federal Power Commission to combat . . . discrimination").

142. *See* Chan & Klass , *supra* note 11, at (26) (Low-income rate programs authorized by legislatures "may be politically debated, but they are rarely subject to legal challenge as they are clearly within a state legislature's authority.").

143. *See, e.g.*, Mountain States Legal Found. v. N.M. State Corp. Comm'n, 687 P.2d 92, 94 (N.M. 1984).

144. *See* 425 U.S. at 669–71.

145. *Id.* at 664.

public interest," the purposes of those acts was to more specifically authorize "economic regulation of entrepreneurs engaged in resource developments."[146]

The Supreme Court agreed with the FPC, stating that the

> Court's cases have consistently held that the use of the words "public interest" in a regulatory statute is not a broad license to promote the general public welfare. Rather, the words take meaning from the purposes of the regulatory legislation.[147]

The Court concluded that "[t]he use of the words 'public interest' . . . is not a directive . . . to eradicate discrimination, but, rather, is a charge to promote the orderly production of plentiful supplies of electric energy and natural gas at just and reasonable rates."[148] Although the Court concluded that the FPC was authorized to "consider the consequences of discriminatory employment practices on the part of its regulatees . . . insofar as such consequences are directly related to the Commission's establishment of just and reasonable rates,"[149] the decision nevertheless influenced many state courts to similarly view state statutes authorizing regulation in the "public interest" somewhat narrowly.

For example, state courts invalidated attempts by utility commissions to set or approve low-income rates or policies in Washington, Colorado, New Mexico, and Arkansas, all at least partially because their state statutes did not provide sufficient authority.[150]

In contrast, the highest court in Massachusetts held that a general enabling statute with typical language authorizing regulation and oversight of ratemaking was sufficient to enable the utility commission to authorize a low-income rate for low-income elderly residents.[151] In Ohio, the state's PUC successfully used statutory authorization of emergency powers to prevent the disconnection of customers who paid at least a percentage of their income toward their utility bill.[152]

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146. *Id.*

147. *Id.* at 669.

148. *Id.* at 670.

149. *Id.* at 662.

150. These cases generally turn on the court's understanding that providing a low-income rate would be unduly discriminatory against other categories of customers. State *ex rel.* Puget Sound Power & Light Co. v. Dep't of Pub. Works, 38 P.2d 350, 353 (Wash. 1934) (holding a customer's ability to pay is not a valid factor in determining to reduce rates); Mountain States Legal Found. v. Pub. Utils. Comm'n, 590 P.2d 495, 498 (Colo. 1979) ("although the PUC has been granted broad rate making powers . . . the PUC's power to effect social policy through preferential rate making is restricted by statute"); Mountain States Legal Found. v. N.M. State Corp. Comm'n, 687 P.2d 92, 94 (holding that providing lower rates to seniors and low-income customers was unduly discriminatory without express legislative authorization); Ark. Gas Consumers, Inc. v. Ark. Pub. Serv. Comm'n, 118 S.W.3d 109 (Ark. 2003) (holding that PUC lacked statutory authority to establish a policy reconnecting customers who had been disconnected for failure to pay).

151. *See* Am. Hoechest Corp. v. Dep't of Pub. Utils., 399 N.E.2d 1, 3–5 (Mass. 1980).

152. *See* Montgomery Cnty. Bd. of Comm'rs v. Pub. Utils. Comm'n of Ohio, 503 N E.2d 167, 169–70 (Ohio 1986) (vacating the program on other grounds but expressly affirming use of emergency authority); *see also* discussion *infra* Part III.C.3.a.

In a recent article, Gabriel Chan and Alexandra B. Klass argue that general authority to regulate in the public interest and to set just, reasonable, and non-discriminatory rates should be understood as sufficient to authorize a variety of affordability and access policies.[153] In particular, Chan and Klass argue that utility commissions mistakenly rely on precise "cost causation" to make rate setting appear a technocratic exercise in a way that obscures the "social dimensions" of ratemaking.[154] They argue that the costs of service studies "are more of an art than a science" and give the widespread use of economic development rates as another example of "social ratemaking" that does not attract the same criticism.[155] Jean Su also points to several cases where federal and state courts have affirmed more expansive interpretations of public interest when the policies in question can be "tied" to a utility commission's enabling statutes.[156]

In sum, utility regulation has long been justified on the grounds that certain companies with monopoly power may be able to coercively raise prices beyond a level that is just and reasonable or withhold service in a discriminatory fashion, especially from poorer customers. Traditionally, utilities were not required to consider a customer's ability to pay in setting rates. Some state courts, though not all, have found that the prohibition on undue discrimination prohibits robust affordability and access programs that effectively subsidize some customers absent express statutory authorization. However, it is clear that state legislatures may authorize such programs, and many have done so.

B. Universal Access to "Energy Services" as a Human Right?

International human rights law is widely accepted as identifying a right to life and an adequate standard of living, raising the question of whether these rights necessarily rely on a right to universal access to energy services.

The foundational sources for the rights to life and an adequate quality of life are the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights (ICCPR), and the International Covenant on Economic, Social, and Cultural Rights (ICESCR). None of these documents expressly mention access to energy or electricity, although they mention other elements, such as food and housing, in the context of a right to an adequate standard of living.[157] Several scholars, however, have argued that a right to

153. Chan & Klass, *supra* note 11, at 1479; *see also* Mormann, *supra* note 11, at 343–44.

154. Chan & Klass, *supra* note 11, at 1479.

155. *Id.* at 1462.

156. Jean Su, *Climate, Environmental, and Energy Justice Integrating Justice into Electricity System Design and Decision-Making*, *in* GRID MODERNIZATION LAB'Y CONSORTIUM, U.S. DEP'T OF ENERGY, ADVANCING EQUITY IN UTILITY REGULATION: FUTURE ELECTRIC UTILITY REGULATION REPORT NO. 12, at 79 (2021).

157. G.A. Res. 217 (III) A, art. 25, Universal Declaration of Human Rights (Dec. 10, 1948) (including the right to "a standard of living adequate for the health and well-being" of each person and their family, and listing as examples food, housing, and medical care—but not access to electricity or energy); International Covenant on Civil and Political Rights art. 6, Dec. 16, 1966, 80 Stat. 271, 999 U.N.T.S. 171 ("every human being has the inherent right to life"); International Covenant on Economic,

access "energy services"— particularly electricity service—exists as a right derived from these rights to life and an adequate quality of living. [158]

For example, Stephen Tully has argued that electricity is:

> a prerequisite for realizing several interrelated human rights. Electricity properly cooks and refrigerates food (thus realizing the right to adequate food), provides sufficient heating, cooling and lighting (realizing the right to housing), and ensures safe environmental conditions within both households and workplaces (realizing the right to health).[159]

In 2015, the United Nations Human Rights Committee supported this position when it "highlighted the connection between the duty of states to protect the right to life and other human rights including . . . access to electricity."[160] In addition, at least one international rights treaty—the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)—frames access to electricity as a right.[161]

The argument that access to energy services *is* or *should be* recognized as a right also aligns with a growing recognition of the importance of providing universal access to electricity as a component of sustainable development and global poverty eradication.[162] According to most recent data, 759 million people

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Social and Cultural Rights art. 11.1, Dec. 16, 1966, 993 U.N.T.S. 3 (recognizing the right "to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions"). Another source of a potential right to universal access to energy sources is the United Nations Charter, which calls upon all member states to promote "higher standards of living," "solutions of … economic, social, health, and related problems," and "universal . . . observance of . . . human rights . . . for all without distinction as to race, sex, language, or religion." U.N. Charter art. 55.

158. *See, e.g.*, Adrian J. Bradbrook & Judith G. Gardam, *Placing Access to Energy Services within a Human Rights Framework*, 28 HUM. RTS. Q. 389, 405 ("It is increasingly apparent that the socioeconomic goals contained in the ICESCR cannot be achieved without access to [energy] services . . . the argument can be made that the right to access to modern energy services is already implicit in a range of existing human rights obligations."); Olasupo Owoeye, *Access to Energy in Sub-Saharan Africa A Human Rights Approach to the Climate Change Benefits of Energy Access*, 18 ENV'T L. REV. 284, 294 (2016) ("Access to electricity is very important to the realization of many of the social and economic rights protected by the general field of international human rights law"); Lars Löfquist, *Is There a Universal Human Right to Electricity?*, 24 INT'L J. HUM. RTS. 711, 714, 721 (2020) ("electricity is a right to a resource, which makes it easier to live a good enough human life even though it might not be necessary for survival"; "we should understand electricity as a derived right"); Thoko Kaime & Robert L. Glicksman, *An International Legal Framework for SE4All Human Rights and Sustainable Development Law Imperatives*, 38 FORDHAM INT'L L. J. 1405, 1435 (2015) ("the achievement of the goals set out in Article 55 [of the UN Charter] requires universal access to modern energy services.").

159. Stephen R. Tully, *The Contribution of Human Rights to Universal Energy Access*, 4 NW. J. INT'L HUM. RTS. 518, 547 (2005).

160. "When adopting long-term measures designed to ensure the enjoyment of the right to life, States parties should aim to facilitate and promote adequate conditions for a dignified existence for all individuals. Long-term measures required for ensuring the right to life may include facilitating access by individuals to basic goods and services such as . . . electricity." Owoeye, *supra* note 158, at 295 (citing United Nations Human Rights Committee, Draft General Comment No. 36: Article 6: Right to Life, at 10, U.N. Doc. CCPR/C/GC/R.36/Rev2 (Sept. 2, 2015)).

161. All state parties "shall ensure" to women in rural areas "the right . . . to enjoy adequate living conditions, particularly in relation to . . . electricity and water supply." Convention on the Elimination of All Forms of Discrimination Against Women art. 14(2)(h), Dec. 18, 1979, 13 U.N.T.S. 1249.

162. *See, e.g.*, Tully, *supra* note 159, at 522 (since the early 1990s, energy has become more prominent in "sustainable development agenda" and more focused on "universal access for the benefit of

in the world do not have electricity access.[163] Scholars have noted that the role of access to energy in relation to poverty was neglected for a long time, but that this began to change in the 1990s and has become a significant focus of international development today.[164]

A key milestone in this change was the 2000 release of the United Nations' World Energy Assessment, which highlighted energy access's role in improving quality of life and mitigating poverty.[165] Another occurred in 2011 when the United Nations' Secretary General initiated the Sustainable Energy for All initiative ("SE4All"), which focused on achieving universal access to energy for all while reducing dependence on the use of fossil fuels.[166] And at the 2012 Rio+20 United Nations Conference on Sustainable Development, countries again highlighted the importance of universal access, recognizing in the conference's summary document that "access to sustainable modern energy services contributes to poverty eradication, saves lives, improves health and helps provide for basic human needs" and emphasizing "the need to address the challenge of access to sustainable modern energy services for all, in particular for the poor, who are unable to afford these services even when they are available."[167]

Perhaps most notably, in 2015, the United Nations adopted seventeen "Sustainable Development Goals" (SDGs) as "a plan of action" for both eradicating poverty and protecting the environment by 2030.[168] These include a stand-alone goal focused on energy: Goal 7 aims "to ensure access to affordable, reliable, sustainable, and modern energy to all."[169]

All these developments underscore a growing international consensus of the critical role that access to energy services plays in supporting an "adequate standard of living."

In this international development context, there has also been an increasing focus in recent years on ensuring that access really is universal, affordable, and secure in response to previous initiatives focused on privatizing energy

individuals"); Bradbrook & Gardam, *supra* note 158, at 389–90 (energy went from "lagg[ing] behind" other environmental issues to taking "center stage" in sustainable development discussions).

163. This data is from 2019. INT'L ENERGY AGENCY ET AL., TRACKING SDG7: THE ENERGY PROGRESS REPORT 2021, at 4 (2021).

164. *See, e.g.*, Tully, *supra* note 159, at 522 (since the early 1990s, energy has become more prominent in "sustainable development agenda" and more focused on "universal access for the benefit of individuals"); Bradbrook & Gardam, *supra* note 158, at 389-90 (energy went from "lagg[ing] behind" other environmental issues to taking "center stage" in sustainable development discussions).

165. The report highlighted the importance of providing affordable, reliable energy services to alleviate poverty. *See generally* UNITED NATIONS DEV. PROGRAMME, WORLD ENERGY ASSESSMENT: ENERGY AND THE CHALLENGE OF SUSTAINABILITY (2000).

166. Kaime & Glicksman, *supra* note 158, at 1406–17.

167. *Id.* at 1417 (citing, G.A. Res. 66/288, ¶¶ 125, 126, The Future We Want (July 27, 2012)).

168. *See* G.A. Res. 70/1, Transforming our World: the 2030 Agenda for Sustainable Development (Sept. 25, 2015).

169. *Id.* at 14, 19.

services.[170] However, several critiques point out that market liberalization policies, promoted by the international lending institutions like the World Bank, focused on improving energy-sector efficiency at the expense of improving access for low-income people.[171]

For example, one case study found that liberalization in several Indian provinces without subsidies resulted in reduced electricity consumption by poor customers.[172] In comparison, liberalization in the Philippines—specifically requiring lifeline rates and subsidies for service expansion—resulted in increased electrification rates.[173] Another case study of Argentina concluded that Universal Service Obligations—requirements that service be set at rates affordable for all—were important components of privatization policies for electricity access, especially in circumstances of high unemployment.[174]

The theme of increased focus on addressing affordability and access for the poor was also the leading piece of feedback in a "thematic e-consultation" convened around the Energy Access Sustainable Development Goal.[175] Stakeholders identified "inequality and poverty" as a leading constraint in preventing access to affordable, reliable, and sustainable energy. In particular, stakeholders "emphasized how the lack of government subsidies to low-income households aggravates their ability to access affordable and clean energy."[176]

These examples show that while the international discourse is still largely focused on providing *access* to energy services in *developing countries*, the conversation is increasingly concerned with ensuring that all individuals have access to affordable and secure energy services, especially poor people.

Tully has also addressed what the content of a right to energy access is or should be and what obligations it should impose on governments. In keeping with the articulation of positive right obligations in the ICESCR, Tully states that a right to energy services should *not* be understood to create an obligation to provide universal access to all people immediately.[177] Instead, following the ICESCR's principle of "progressive realization," the right should be understood

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170. *See, e.g.*, MIKUL BHATIA & NIKI ANGELOU, ENERGY SECTOR MGMT. ASSISTANCE PROGRAM, TECH. REP. NO. 008/15, BEYOND CONNECTIONS: ENERGY ACCESS REDEFINED 1, 42 (2015) (describing how prior conception of energy access did "not take into account the quantity and quality of electricity . . . [and did] not address the question[] of affordability," and proposing broader metrics in response); Tully, *supra* note 159, at 522.

171. *See, e.g.*, Tully, *supra* note 159, at 519; Roberto Kozulj & Nicolas Di Sbroiavacca, *Assessment of Energy Sector Reforms Case-Studies from Latin America*, 8 ENERGY FOR SUSTAINABLE DEV. 74, 74 (2004).

172. A.R. Sihag et al., *Impact of Power Sector Reform on the Poor Case-Studies of South and South-East Asia*, 8 ENERGY FOR SUSTAINABLE DEV. 54, 63–69 (2004).

173. Using electrification level of barangays, or villages and wards. *Id.* at 71–73.

174. Antonio Estache & Omar Chisari, *Universal Service Obligations in Utility Concession Contracts and the Needs of the Poor in Argentina's Privatizations* 4 (World Bank Grp., Pol'y Rsch. Working Paper No. 2250, 1999).

175. UNITED NATIONS DEP'T OF ECON. & SOC. AFFS., SUMMARY REPORT: STAKEHOLDERS THEMATIC E-CONSULTATION FOR THE UNITED NATIONS HIGH LEVEL DIALOGUE ON ENERGY 7 (2021).

176. *Id.*

177. Tully, *supra* note 159, at 544.

to require governments "to take steps to the maximum of their available resources to progressively achieve the right[]."[178]

He further argues that the right should also be understood as compatible with the market-based provision of utility services.[179] In particular, "economic, social and, cultural rights must be affordable but not necessarily free."[180] But neither should the right be understood to simply "bolster property rights or enable market participation."[181] Instead, governments should provide "transparent, targeted" subsidies to disadvantaged populations when necessary to make access to electricity affordable and secure.[182]

While these developments show that the right to electricity access can be credibly called an emerging human right, few would argue that the United States has an *enforceable obligation* under international human rights law to provide universal, affordable energy services to its residents. One key factor is that while the United States voted in support of the non-binding Universal Declaration and has since then affirmed that the rights declared are "universal, indivisible, and interdependent,"[183] it is not a party to the ICESCR, which is the binding multi-country treaty that recognizes the right to an adequate standard of living and details the obligations it imposes on states.[184] Because it is not a party to the ICESCR, the United States is not legally bound by the covenant's obligations on parties to progressively take maximum steps to realize a right to an adequate standard of living.[185]

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178. *Id.*

179. *Id.*

180. *Id.* In fact, scholars have pointed out that provision of free electricity can prolong or exacerbate reliance on fossil-fuel electricity production by creating a disincentive to conservation.

181. *Id.*

182. *Id.*

183. The Universal Declaration was adopted in 1948 by the United Nations with a vote in support by the United States. The rights enumerated in the non-binding declaration were then codified into two multi-country treaties: The International Covenant on Civil and Political Rights (ICCPR), which the U.S. has ratified; and the International Covenant on Economic, Social, and Cultural Rights (ICESCR), which the U.S. has signed but not ratified. The status of the declaration itself in international law "remains somewhat controversial . . . it is [now] commonly accepted that at least some of the provisions of the Declaration were, or may have become, obligations under customary law." LOUIS HENKIN ET AL., HUMAN RIGHTS 320–22, 1112, 1115 (1999). In 1993, the United States along with other countries adopted the Vienna Declaration and Programme of Action, which states that "All human rights are universal, indivisible, and interdependent and interrelated . . . it is the duty of States, regardless of their political, economic, and cultural systems, to promote and protect all human rights." ¶ I.5, reprinted in 32 I.L.M. 1661, 1665.

184. *Id.* at 1112.

185. The United States is a signatory to the Covenant but is not a party because it never ratified the instrument. A state that is a signatory but not a party to a treaty agrees to act, in good faith, "not to defeat the object and purpose" of the treaty but is not legally bound by specific provisions. Vienna Convention on the Law of Treaties art. 18, May 23, 1969, 1155 U.N.T.S. 331; *see also* HENKIN ET AL., *supra* note 183, at 307 (U.S. "has accepted the provisions of the [Vienna] Convention as . . . reflecting . . . customary law"). Even if the U.S. were to ratify the ICESCR, implementation would be dependent on legislative or executive action and would not be subject to any external standard. RESTATEMENT (THIRD) OF FOREIGN RELS. L. § 701 (AM. L. INST. 1987) (noting that if U.S. were to ratify the ICESR, it "would largely determine for itself the meaning of 'full realization' and the speed of realization, and whether it is using 'the maximum of its available resources'").

Similarly, regarding the ICCPR, the United States declared in its ratification that substantive provisions of the covenant—including the right to life—are not self-executing and instead rely on domestic legal action such as the passage of legislation.[186] In other words, even if a global consensus emerged that the ICCPR's right to life obligated derivative positive rights, such as the right to energy services, such a right would almost certainly not be individually enforceable in U.S. courts without implementing legislation.[187] It is also worth noting that rights-based arguments for domestic implementation of other, better-established positive human rights, such as housing, have not successfully found support in U.S. law as binding obligations.[188]

The limited recognition of international human rights in domestic law does not mean that U.S. energy policymakers should ignore a developing movement towards an international right of universal energy access. Scholars and advocates engaged in this discussion largely conceive of this right as one that is consistent with the approach detailed in this Article—a right focused on progressive, targeted supports and subsidies to ensure that access to electricity is affordable and secure even for those who cannot pay. In the same way that state policymakers often frame their climate actions in references to the goals of the Paris Agreement on climate change, even though it is not binding on sub-state actors, state policymakers should draw on and reference this emerging right to support a greater focus on universal access and affordability.[189]

III. INNOVATIVE STATE GAP-FILLING TOWARDS A UNIVERSAL SERVICE GOAL

This Article next synthesizes actions taken by several states that together provide a much stronger framework for ensuring access to affordable electricity service and preventing disconnections. These actions generally build on longstanding and widespread federal and state policies but seek to address the significant limitations of those policies.

The Article groups these innovative policies into four categories. First are policies that authorize, establish, and measure progress toward affordability and access goals. Second are policies that reduce the need for electricity for low-

186. *See* HENKIN ET AL., *supra* note 183, at 786–87; *see also* Catherine Powell, *Dialogic Federalism Constitutional Possibilities for Incorporation of Human Rights Law in the United States Social Movements and Law Reform*, 150 U. PA. L. REV. 245, 258–59 (2001) ("Having declared most human rights treaties it ratifies to be non-self-executing, the United States has limited the enforceability of these treaties absent implementing legislation.").

187. *See, e.g.*, Powell, *supra* note 186, at 257 (stating "most judges are reluctant to apply [human rights] norms . . . even though ratified human rights treaties . . . are . . . law of the land in the United States" and providing examples of courts declining to apply ICCPR).

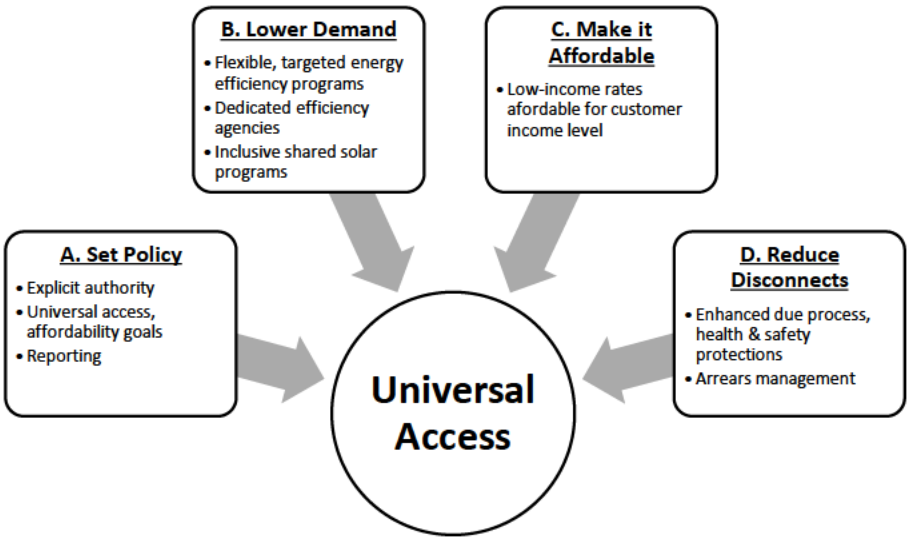
188. *See, e.g.*, Ben A. McJunkin, *The Negative Right to Shelter* 22-31, 111 CALIF. L. REV. 127, 147–57 (2023) (discussing the largely unsuccessful history of seeking a right to shelter in U.S. courts, mostly based on Constitutional due process and equal protection clauses).

189. *See generally* Powell *supra* note 186, at 245, 250 (describing how states and local governments are "adopting" international human rights obligations and arguing that such subnational action is "critical to meaningful implementation of international human rights law in the United States.").

income people, therefore lowering electricity bills—these include innovative programs to provide energy efficiency improvements to homes and policies that provide access to distributed renewable energy. Third are policies that directly affect the affordability of electricity service for low-income customers, particularly low-income rates tied to a level of affordability for a specific income level. Fourth are policies that reduce disconnections, especially arrears management programs but also enhanced versions of more traditional protections like payment plan requirements.

Figure 2 summarizes the innovations that states are implementing in each of these four categories.

Figure 2: Innovative State Strategies Towards Universal, Affordable Service



For each of the four categories described below, this Article first describes the baseline of existing federal and state programs in that category and why it is insufficient in achieving affordable, universal access to electricity service. The Article then profiles the innovations states are implementing in these categories and explains how they intend to help better achieve an affordable universal access goal. Each Subpart includes a summary table describing the baseline and its limitations, as well as the innovations, and how they improve affordability and access outcomes.

The development of these affordability and access policies can be traced to three eras illustrated in Figure 3 below. Most of the "baseline" policies emerged during the energy crisis of the 1970s. Increased oil and natural gas prices—used for heating and electricity generation at the time—prompted Congress to create

programs for low-income heating assistance and home weatherization.[190] Congress also enacted PURPA, which among other things, required state utility commissions to consider enacting discount "lifeline rates" for vulnerable customers.[191]

In the late 1980s, access and affordability policies received another policy push during a period of restructuring of the electricity industry.[192] A number of states sought to repeal monopoly protections for retail electricity service and allow for competition among retail electricity providers.[193] Allowing competition was generally intended to reduce rates.[194] However, because restructuring would remove traditional PUC oversight over ratemaking, legislatures sought to provide protections for low-income residential customers.[195] Therefore, several states implemented affordability and access programs—including low-income rates and sometimes arrears management—as a part of their restructuring legislation.[196]

The most recent period of activity is characterized here as the "climate and energy justice" period. These are relatively recent actions generally taken by states in the context of the transition to a zero- or low-carbon electricity system. They also respond to an increased awareness of injustice in the energy system and the vulnerability of marginal groups to the disproportionate harms in the transition to a cleaner electricity system. As described below, states that have recently acted include California, Colorado, Maine, Massachusetts, Oregon, and

190. Richard D. Cudahy, *PURPA The Intersection of Competition and Regulatory Policy*, 16 ENERGY L.J. 419, 421 (1995) (noting that Congress enacted PURPA as a response to the energy crisis); *Celebrating 40 Years of LIHEAP 1981–2021*, NAT'L ENERGY & UTIL. AFFORDABILITY COAL., https://neuac.org/liheap-40-years/ (last visited Apr. 10, 2023) (noting that LIHEAP was created "in response to rising energy prices").

191. *See* discussion *infra* Part III.C.2.

192. *See generally* STEVE ISSER, ELECTRICITY RESTRUCTURING IN THE UNITED STATES: MARKETS AND POLICY FROM THE 1978 ENERGY ACT TO THE PRESENT (2015); RICHARD F. HIRSH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM (2001).

193. Boyd & Carlson, *supra* note 67, at 833.

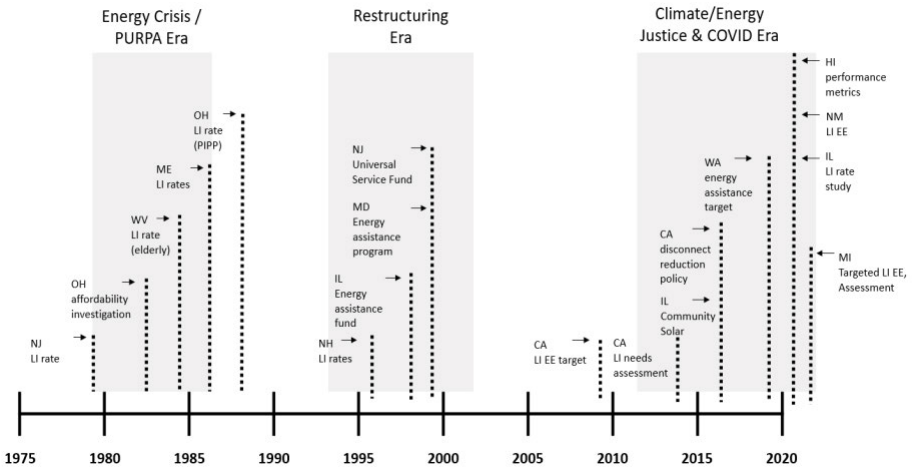
194. *See, e.g.*, 1996 Cal. Legis. Serv. Ch. 854 (A.B. 1890) (codified at CAL. PUB. UTIL. CODE § 330) (A California electricity sector restructuring statute which states that the anticipated results of implementing restructuring is a "cumulative rate reduction for residential and small commercial customers of no less than 20 percent by April 1, 2002."); 1999 N.J. Laws 90 (1999) (codified at N.J. STAT. ANN. § 48:3-50) (authorizing PUC to allow competition to "reduce the aggregate energy rates currently paid by all New Jersey consumers"). *But see* David B. Spence, *Can Law Manage Competitive Energy Markets*, 93 CORNELL L. REV. 765, 795–98 (2008) (discussing why industrial customers will receive highest benefit from restructuring, and why "residential customers will feel the effects of unbundling in a more adverse way than industrial customers").

195. *See* Rossi, *supra* note 83, at 1292–93 (discussing how states have addressed tension between duty to serve and competition in restructuring).

196. *See, e.g.*, N.H. REV. STAT. ANN. § 374-F:3 (2023) ("A restructured electric utility industry should provide adequate safeguards to assure universal service. . . . Programs and mechanisms that enable residential customers with low incomes to manage and afford essential electricity requirements should be included as a part of industry restructuring.").

Washington. Notably, where states have longstanding programs, they often strengthen the protections of these programs or expand their availability.[197]

Figure 1: Illustrative Timeline of Selected State Policies[198]



As the chief aim of this Article is to describe this emerging state model, this Part does not seek to evaluate the policies described. However, the final Part of this Article identifies questions and considerations related to this emerging state model, including whether this model amounts to "good" policy.

A. Set Policy: Make Authority Explicit, Get Data, Establish Goals

Utility commissions are generally tasked with ensuring that electricity rates are "just and reasonable," that utilities meet their "duty to serve," and that they otherwise regulate "in the public interest."[199] Many commissions do not have a clear mandate to ensure affordability for all customers or reduce disconnections.[200]

197. *See, e.g.*, 2021 Maryland Laws Ch. 636 (2021) (H.B. 397) (codified at MD. CODE ANN., PUB. UTIL. §4-308) (expanding eligibility for universal service program, authorizing more frequent arrears forgiveness); 2017 Cal. Legis. Serv. Ch. 362 (2017) (S.B. 598) (codified at CAL. PUB. UTIL. CODE §§ 718, 779.3, 910.5) (2023) (requiring utility commission to "develop policies, rules, or regulations with a goal of reducing, by January 1, 2024, the statewide level of gas and electric service disconnections for nonpayment by residential customers"); 2021 Me. Legis. Serv. Ch. 279 § 3 (2021) (amending ME. STAT. tit. 35-A, §§ 101, 103-A) (amending public utility regulation enabling act to include reduction of GHG emissions in purpose and to require Office of Policy Innovation and the Future to "develop methods of incorporating equity considerations in decision making" at the Public Utilities Commission and other agencies); 2022 Me. Legis. Serv. Ch. 623 (2022) (amending ME. STAT. tit. 35-A, § 1714) (creating electric ratepayer advisory council to "make recommendations to the Public Advocate regarding methods to ensure that ratepayers are able to afford electricity in the State.").

198. Compiled by author; citations for policies on file with author. Heights of states are varied to make labelling easier, and different heights do not have any special meaning.

199. *See* discussion *supra* in Part II.A.1.

200. This conclusion is based on authors review of state PUC enabling statutes. *See also* Chan & Klass, *supra* note 11, at 1433, 1439–42 (discussing how state legislation has granted PUCs broad authority

Several states have amended legislation to expressly task PUCs with addressing these issues. This Part focuses on three related actions: those that expressly provide legal authority to PUCs to address affordability; those that require detailed public utility reporting on disconnections, arrears, and affordability; and those that set express targets or performance measures to improve affordability and disconnection outcomes.

1. Baseline: Ambiguous Authority, No Clear Mandate to Improve Outcomes, Insufficient Data

For the other categories of strategies, existing federal and state policies provide a solid starting point for increasing affordability and access. But in most states, there is no clear mandate that utility commissions should seek to ensure that electricity service is affordable to all and to minimize disconnections.[201] Even where existing authority may be sufficient, commissioners, commission staff, or other stakeholders (such as utilities and industrial consumers) may argue that improving affordability and access outcomes is not part of the utility commission's traditional mission.[202]

Another critical shortcoming is the lack of data. Utility commissions generally *do* have broad authority to require reporting of all kinds of information.[203] Yet electric utilities are generally not required to report detailed data about disconnections and reconnections publicly.[204] Even more rare is requiring utilities to report which households lack access to electricity or for how many households electricity is "unaffordable."[205]

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to regulate "to advance the public interest"); NCLC TREATISE, *supra* note 90, § 7 (describing states that have authorized specific affordability programs; many states have no listed programs); FILIPINK, *supra* note 127, at 15–18 (analyzing litigation in a several states challenging expansions of PUC authority, including to implement affordability programs, where PUCs did not have express statutory mandate).

201. *See* sources *supra* note 199.

202. The author heard these arguments from utility representatives and others during his clinic's advocacy for a low-income rate. *See also* FILIPINK, *supra* note 127, at 3, 14 (noting that when regulators seek to expand beyond traditional jurisdiction without an express mandate, "it unsettles utilities" and utilities may challenge legal authority of regulators; also noting that regulators may "refrain from acting to the full extent of their authority"); Herman K. Trabish, *Utility Regulators Eye New Tools to Ensure Equity Efforts Don't Impinge on Other Policy Goals*, UTIL. DIVE (Feb. 21, 2022), https://www.utilitydive.com/news/utility-regulators-eye-new-tools-to-ensure-equity-efforts-dont-impinge-on/618384/ (emphasizing a comment from Ahmad Faruqui suggesting that tax funding, instead of utility programs, is a more appropriate way to fund affordability objectives).

203. *E.g.*, N.M. STAT. ANN. § 62-6-18 (2023) ("Every utility, when and as required by the commission, shall file with the commission such annual report and such other information as the commission may reasonably require."); MINN. STAT. § 216B.13 (2023) (The commission may require . . . the production . . . [of] records of the public utility relating to its business or affairs within the state . . .").

204. Graff et al., *supra* note 37, at 102,145.

205. The author was only able to identify several programs that require an analysis of affordability or lack of access. *See generally* NCLC TREATISE, *supra* note 90, § 7 (describing very few programs that match this description).

2. Innovation: Make Utility Commission Authority Explicit

Legislative amendments to utility commission enabling statutes can remove potential ambiguity or constraints by expressly authorizing affordability and access programs or even mandating such programs.

In one recent example, Washington amended how the utility commission's mandate to regulate in the "public interest" should be understood. In its Clean Energy Transformation Act, the legislature included a finding stating that "the public interest includes . . . [t]he equitable distribution of energy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health, economic, and environmental benefits and the reduction of costs and risks; and energy security and resiliency."[206]

In other cases, state legislation has expressly *mandated* that utility commissions implement affordability and access programs. One example is Maryland's electricity restructuring legislation, which tasked the state utility commission with establishing an "electric universal service program" for lower-income customers that included bill assistance, low-income energy efficiency, and arrearage assistance components.[207]

Other states have amended statutes to provide narrower authorizations, for example, by expressly authorizing low-income rates. Those types of changes are identified in the relevant Subparts below.

3. Innovation: Reporting, Assessment Requirements

There is a growing recognition that reporting detailed disconnection and affordability data is critical to addressing inequities in energy security. For example, in 2019, the National Association of Regulatory Utility Commissioners (NARUC) and the National Association of State Utility Consumer Advocates (NASUCA) jointly adopted a resolution stating that states "should consider requiring utilities" to collect monthly data tracking "uncollectables, number of payment arrangements, number of payment arrangement defaults, number of revised payment arrangements, disconnections, reconnections, duration and frequency of disconnections and other relevant data points."[208] The resolution also encourages states to publish this data publicly each month.[209]

206. WASH. REV. CODE § 19.405.010(6) (2023).

207. MD. CODE ANN., PUB. UTIL. § 7-512.1 (2022).

208. NAT'L ASS'N OF REGUL. UTIL. COMM'RS., RESOLUTION ON BEST PRACTICES IN DATA COLLECTION AND REPORTING FOR UTILITY SERVICES DELINQUENCIES IN PAYMENTS AND DISCONNECTIONS OF SERVICE 3 (adopted by NARUC Bd. of Dirs. on Nov. 19, 2019) [hereinafter NARUC RESOLUTION]; NAT'L ASS'N OF STATE UTIL. CONSUMER ADVOCS., RESOL. NO. 2019-07, RESOLUTION ON BEST PRACTICES IN DATA COLLECTION AND REPORTING FOR UTILITY SERVICES DELINQUENCIES IN PAYMENTS AND DISCONNECTIONS OF SERVICE 3 (approved Nov. 18, 2019) [hereinafter NASUCA RESOLUTION].

209. The Resolution further urged that the data be "delineated by general residential customers and those receiving low-income assistance" and that the goal of publication is to provide policy makers with

John Howat and Jenifer Bosco of the National Consumer Law Center similarly advocate for the need for publicly available data related to disconnections and urge that this data be comprehensive and reported by zip code. For example, the data should include the number of customers charged a late fee, detailed data on the numbers of customers with arrearages of different vintages, numbers of disconnection notices sent, number of disconnections, service restorations after disconnections, and the average duration of disconnection, among others.[210]

One specific example of state action on this front is California's Senate Bill 598, enacted in 2017. This requires annual reporting on disconnections and reconnections, with specific information on how many disconnected and reconnected customers were participants in state low-income programs or the federal LIHEAP program.[211]

California provides additional examples of requirements for data collection and analysis that go beyond the simple recording of metrics. In 2013, California enacted a law requiring the utility commission to conduct "an assessment of the needs of low-income electricity and gas ratepayers" every three years.[212] The assessment is to "consider whether existing programs adequately address low-income electricity and gas customers' energy expenditures, hardship, language needs, and economic burdens."[213]

Similarly, in a 2022 settlement agreement, Michigan's DTE Energy agreed to conduct a low-income needs assessment to "quantify the historic coverage of existing low-income energy programs, identify gaps in coverage, characterize the eligible population, and consider prioritization scenarios for future program delivery."[214] Importantly, the settlement agreement specifically sought to address a documented lack of efficiency investment in Black neighborhoods.[215]

While implementing various affordability mandates, the California Public Utility Commission (CPUC) conducted a rulemaking to define "affordability." The CPUC ultimately established three metrics that would be used "in concert"

"access to sufficient, objective and granular data for forming public policy aimed at protecting the public health, safety and welfare." NARUC RESOLUTION, *supra* note 208, at 3; NASUCA RESOLUTION, *supra* note 208, at 3.

210. Howat & Bosco, *supra* note 47, at 27–28.

211. CAL. PUB. UTIL. CODE § 910.5 (2023).

212. *Id.* § 382(d).

213. *Id.* To view assessments conducted in 2013, 2016, and 2019, *see Energy Savings Assistance*, CAL. PUB. UTILS. COMM'N, https://www.cpuc.ca.gov/consumer-support/financial-assistance-savings-and-discounts/energy-savings-assistance (last visited Apr. 10, 2023) (assessments are located under subheading "Low Income/ESA Reports").

214. Mich. Pub. Serv. Comm'n, Order Approving Settlement Agreement *in re* Regulatory Reviews, Revisions, Determinations, and/or Approvals Necessary for DTE Electric Company to Fully Comply with Public Act 295 of 2008, Case No. U-20876, at 6 (Jan. 20, 2022).

215. Robert Walton, *DTE to Expand Energy Efficiency in Underserved Communities, Develop Geographic Targeting' Approach*, UTIL. DIVE (Jan. 27, 2022), https://www.utilitydive.com/news/dte-to-expand-energy-efficiency-in-underserved-communities-develop-geogra/617820/#:~:text=DTE%20Energy%20will%20add%20almost,the%20Michigan%20Public%20Service%20Commission.

to assess the affordability of "essential" utility services, including electricity.[216] The three metrics are: "1) the hours at minimum wage required to pay for essential utility services, 2) the vulnerability index of various communities in California, and 3) the ratio of essential utility service charges to non-disposable household income – known as the affordability ratio."[217]

4. Innovation: Establish Affordability, Access Policies, Targets, or Performance Measures

Beyond ensuring that utility commissions have the authority necessary to address affordability and access, several states have expressly established that improving affordability and access is one of the purposes of utility regulation. Some have gone further to establish measurable targets or performance measures for improving performance in these areas.

a. Establishing PUC Policy to Improve Affordability and Access

A modest step for a PUC is to expressly state that its mission includes working towards affordable utility service and universal access.

There is a federal precedent for such a goal in the telecommunications context. The stated purpose of the Federal Communications Act of 1934 was "to make available, as far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, nationwide, and world-wide wire and radio communication service with adequate facilities at reasonable charges [. . .]."[218] The Telecommunications Act of 1996 expanded the scope to include not just phone service but also high-speed internet.[219] To implement that goal, the Federal Communications Commission (FCC) "established a fund and comprehensive set of programs."[220]

California amended its utility code to include similar language for electricity. California's Public Utilities Code states that "recognizing that electricity is a basic necessity, and that all residents of the state should be able to afford essential electricity and gas supplies, the [C]ommission shall ensure that low-income ratepayers are not jeopardized or overburdened by monthly energy expenditures."[221] The provisions governing rate setting similarly state that "[i]n establishing residential electric and gas rates . . . the [C]ommission shall ensure that the rates are sufficient to enable [utilities] to recover a just and reasonable amount of revenue from residential customers as a class, while observing the

216. Cal. Pub. Utils. Comm'n, Decision Adopting Metrics and Methodologies for Assessing the Relative Affordability of Utility Service, D.20-07-032 (July 22, 2020).

217. *Id.*

218. 47 U.S.C. § 151.

219. Verclas & Hsieh, *supra* note 36, at 7.

220. *Id.*

221. CAL. PUB. UTIL. CODE § 382(b) (2023).

principle that electricity and gas services are necessities, for which a low affordable rate is desirable and while observing the principle that conservation is desirable in order to maintain an affordable bill."[222]

In addition, the CPUC has established strategic directives that "collectively define the universe of results" expected of the Commission.[223] These include a directive that within its jurisdictional authority, the Commission "[a]ssure that essential services are available to all Californians at an affordable price."[224] California has also begun work on an Environmental and Social Justice Action Plan that seeks to address, among other issues, discriminatory impacts in disconnections.[225]

b. Binding Targets or Performance Measures

A much more significant step towards improving affordability and access is setting specific targets or performance measures. Both policies require identifying a level of improvement that can be tracked and measured against a baseline.

i. Targets: Washington, California[226]

A policy target can be defined as a measurable policy outcome to be achieved by a certain date.[227] Policymakers use targets as a cornerstone of climate and clean energy policy. For example, many states have set climate policies requiring polluters to achieve net-zero greenhouse gas emissions by 2050[228] and requiring utilities to supply 100 percent zero-carbon electricity also by 2050.[229] Notably, utility commissions are often responsible for administering

222. *Id.* § 739(d)(2).

223. CAL. PUB. UTILS. COMM'N, STRATEGIC DIRECTIVES, GOVERNANCE PROCESS POLICIES, AND COMMISSION-STAFF LINKAGE POLICIES 3 (2020).

224. *Id.* at 7.

225. *Environmental and Social Justice Action Plan*, CAL. PUB. UTILS. COMM'N, https://www.cpuc.ca.gov/news-and-updates/newsroom/environmental-and-social-justice-action-plan (last visited Apr. 10, 2023).

226. In 2022 the Maryland legislature passed a bill that would have established a goal of providing energy efficiency retrofits to "all low-income households by 2030," but the bill was vetoed by the governor. H.B. 108, 444th Gen. Assembly, Reg. Sess. (Md. 2022); Ruth Ann Horton, *Opinion Hogan Veto Deprives Low-Income Marylanders of Their Fair Share of Energy Efficiency Benefits*, MD. MATTERS (June 24, 2022), https://www.marylandmatters.org/2022/06/24/opinion-hogan-veto-deprives-low-income-marylanders-of-their-fair-share-of-energy-efficiency-benefits/.

227. *See, e.g.*, *Target Setting*, CTR. FOR CORP. CLIMATE LEADERSHIP, EPA, https://www.epa.gov/climateleadership/target-setting (last updated Sept. 30, 2022).

228. *State Climate Policy Maps*, CTR. FOR CLIMATE & ENERGY SOLS., https://www.c2es.org/content/state-climate-policy/ (last visited Apr. 10, 2023) (navigate to "Greenhouse Gas Emission Targets").

229. *Id.* (navigate to "U.S. State Electricity Portfolio Standards").

the latter type of policy, known as a clean energy standard or renewable portfolio standard, so they are familiar with these targets.[230]

The Washington legislature included an affordability target to complement its clean energy target in its comprehensive clean energy bill, the Clean Energy Transformation Act (CETA), although the affordability target is not necessarily binding or enforceable. CETA requires that utilities "make programs and funding available for energy assistance to low-income households."[231] Most importantly, utilities "must demonstrate progress" toward meeting "[60] percent of the current energy assistance need, or increasing energy assistance by fifteen percent over the amount provided in 2018, whichever is greater, by 2030; and . . . [90] percent of the current energy assistance need by 2050."[232] "Energy assistance" is defined broadly as any program that "reduces the household energy burden" of customers.[233] The legislation explicitly includes providing investments in energy efficiency, providing rate discounts or subsidies, or providing access to ownership stakes in distributed energy resources."[234] "Energy assistance need" is defined as the amount of assistance needed to reduce energy burden to a level established by the state agency.[235]

California has established two targets that are not as broad as Washington's but demonstrate how targets can be used to address different aspects of affordability and access.

The first is a target for participation by low-income people in energy efficiency programs. As described in more detail in Part III.B.1., efficiency programs are critical tools because they reduce electricity demand on the grid, reduce greenhouse gas emissions, reduce customer bills, and improve affordable housing stock. A 2009 law amended California's low-income energy efficiency statute to require that utilities "ensure that all eligible low-income electricity and gas customers are given the opportunity to participate in low-income energy efficiency programs" by 2021.[236]

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230. Initially, states focused on passing renewable portfolio standards, which required utilities to supply a percentage of renewable energy—primarily wind and solar—by a certain year. More recently, states have begun to add clean energy standards, which typically require that all electricity supplied by some year have no greenhouse gas combustion emissions. Dan Gearino, *Inside Clean Energy Here Are 5 States That Took Leaps on Clean Energy Policy in 2021*, INSIDE CLIMATE NEWS (Dec. 23, 2021), https://insideclimatenews.org/news/23122021/inside-clean-energy-states-2021/.

231. WASH. REV. CODE § 19.405.120(2) (2023).

232. *Id.* §§ 19.405.120(2), 19.405.120(4).

233. *Id.* § 19.405.020(15).

234. *Id.* These strategies are covered in Parts III.B and III.C below.

235. WASH. REV. CODE § 19.405.020(16) (2023).

236. CAL. PUB. UTIL. CODE § 382(e) (2023). The statute specifically requires that this includes "customers occupying apartments or similar multiunit residential structures." *Id.* The law followed a CPUC order adopting "a programmatic LIEE initiative to provide all eligible LIEE customers the opportunity to participate in LIEE programs and to offer those who wish to participate all cost-effective energy efficiency measures in their residences by 2020." Cal. Pub. Utils. Comm'n, Decision Providing Direction for Low-Income Energy Efficiency Policy Objectives, Program Goals, Strategic Planning and the 2009–2011 Program Portfolio and Addressing Renter Access and Assembly Bill 2140 Implementation, D.07-12-051, (Dec. 20, 2007).

The CPUC implemented this provision by estimating the percentage of low-income customers that were both "eligible" for these programs and "willing to participate."[237] This factor would then be used to determine the number of customers that a utility would "be expected to treat" with low-income energy efficiency programs.[238] Based on a state-wide assessment and utility program tracking, the commission determined that, On average, 60 percent of low-income customers statewide were "willing and feasible to participate" in such programs.[239]

More recently, a 2017 California law required that the CPUC "develop policies, rules, or regulations with a goal of reducing, by January 1, 2024, the statewide level of gas and electric service disconnections for nonpayment by residential customers."[240] In addition, the act required that the commission consider potential increases in disconnections in ratemaking procedures and incorporate "residential utility disconnections for nonpayment" as a metric in gas and electricity rate cases.[241]

All three of these examples fall short of binding, enforceable targets, instead relying on what can be interpreted as escape valve clauses like "with a goal of" or "demonstrate progress."[242] This likely reflects the novelty of setting such targets. Perhaps unsurprisingly, early state renewable energy mandates were similarly very modest and became more ambitious as they proved their effectiveness.[243] What is important is that these two states are experimenting with requiring utilities to meet affordability and access outcomes in the same way that they required utilities to meet desired renewable energy supply outcomes.[244]

ii. Performance-Based Regulation: Hawaii

In recognition of the many perverse incentives of the traditional utility regulation model, a number of utility commissions are considering some form of "performance-based" regulation. The concept is that utilities' compensation is adjusted based on how the utility performs concerning certain metrics.[245] Under

237. Cal. Pub. Utils. Comm'n, Decision on Large Investor-Owned Utilities' California Alternative Rates for Energy (CARE) and Energy Saving Assistance (ESA), D.16-11-022, at 269–70 (Nov. 10, 2016).

238. *Id.* at 271.

239. *Id.* at 269–70.

240. CAL. PUB. UTIL. CODE § 718(a).

241. *Id.* § 718(b).

242. *Id.* § 718(a); WASH. REV. CODE § 19.405.120(2) (2023).

243. BARRY RABE, RACE TO THE TOP: THE EXPANDING ROLE OF U.S. STATE RENEWABLE PORTFOLIO STANDARDS 7 (2006).

244. For a related argument on how utility commissions should better consider state public health and environmental goals into regulation, *see* Jonas J. Monast & Sarah K. Adair, *A Triple Bottom Line for Electric Utility Regulation Aligning State-Level Energy, Environmental, and Consumer Protection Goals*, COLUM. J. ENV'T L. 1, 1 (2013).

245. Haw. Pub. Utils. Comm'n, Decision and Order No. 37787, *in re* Instituting a Proceeding to Investigate Performance-Based Regulation, at 1–2 (May 17, 2021) (establishing "suite of performance metrics") [Hereinafter Hawaii PUC Performance Metric Order]; *see generally* Haw. Pub. Utils. Comm'n,

Hawaii's model, a utility is judged on a suite of "performance incentives mechanisms" that provide the utility with "the opportunity to earn additional revenues based on exemplary performance in key areas."[246] Many performance measures track bread-and-butter utility regulation concerns, such as reliability and adequacy of service.[247] However, some of Hawaii's current and prospective performance measures address affordability and access.

For example, the Hawaii utility commission adopted a low- and moderate-income energy efficiency performance incentive mechanism. Hawaiian electric utilities can win a total of $2 million in incentive payments through their performance on three metrics: achieving a level of "energy savings" for low- and middle-income customers beyond an existing energy conservation target; a reduction of peak demand among these customers; and the number of participants in utility "affordability and accessibility" programs.[248]

In addition, the commission also established metrics for a "scorecard." These emerging metrics serve as performance incentive mechanisms in the future.[249] The scorecard metrics included the following affordability and access-related metrics:

- LMI Energy Burden: the "typical and average annual bill as a percentage of low-income average income" (defined as 150 percent of the Hawaii Federal Poverty Limit);
- Payment Arrangement: The percent of customers entered into payment arrangements; and
- Disconnections: Percent of disconnections for non-payment by customer class.[250]

Summary Table III.A: Authority, Data, Goals		
Sub-strategy (State profiled)		**Baseline limitation/ Innovation response**
A.1. Legal Authority		
Baseline	State PUC statutes generally use broad, undefined terms like "public interest"	• Some (but not all) courts have interpreted narrowly to prohibit "social ratemaking" • PUCs may have a history of narrow interpretation
Innovation: (WA)	Explicitly authorize PUC to address affordability/access	• Legal certainty • Clear mandate to PUC
A.2. Require Reporting of Data, Assessment		

Decision and Order No. 37507, *in re* Instituting a Proceeding to Investigate Performance-Based Regulation (Dec. 23, 2020) (establishing performance-based regulation framework to govern Hawaiian Electric) [hereinafter Hawaii PUC PBR Order].

246. Hawaii PUC PBR Order, *supra* note 245, at 2–3.

247. *Id.* at 149, 16–17 (detailing existing and new performance measures).

248. *Id.* at 29–32.

249. Hawaii PUC PBR Order, *supra* note 245, at 154–57.

250. Hawaii PUC PBR Order, *supra* note 245, at 65.

Baseline	PUCs have broad authority to require reporting, but few require detailed affordability, disconnection reporting	• Lacking understanding of scope of affordability/access problems
Innovation: (CA, MI)	Require reporting, assessment	• Provides data and analysis of the problem
A.3. Set Policy, Targets, or Performance Measures		
Baseline	N/A – state PUCs usually lack a clear mission to improve affordability and access outcomes	• Without express mission, goals, access and affordability is ignored or not prioritized
Innovation: (CA)	Make affordability/access part of statutory mission	• Supports PUC attention and action
Innovation: (WA, CA)	Set measurable target	• Requires progress toward specific affordability / access outcome
Innovation: (HI)	Establish performance measure	• Financially incentivizes utility progress toward affordability / access outcome

B. Lower Demand with Efficiency, Distributed Renewables

The second category covers policies that reduce low-income customer demand for utility-supplied electricity by providing access to energy efficiency improvements or distributed renewable generation.

Residential energy efficiency retrofit policies incentivize or subsidize improvements to customers' homes that reduce the amount of electricity used. For example, improvements can include replacing incandescent light bulbs with much more efficient LED bulbs; switching out older refrigerators or other energy-intensive appliances for newer, more efficient ones; or improving the insulation and weatherization of a home so that it requires less energy for heating in the winter and cooling in the summer.[251]

Distributed renewable energy refers to technologies like rooftop solar that allow customers to own, lease, or otherwise benefit from small-scale electricity-producing infrastructure.[252] Customers can then use the electricity produced or sell it to the grid when they do not need it.[253]

251. ENV'T DEF. FUND, LOW-INCOME ENERGY EFFICIENCY: A PATHWAY TO CLEAN, AFFORDABLE ENERGY FOR ALL 3 (2018).

252. *Renewable Energy Distributed Generation Policies and Programs*, U.S. DEP'T OF ENERGY, https://www.energy.gov/scep/slsc/renewable-energy-distributed-generation-policies-and-programs (last visited Apr. 10, 2023) ("Distributed generation is the term used when electricity is generated from sources, often renewable energy sources, near the point of use instead of centralized generation sources from power plants.").

253. Ari Peskoe, *Unjust, Unreasonable, and Unduly Discriminatory Electric Utility Rates and the Campaign against Rooftop Solar*, 11 TEX. J. OIL, GAS & ENERGY L. 101, 106 (2016).

These strategies have climate benefits and affordability benefits. Both strategies reduce the need for utility-supplied electricity and, therefore, reduce the need to run greenhouse-gas-producing power plants that still produce most of our electricity.[254] For low-income customers, both strategies permanently lower electricity bills because they permanently reduce demand for grid-supplied electricity.[255]

Many federal and state subsidies are available for energy-efficiency improvements and distributed renewables.[256] More affluent customers can benefit from these incentives, but lower-income customers have structural barriers—including a lack of capital and their frequent status as renters—to accessing these programs without additional support.[257] Often, racial minorities disproportionately lack access to these programs.[258] Scholars have noted a moral imperative to ensure that low-income people and historically disadvantaged groups have an equal opportunity to access these programs.[259] For these reasons, the state innovations detailed below are often considered important components of achieving energy justice.

1. Energy Efficiency Improvements to Low-income Housing

Energy efficiency is often referred to as the "first fuel" because reducing energy demand is usually the cheapest and most environmentally responsible way to ensure that energy supply meets energy demand.[260] It is particularly important in the clean energy transition because it will already require a tremendous build-out of zero-carbon electricity generation capacity; reducing demand lessens the total capacity needed.[261] Providing energy efficiency

254. *What is U.S. Electricity Generation by Energy Source?*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/faqs/faq.php?id=427&t=3 (last updated Mar. 2, 2023) (noting that 60 percent of U.S. electricity is produced by fossil fuel-powered sources). These strategies can be even more valuable if they reduce electricity use at time when there is greatest demand on the grid.

255. *See* BROWN ET AL., *supra* note 34, at 45.

256. *Renewable Energy Explained Incentives*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/energyexplained/renewable-sources/incentives.php (last updated Dec. 30, 2022).

257. *Federal and State Tax Credits*, LOW-INCOME SOLAR POL'Y GUIDE, https://www.lowincomesolar.org/toolbox/investment-tax-credit-state-tax-credits/ (last visited Aug. 8, 2022) (noting that tax credit incentives have "limited . . . utility to low-income households"); *Low-Income Community Energy Solutions*, DEP'T OF ENERGY, https://www.energy.gov/eere/slsc/low-income-community-energy-solutions (last visited April. 10, 2023) (noting that 59 percent of low-income households are renters).

258. *See, e.g.*, Walton, *supra* note 215.

259. *See, e.g.*, Welton & Eisen, *supra* note 11, at 330–33.; DeVar, *supra* note 11, at 1023; BAKER, *supra* note 11, at 9–10.

260. Brian Motherway, *Energy Efficiency is the First Fuel, and Demand for it Needs to Grow*, INT'L ENERGY AGENCY (Dec. 19, 2019), https://www.iea.org/commentaries/energy-efficiency-is-the-first-fuel-and-demand-for-it-needs-to-grow.

261. *See id.*

services is also an important economic development tool in the clean energy transition because it is labor-intensive and creates well-paying local jobs.[262]

Providing energy efficiency retrofits to low-income housing can reduce customer energy usage by 13 to 31 percent and, correspondingly, reduce customer bills.[263] It also provides other consumer benefits, including improving the quality and safety of affordable housing.[264]

Yet providing energy efficiency improvements to low-income households presents more challenges—and higher costs—than providing such services to other households.[265] Lower-income homes are generally smaller and have higher transaction costs.[266] Providers get more bang for their buck by weatherizing one larger home than three smaller ones. The lower-quality housing that many lower-income people live in may require more expensive improvements—for example, new windows or more extensive weatherization.[267] In addition, low-income households tend to be harder to inform and educate about program opportunities.

Energy efficiency retrofit programs for low-income households are therefore both an opportunity and a challenge.

This Part focuses on energy efficiency improvements to housing for low-income people, but there are other types of energy efficiency programs as well. Many utilities, for example, implement programs to provide customer education about energy efficiency, offer free or subsidized home energy efficiency audits, provide rebates for upgrades to more efficient appliances, or provide free or subsidized efficient light bulbs.[268] While these programs can reduce overall electricity demand and have some effect in lowering utility bills, home retrofits typically have a much greater impact in terms of reducing customer bills and reducing demand for low-income people (although they are also significantly more expensive).[269]

This Subpart first describes two baseline low-income energy efficiency programs—the federal Weatherization Assistance Program and ratepayer-funded utility programs—and describes their limitations. The Subpart then profiles three examples of state innovations: improved targeting of customers most in need, increased flexibility in funding use, and the use of dedicated non-profit efficiency agencies.

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262. *See Multiple Benefits of Energy Efficiency*, INT'L ENERGY AGENCY, https://www.iea.org/reports/multiple-benefits-of-energy-efficiency/economic-benefits-2 (last visited Apr. 10, 2023).

263. U.S. DEP'T OF ENERGY, LOW-INCOME HOUSEHOLD ENERGY BURDEN VARIES AMONG STATES—EFFICIENCY CAN HELP IN ALL OF THEM 1 (2019).

264. *Id.*

265. BROWN ET AL., *supra* note 34, at 37; *see also* ENV'T DEF. FUND, *supra* note 251, at 4.

266. *See* BROWN ET AL., *supra* note 34, at 11–12, 37 (noting high-income households consume more energy even though they use less energy per square foot, i.e., because they have larger housing units; also describing lower cost-effectiveness of providing energy efficiency services to low-income households).

267. *Id.* at 12 (explaining that lower-income people often live in older, less efficient homes).

268. *See, e.g.*, Heather Payne, *Electrifying Efficiency*, 40 STAN. ENV'T L.J 57, 70 (2021).

269. *See* BROWN ET AL., *supra* note 34, at 21–22.

a. Baseline: Federal Weatherization Assistance Program

The federal Department of Energy Weatherization Assistance Program (WAP) provides formula grants to states; states then provide grants to service providers to weatherize the homes of lower-income people.[270] States develop regulations but must adhere to federal program requirements relating to eligibility, efficiency measures implemented, energy audits and inspections, and other factors.[271] Many states add to the operating budget of their WAP programs with federal LIHEAP funds, state funds, or utility funds.[272]

States develop a plan to implement the WAP program.[273] Based on federal guidelines, this includes identifying qualifying income level.[274] States must also determine how to implement a requirement that priority must be given to households with elderly persons, persons with disabilities, families with children, high residential energy users, and households with a high energy burden.[275]

The most significant criticisms of the federal WAP program are that it is underfunded, restrictive in its eligibility requirements, and can fail to target those customers who could most benefit.

In 2018, the program was responsible for weatherizing about 90,000 homes, which amounts to only 0.2 percent of the 38.6 million eligible households in the United States.[276] In most states, there is a long waiting list every year.[277] The program did receive a substantial boost of $3.5 billion in funding in the Biden infrastructure bill, but this was one-time funding.[278]

In addition, there is little evidence that the program effectively targets households with the most need. Although states are required to prioritize households with elderly and disabled persons, children, those with high energy use, and those with high energy burden, a review of the program found that over 80 percent of eligible households qualify as having a vulnerable individual.[279] Because the vast majority of all eligible households qualify as priority

270. *Id.* at 29.

271. 10 C.F.R. §§ 440.1–440.30 (2023).

272. *See* NAT'L ASS'N FOR STATE CMTY. SERVS. PROGRAMS, WEATHERIZATION ASSISTANCE PROGRAM: FUNDING REPORT PY 2018 (2019).

273. 10 C.F.R. § 440.14.

274. *Id*. § 440.14(c)(6)(xii).

275. *Id*. § 440.16(b).

276. Ariel Drehobl, *Weatherization Cuts Bills and Creates Jobs but Serves Only a Tiny Share of Low-Income Homes*, ACEEE (July 7, 2020), https://www.aceee.org/blog-post/2020/07/weatherization-cuts-bills-and-creates-jobs-serves-only-tiny-share-low-income.

277. As an example, in New Mexico during the summer of 2019 there were 2,412 families on the waitlist, and the state agency only had funds to serve 487 households during that fiscal year. N.M. Mortg. Fin. Auth., Presentation to Oversight Committee (2019) (on file with author).

278. Laura Benshoff, *A Low-Income Energy-Efficiency Program Gets $3.5B boost, but Leaves Out Many in Need*, NPR (May 13, 2022), https://www.npr.org/2022/05/13/1096114029/low-income-energy-efficient-weatherization-program-3-5b-needy.

279. DAVID CAROLL ET AL., OAK RIDGE NAT'L LAB'Y, ORNL/TM-2015/21, NATIONAL WEATHERIZATION ASSISTANCE PROGRAM EVALUATION: ELIGIBLE POPULATION REPORT xxi (2014).

households, there is no effective federal guidance on what households should actually be prioritized.

In addition, the program restricts what types of improvements may be funded. In particular, the program does not cover improvements to the building envelope—so, for example, a house that needs to fix a hole in the roof would not qualify because fixing the hole is not covered and is a prerequisite for improving insulation.[280] This is a significant barrier because it is common for low-income housing to have structural problems.[281]

Finally, the documentary burden of applying for weatherization assistance is high. Individual applicants must provide proof of income and show proof of legal residency—a substantial barrier in many immigrant communities.[282]

b. Baseline: Utility Low-income Energy Efficiency Programs

The second widespread type of low-income energy efficiency program is utility programs funded by ratepayers targeting low-income customers. These programs—sometimes referred to as customer energy efficiency programs—are usually implemented pursuant to state policies requiring utilities to achieve some level of energy savings, with a further requirement that some percentage of energy savings or funds expended must target low-income households.[283]

Often, utilities set aside some of the funds for the benefit of low-income customers in residential retrofits.[284] In many cases, however, the majority of funds are used for programs such as free lightbulbs.[285]

Criticisms of utility programs include that utilities are not very effective at providing utility services; that programs are too restrictive in what improvements are allowed; and that they often do not reach households most in need. In 2018, only 10 percent of utility spending on energy efficiency went to low-income communities.[286]

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280. U.S. DEP'T OF ENERGY, WEATHERIZATION PROGRAM NOTICE 19-5, INCIDENTAL REPAIR MEASURE GUIDANCE, INCLUDING: WINDOWS, DOORS, & ROOFS 4 (2019); *see also* Benshoff, *supra* note 278.

281. Benshoff, *supra* note 278 (noting five to twenty percent "deferral" rates due to repair needs in jurisdictions that track such rates).

282. *See* OFF. OF CMTY. SERVS., U.S. DEP'T OF HEALTH & HUM. SERVS., REVISED GUIDANCE: LIHEAP IM 1999-10 ON FEDERAL PUBLIC BENEFITS UNDER THE WELFARE REFORM LAW (1999) (stating that "weatherization services performed to a single-family dwelling unit are subject to the alien verification requirements," even though multi-family homes are not subject to this requirement).

283. Not all customer energy efficiency programs have a low-income set-aside. For an overview of utility customer energy efficiency programs in each state, *see Customer Energy Efficiency Programs*, ACEEE, https://database.aceee.org/state/customer-energy-efficiency-programs (last visited Apr. 10, 2023).

284. *Id.*

285. *Id.*

286. Dan Power, *Here's What We Know About Energy Efficiency Access In Low-Income Communities*, ALL. TO SAVE ENERGY (June 15, 2021), https://www.ase.org/blog/heres-what-we-know-about-energy-efficiency-access-low-income-communities.

One study found that only 62 percent of utility efficiency funding was actually used to provide efficiency services, with the remaining 38 percent used for administration, marketing, and other expenses.[287] This compares unfavorably with services provided by non-profits.[288] Some scholars have also argued that despite their investments, public utilities have not been very effective at achieving actual energy savings.[289]

In addition, utilities receive a substantial return on investment for any capital expended in efficiency programs, and ratepayers ultimately pay both the program's costs and profits.[290] The substantial profit utilities recover—usually around 10 percent—means that the efficiency programs are more expensive than if non-profits or public agencies implemented them. Heather Payne has argued more generally that utilities also have a conflict of interest in operating efficiency programs and are subject to regulatory capture.[291]

Moreover, utility efficiency programs are typically required to pass a "cost-effectiveness" test, the idea being that using ratepayer dollars for these investments can only be justified as a component of a "just and reasonable" rate if the investment provides a total benefit to the grid from demand reduction that is valued more than its cost.[292] Consequently, some low-income customers—particularly those in substandard housing that requires improvements deemed not "cost-effective"—may not qualify. There has been substantial criticism that the cost-effectiveness test used by many utility commissions has an unwarrantedly narrow conception of benefits.[293]

Moreover, there is some evidence that utility efficiency programs may have discriminatory impacts. For example, an analysis from Michigan showed that efficiency investments from the state's largest utility, DTE, "varied dramatically in relation to the concentration of Black households."[294] Instead, the "overwhelming majority of DTE expenditures on major measures go to zip codes without concentrated poverty."[295] Similarly, a study analyzing where utility-subsidized light bulbs were offered for sale found that energy-efficient bulbs

287. Payne, *supra* note 268, at 70 (citing *Utility Energy Efficiency Spending and Savings Declined in 2018*, U.S. ENERGY INFO. ADMIN. (Feb. 27, 2020), https://www.eia.gov/todayinenergy/detail.php?id=42975).

288. *Id.*

289. *Id.* at 75 (citing statistics that nationally, utility efficiency programs have saved "just 0.71% of electricity demand").

290. *Id.* at 71.

291. *Id.* at 75–76.

292. *See generally* EPA, NAT'L ACTION PLAN FOR ENERGY EFFICIENCY, UNDERSTANDING COST-EFFECTIVENESS OF ENERGY EFFICIENCY PROGRAMS: BEST PRACTICES, TECHNICAL METHODS, AND EMERGING ISSUES FOR POLICY MAKERS (2008).

293. *See, e.g.*, ACEEE, COST-EFFECTIVENESS TESTS: OVERVIEW OF STATE APPROACHES TO ACCOUNT FOR HEALTH AND ENVIRONMENTAL BENEFITS OF ENERGY EFFICIENCY (2018).

294. Sharonda Williams-Tack, Assoc. Dir. of Energy Just. Campaign, Sierra Club, Presentation at 20th Institute for Natural Resources Law Teachers, Advancing Racial Justice in Utility Programs at 5 (June 2, 2022) (on file with the author).

295. *Id.*

were less available in high-poverty areas and smaller stores and, where available, cost more.[296]

Finally, mandates for such programs are often confined to investor-owned utilities. Households living in the service territories of rural electricity cooperatives often do not have access to utility efficiency programs.[297]

c. Innovation: Targeting Communities, Customers with Most Need

The first innovation highlighted here is state programs that seek to provide energy efficiency improvements to communities and households with a particularly high or disproportionate energy burden. These low-income households will generally receive the highest affordability benefit from energy retrofits. They are also the low-income households that will likely provide the highest degree of energy savings, providing a greater benefit to grid management and greenhouse gas reductions.

There are two emerging models of targeting customers in need worth highlighting. The first is using advanced metering data from utilities to prioritize low-income customers with the highest energy burden. For example, consumer groups and environmental advocates won a settlement with Michigan's largest utility, DTE Energy, to specifically use energy burden maps to decide where to invest efficiency investments.[298] Advocates noted that using energy burden aligned closely with racial factors (because communities with a high portion of Black residents also had a high energy burden) and, therefore, helped address disparities in energy efficiency funding.[299]

Another emerging model focuses on geographic concentrations of high energy burden. This model seeks to address persistent challenges in outreach to lower-income and minority communities by focusing on a single geographic area and partnering with community organizations that already have a relationship with families in the community. An example of this approach is the Community Energy Efficiency Development (CEED) Block Grant Act enacted in New Mexico in 2022,[300] which provides state funds to local governments for providing energy efficiency services to geographic areas that are identified as underserved communities, including communities that have a high energy burden.[301] One of the anticipated benefits of this model is that it will provide

296. Tony G. Reames et al., *An Incandescent Truth Disparities in Energy-Efficient Lighting Availability and Prices in an Urban U.S. County*, 218 APPLIED ENERGY 95, 102 (2018).

297. Miriam Fischlein et al., *Carbon Emissions and Management Scenarios for Consumer-Owned Utilities*, 12 ENV'T SCI. & POL'Y 778, 782 (2009) (noting that of the 27 state programs that set binding energy efficiency mandates on utilities, 16 completely excluded coops).

298. Mich. Pub. Serv. Comm'n, Order Approving Settlement Agreement *in re* Regulatory Reviews, Revisions, Determinations, and/or Approvals Necessary for DTE Electric Company to Fully Comply with Public Act 295 of 2008, Case No. U-20876, at 6 (Jan. 20, 2022); Walton, *supra* note 215.

299. Williams-Tack, *supra* note 294.

300. The author and the clinic he supervises were involved in developing this legislation.

301. 2022 N.M. Laws Ch. 10 (H.B. 37, sec. 2.J.) (codified at N.M. STAT. ANN. § 62-17A-2(J)) (defining "underserved community").

economy-of-scale benefits by focusing retrofits on specific communities instead of retrofitting residences broadly dispersed across the state.[302]

d. Innovation: Increased Flexibility for Eligibility and Structural Improvements

Both federal weatherization and state utility programs are constrained by restrictions on who is eligible and what improvements can be made through the program.

New Mexico's CEED program provides broad flexibility to local governments on both fronts. For example, governments winning grants can qualify households through traditional proof-of-income or alternatively qualify households by showing that the housing unit qualifies as low-income affordable housing.[303] The legislation does not require verification of citizenship or legal residency.[304]

In addition, CEED allows improvements to housing that include improvements for safety—for example switching from wood-fired or natural-gas cooking, both of which harm indoor air quality.[305] It also does not impose a cost-effectiveness test on the program.[306]

e. Innovation: Developing dedicated efficiency agencies

Several states have developed third-party agencies to provide energy efficiency services, addressing concerns about having for-profit utilities or state agencies without the requisite expertise to implement such programs. The oldest example is the Vermont Efficiency Improvement Corporation (VEIC), a non-profit organization that serves as the third-party agency providing improvement services in Vermont and Washington, D.C.[307] A similar model operates in Maine.[308]

302. This conclusion is drawn from author's discussions with bill sponsors, drafters, and advocates.

303. 2022 N.M. Laws Ch. 10 (H.B. 37, sec. 4.B.(4)) (codified at N.M. STAT. ANN. § 62-17A-4(B)(4)).

304. *See id.* (omitting residency requirement from project eligibility criteria).

305. *Id.* (H.B. 37, sec. 2.F.) (codified at N.M. STAT. ANN. § 62-17A-2(F)) (defining "energy efficiency" to include "health and safety measures that use efficient equipment or devices to improve indoor air or drinking water quality.").

306. *See id.* (H.B 37, secs. 2.F, 4.B.(4)) (codified at N.M. STAT. ANN. §§ 62-17A-2(F), 62-17A-4(B)(4)) (including no cost-effectiveness requirement in the definition of energy efficiency nor in the project eligibility criteria).

307. *Our Story*, VT. ENERGY INV. CORP., https://www.veic.org/company/story (last visited Apr. 10, 2023).

308. BASAV SEN ET AL., INST. FOR POL'Y STUDS., ENERGY EFFICIENCY *WITH* JUSTICE: HOW STATE ENERGY EFFICIENCY POLICY CAN MITIGATE CLIMATE CHANGE, CREATE JOBS, AND ADDRESS RACIAL AND ECONOMIC INEQUALITY 21 (2018).

1. Low-income Distributed Renewable Energy (Shared Solar)

Rooftop solar technology has allowed many electricity customers to become electricity producers. Homeowners typically purchase or lease rooftop solar technology, taking advantage of federal tax credits and often state subsidies.[309] When the sun is shining, the electricity produced is often credited by the utility against the homeowner's electricity bill.[310] While this requires a substantial upfront investment from the homeowner in the cost of capital infrastructure upfront, it can reduce a customer's electricity bill to a nominal amount.[311]

Low-income people can have difficulty accessing these opportunities without special programming.[312] Most are renters who do not have the authority to make changes to the infrastructure of their buildings.[313] Moreover, low-income people who own their own homes—for example, those who may have inherited a family home—will often not have the savings or the credit to finance a substantial upfront investment in solar cells.[314]

Community solar or shared solar policies seek to address some of these concerns by creating models that allow customers to participate in distributed solar technology through a communal or cooperative approach, even if they do not have capital or their own rooftop space.[315]

Although there are many different community solar models, the general idea is that a group of customers act collectively to receive the benefits of owning a small renewable powerplant interconnected into the electricity grid, similar to rooftop solar.[316] In most cases, participating customers share the benefits of

309. *Texas and Florida Had Large Small-Scale Solar Capacity Increases in 2020*, U.S. ENERGY INFO. ADMIN. (Mar. 4, 2021), https://www.eia.gov/todayinenergy/detail.php?id=46996.

310. This policy is called net energy metering. *See* Peskoe, *supra* note 253.

311. Even if a customer produces enough electricity to offset all of their usage, they usually pay a small fixed monthly charge to the utility reflecting the benefit of being connected to the grid. *See* FED. TRADE COMM'N: CONSUMER ADVICE, *Solar Power for Your Home* (June 2015), https://consumer.ftc.gov/articles/solar-power-your-home.

312. One study estimates that forty-nine percent of households are unable to host a rooftop solar system either because they are renters or because they do not own residence that can accommodate rooftop solar. DAVID FELDMAN ET AL., NAT'L RENEWABLE ENERGY LAB'Y TECH. REP. NO. 6A20-63892, SHARED SOLAR: CURRENT LANDSCAPE, MARKET POTENTIAL, AND THE IMPACT OF FEDERAL SECURITIES REGULATION v (2015).

313. *Low-Income Community Energy Solutions*, *supra* note 257 (noting that 59 percent of low-income households are renters).

314. *Low- and Moderate-Income Solar Policy Basics*, NAT'L RENEWABLE ENERGY LAB'Y, https://www.nrel.gov/state-local-tribal/lmi-solar.html (last visited Apr. 10, 2023).

315. For a description of the differences between "community-owned" and "shared solar" *see* DeVar, *supra* note 11, at 1025.

316. *Id.* at 1023–25.

avoided electricity costs.[317] There are a variety of models for how such programs can be set up, varying from shared ownership to subscription models.[318]

a. Baseline: State Community Solar Policies

Community solar is gaining traction. At least twenty states have adopted a policy authorizing community solar projects.[319] But relatively few of these states have adopted program designs that effectively prioritize and incentivize participation for low-income households.[320] Without such program design elements, scholars argue that existing programs will not provide low-income households an equitable opportunity to participate.[321] Subin DeVar identifies three common failures of such programs—ensuring that the program design will make project financing and construction feasible; ensuring equitable access for low-income customers; and ensuring that the benefits of participating are sufficient to incentivize low-income customer participation.[322] DeVar describes how California's first attempt at a community solar program failed to generate any successful projects because it did not meet these criteria.[323]

b. Innovation: Equitable Community Solar with Effective Low-income Incentives

A report published by the Institute for Local Self Reliance recommends that policies be structured to provide monetary incentives to shared solar projects that incentivize participation of low-income and marginalized communities, make participation simple with on-bill credits, and streamline sign-up.[324]
Illinois has enacted one of the country's most progressive shared solar programs—Illinois Solar for All.[325] The program reserves 25 percent of the program capacity for solar projects "serving low-income and historically polluted communities that cannot install rooftop solar due to cost, space, or limits

317. *Id.* at 1027 (describing virtual net energy metering).

318. *Green Power Markets Shared Renewables*, EPA, https://www.epa.gov/green-power-markets/shared-renewables#:~:text=Shared%20renewables%2C%20also%20known%20as,from%20their%20home%20or%20business (last updated Nov. 21, 2022).

319. In many states, special authorization is needed because of utilities otherwise have no mandate, and no incentive, to interconnect such facilities under favorable rates.

320. *See State Policies for Shared Renewable Energy*, NAT'L CONFERENCE OF STATE LEGISLATORS https://www.ncsl.org/research/energy/state-policies-for-shared-renewable-energy.aspx (last visited Mar. 5, 2023) (showing only Illinois, Maryland, New York, and Rhode Island with set-asides for low-income customers); TIMOTHY DENHERDER-THOMAS ET AL., INST. FOR LOC. SELF-RELIANCE, EQUITABLE COMMUNITY SOLAR: POLICY AND PROGRAM GUIDANCE FOR COMMUNITY SOLAR PROGRAMS THAT PROMOTE RACIAL AND ECONOMIC EQUITY 3–4 (2020); *see generally* DeVar, *supra* note 11.

321. DeVar, *supra* note 11, at 1028–30 (describing the failure of California program to attract low-income participation).

322. *Id.* at 1028.

323. *Id.* at 1032–33

324. DENHERDER-THOMAS ET AL., *supra* note 320, at 3.

325. 2016 Ill. Legis. Serv. 99-906 (2016) (S.B. 2814) (codified at 20 ILL. COMP. STAT. ANN. 3855/1-56 (2022)).

in local zoning laws."[326] The program structure guarantees that subscribers will reduce their bills by 50 percent with no up-front cost.[327]

Summary Table III. B. Reduce Demand		
Sub-strategy		Baseline limitation/ Innovation response
B.1. Low-income Energy Efficiency Improvements		
Baseline	Federal weatherization assistance programs	• insufficient funding; long waitlist • high administrative burden • constraints on what improvements can be made • not targeted to highest energy burden
Baseline	Utility low-income energy efficiency programs	• relatively poor performance • program costs include significant profit for utilities • only "cost-effective" improvements can be made • may be discriminatory • often not available to coop customers
Innovation: (MI, NM)	Targeting individuals, communities with most need	• ensures that efficiency investments are made to customers who could most use the help
Innovation: (NM)	Increased flexibility for eligibility and services provided	• ensures that documentary burden, poor housing condition not a barrier to efficiency investment
Innovation: (VT, DC, ME)	Developing dedicated efficiency agencies	• ensures that efficiency improvements conducted by agencies with appropriate expertise, mission
B.2. Low-income Distributed Renewable Energy		
Baseline	State community programs without strong LI components	• doesn't effectively incentivize participation of low-income customers or provide significant savings.
Innovation: (IL)	State community solar program with effective low-income incentives	• incentivizes projects with strong low-income participation.

326. Abby Hornberger & Maria McCoy, *Illinois's Community Solar Program*, INST. FOR LOC. SELF-RELIANCE (Mar. 31 2021), https://ilsr.org/illinois-community-solar-program/; *see also id*.

327. Hornberger & McCoy, *supra* note 326; 220 ILL. COMP. STAT. ANN. 5/16-111.7(b).

C. Make it Affordable

The third strategy focuses on reducing the cost of service charged to low-income customers to make electricity service universally affordable. Two types of policies achieve this end: subsidies that pay for a portion of a low-income customer's bill, and lower rates for low-income customers.

This Article identifies two "baseline" policies in each category. Both policies were first introduced as responses to the energy crisis of the 1970s.[328] First is LIHEAP, which chiefly provides heating subsidies to customers. The program, however, is underfunded and only reaches a fraction of the need. Even for people who receive the program, it is rarely enough to make electricity service affordable. A second baseline policy is fixed low-income rate programs, sometimes referred to as lifeline rates. While these rates certainly help with affordability, they are not targeted at any specific level of affordability. For some low-income customers, these discount rates may make electricity affordable; for others, they do not.

The chief innovation in this category are rates or subsidies tied to a level of affordability based on the income of specific customers or tiers of customers.

1. Baseline: LIHEAP

The federal LIHEAP program provides critical support for low-income households. First authorized in 1981, LIHEAP provides annual formula grants to states, tribes, and territories.[329] Although recipient jurisdictions can use the funding in several ways, the most widespread and relevant use is providing funds for cash assistance with heating and cooling costs.[330]

LIHEAP heating and cooling funding may be used to help households at or below 150 percent of poverty or 60 percent of state median income, whichever is higher, although states may set lower limits.[331] States have significant discretion on how to implement the program within federal guidelines. For example, states determine how to prioritize who gets funding and how much funding to provide per applicant.[332] The implementing agency usually pays funds directly to the utility.[333]

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328. Gordon L. Weil & Allan T. Ostergren, *Energy Assistance a New Welfare Category*, 5 J. INST. SOCIOECON. STUDS. 77, 78, 84 (1980).

329. 42 U.S.C. §§ 8621–8630.; *see generally* LIBBY PEARL, CONG. RSCH. SERV., RL31865, LIHEAP: PROGRAM AND FUNDING (2018); Weil & Ostergren, *supra* note 328, at 78 (describing how LIHEAP evolved from emergency funding program during energy crisis to prevent low-income people from "freezing to death.").

330. Pearl, *supra* note 329, at 1–2.

331. *Id.* at 3.

332. For example, each state must agree to "provide . . . the highest level of assistance . . . to those households which have the lowest incomes and the highest energy costs or needs in relation to income, taking into account family size," but it is up to states to determine how to meet this requirement. 42 U.S.C. § 8624; *see also* Pearl, *supra* note 329, at 1, 5.

333. Pearl, *supra* note 329, at 5.

LIHEAP is the single most important source of support for electricity costs—in fiscal year 2022, LIHEAP provided $3.8 billion in regular funding.[334]

One significant limitation of LIHEAP is that it can only be used to pay for heating and cooling costs,[335] so states may not use the funds to reduce the costs of all electricity utility services. The vast majority of LIHEAP funding is used to defray heating costs.[336]

A second major limitation is the level of annual funding. Unlike some other federal programs, such as Medicaid or Supplemental Nutrition Assistance Program, meeting eligibility requirements for LIHEAP does not mean that a family will receive LIHEAP—this depends on the amount of funding available and how the jurisdiction in question chooses to allocate that funding.[337] In general, LIHEAP only serves a fraction of eligible households because of inadequate funding. In fiscal year 2017, the last year for which U.S. government data is available, LIHEAP served only 15 percent of the eligible population.[338] In the same year, LIHEAP provided an average of $432 in annual heating benefits to recipients—covering only about 15 percent of total recipient heating costs.[339] Moreover, LIHEAP average benefits are declining—-in constant dollars, the average LIHEAP heating benefit has shrunk 26 percent since 1981 (this does not account for the recent one-time appropriation for during the COVID crisis, for which such data is not yet available).[340]

Several states, including Maryland, Washington, and Oregon, have also implemented low-income energy assistance programs to supplement LIHEAP.[341]

2. Baseline: Low-income Rates

Where energy assistance programs like LIHEAP provide cash subsidies to low-income customers, low-income rates set a lower rate that is only available

334. *LIHEAP Fact Sheet*, U.S. DEP'T OF HEALTH & HUM. SERVS., https://www.acf.hhs.gov/ocs/fact-sheet/liheap-fact-sheet (last visited Apr. 10, 2023). Note that substantial supplemental funds for LIHEAP were allocated by Congress in COVID relief bills. *Id.*

335. 42 U.S.C. §§ 8621(a), 8622(6), 8624(b)(1)(A) (authorizing grants to states to assist low-income households "primarily in meeting their immediate home energy needs," defining "home energy" to mean "a source of heating or cooling in residential dwellings," requiring states to certify they will limit use of funding for specific purposes, including "home energy costs.").

336. ADMIN. FOR CHILD. & FAMS., U.S. DEP'T HEALTH & HUM. SERVS., LOW INCOME HOME ENERGY TRENDS FOR FISCAL YEAR 2017, at viii (2018) [hereinafter LIHEAP TRENDS].

337. Pearl, *supra* note 329, at 6.

338. The percentage of eligible recipients receiving aid has steadily fallen since 1981 as a result of "higher home heating bills and an increase in the size of income eligible population." LIHEAP TRENDS, *supra* note 336, at viii, 22. These figures don't include increases in the customers receiving LIHEAP that likely resulted from supplemental funding provided in COVID relief bills. Note, however, that fiscal year 2022 federal LIHEAP appropriation has returned to pre-COVID levels. *See LIHEAP Fact Sheet*, *supra* note 334.

339. LIHEAP TRENDS, *supra* note 336, at 25, 27.

340. *Id.* at 25 fig.2-24.

341. Weil & Ostergren, *supra* note 328, at 82–83; NCLC TREATISE, *supra* note 90, § 7.2.3.4.

to low-income people.[342] Low-income rates are a longstanding idea but did not become common until the 1970s energy crisis.[343]

In the 1978 PURPA legislation, Congress included a variety of provisions intended to promote conservation and grow domestic energy sources.[344] One of these provisions required state public utility commissions to consider implementing a "lifeline rate," also described as a "rate for essential needs" lower than other rates.[345] This provision came in the context of a broader goal of nudging utility commissions away from declining block rates to encourage conservation. Declining block rates incentivized higher consumption by reducing the rates consumers would pay for higher usage levels—in other words, a volume discount.[346] PURPA required PUCs to consider eliminating declining block rates.[347] Against this backdrop of "rate reform" to encourage conservation, the legislation also sought to encourage utility commissions to consider lifeline rates as one way to ensure that basic electricity service was affordable.

PURPA did not specify the form of the lifeline rate or who should qualify. But the general idea was that "a certain minimum amount of electricity or gas energy is required for essentials" and that, therefore, special low rates should be provided so that all customers "can afford at least this minimum amount" of electricity.[348]

In many states, there was opposition to the idea of low-income rates because such a rate would require some customers to subsidize others or because such policy should be made through legislative subsidies and not through rates.[349] The

342. Sometimes such rates are only available to low-income elderly people, for example in Missouri's Independence Rate Assistance Program. *See* OREGON REPORT, *supra* note 99, at 30. Generally, where utilities offer low-income rates, low-income customers can both access the low-income rate *and* use LIHEAP to pay a portion of their bills.

343. As Chan and Klass point out, an early low-income rate was proposed in the New Deal era. Chan & Klass, *supra* note 11, at 26.

344. *See* 16 U.S.C. § 2621 (requiring PUCs to consider specific federal regulatory standards and make a determination whether to adopt them, including standards for rate designs that promote conservation and conservation investments); *id.* § 824a-3 (requiring that utilities allow small renewable and alternative energy "qualifying facilities" to interconnect into the electricity grid and requires the utilities to purchase the power at avoided cost).

345. One of the federal standards PURPA required state utility commissions to consider was the "cost of service standard" that generally requires rates charged to a class of customers to "reflect the costs of providing electric service to such class." *Id.* § 2621(d)(1). The requirement for utility commissions to consider lifeline rates, however, expressly exempts lifeline rates from the cost-of-service standard. *Id.* § 2624(a); *see also* H.R. REP. NO. 95-1750, at 77–78 (1978) ("The purpose of this section is to authorize lifeline rates as an exception to the Federal standard on cost of service (section 111 (d) (1)). Thus . . . [a state PUC that adopted the cost-of-service standard would not be prohibited the] adoption of lifeline rates as well, even though a certain portion of the charge to residential electric consumers would not necessarily reflect the cost of providing service to them").

346. Richard E. Morgan, *Fall of Declining Blocks PURPA Spurs Rate-Structure Victories in Nine States*, 7 POWER LINE 1, 1 (1981).

347. *Id.*; 16 U.S.C. §§ 2621(a), (d)(2).

348. Weil & Ostergren, *supra* note 328, at 84.

349. *Id.* at 84–85.

literature suggests that only a minority of states adopted such rates in response to PURPA.[350]

Where such rates were authorized, they frequently implemented simple discounts or credits. For example, New Jersey initially implemented a $100 annual credit for low-income customers.[351] Other programs focused on particularly vulnerable customers. In West Virginia, for example, the utility commission required that during winter heating months, all gas and electric utilities must provide a 20 percent discount to customers who are elderly and low-income.[352]

Any program that reduces bills helps with the mission of affordability. Many of these early programs used a fairly blunt approach, such as a flat credit, like in Maryland, or a flat percentage discount for all qualifying customers, like West Virginia. While these discounts were helpful, they did not seek to ensure that the actual bill was "affordable" for a specific household.

3. Innovation: Low-income Rates Tied to Affordability Level

The chief innovation identified here is low-income rates or subsidies expressly designed to provide a level of support that reduces utility bills to a level of "affordability" based on a customer's income while maintaining an incentive to continue to conserve electricity.

Affordability is usually defined as a percentage of annual income, often between 4 and 10 percent. For example, at a 6 percent affordability level, a family of four with an income of $27,000—just below the federal poverty level—would be limited to paying no more than $1,620 on electric and gas utility bills for the year, or not more than $135 per month, even if that amount would not cover the total cost of their energy usage.[353] In these programs, the highest discount or subsidy goes to those with the lowest incomes. In contrast to flat discount programs, when adequately funded, these programs guarantee a level of "affordability."

States have implemented two general approaches: a "percentage-of-income program" (PIPP) that tailors a discount to each qualifying household or a tiered approach that provides discounts by income tier. The difference is that the "straight PIPP" program is more precise in reaching a level of affordability for a

350. *See, e.g.*, Herbert Blinder, *How Electric Rates are Changing*, 38 PUB. POWER 46, 47 (1980) (noting the Blinder's contemporaneous experience suggesting that, of those states that have considered lifeline rates, "fewer have adopted [a lifeline rate] than have rejected it").

351. N.J. STAT. ANN. §§ 48:2-29.15–48:2-29.17 (2023); *see also* 1979 N.J. Laws 847 (setting initial lifeline credit at $100).

352. To be eligible, customers must receive one of several federal or state welfare benefits and must be over the age of 60. OREGON REPORT, *supra* note 99, at 34–35.

353. $1,620 is six percent of $27,000. *See* Annual Update of the HHS Poverty Guidelines, 87 Fed. Reg. 3315, 3316 (Jan. 21, 2022), (indicating the federal poverty level for a family of four is $27,750).

specific household but is more costly and complicated to administer, whereas the tiered approach is less precise but also cheaper and simpler.[354]

Notably, utility commissions have often justified such rates because these rates increase the amount of revenue collected from low-income customers while reducing overall bad debt that other customers otherwise cover.[355]

a. Straight PIPP program

Ohio developed the first PIPP program.[356] Although instituted in 1988, it was the outcome of a multi-year investigation of the utility commissions into "long-term solutions to the problems arising from [utility] disconnection[s]" in response to the 1979 energy crisis.[357] The program was initially implemented under language in the utility commission's enabling statute granting broad emergency powers.[358] The commission interpreted those powers to authorize the program to prevent utility disconnections, and the state's Supreme Court affirmed this reading.[359] In 1999, the program was expressly authorized as part of the state's electricity restructuring legislation.[360]

The current program—"PIPP plus"—is open to customers with income less than 150 percent of the federal poverty rate.[361] The PUC determined that the level of affordability for electricity service is 10 percent of monthly household income for customers that have electric heating (and, therefore, did not rely on gas service to heat their homes) and 5 percent for customers that do not have electric heating.[362] Enrolled customers thus pay either 10 or 5 percent of their monthly household income to maintain electricity service—regardless of

354. *See* N.H. Pub. Utils. Comm'n, Order No. 23,980, Approving Tiered Discount Program, at 44 (May 30, 2002) (explaining that, in deciding between both types of programs, "The basic decision facing us is whether customers will benefit more if we adopt a program that has higher estimated administrative costs but more finely targets benefits or if we adopt a program with lower estimated administrative costs that does not as finely target benefits").

355. *See, e.g.*, NCLC TREATISE, *supra* note 90, § 7.2.3.2.3; Roger Colton, *A Cost-Based Response to Low-Income Energy Problems*, 127 PUB. UTILS. FORT. 31 (1991) (arguing programs "increase total revenues, decrease collection expenses, and assist low-income customers").

356. *See generally* NCLC TREATISE, *supra* note 90, § 7.2.3.2.2.

357. Ohio Pub. Utils. Comm'n, Opinion and Order *in re* Investigation into Long-Term Solutions Concerning Disconnection of Gas and Electric Service in Winter Emergencies, Case No. 83-303-GE-COI, at 29 (Nov. 23, 1983).

358. *Id.* at 29–31 (citing statutory emergency authority in OHIO REV. CODE ANN. § 4909.16 (2023)).

359. The court disallowed recovery of costs for the program through a rate rider, expressly affirmed the commission's reliance on its statutory emergency authority: "it is clearly within the [Public Utilities Commission of Ohio's] emergency powers under R.C. 4909.16 to fashion such relief as that provided by the PIP plan and we find the plan of the commission to be manifestly fair and reasonable as a solution to the crisis." Montgomery Cnty. Bd. of Comm'rs v. Pub. Utils. Comm'n of Ohio, 503 N.E.2d 167, 170 (Ohio 1986).

360. 1999 Ohio Laws 47 (codified at OHIO REV. CODE ANN. §§ 4928.51–4928.53 (2023)).

361. OHIO ADMIN. CODE 122:5-3-02(B) (2021).

362. *Id.* 122:5-3-04(A)(1), 122:5-3-02(C).

usage—with the exception that customers must make a minimum payment of at least $10, even if that is more than the required percentage of income.[363]

Utilities are not allowed to charge late fees or deposits for enrolled customers, nor may they disconnect customers for arrearages if customers are making their monthly minimum payments.[364] However, they may disconnect customers for non-payment of minimum payments.[365]

Participating utilities can recover the revenue balance that would be due to them under the normal residential rates.[366] The revenue for this subsidy is collected from all utility customers through a public benefit charge.[367]

Ohio's PIPP plus program includes a robust arrears management component that is part of the program, discussed below in Part D.2. It also includes mechanisms to mitigate concerns that the program reduces conservation incentives for participating customers. Participating customers must agree to any energy efficiency improvements that are offered to them through the state's conservation programs if such improvements do not impose costs on the customer.[368]

Pennsylvania is another state whose utilities are now required to provide a straight PIPP program.[369]

New Jersey operates a similar income-pegged program, but unlike the Ohio or Pennsylvania programs, the New Jersey program does not identify a minimum monthly payment.[370] Instead, it provides customers with a fixed *credit* based on a percentage of income and their historically average bill.[371] Therefore, the actual payment required from the customer varies depending on usage and rates (or fuel costs). The public policy benefit of such a program is that it maintains a price incentive for the customer to reduce electricity usage; the drawback is that it does not necessarily guarantee that a customer's actual bills meet the affordability threshold.[372]

363. *Id.* 122:5-3-04(A)(1), (2).

364. *Id.* 4901:1-18-15 (A)-(C).

365. *Id.*

366. OHIO REV. CODE ANN. §§ 4928.51, 4928.52 (2023); OHIO ADMIN. CODE 122:5-3-05.

367. *Id.*; *see* discussion *infra* Part IV.B.

368. OHIO ADMIN. CODE 122:5-3-02(E).

369. Pa. Pub. Util. Comm'n, Final Policy Statement and Order *in re* 2019 Amendments to Policy Statement on Customer Assistance Program, Docket No. M-2019-3012599, at 3-4 (Nov. 5, 2019); *see also* 66 PA. CONS. STAT. §§ 2203(8), 2804(9) (2022) [hereinafter PA 2019 CAP Policy Statement].

370. *Universal Service Fund*, N.J. BD. OF PUB. UTILS., https://www.state.nj.us/bpu/residential/assistance/usf.html#:~:text=The%20goal%20of%20the%20USF,Poverty%20Level%20are%20income%20eligible (last visited Apr. 10, 2023); NCLC TREATISE, *supra* note 90, § 7.2.3.3.2.

371. *Universal Service Fund*, *supra* note 370; NCLC TREATISE, *supra* note 90, § 7.2.3.3.2.

372. A customer's bills may be high because of circumstances beyond their control, such as fuel cost increases. *Cf. Universal Service Fund*, *supra* note 370 ("A customer's energy burden is calculated using an adjustment for any anticipated changes in energy prices in the coming year.").

b. Tiered PIPP program

In contrast to a straight PIPP program, which limits a customer's bill to a percentage of their *individual* household income, a tiered PIPP program sets minimum monthly bills based on different tiers of household income.

A key example is the approach taken by New Hampshire. As part of its electricity restructuring legislation, the state authorized a system benefit charge that could expressly be used for programs benefitting low-income customers,[373] and subsequently directed the utility commission to design low-income programs "in a manner that targets assistance and has high operating efficiency, so as to maximize the benefits that go to the intended beneficiaries of the low-income program."[374]

The program evolved over time, with the state utility commission approving a change from an individual percentage-of-income program to a tiered-income program in 2002.[375]

In its current form, the program provides discounts in five tiers ranging from a 76 percent discount for lowest-income households to 8 percent for households just below 200 percent of the federal poverty line.[376] (See Table 2 below). The discounts intend to reduce customers' electricity bill payments to between 4 and 5 percent of their annual incomes.[377]

Figure 4: Illustrative Tiered Discount Levels for Household of Four in New Hampshire Energy Assistance Program[378]

Annual income tiers for household of four	≤ $22,500	> $22,500 but ≤ $30,000	> $30,000 but ≤ $37,500	> $37,500 but ≤ $45,000	> $45,000 but ≤ $74,941
Percent discount on electricity bill	76%	52%	36%	22%	8%

In moving to a tiered program, the utility commission justified the change on the basis that the tiered program would cost less to administer and that the

373. 1996 N.H. Laws 156 (H.B. 1392) (codified as amended at N.H. REV. STAT. ANN. § 374-F:3 VI-a. (2022)).

374. 2000 N.H. Laws 308 (S.B. 472) (codified as amended at N.H. REV. STAT. ANN. § 369-B:1 XIII).

375. N.H. Pub. Utils. Comm'n Order No. 23,980, *supra* note 354.

376. *2023 EAP Income Eligibility Guidelines by Discount Tier*, N.H. PUB. UTILS. COMM'N. (2022), *available at* https://www.energy.nh.gov/sites/g/files/ehbemt551/files/2022-01/eap-income-eligibility-guidelines-current.pdf (last visited June 14, 2023); N.H. Pub. Utils. Comm'n, Order No. 25,901, Approving Changes to EAP Discounts and Income Eligibility Level, at 5 (May 13, 2016) (making permanent expansion of eligibility to 200 percent of federal poverty level).

377. N.H. Pub. Utils. Comm'n Order No. 25,901, *supra* note 376, at 2.

378. *2023 EAP Income Eligibility Guidelines by Discount Tier*, *supra* note 376.

cost savings would also allow a greater number of customers to participate in the program.[379] The utility commission acknowledged, however, that a tiered approach would mean that some households in each tier would pay more than the 4 percent of annual income that had been determined to be an "affordable" level of electricity bills. Generally, the utility commission found that customers in the different income tiers would pay between 1 and 12 percent of their annual income to electricity bills.[380] An exception would be people making less than $2,000, who would pay up to 29 percent of their income to utility bills.[381]

California has recently adopted a tiered rate cap tied to income. In October 2021, the CPUC authorized a PIPP pilot program for a total of 15,000 customers to test whether a PIPP can "(i) reduce the number of low-income households at risk of disconnection, (ii) encourage participation in energy saving and energy management programs, (iii) increase access to essential levels of energy service, and (iv) control program costs."[382] The pilot program is open to customers below 200 percent of the federal poverty level, with two tiers of discounts.[383] In addition, customers must either live in a zip code with a high rate of disconnections or have been disconnected two or more times in the prior year.[384] Customers below the federal poverty level will have a monthly bill cap (combined electricity and gas) of $37; customers in the 100–200 percent of the federal poverty level tier will have a bill cap of $109.[385]

In another recent development, the Illinois General Assembly enacted the Climate and Equitable Jobs Act, which requires the Illinois PUC to conduct a study assessing whether low-income rates are "appropriate" and determine the potential design and implementation of any such rates.[386]

379. N.H. Pub. Utils. Comm'n Order No. 23,980, *supra* note 354, at 44–48.

380. *Id.* at 47.

381. *Id.* at 47, 49.

382. Cal. Pub. Utils. Comm'n, Decision Authorizing Percentage of Income Payment Plan Pilot Programs, D.21-10-012, at 2, 12 (Oct. 11, 2021). Two utilities—San Diego Gas & Electric and Southern California Gas—expressed skepticism that a PIPP would reduce disconnections. Southern California Edison, California's second largest utility, raised concerns that a PIPP would "leave part of customer bills unpaid" and would therefore require some other way to recover costs from those bills, including subsidization by other customers. Cal. Pub. Utils. Comm'n, Phase I Decision Adopting Rules and Policy Changes to Reduce Residential Customer Disconnections for the Larger California-Jurisdictional Energy Utilities, D.20-06-003, at 121-122 [hereinafter CPUC Phase I Disconnection Decision]. SCE also raised concerns that a PIPP would decouple energy usage from bills for eligible customers, and therefore would not create a price incentive to reduce usage and would be counter to state conservation goals. *Id.*

383. Decision Authorizing Percentage of Income Payment Plan Pilot Programs, *supra* note 382, at 42–43.

384. *Id.* at 24–25.

385. The caps represent four percent of a reference income of either fifty percent or 150 percent of the federal poverty level for a family of three. *Id*. at 42–43.

386. 2021 Ill. Legis. Serv. 102-662.

Summary Table III.C. Make it Affordable		
C. Make it Affordable		Limitations/ Benefits
Baseline:	Federal LIHEAP program; State supplemental aide	• Only pays ~15% of heating cost (not all electricity) • Only available to ~15% eligible customers. • Few states with state programs also budget limited
Baseline:	Utility "Lifeline" Rates (Flat discount rate for eligible customers	• Helpful, but doesn't necessarily make service affordable
Innovation:	Percentage of Income Programs (straight or tiered)	• Based on affordability • Seek to tailor aid to needs of particular customer or group of customers

D. Reduce Disconnects

The fourth category focuses on policies that seek to actively prevent disconnections.

As a baseline, most states have enacted laws or regulations requiring notice and hearing requirements before disconnection and special protections for customers with a medical need for electricity service.[387] In addition, moratoriums on disconnecting protections during winter months are common.[388]

But many states have recognized that this suite of traditional protections can be enhanced. As detailed by Matthew Flaherty, Sanya Carley, and David M. Konisky, some of the most important types of enhancements to these traditional protections include enhanced notice requirements, such as at least one in-person notice attempt; additional disconnection protections for other vulnerable groups, such as families with young children; and disconnection moratoriums not only during winter months but also during hot summer months when electricity-powered cooling can be a necessity.[389]

A number of states have also implemented a second innovation, arrears management programs. These programs recognize the critical role that built-up arrearages—or past-due utility debts customers owe—play in the cycle of disconnection for low-income people. State arrears management programs vary in design, but all of them forgive at least a portion of arrears for qualifying customers.

387. NCLC TREATISE, *supra* note 90, §§ 6.2, 6.3.
388. *Id.* § 6.3.2.
389. Flaherty et al, *supra* note 71, at 106,864.

1. Enhancing Traditional Protections

a. Baseline: Limited Constitutional and State Disconnection Protections

i. Constitutional Notice and Hearing Requirement for Government-owned Utilities

The Supreme Court ruled in *Memphis Light, Gas and Water Division v. Craft* that the U.S. Constitution's due process right requires that before any disconnection, a government-owned utility must provide customers with "notice reasonably calculated" to provide customers with an opportunity to challenge their bill, and to establish a hearing procedure that provides "an opportunity to present their complaint to a designated employee empowered to review disputed bills and rectify error."[390]

Due process protections apply only to actions taken by the government, however.[391] And the Supreme Court ruled that disconnections by state-regulated for-profit utilities—even if pursuant to a utility commission approval—are not government actions.[392] Therefore, for-profit utility terminations are generally not subject to constitutional notice-and-hearing requirements.[393]

ii. Traditional State Disconnection Safeguards

Shortly after the ruling in *Memphis Light*, PURPA required utility commissions to adopt notice and opportunity-to-be-heard provisions if PUCs determined that such policies were "appropriate and consistent with otherwise applicable State law."[394] As part of these disconnection standards, PURPA also required utilities to consider a provision that would prohibit termination of electricity service "when termination . . . would be especially dangerous to health" and if the customer cannot pay their bills or can only pay in installments.[395]

390. 436 U.S. 1, 22 (1978). The Court found that state law recognized a property interest in utility service because it only allowed termination for just cause and expressly prohibited termination where there was a "bona fide dispute" regarding the bill. *Id.* at 9-13.

391. Due process applies to the federal government under the fifth amendment, and to state governments and their subsidiaries under the fourteenth amendment. U.S. CONST. amends. V, XIV.

392. Jackson v. Metro. Edison Co., 419 U.S. 345, 358 (1974).

393. *But see* NCLC TREATISE, *supra* note 90, § 15.1.1 (suggesting that where a utility commission more directly encourages or authorizes such termination through regulations after notice-and-comment rulemaking, rural electricity cooperatives may be subject to such due process protections). No court has directly ruled on the issue, but courts have held that cooperatives are "instrumentalities of the Government" in other contexts because Congress enacted federal programs to establish cooperatives for the purpose of rural electrification and has continued to subsidize these cooperatives. *Id.* § 15.1.4; Salt River Project Agr. Imp. & Power Dist. v. Fed. Power Comm'n, 391 F.2d 470, 473 (D.C. Cir. 1968); *see also* Ala. Power Co. v. Ala. Elec. Co-op., Inc., 394 F.2d 672, 677 (5th Cir. 1968).

394. *See* 16 U.S.C. §§ 2625(g), 2623(a)(2), (b)(4).

395. *Id.* § 2625(g)(2).

The PURPA requirements successfully prompted most PUCs to adopt notice and hearing requirements.[396] They also prompted PUCs to adopt other types of protections consistent with preventing termination at times "dangerous to health" in PURPA's language. As Flaherty, Carley, and Konisky detail, this includes forty-two states that have adopted regulations prohibiting disconnections during cold periods.[397] It also includes forty-five states that offer protections for people with some type of medical condition who rely on electricity for medical devices.[398] One other important baseline protection is a payment plan requirement. Forty-six states require utilities to offer customers the option of being put on a payment plan for their arrearages to avoid disconnections.[399]

b. Innovation: Enhancing Traditional Protections

While a majority of states prohibit winter disconnections, prohibit disconnections of medically vulnerable people, and require payment plans, some states have expanded on these protections. Flaherty, Carley, and Konisky categorize these state enhancements.[400] In particular, fourteen states adopted policies that prevent disconnections during hot periods in addition to cool periods.[401] Some states offer additional disconnection protections for other vulnerable populations, such as the elderly (seventeen states), people with disabilities (twelve states), and households with young children (five states).[402] Several states have more detailed notice requirements before disconnection, for example, requiring at least one in-person notice attempt.[403]

Several states prohibit disconnection and reconnection fees.[404] Late fees are intended to recoup additional costs associated with servicing delinquent accounts or incentivize customers' timely payments.[405] But when late fees are added to the arrears of customers who already have insufficient income to pay late fees, they only increase barriers to paying off arrears. At least fifteen states exempt some customers from late fees and limit such fees, and ten states prohibit late fees for at least low-income residential customers.[406]

396. NCLC TREATISE, *supra* note 90, § 6.2.

397. Flaherty et al., *supra* note 71, at 106,862.

398. *Id.*

399. *Id.*

400. *Id.* at 106,862–63.

401. *Id.*

402. *Id.* at 106,862.

403. Flaherty et al. point out that with the advent of smart grid infrastructure, electricity service can increasingly be disconnected without any utility employee visiting the residence. *Id.* at 106,864.

404. *Id.* at 106,865–66. Relatedly, some states similarly prohibit utilities from denying service to customers who cannot afford a deposit. *See, e.g.*, CONN. GEN. STAT. § 16-262j (2023).

405. Because for-profit utilities already get a generous rate of return, late fees should not be used to help generate profit for the utility. *See* NCLC TREATISE, *supra* note 90, § 5.6.2.

406. Illinois and Montana prohibit late fees for low-income residential customers; Kentucky, Massachusetts, New Jersey, and Rhode Island and Texas prohibit late fees for all residential customers; and Alabama, Colorado, and Vermont prohibit all late fees. *Id.* § 5.5.2 (citing NAT'L ASS'N OF REGUL.

Another area of enhancement is increased guidance on payment plan policies. Especially during COVID-19, some states have adopted a minimum length that utilities must provide to customers for a payment plan, for example, for six- or twelve months.[407] The CPUC has promulgated a rule requiring that disconnections are not allowed if a customer 1) pays more than 20 percent of their arrears and 2) agrees to a twelve-month payment plan.[408]

2. Preventing and Managing Arrears

Low-income people often experience crises—for example, job loss or medical emergencies—that leave them unable to pay their bills for a significant period.[409] A financial crisis can cause substantial arrearages to accrue on a customer's account. For example, during COVID-19 in New Mexico, utilities reported that tens of thousands of customers would have been eligible for disconnection for nonpayment and average arrearages for some utilities were $500 or even $1,000 per customer.[410] Traditionally, these people would ultimately be disconnected and, often, a utility would not be able to collect these arrearages and would instead recover the costs of this "bad debt" from customers.[411] Approaching universal service requires finding a way to help customers who are suffering or have suffered from a financial crisis to maintain service without disconnection. Such programs can have the added benefit for all customers of actually decreasing costs related to debt collection and increasing revenue collected from customers.[412] These programs tend to be controversial, as they raise questions about fairness (why do some people not have to pay all of their bills when others do?) and moral hazard (does this create an incentive not to pay your bills?).[413]

Before introducing arrears management programs, it is valuable to explain how utilities generally treat collections of past-due debt to explain how arrears management programs can often provide benefits to all customers, not just to those who find themselves behind on their bills and in danger of disconnection.

UTIL. COMM'RS, 1994–1995 COMPILATION OF UTILITY REGULATORY POLICY IN THE U.S. AND CANADA 457 tbl.208).

407. *Map of Disconnection Moratoria*, *supra* note 7 (noting District of Columbia, Indiana, Maryland, South Carolina imposed minimum of 6- or 12-month payment plans).

408. CPUC Phase I Disconnection Decision, *supra* note 382, at 87–88.

409. BRITTANY LEWIS ET AL., ILLUSION OF CHOICE: EVICTIONS AND PROFIT IN NORTH MINNEAPOLIS 10 (2019) (finding job loss, medical emergencies, domestic violence among crises leading to eviction).

410. Based on filings of utilities in New Mexico Public Regulation Commission Case Number 20-00069-UT with data through November 2020.

411. *See* discussion *infra* accompanying notes 415–18.

412. *See generally* Colton, *supra* note 355.

413. In an effort to pass similar legislation to address COVID-19 related arrears in New Mexico, advocates (including the author) faced strong opposition from utilities who were concerned about the principle of shifting costs from one set of customers to another, and about customers "taking advantage" of such programs.

Utilities in rate-regulated states are entitled to recover their "cost of service" and their "cost of capital."[414] Utilities recover these combined costs—collectively called the "revenue requirement"—through a forward-looking ratemaking process that estimates future costs based on prior history.[415] Utilities then propose rates anticipated to equal the revenue requirement.[416] One line-item component of a utility's cost-of-service is its bad debt, chiefly unpaid utility bills or "uncollectibles."[417]

Therefore, the rates that electricity customers pay already include compensation to utilities for other customers' anticipated unpaid utility bills. Moreover, the prospective nature of ratemaking incentivizes utilities not to exceed their forecast level of "uncollectibles."[418] For example, if a utility was forecast to write off $1 million in bad debt in a given year but needs to write off $1.5 million because of customer non-payment, then the utility has effectively lost $500,000.

In a recent California rulemaking proceeding, consumer advocates and utilities sparred over whether cost recovery mechanisms incentivize disconnecting customers quickly.[419] The CPUC found that under prior CPUC rate proceedings—generally in keeping with the process described above—there was a "lack of transparency regarding actual uncollectibles versus the authorized amounts," the "current accounting practice for uncollectibles means that IOUs are incentivized to keep uncollectibles low," and when for-profit utilities have a "lower actual uncollectible amount than the authorized amount, the difference is absorbed as profit."[420] The CPUC additionally found that three of the four largest utilities had regularly profited from the uncollectibles line item in recent years.[421]

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414. JOEL B. EISEN ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 456 (4th ed. 2015).

415. HEMPLING, *supra* note 66, at 326 (the prospective nature of ratemaking derives from ratemakings "legislative character" and the general prohibition on retrospective legislation).

416. EISEN, *supra* note 414, at 457.

417. *See* Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act, 18 C.F.R. pt.101 (2022) (requiring line item 904 Uncollectible Accounts as a Customer Expense Account); *see also* CPUC Phase I Disconnection Decision, *supra* note 382, at 110–13 (discussing that general rate cases "include an amount of revenue to account for forecasted uncollectibles"); Columbia Gas of Pa., Inc. v. Pa. Pub. Util. Comm'n, 613 A.2d 74, 79 (1992), *aff'd*, 636 A.2d 627 (1994) (stating that generally accepted accounting principles require that arrearages for past due accounts of most troubled ratepayers be written off as bad debts absent some assured means of recovery).

418. In some cases, a utility commission's uncollectible account is subject to a post-factor reconciliation or true-up procedure, which can remove this dynamic. *See infra* note 421.

419. CPUC Phase I Disconnection Decision, *supra* note 382, at 110–13.

420. *Id.* at 113.

421. "While SoCalGas has exceeded their authorized uncollectible amount since 2008; as of 2018, the latest year reported, SDG&E, has profited six years in a row; SCE has profited the last four years and PG&E has profited the last three years." *Id.* As a result of this rulemaking, the CPUC adopted a "two-way" balancing account for addressing uncollectibles. Under a two-way balancing account, there is a mechanism for comparing after-the-fact actual expenditures to estimated costs, and then provides for either refunds to customers of over-collections or authorizes recovery from customers for over-collections. *See* CAL. PUB. UTILS. COMM'N, BALANCING ACCOUNT EXAMINATION: LIBERTY UTILITIES (CALPECO ELECTRIC), LLC 6 (2019).

Utilities in retail competition states also have an incentive to minimize bad debt, as this effectively reduces their costs and allows them to offer lower prices.

In practice, most utilities have at least some financial incentive to use the threat and fact of disconnection aggressively so that they do not lose money due to a higher-than-anticipated bad debt write off. Utilities often report that it is only the threat or fact of disconnection that gets customers to pay.[422] Advocates point out that this creates a "heat or eat" dilemma for low-income people in crisis—they may be foregoing food or other necessities to keep their utilities from being turned off.[423]

Threatening to disconnect customers, however, does not always lead to the successful collection of past-due debt. Utilities informally report that many customers may have someone else in the household sign up for service—and utilities are often prohibited from trying to collect a past-due debt from another person, even if related to a customer with arrears.[424]

For this reason, programs that avoid disconnections and provide a gentle pathway to getting current on bills can allow a utility to collect *more* revenue from payment-troubled customers than the traditional system while simultaneously reducing disconnections. And because the cost of bad debt is usually passed on to all customers, this can, in turn, reduce costs that customers will ultimately pay through rates.

a. Baseline: Shareholder- or Voluntary Contribution-Funded Arrears Relief Programs

Many utilities offer a limited set of funds that can be used for arrears forgiveness at the utility's discretion—sometimes referred to as "fuel funds" or crisis energy assistance.[425] These funds do not usually come from revenue collected as part of rates.[426] Often, they come from voluntary donations from ratepayers or other sources, such as shareholder contributions. Ratepayers who are having trouble paying their utility bills can apply to access these funds. In 2010, states reported over $132.7 million in funds leveraged from such programs.[427] This is almost certainly a fraction of the total need. For example, in 2022, the federal LIHEAP program, itself insufficient, provided $3.8 billion in

422. Author conversation with utility representatives in relation to proposed arrears management bill in New Mexico.

423. *See, e.g.*, *The "Heat or Eat" Dilemma*, FOODBANK (Oct. 8, 2020), https://thefoodbankdayton.org/heatoreat/.

424. *Id.*

425. *See* NCLC TREATISE, *supra* note 90, § 7.1.1.

426. *See id.*

427. *Id.* § 7.1.1.2; *see FY 2010 State Leveraging Summary and Table*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/leverage/FY2010/10stlvsm.htm (last visited Apr. 10, 2023). Congress previously offered additional incentives funds that could be distributed to states that demonstrated "leveraged funding" to supplement LIHEAP, but such funding has not been made available since 2010. *See LIHEAP Leveraging Reports 1991–2010*, LIHEAP CLEARINGHOUSE, https://liheapch.acf.hhs.gov/leverage/lvstate.htm (last visited Apr. 10, 2023).

regular funding for heating assistance.[428] Little scholarly information exists about how adequate these funds have been to address energy insecurity or how they are implemented.

b. Innovation: Arrears Management Programs

Arrears management programs began when states enacting universal service programs as a part of utility restructuring recognized that dealing with arrearages was often necessary for making utility service affordable to low-income people through low-income rates or credits. All programs offer some mechanism to forgive at least a portion of arrears if a customer makes regular payments through an affordability program.

In most of these programs, the program is designed to incentivize customers to become "regular bill payers," and provides forgiveness only upon successful completion of some regular period of payments.

New Jersey's model is the most supportive of low-income customers. It provides 100 percent forgiveness to qualifying customers who make twelve months of payments in New Jersey's fixed-credit PIPP program.[429] The benefit of New Jersey's model is that it maintains the affordability goal set by its PIPP program. In other words, customers who enroll in the program only need to make regular bill payments of approximately 6 percent of their income for a year to have their arrears forgiven.[430] They do not need to make payments on top of those normal payments to receive the benefit of arrears forgiveness.[431]

Another model is a fifty-fifty credit model implemented by Connecticut[432] and Minnesota.[433] Under this model, a customer is put on an arrearage payment plan where the customer is to pay *50 percent* of the arrearage debt over a fixed period, for example, twelve months.[434] For each payment made, the utility will credit a matching portion.[435] If the customer makes all payments over twelve months, the utility will have forgiven the other 50 percent of the original arrearage debt.

As with other low-income programs, arrears management programs are gaining ground. Spurred in part by a 2017 law requiring it to reduce disconnections, the CPUC enacted an arrears forgiveness program in 2020.[436]

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428. *See* discussion *infra* at Part III.C.

429. *Universal Service Fund*, N.J. DEP'T OF CMTY. AFFRS., https://www.nj.gov/dca/divisions/dhcr/faq/usf.html#q22 (last visited Apr. 10, 2023) (navigate to "Fresh Start").

430. New Jersey's Universal Service Fund PIPP program receive a credit targeted to limit electricity and gas bills to 6 percent of a customer's income. *Universal Service Fund*, N.J. BD. OF PUB. UTILS., *https //www.state.nj.us/bpu/residential/assistance/usf.html# ~ text* (last visited Apr. 10, 2023).

431. *Universal Service Fund*, *supra* note 429.

432. CONN. GEN. STAT. § 16-262c (2023); *see also* KEVIN E. MCCARTHY, CONN. OFF. OF LEGAL RSCH., 2011-R-0318, UTILITY MATCHING PAYMENT PROGRAM (2011).

433. MINN. STAT. § 216B.16.15(a) (2023) (requiring affordability programs to lower arrears).

434. This is the period of time used in Connecticut's program. MCCARTHY, *supra* note 432.

435. *See, e.g.*, *id.*

436. *See* CPUC Phase I Disconnection Decision, *supra* note 382.

Congressional action in response to COVID-19 may prove to be an important step in socializing arrears management programs moving forward. Congress established the Emergency Rental Assistance program in COVID-19 relief legislation and later increased its funding.[437] The program ultimately provided approximately $46 billion that could be used to pay not only for rental assistance but also for renters' current and past-due utility bills in response to the potential disconnection crisis caused by COVID.[438]

Summary Table III.D. Reduce Disconnects		
Sub-strategy		Baseline limitation/ Innovation response
D.1. Enhance Traditional Protections		
Baseline:	• Notice and hearing prior to disconnection • Many states have prohibitions on winter disconnection and when service is a medical necessity • Most states have payment plan requirements	• While offering critical protections, these baseline policies have not proven sufficient to stop widespread disconnections
Innovation:	Enhanced traditional protections (longer payment plans, summer moratoria in hot places)	• Based on affordability
D.2. Prevent and Manage Arrears		
Baseline	Many utilities have charitable emergency fund programs	• While offering support for crisis, these programs are again not sufficient
Innovation: (NJ, CT, MN)	Arrears management programs	• Create a pathway out of arrears for low-income people

IV. FUNDING OPTIONS

Most of the strategies highlighted in Part III above require funding, whether it be cash assistance for utility bills or credit-matching in arrears forgiveness programs. Many, but not all, low-income rates are also subsidized. States fund these programs in different ways, including through traditional utility rates or tariffs, public service charges, revenue raised from climate change cap-and-trade programs, general ratepayer funds, and even through one-time funding opportunities such as negotiated settlements in utility proceedings. These mechanisms are briefly described here, along with high-level benefits and drawbacks.

437. *Emergency Rental Assistance Program*, U.S. DEP'T. OF THE TREASURY, https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/emergency-rental-assistance-program (last visited Apr. 10, 2023).

438. *Id.*

A. Utility Rates or Tariffs

Rate-regulated utilities propose sufficient rates to meet their overall cost of providing electricity service.[439] One mechanism for funding low-income programs is to include the cost of such programs in the cost-of-service calculated in utility ratemaking.

In a general rate case, utilities will propose a combination of rates, usually including energy charges (a per kilowatt hour charge for energy used), demand charges (a charge for the maximum amount of energy used at one time at a given period), and fixed charges (a flat charge for all customers) that are anticipated to create sufficient revenue to meet a utilities' anticipated "revenue requirement."[440] Different customer classes will have different rates, which, based on the cost-causality principle, are supposed to reflect the cost of providing service to customers in that class.[441] Each utility proposes rates reflecting the costs of providing service to its particular customer base. As described above in Part II.A, rates typically must be "just and reasonable" and not unduly discriminate.

In addition to rates, utilities will sometimes be awarded tariff riders or adjustment clauses. A tariff rider is usually an adjustment to rates made in the interim between rate proceedings. [442] An adjustment clause is "an ongoing adjustment that is periodically changed to reflect changing costs between rate cases," for example, to account for variability in the cost of fuel.[443]

Allowing utilities to recover the costs of low-income programs has historically been controversial because, in many cases, it is seen as charging some customers to subsidize electricity service for others—referred to as a "cross-subsidy."[444] From this viewpoint, recipients of low-income rates that rely on a cross-subsidy can use electricity without paying their "fair share" of the cost of providing that electricity service.[445] Other criticisms include that cross-subsidization is an imprecise way to effect redistribution of wealth—some subsidizing customers may not be much better off than those receiving the subsidy.[446]

Several recent scholarly articles have challenged the conservative argument that ratemaking should not engage in cross-subsidy. For example, Ari Peskoe argues that "attributing utility costs to ratepayer classes is imbued with false

439. HEMPLING, *supra* note 66, at 217.

440. JIM LAZAR, REGUL. ASSISTANCE PROJECT, *Rate Design for Vertically Integrated Utilities A Brief Overview*, *in* SMART RATE DESIGN FOR A SMART FUTURE B-2 (2015).

441. *Id.* at B-1.

442. *Id.* at B-6.

443. *Id.*

444. *See, e.g.*, Richard A. Posner, *Taxation by Regulation*, 2 BELL J. ECON. & MGMT. SCIS. 22, 22–29 (1971) (arguing against using regulation for redistributive purposes).

445. *See, e.g.*, Troy A. Rule, *Solar Energy, Utilities, and Fairness*, 6 SAN DIEGO J. CLIMATE & ENERGY L. 115, 130–31 (2014) (describing the "fairness" critique of cross-subsidization in the context of net metering policies).

446. *See* BONBRIGHT ET AL., *supra* note 63, at 170.

precision" and that "regulators, courts, and economists have long understood that allocating utility costs rests on "judgment," not science."[447] Chan and Klass similarly argue that cost causation is "more of an art than a science" and that "a limited focus on cost causation ignores the fact that in practice, rate design creates myriad incentives that apply to utilities and its customers; incentives that have enabled significant disparities in access to affordable essential energy services."[448] Troy Rule joins these commentators to note that "cross-subsidies have long existed within electric utility rates and many electric utilities have deliberately embedded cross-subsidies into their pricing for decades."[449]

Along with Chan and Klass, Felix Mormann and Rule separately note that cross-subsidies can make for good policy. "Indeed, basic microeconomic theory teaches that subsidies can be a valuable tool for promoting economic efficiency when tailored to address positive externality problems that might otherwise lead to a sub-optimally low quantity of some socially valuable activity."[450]

Despite such criticisms of cost causation, these scholars do not generally advocate abandoning it altogether. Chan and Klass advocate that ratemaking should incorporate cost causation as "one of several goals to balance in rate design" along with "the benefits of service and ability to pay."[451] Mormann advocates a similar position, although cost-causation remains the clear starting point.[452]

In a few cases, particularly with regards to low-income energy efficiency programs and some types of low-income rates, using ratepayer funding can be justified based on conservative ratemaking principles—that is, the benefit provided by the program to the system of utility service outweighs the costs. In other cases, however, states have expressly authorized utilities to recover costs of affordability and access programs from all customers without regard to cost causation. This Part first illustrates how energy efficiency programs are often justified through conservative approaches to utility ratemaking and then describes recovery through rates for programs that are not justified on the basis of cost causation or cost-effectiveness.

447. Peskoe, *supra* note 253, at 112.

448. Chan & Klass, *supra* note 11, at 1479.

449. Rule, *supra* note 445, at 132.

450. *Id.* at 131 (citing HARVEY S. ROSEN & TED GAYER, PUBLIC FINANCE 86 (10th ed. 2014)); *see also* Mormann, *supra* note 11, at 348 (discussing cross-subsidization).

451. Chan & Klass, *supra* note 11, at 1479.

452. Mormann notes that "there may well be instances where deviations from [cost-causation] are called for, for example in the interest of universal access to electric service." While programs like low-income rates can "result[] in an uneven distribution of economic benefits and costs" these "distortionary effect[s] should not a priori eliminate [low-income rates] from the public policy toolbox." Rather, Mormann argues that cross-subsidies should be clearly identified "in order to facilitate the public scrutiny necessary to ensure that they are, in fact, used in furtherance of important public policy objectives, and not for hand-outs to special interest groups or pork barreling." Mormann, *supra* note 11, at 348.

1. Energy Efficiency: Low-income Program with "Public Benefit" for All Utility Customers

In general, utility commissions have often required utilities to invest in certain programs or infrastructure because such investments will provide a "public benefit" related to the provisions of utility services and correspondingly authorize utilities to recover the costs of these investments or programs from customers.[453] This includes requiring investments in renewable energy powerplants and advanced metering systems.[454]

Utility commissions frequently apply the same rationale to utility investments in energy-efficiency improvements.[455] Notably, these investments into energy efficiency retrofits of individual customers' homes are frequently justified as costs for all utility customers because they benefit all customers concerning the delivery of energy services.[456] That is, although the individual low-income customers receive a benefit—the quality of their housing is improved, and their bills are lowered—all electricity customers also receive a benefit because the energy demand on the power grid is also lowered avoiding energy production and transmission costs. In this sense, investments in low-income energy efficiency are typically not treated as a subsidy from some customers to other lower-income customers because all customers are paying for and receiving a benefit from these investments.

That said, there are different ways of measuring cost-effectiveness.[457] Many environmental advocates encourage cost-effectiveness tests to include not only benefits that accrue to provision of energy services but also benefits to society at large (i.e., externalities).[458] These may include the value of reduction of greenhouse gas emissions as well as the benefits of reduced disconnections (e.g., avoided costs of homelessness services).[459] While some jurisdictions are moving towards this more expansive valuation, it represents a departure from conservative ratemaking principles.

Energy efficiency programs are not the only programs that have been implemented on a cost-effectiveness rationale. In some cases, advocates have successfully argued that low-income rates and arrears management programs are

453. Only "prudent" investments may be recovered. JIM LAZAR & KEN COLBURN, REGUL. ASSISTANCE PROJECT, RECOGNIZING THE FULL VALUE OF ENERGY EFFICIENCY (WHAT'S UNDER THE FEEL-GOOD FROSTING OF THE WORLD'S MOST VALUABLE LAYER CAKE OF BENEFITS) 15 (2013).

454. *E.g.*, N.M. STAT. ANN. § 62-16-4 (2023) (requiring New Mexico electric utilities to supply progressively more electricity from renewable sources); *Id.* §§ 62-8-12, 62-8-13 (requiring New Mexico electric utilities to propose plans for investing in electric vehicle charging infrastructure and for grid modernization and authorizing cost recovery for both).

455. LAZAR & COBURN, *supra* note 453.

456. *Id.* at 12–13 (noting that the most commonly used cost-effectiveness tests monetize energy benefits to utility so there are "no losers.").

457. *See generally* LAZAR & COBURN, *supra* note 453.

458. *See, e.g.*, ENV'T DEF. FUND, *supra* note 251; *see also* LAZAR & COBURN, *supra* note 453, at 10 (delineating utility system benefits, participant benefits, societal benefits).

459. LAZAR & COBURN, *supra* note 453, at 10.

more cost-effective in recovering revenue and avoiding bad debt costs than the status quo.[460]

2. Funding for Low-income Programs without Justification

As described above, reaching affordable, universal service often requires raising revenue. Under conservative approaches to cost-effectiveness tests—i.e., those that do not consider societal benefits—the costs may appear to exceed the benefits. For example, an arrears management program that includes forgiveness of arrears in certain circumstances will likely reduce bad debt costs otherwise incurred by utility customers, but the overall costs of the program may exceed this benefit. That does not mean that the program does not provide other valuable public benefits—avoiding disconnections keeps families from falling into homeless and prevents school crises—but these benefits are not of the type that have traditionally been considered by utility commissions in ratemaking.[461]

Nevertheless, some states have expressly authorized utilities to charge utility customers for the costs of low-income programs, including those that might not be "cost-effective" under the traditional definition. For example, California's CARE program expressly contemplates that all other customers will pay subsidies for low-income customers.[462]

From a policymaker's perspective, one benefit of recovering costs through utility rates is that it normalizes the costs of low-income programs as part of the cost of providing utility service, just like all other components of utility service. Importantly, this cost recovery does not require a legislative appropriation, which is often a high political bar and may introduce funding volatility year to year. Depending on the language of a utility commission's enabling act, it may also not require any legislative action to implement, although this is likely uncommon.

Drawbacks include that customers in different utility service territories will likely pay a different marginal increment towards low-income programming because each utility will have different costs spread over a different number of customers. It also increases the costs of providing electricity service for all customers.

B. Using a Public Benefit or Systems Benefit Charge

During the conversations about restructuring the electricity industry, states began to realize that restructuring could interfere with conservation mandates and affordability programs. Previously, utility commissions would play a role in determining the level of revenue that a utility should raise from customers

460. Colton, *supra* note 355.

461. *See* LAZAR & COBURN, *supra* note 453, at 10–13.

462. The statute directs the California PUC to "continue a program of assistance to low-income electric and gas customers . . . *the cost of which shall not be borne solely by any single class of customer*." CAL. PUB. UTIL. CODE § 739.1(a) (2023) (emphasis added).

through rates for such programs.[463] But in a retail competition world, utilities would be competing against each other to offer the lowest rates.[464]

Many states solved this problem by turning to "public benefit" or "system benefit charges"—sometimes also called "universal service" funds when focused on affordability programs.[465] These are typically per-kilowatt-hour charges applied to all customers across all utilities.[466] They have the benefit of having a neutral impact on retail rate competition between utilities.[467] Revenue from these charges could then be used to fund the desired public interest programs.[468] Many states expressly authorized such charges to fund energy efficiency and affordability programs.[469]

Public benefit, system benefit, or universal service charges are another form of ratepayer funding. The primary difference is that all customers are subject to the same charge, regardless of what utility provides their service. Affordability programs may also be centrally administered, meaning that all utility customers in the state have access to the pool of available funds (instead of the specific pool raised by the utility).[470]

The benefits of these programs include that because the same charge is applied to all customers and the funded programs can be centrally administered, it promotes fairness among customers paying into the fund and customers accessing the benefits. This is especially true where there are many different utilities, such as in retail competition states or states with many cooperatives. Finally, where a utility commission has the statutory authority to change the level of service charge as necessary to meet a universal service goal, the utility commission can adjust the service charge to reflect need more quickly than through a general rate case. This approach typically does not require an annual legislative appropriation.

Drawbacks of such charges include that they typically require express statutory authorization and add complexity to an electricity bill.[471] They also

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463. *See* discussion *supra* accompanying notes 191–95.

464. *Id.*

465. "As [demand-side management] spending plummeted in the mid to late 1990s, states began to recognize that deregulation was the leading cause, and began establishing mechanisms to stem the decline. The most common approach that regulators have taken has been to establish a public benefit fund (PBF) to fund DSM and other programs." Gillingham et al., *supra* note 133, at 20.

466. *Id.*

467. *Id.*

468. *Id.*

469. *Id.* ("PBFs are designed to fund energy efficiency programs, renewable energy programs, programs to assist low-income families to pay their energy bills"); *see, e.g.*, N.H. REV. STAT. § 374-F:3 VI-a (authorizing system benefits charge in New Hampshire, including for energy efficiency and programs for low-income customers); 1999 N.J. Laws 90 (1999) (codified at N.J. STAT. ANN. § 48:3-50) (authorizing Universal Service Fund and expanded or new charges to fund "social programs").

470. *See, e.g.*, NCLC TREATISE, *supra* note 90, § 7.2.3.4.2 (describing how Maryland Department of Human Resources is charged with administering affordability programs for all utility customers from funds raised through universal service fund).

471. *See generally id.* § 7 (discussing state public benefit funded programs created by statute).

increase the costs of electricity service, in that they are an additional charge added to a bill to support public policy outcomes.

C. Using Revenue Raised for Climate Purposes

Several states have put in place greenhouse gas reduction policies, specifically cap-and-trade programs, that generate revenue through the auction of emission allowances.[472] These revenues promote the transition to a low-carbon economy—including, for example, investments into energy efficiency improvements and promoting the transition to clean vehicles.[473] However, some states have also used these revenues to support an equitable transition by using some of these funds for low-income electricity programs, including some of the innovations described above.[474]

The benefits of such funding include that it may not necessarily add to net electricity bills, depending on how emission rights and revenue are distributed,[475] and that it may not require an annual appropriation.[476] The chief drawback is that relatively few states have implemented such programs, and there is much demand for these revenues among competing public policy programs.[477]

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472. Emissions allowances are tradable permits to emit a specific amount of greenhouse gas. Under a cap-and-trade program, a declining quantity of emission allowances is issued every year. States with operating programs include California and the northeast and mid-Atlantic states participating in the Regional Greenhouse Gas Initiative. *State Climate Policy Maps*, *supra* note 228 (navigate to "State Carbon Pricing Policies").

473. CAL. CLIMATE INVS., 2021 ANNUAL REPORT 11 (2022).

474. Delaware, Maine, New Hampshire, and Vermont invest cap-and-trade funds into low-income energy efficiency or bill assistance. REG'L GREENHOUSE GAS INITIATIVE, THE INVESTMENT OF RGGI PROCEEDS IN 2020, at 12 (2022). California also invests cap-and-trade revenues into affordability programs, including low-income weatherization. CAL. CLIMATE INVS., *supra* note 473, at 10–11.

475. Hethie Parmesano & Theodore J. Kury, *Implications of Carbon Cap-and-Trade for Electricity Rate Design, with Examples from Florida*, 23 ELEC. J. 27, 34 (2010) (finding cap-and-trade on electricity sector with auction "will likely increase" rates for customers "in regions that are highly dependent on carbon-intensive electricity generation, but this will be offset to some extent by free allowances and the opportunity to sell excess allowances"); PAUL J. HIBBARD ET AL., THE ECONOMIC IMPACTS OF THE REGIONAL GREENHOUSE GAS INITIATIVE ON NINE NORTHEAST AND MID-ATLANTIC STATES 5 (2018) (finding that during 2015–2017 period electricity cap-and-trade program raised electricity prices but lowered consumers bills on net because of investments).

476. *Compare* MASS. GEN. LAWS ch. 21A, § 22(c)(1) (2023) (cap-and-trade proceeds "shall be used without further appropriation for the following purposes only and shall be in a proportion to be determined by the department of energy resources with the approval of the secretary") *with* CAL. LEG. ANALYST'S OFF., 2022–23 BUDGET: CAP-AND-TRADE EXPENDITURE PLAN (2022) (analyzing the California Governor's proposal for annual appropriation of discretional cap-and-trade revenue).

477. *See, e.g.*, Anne C. Mulkern, *Wildfires Eat Up $1.9B of Calif. Cap-and-Trade Revenue*, E&E NEWS: CLIMATEWIRE (May 13, 2022), https://www.eenews.net/articles/wildfires-eat-up-1-9b-of-calif-cap-and-trade-revenue/ (noting disputes over use of cap-and-trade revenue); Timothy Gardner, *NJ Latest U.S. State to Raid Carbon Auction Funds*, REUTERS (Mar. 17, 2010), https://www.reuters.com/article/states-climate-idUSN1717846620100317 (demonstrating how state politicians use funds for unintended purposes).

D. Using General Tax Revenue

In general, regulatory economists have argued that raising funds for welfare programs through taxation is more efficient and more fair than through rates or other charges on electricity.[478] At least one state—Michigan—funds some of its low-income programs through its general fund instead of through electricity rates or charges.[479]

Again, the benefits of this mechanism are that it does not raise electricity bills (though it does require an increase in a tax or revenue mechanism unless there is an offsetting decrease in other general fund spending). Drawbacks include that the revenue can be subject to an annual appropriation and that passing any kind of tax increase or change in appropriations can be politically challenging.[480]

E. Using One-time Revenue (e.g., Settlements, Tax Refunds)

A few states have used one-time revenue mechanisms, such as from settlements in ratemaking proceedings or tax refunds, to provide one-time funding for low-income programs.

For example, Minnesota advocates successfully convinced Xcel Energy to shoulder the cost of a $17.5 million arrears-forgiveness program as part of a resolution to a separate matter.[481] Similarly, community and environmental advocates in New Mexico negotiated a community benefits package as part of a proposed merger that would have provided substantial funding for arrears relief, although the merger was not approved.[482] Arizona has mandated that a utility use refunds from federal tax cuts to provide refunds to customers.[483]

The benefits of using one-time funding opportunities are that it may allow experimentation with policy tools like arrears forgiveness that a utility commission is not willing to adopt permanently. Because one-time funding may also not qualify as "ratemaking," it can potentially avoid the need for analysis under "just and reasonable" and "no undue discrimination" concepts. The obvious drawback is that one-time funding is not ongoing.

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478. BONBRIGHT ET AL., *supra* note 63, at 170.

479. Michigan Energy Assistance Act, MICH. COMP. LAWS § 400.1233 (2023) (establishing energy assistance fund to be funded by state appropriations or federal LIHEAP funding).

480. *See, e.g.*, Burgess Everett, *Conservatives Target Senate Dems on Taxes*, POLITICO (June 13, 2017), https://www.politico.com/story/2017/06/13/taxes-conservatives-targets-senate-democrats-239463.

481. Minn. Pub. Utils. Comm'n, Order Approving Payment Plan Credit Program *in re* Xcel Payment Plan Credit Proposal, Docket No. E-002/M-20-760, at 1-2 (Apr. 7, 2021).

482. Scott Van Voorhis, *Avangrid Deal for PNM Enters Final Stages of New Mexico Regulatory Review*, UTIL. DIVE (Sept. 7, 2021), https://www.utilitydive.com/news/avangrid-deal-for-pnm-enters-final-stages-of-new-mexico-regulatory-review/606176/.

483. Jake Kincaid, *Customers to Get Refund for Paying Johnson Utilities' Income Taxes*, PINAL CENT. (Sept. 13, 2018), https://www.pinalcentral.com/san_tan_valley_sentinel/local_news/customers-to-get-refund-for-paying-johnson-utilities-income-taxes/article_62d6f5cd-e833-541e-bf42-d3e9770442ca.html.

Summary Table IV: Funding Mechanism Considerations		
Funding Option	Benefits	Drawbacks
Ratepayer Funding by Utility	• Normalizes low-income programs as part of utility cost-of-service • Does not require legislative appropriation • In some cases, may not require express statutory authority • Depending on structure of authorization, may ensure adequate level of ongoing funds	• Often requires express statutory authority • Increases electricity bills for all customers • Bill impacts and level of revenue will vary by utility
Public Benefit Charge	• Does not require legislative appropriation • Depending on structure of authorization, may ensure adequate level of ongoing funds • Charges and revenue available for programming the same for customers in all utilities	• Typically requires express statutory authority • Increases electricity bills for all customers
Climate Program Revenue	• Revenue available for programming the same for customers in all utilities • May not require annual legislative appropriation • Depending on design, may not increase net electricity bills	• Few states have enacted revenue-raising climate change programs • Overall among of revenue may vary year to year; likely strong competition for revenue among public policy purposes • May require annual legislative appropriation • May increase electricity bills
General Tax Revenue	• Does not increase electricity bills • Some economists argue that a more appropriate source of funding than electricity rates or charges • Revenue available for programming the same for customers in all utilities	• Requires legislative appropriation • Ongoing funding likely subject to political process; funding may not always be adequate
One-Time Revenue Source	• Likely does not increase electricity bills • May not require express statutory authorization • May allow for piloting programs that are not otherwise viable, like arrears forgiveness	• Does not provide ongoing source of funding • Likely only applies to one utility service territory • Opportunities may be scarce

V. QUESTIONS AND CONSIDERATIONS

The prior Parts outlined how states are developing a model of layered policies that moves to affordable, universal service, and have described various mechanisms used to fund this model. Although this Article is primarily descriptive, this final Part identifies several questions and considerations about these developments that may interest scholars, policymakers, and advocates. Some of these questions relate to whether these developments amount to good policy or, at least, pragmatic policy. It is outside the scope of this Article to answer these questions; rather, the following Part identifies some potential critiques and responses.

A. What About Procedural Justice?

This Article has focused on the substantive actions that several states have taken toward achieving universal, affordable service. However, a key related critique made by community advocates and energy justice scholars is that utility commission proceedings are generally too technical and formalistic to allow meaningful participation by those that are most affected.[484]

There are several efforts to increase the opportunity for meaningful participation in utility commissions.[485] These include providing less-formal opportunities for input through public meetings and workshops instead of formal hearings or proceedings or by providing funding mechanisms to pay legal fees for attorneys representing community groups.[486]

Many and, perhaps, all of the policies above were developed specifically because of the advocacy of community-based stakeholders. But it is beyond the scope of this Article to identify whether and when these policies resulted from meaningful participation by low-income and marginalized stakeholders.

B. Should We be Doing this Through Utility Regulation?

Historically, critics have argued that social policy should be accomplished through direct government welfare programs and not through utility policy. For example, Bonbright writes, "public utility rates are ineffective instruments by which to minimize inequalities in income distribution; and that alternative instruments (including public education, social security laws, progressive

484. *See, e.g.*, *Engaging With Public Utilities and Public Service Commissions*, NAACP, https://naacp.org/resources/engaging-public-utilities-and-public-service-commissions (last visited Apr. 10, 2023).

485. At the federal level, one important development was the establishment of the Office of Public Participation at the Federal Energy Regulatory Commission. *See* FED. ENERGY REGUL. COMM'N, REPORT ON THE OFFICE OF PUBLIC PARTICIPATION 4 (2021).

486. Erifili Draklellis et al., *Five Steps for Utilities to Foster Authentic Community Engagement*, ROCKY MOUNTAIN INST. (June 2, 2022), https://rmi.org/five-steps-for-utilities-to-foster-authentic-community-engagement/; Christopher Tonnu Jackson, *Putting the Public in Public Utilities Commissions*, 38 ISSUES SCI. & TECH. 23, 24–25 (2021).

taxation, and possibly even some form of subsidized public services) are better designed to accomplish this objective."[487]

Others frequently present several versions of this argument. The most common is that using utility regulation is economically inefficient because it will likely lead to the over- and under-subsidization of certain households without a clear policy for who should be subsidized and how much.[488] Other arguments include that utility commissions lack the expertise or resources to implement and provide oversight over affordability policies.[489] A final argument is that using utility policy to achieve affordability is patronizing and that it is better to provide welfare grants to low-income people to use as they see fit, as opposed to dictating what different portions of welfare should be used.[490]

Responses to these arguments may include the following. First, states—notably those with more developed welfare policies—are using utility regulation to implement these policies, and we see an absence of such comprehensive welfare policymaking at the federal or state level that would render this model unnecessary.[491] This suggests that policymakers are choosing to use utility regulation for some reason—perhaps political pragmatism. Similarly, in the international context, scholars and advocates have found that some type of subsidization is necessary to achieve universal, affordable access.[492] Finally, from a rights-based approach, governments must work towards providing universally affordable electricity service precisely because of how important it is to an adequate standard of living.[493] This suggests that because the provision of energy services is a necessity, some dedicated energy affordability policy is required to ensure that all people have such affordable access.

C. Should we Just Blow up the Regulated Utility Model?

A number of scholars and policy advocates have suggested that the regulated utility monopoly exacerbates energy injustice because it: raises the costs of programs like energy efficiency through the guaranteed rate-of-return on capital investments; asks for-profit utilities to administer access and affordability even though these goals are not part of their mission and outside of their expertise; entrusts such programs to for-profit institutions that frequently capture

487. BONBRIGHT ET AL., *supra* note 63, at 72.

488. *See id*. at 170.

489. For example, the New Mexico Public Regulation Commission commented that a proposed legislative requirement requiring analysis of disconnections and reconnections would cause the number of customers not receiving utility service, and other access and affordability information to "be a challenge for the Commission to analyze." N.M. LEGIS. FIN. COMM., FISCAL IMPACT REPORT OF H.B. 206, at 7, *available at* https://www.nmlegis.gov/Sessions/21%20Regular/firs/HB0206.PDF.

490. *See* JOSEPH HANLON ET AL., JUST GIVE MONEY TO THE POOR: THE DEVELOPMENT REVOLUTION FROM THE GLOBAL SOUTH 1–2 (2010).

491. *See generally* states implementing policies described *supra* Parts III.A.–D.

492. *See* discussion *supra* Part II.B.

493. *Id.*

their regulators.[494] As a result, some advocates have called for abolishing utilities in favor of publicly-owned power companies.[495]

Responses to these arguments can include that whatever the substantive merits of this critique, successful state action on access and affordability has largely worked through the regulated utility model as outlined above, perhaps because of the political feasibility of these more incremental changes. It is also unclear whether existing publicly owned or cooperative utilities have a better track record regarding access and affordability outcomes.[496]

D. Why Create Layers upon Layers of Policy?

Another potential criticism of this emerging model is that it relies on layers of new policies on top of an already complicated series of state and federal policies. So, for example, new state efficiency programs might be added to complement the federal weatherization assistance program; new state low-income rates might be added to federal LIHEAP; state arrears management requirements might be added to existing disconnection protections. A potential criticism is that this will create a mishmash of low-income programs that is complicated, administratively inefficient, and not as well targeted as a single, comprehensive policy. Instead of these different federal and state programs, it could be argued that policymakers—perhaps federal policymakers—should create a single comprehensive program designed to address affordability and access.

Responses here could include that the regulatory mishmash reflects the enduring jurisdictional splits and political realities that prevent a comprehensive approach. In addition, the policy mishmash allows for experimentation by different jurisdictions. Some policies may prove more effective than others and may become dominant in time or pave the way for a more comprehensive federal approach.

E. Does this Model Rely on a False Sense of Regulatory Precision?

Several scholars have criticized utility regulation for using false economic precision, for example, in the reliance on cost-causation studies that are "more art than science" in rate setting.[497] A similar criticism could be leveled at

494. *See, e.g.*, Juliana Broad, *Power to the People Winning Public Control of Electric Utilities*, NEXT SYS. PROJECT (Jan. 10, 2020), https://thenextsystem.org/learn/stories/power-people-winning-public-control-electric-utilities; BAKER, *supra* note 11, at 41–65; Payne, *supra* note 268.

495. Johanna Bozuwa, *Public Ownership for Energy Democracy*, DEMOCRACY COLLABORATIVE, https://democracycollaborative.org/blog/public-ownership-for-energy-democracy (last visited Apr. 10, 2023); Al Weinrub, *Power to the People Why We Need Energy Justice*, NONPROFIT Q. (Nov. 1, 2021), https://nonprofitquarterly.org/power-to-the-people-why-we-need-energy-justice/.

496. *See, e.g.*, Pacyniak, *supra* note 65, at 415, 450–55 (finding that cooperatives have lagged behind in the shift to lower-carbon generation and the implementation of efficiency programs).

497. *See* discussion *supra* Part IV.A.

affordability or access policies that rely on similar types of analyses—perhaps, most notably, efforts to quantify an "affordable" rate to different households.[498]

Responses to this criticism may include the argument that just because identifying a level of "affordability" inevitably fails to capture the many factors that dictate affordability for a specific household, percentage-of-income rates based on affordability are the best politically viable solution. A related response might be that to the degree that utility ratemaking uses such analytic techniques, those techniques should be applied to all policies. Another rebuttal is that not all affordability and access policies rely on such a level of precise analysis. For example, arrears management programs do not generally rely on affordability metrics.[499]

F. Investments in Low-Income Efficiency and Distributed Renewables vs. Affordability Subsidies

Another difficult question is, given a limited amount of public subsidy dollars, how much should be invested in energy efficiency improvements in low-income households and in providing access to distributed renewables for low-income people versus providing subsidized low-income rates and arrears forgiveness? Efficiency improvements and renewables provide ongoing, long-term affordability benefits, reduce greenhouse gases, and may also provide other intangible benefits such as "democratizing energy."[500] But they require more expensive up-front costs in any given year. For example, providing a whole home retrofit costs a little over $14,000.[501] In comparison, a hypothetical $50 monthly subsidy for a low-income rate would be one-twentieth of that amount per household per year. In any given year, twenty households could receive low-income rates to each household receiving a full-home retrofit, although such funding would need to be maintained year after year.

G. Documentary Burden vs. Verification

One significant criticism of existing federal programs—LIHEAP and the federal weatherization assistance program—is that they pose a high

498. For example, Shuchen Cong and coauthors demonstrate how the "energy burden" metric fails to capture low-income households that reduce cooling during hot days to reduce bills. *See* Cong et al., *supra* note 55, at 2456.

499. *See* discussion *supra* Part III.D.2.b (describing policies that forgive 100 percent or 50 percent of arrears without targeting a precise level of "affordability").

500. *See, e.g.*, Powers, *supra* note 11, at 561 ("Rather than view low-income households as perpetual recipients of lifeline rates, state planners and renewable energy advocates should begin to envision a future energy system in which low-income households are no longer reliant on expensive fuels and cross-subsidization through rate design."); *see generally* Shelley Welton, *Grasping for Energy Democracy*, 116 MICH. L. REV. 581 (2017) (discussing benefits of consumer decision-making in energy).

501. Steve Nadel, *For Existing Homes, Energy Efficiency Often Has a Better Return on Investment Than Solar*, ACEEE (May 21, 2019), https://www.aceee.org/blog/2019/05/existing-homes-energy-efficiency.

administrative burden. For example, both programs require applicants' verified proof of income and legal residency.[502] Studies have identified application complexity as one reason that eligible families do not apply—either because of the steps required to fill out the applications or because of government distrust.[503] Moreover, undocumented immigrants are not allowed to participate in federal programs, legal immigrants may have concerns that participation will affect their immigration status.[504] At the same time, efforts to reduce the documentary burden are often criticized for making it easier for unqualified customers to defraud the system.[505]

H. What About Those Without Physical Access to Electricity Service

Most households in the United States have physical access to utility electricity service—but not all.[506] Some rural households still do not have such service. The largest documented lack of electricity exists in the Navajo Nation.[507] One question is how to ensure that all households receive access to electricity service, including isolated households far away from transmission lines? One promising development is the use of new technologies—such as solar panels combined with battery storage—to provide some level of electricity service without connecting to the grid.[508]

I. Level of Support vs. Cost to Consumers

Perhaps the most fundamental question for policymakers is the tradeoff between making electricity affordable and accessible to all versus keeping electricity rates low. To the extent that state policymakers implement the full suite of innovations detailed here and fund these innovations through electricity

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502. *See* discussion *supra* Part III.B.1.a.

503. OFF. OF CMTY. SERVS., U.S. DEP'T OF HEALTH & HUM. SERVS., LIHEAP RESEARCH EXPERIENCES OF SELECTED FEDERAL SOCIAL WELFARE PROGRAMS AND STATE LIHEAP PROGRAMS IN TARGETING VULNERABLE ELDERLY AND YOUNG CHILD HOUSEHOLDS, https://www.acf.hhs.gov/ocs/report/liheap-research-experiences-selected-federal-social-welfare-programs-and-state-liheap (last updated June 27, 2019).

504. *Id.*; OFF. OF CMTY. SERVS., U.S. DEP'T OF HEALTH & HUM. SERVS., LIHEAP IM HHS GUIDANCE ON THE USE OF SOCIAL SECURITY NUMBERS (SSNS) AND CITIZENSHIP STATUS VERIFICATION, https://www.acf.hhs.gov/ocs/policy-guidance/liheap-im-hhs-guidance-use-social-security-numbers-ssns-and-citizenship-status (last updated June 20, 2019).

505. *See* U.S. GOV'T ACCOUNTABILITY OFF., GAO-10-621, LOW-INCOME HOME ENERGY ASSISTANCE PROGRAM: GREATER FRAUD PREVENTION CONTROLS ARE NEEDED (2010).

506. Aaron Larson, *Did You Know There are 60,000 U.S. Citizens Who Lack Access to Electricity?*, POWER MAG. (Oct. 1, 2020), https://www.powermag.com/did-you-know-there-are-60000-u-s-citizens-who-lack-access-to-electricity/ (estimating there are 15,000 households without electricity nationwide).

507. Heather Tanana & Warigia Bowman, *Energizing Navajo Nation How Electrification Can Secure a Sustainable Future for Indian Country*, BROOKINGS (July 14, 2021), https://www.brookings.edu/blog/how-we-rise/2021/07/14/energizing-navajo-nation-how-electrification-can-secure-a-sustainable-future-for-indian-country/.

508. *See generally* NATIVE RENEWABLES, https://www.nativerenewables.org/ (last visited Mar. 8, 2023).

costs, it will raise the cost of electricity for all. But at the same time, failing to implement such policies means that many will remain stuck in a cycle of unaffordable rates and utility shutoffs with all the consequences.

J. What about Red-state, Blue-state Issues?

Another critique might be that this emerging roadmap of state policies is likely only to be adopted by states with a heavy Democratic Party majority and broader support for welfare policies; the same states that already have robust state welfare policies in other areas like housing.[509] Consumers in Republican party majority states may never benefit from such policies.

Responses to this critique might include noting that sometimes welfare policies originated by blue states go on to get widespread support and become implemented by red states or at the federal level. State renewable portfolio standards and broader healthcare safety nets are respective examples.[510] Another point worth noting is that while most of the states profiled in this Article are blue states, some are classified as purple states (Colorado, New Mexico, Ohio).[511]

K. How does this apply to other utilities?

A final consideration is the degree to which these affordability and access policies can be applied to other utility services, including water and broadband internet services. Unfortunately, each of these services operates in a different regulatory framework. Water service, for example, is largely provided by utilities owned by local governments, though it is sometimes provided by for-profit utilities regulated by utility commissions.[512] Retail internet service is largely not subject to economic regulation, though various federal programs seek to incentivize universal access and affordability, building on the universal service goals of telephone service under the Federal Communications Act.[513]

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509. *See* Joshua Holland, *Under Trump, Red States are Slashing the Safety Net and Blue States are Fighting Back*, THE NATION (Jan. 30, 2018), https://www.thenation.com/article/archive/under-trump-red-states-are-slashing-the-safety-net-and-blue-states-are-fighting-back/; ALEXANDRA CAWTHORNE GAINES ET AL., HOW WEAK SAFETY NET POLICIES EXACERBATE REGIONAL AND RACIAL INEQUALITY 1 (2021) (finding "South, West, and Midwest [states] have consistently weaker safety nets than the Northeast").

510. *See generally* Barry Rabe, *Race to the Top The Expanding Role of U.S. State Renewable Portfolio Standards*, 7 SUSTAINABLE DEV. L. & POL'Y 10 (2006) (describing how RPS policies became widespread); Megan Messerly, *A Complete About Face' Some Republicans Change Tune on Obamacare's Medicaid Expansion*, POLITICO (Nov. 30, 2022), https://www.politico.com/news/2022/11/30/obamacare-medicaid-expansion-kansas-north-carolina-00071253.

511. *See Blue and Red States*, 270TOWIN, https://www.270towin.com/content/blue-and-red-states (last visited Apr. 10, 2023).

512. Janice A. Beecher & Jason A. Kalmbach, *Structure, Regulation, and Pricing of Water in the United States A Study of the Great Lakes Region*, 24 UTILS. POL'Y 32, 32 (2013).

513. *How Should Broadband Be Regulated?*, PEW CHARITABLE TRS. (Aug. 25, 2021), https://pew.org/3DgTxZu (noting broadband internet is "subject to only limited oversight by the states" including PUCs); LENNARD G. KRUGER & ANGELE A. GILROY, CONG. RSCH. SERV., RL30719, BROADBAND INTERNET ACCESS AND THE DIGITAL DIVIDE: FEDERAL ASSISTANCE PROGRAMS (2019) (describing limited federal regulation and incentives).

It is beyond the scope of this Article to analyze in any depth how the innovations can be translated to these other utility services. But in general, it seems that the same basic approach—setting a policy of affordability and access, lowering demand with conservation strategies, making service affordable for low-income people, and implementing policies to reduce disconnections, can be applied to these other services.

CONCLUSION

New empirical research has demonstrated that access to electricity is tenuous and unaffordable for many low-income Americans. Indeed, disconnections of low-income people are relatively common and disproportionately affect households of color. The effects of electricity disconnections are profound, with significant impacts on health, education, and even homelessness. The importance of electricity access will only increase as work and education become even more reliant on remote access, and electricity becomes more important in the move to "electrify everything" in the low-carbon economy. Moreover, there is arguably an emerging international human right norm of universal, affordable access to electricity services and a growing recognition in the international context that this requires increased protections, including subsidies, for lower-income people. Such a norm likely requires countries not to offer free electricity, but to take actions to move towards a reality of universal, affordable access.

In this context, several U.S. states have been implementing policies that, together, provide a roadmap toward universal, affordable access. These policies build on a baseline of critical but insufficient federal and state policies but go further to make electricity service more affordable and to better protect against disconnections. The innovations come in four categories: making affordability and access explicitly part of the mission of utility regulation and ensuring that utility commissions have sufficient authority to implement such policies; lowering demand for electricity through increased funding for energy efficiency improvements to low-income housing, especially among households with the greatest energy burden; making electricity service more affordable, such as through low-income rates expressly designed for affordability; and reducing disconnections, particularly through arrears assistance programs.

This emerging model of state action raises a number of considerations for policymakers, including whether addressing affordability and access through utility regulation is very efficient or effective. This Article does not answer those questions but identifies them as important starting points for future research.

However, this Article demonstrates that several states are pursuing such policies, indicating that these actions can be a politically viable path forward.