



Center on Global Energy Policy

COLUMBIA UNIVERSITY | SIPA

Energy Opportunity Lab

World Forum on Energy Regulation (WFER IX)

September 2026

Session 4a – Consumer Empowerment & Energy Poverty Mitigation

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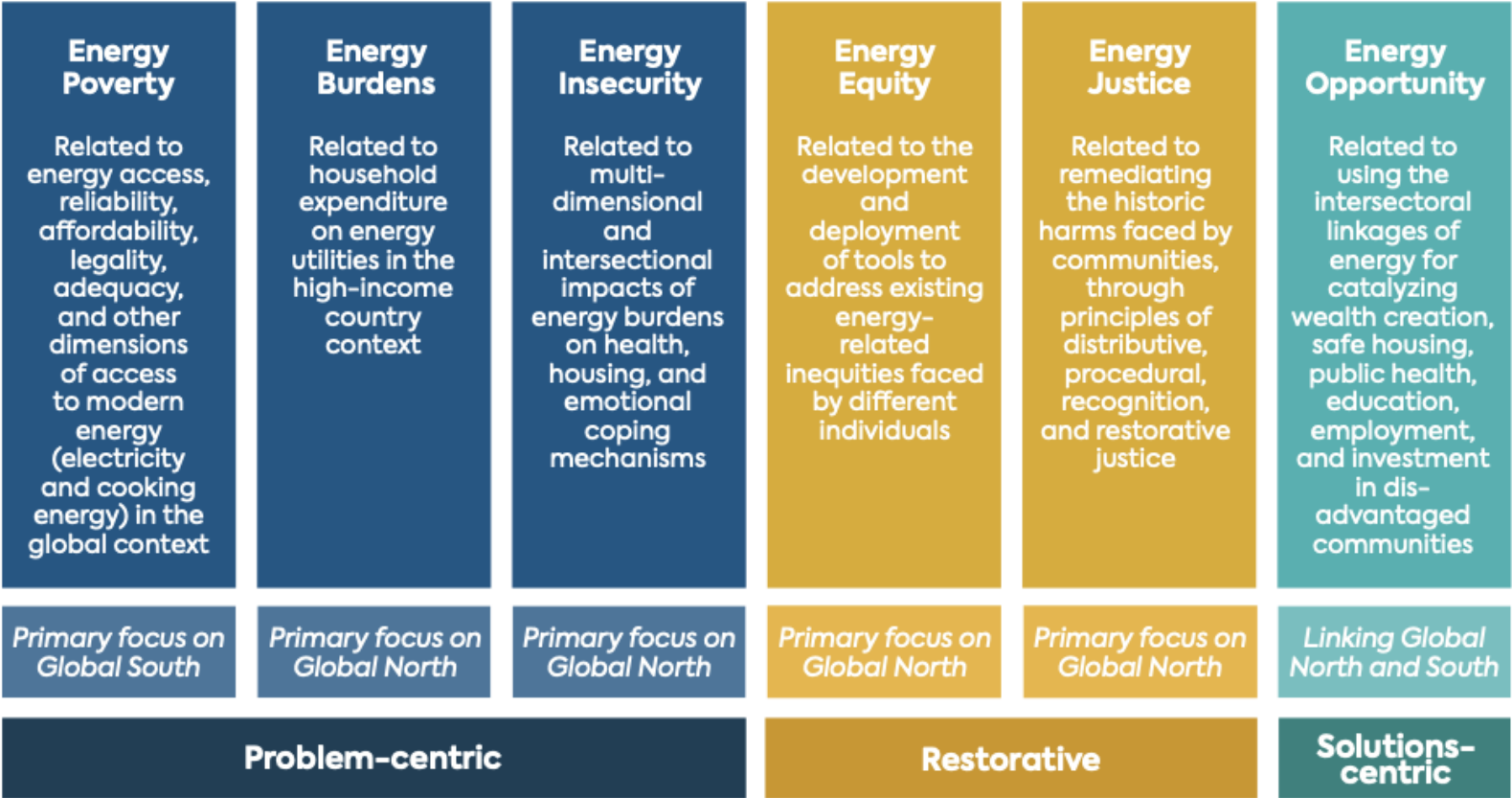
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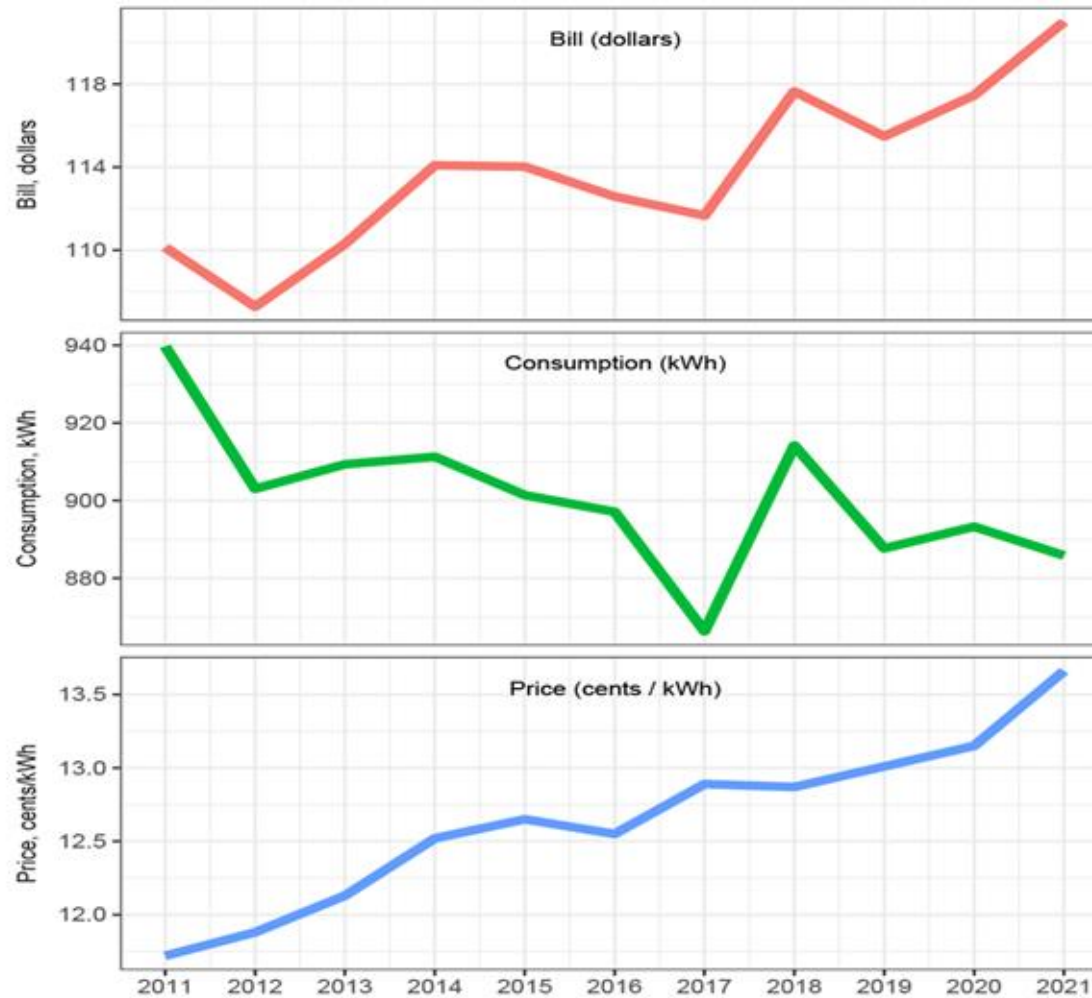
About the Energy Opportunity Lab

EOL aims to catalyze opportunities for improved life chances through energy via actionable research, strategic convenings, community collaborations and equity-focused practical and policy solutions in order to eradicate energy insecurity in historically disadvantaged communities across the US and enable energy for development globally.



Addressing Energy Insecurity Upstream via Ratemaking

Average Monthly Residential Electricity Bill, 2021

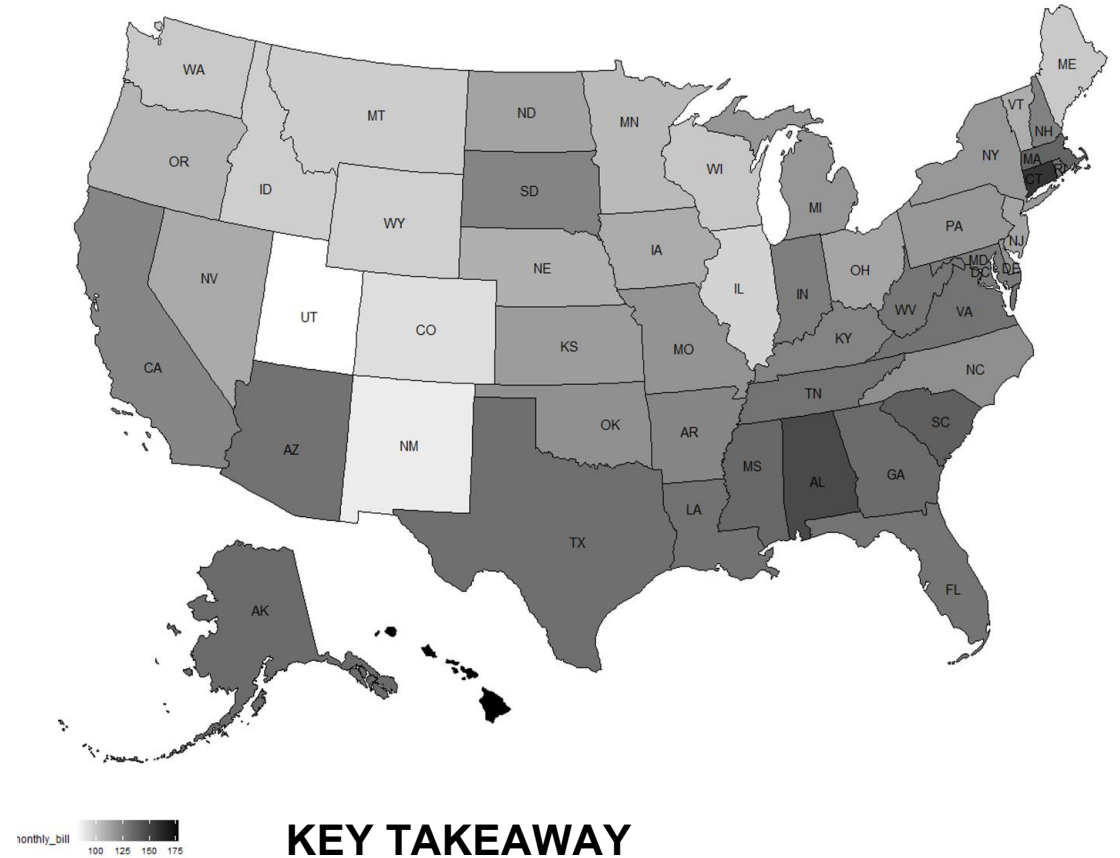


Source: Energy Information Administration



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- Price of energy has increased
- Consumption has decreased
- Bills have **skyrocketed**



KEY TAKEAWAY

- **Approaches** to address energy affordability have not gone far enough **upstream**
- Structural approaches are needed to offer relief to households struggling to pay bills

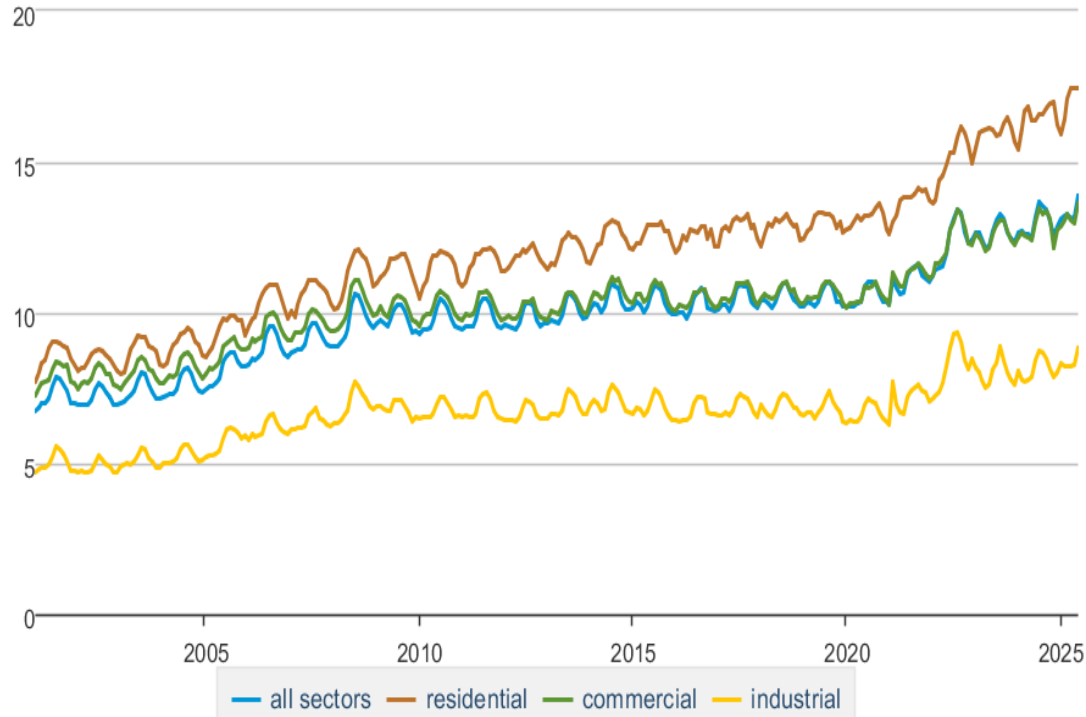
High Prices, Record Profits

When energy intersects with poverty and inequality people suffer

Electricity Prices

Average retail price of electricity, United States, monthly

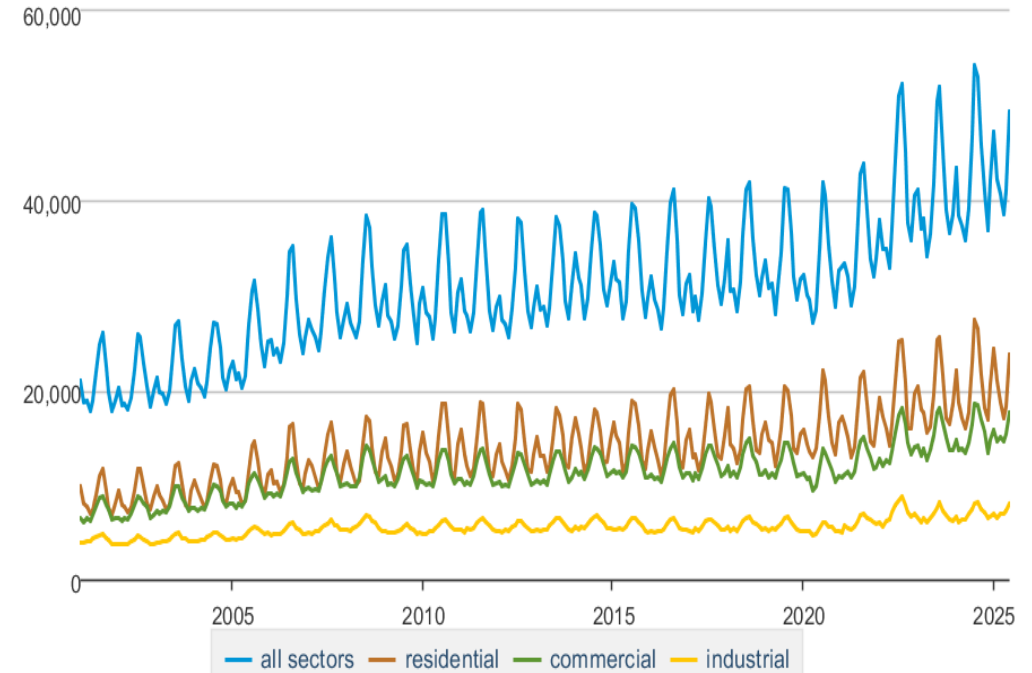
cents per kilowatthour



Revenue from electricity sales

Revenue from retail sales of electricity, United States, monthly

million dollars



Lived Hardship

As of Today 9/20/19, 8/1/19
2/1/19, my bill has been
Over the Limit, I'm Not using
those many Kw a month. My
bill has Never been this high
and I don't understand why it's
this high Now. I has been with
this C for over 45 years
And never had bills like these
3 Months. I had my house weather
by an Expert in 2011, I built my house in 1995 my B
Under \$100.00 as the year
by it kept going up 50%
until now it just external
I Can't pay this much a
a month, I has no electer
I has no Electric Clocks, No
Items plugs up in my house

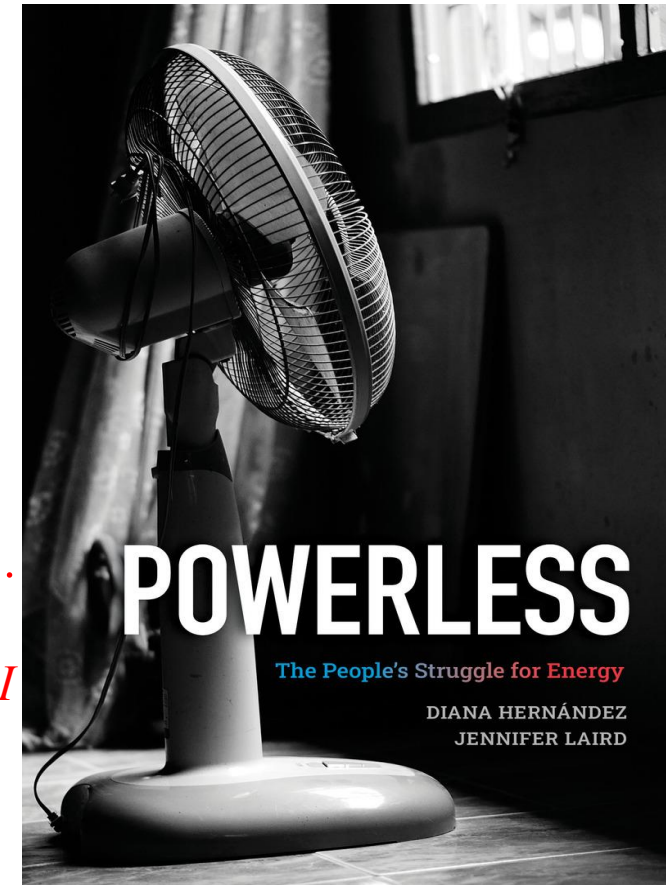
2 peoples lives here I'm 73 and
62. I'm gonna make this long
Story Short, My Bill is Just too
High.

*My bill has never been
this high, and I don't
understand why...I've
never had a bill like
that in the 45 years
we've owned the
house...*

*They just charge me
too much for light.*

*It's not that I don't
know what I'm doing...
I'm very particular
about everything that I
do, and I still can't
keep up.*

- Betty, African
American homeowner,
60s, Greene County, AL

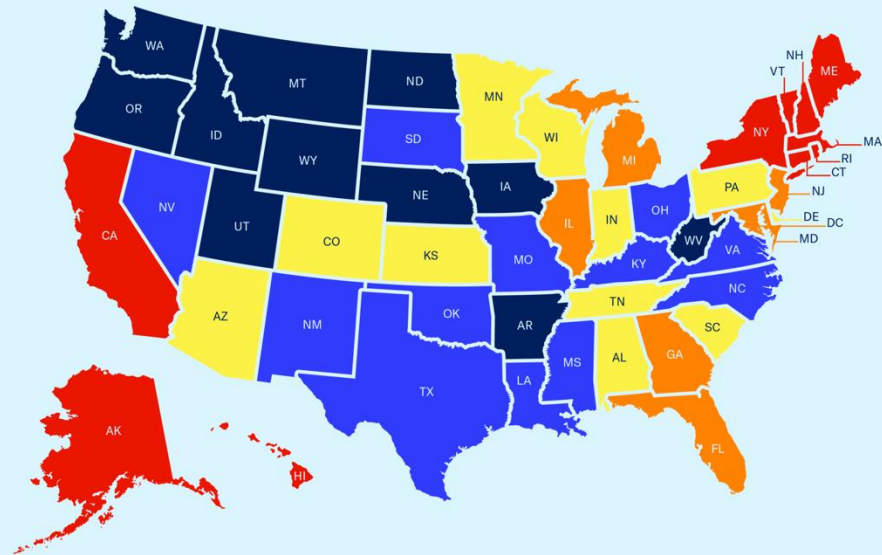


Utility Rates Vary; Energy insecurity does too

2022 Average U.S. Electricity Retail Prices

Shown in cents per kilowatt hour. The national average is 12.49.

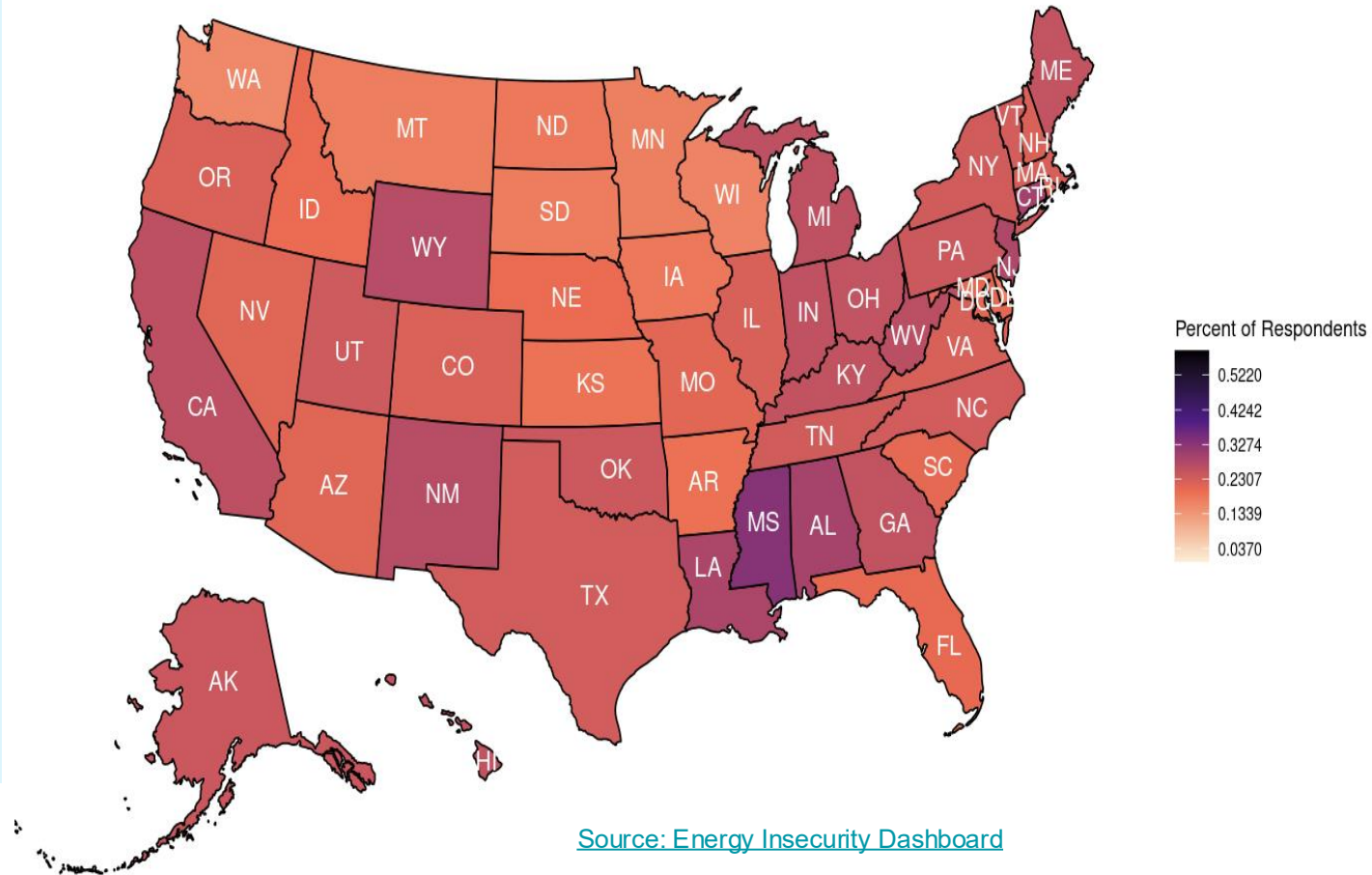
8.00-9.99 10.00-10.99 11.00-11.99 12.00-14.99 15.00+



Source: U.S. Energy Information Administration;
Electric Power Monthly: February 2023



Unable to Pay Bills, HPS (2024)



Source: [Energy Insecurity Dashboard](#)



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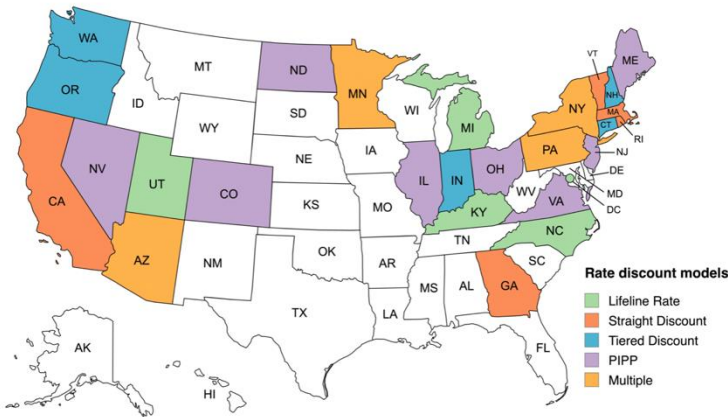
Utility Policies and Practices to Alleviate US Energy Insecurity

Commentary by Qëndresa Krasniqi, Vivek Shastri, Alexandra Peek + 1 more • July 01, 2024



- **Lifeline rates:** a baseline volume of electricity is discounted to cover an eligible household’s basic necessities, with energy use in excess of the baseline charged at normal rates. For example, Utah offers a Low-Income Lifeline Program whereby qualifying households’ monthly bills are the sum of their electric service charge and a \$13.95 lifeline credit.^[7]
- **Straight discount models:** bills are reduced by a set percentage or dollar amount for all eligible households. For example, the California Alternative Rate for Energy (CARE) program has a straight discount rate for utility customers who enroll in Low Income Home Energy Assistance Program (LIHEAP)—30–35% depending on which IOU a customer is served by.^[8]
- **Percent of income payment plans (PIPPs):** regulators decide on an acceptable energy burden (the percentage of customer’s household income that is spent on energy) and credit any amount exceeding that on each bill. For example, New Jersey’s PIPP is administered through a Universal Service Fund that provides a monthly credit on eligible customers’ electric and natural gas bills. The program’s goal is to ensure that households aren’t paying more than 6% of their gross income on both bills combined, which is the most commonly used energy burden cap.^[9]
- **Tiered discount models:** qualifying households are grouped into tiers based on income level and assigned a range of discounts, with the largest discount received by the lowest income group. For example, New Hampshire’s Electric Assistance Program (EAP) offers monthly electric utility bill discounts ranging from 5% to 86%, depending which of five tiers qualifying customers fall into.^[10] All ratepayers support the EAP through a surcharge on their electric bills for system benefits.

Figure 1: Low-income utility discount programs in US states



EOL Research on Utility Rates and Ratemaking



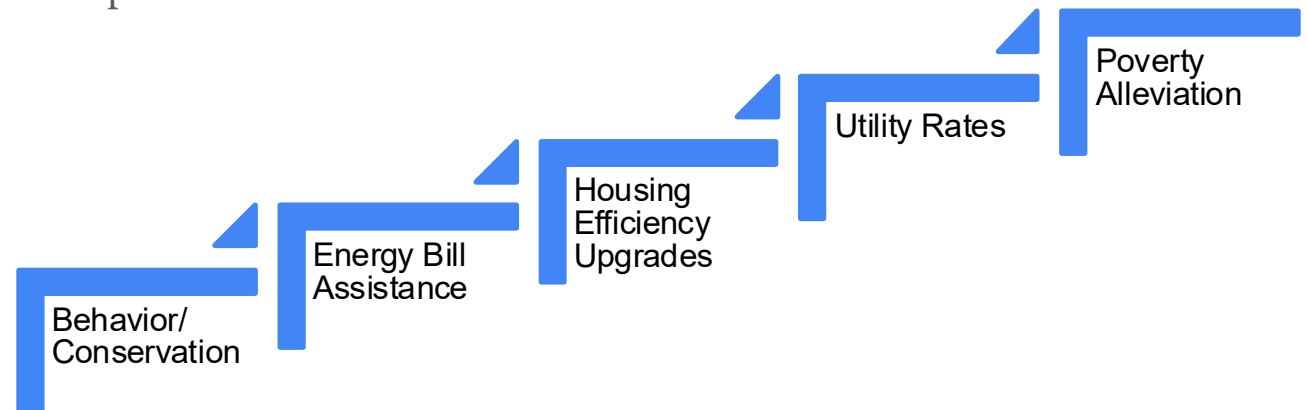
ADDRESSING ENERGY INSECURITY UPSTREAM: ELECTRIC UTILITY RATEMAKING AND RATE DESIGN AS LEVERS FOR CHANGE

*Emma Shumway, Diana Hernández, Qëndresa Krasniqi, Vivek Shastry, Abigail Austin, and Michael B. Gerrard**

Synopsis: Millions of Americans are impacted by energy insecurity each year, in part due to unaffordable and inequitable electricity rates. The electric ratemaking process presents opportunities to confront issues of affordability and equity or to instead entrench traditional approaches. State legislatures, public utility commissions (PUCs), and advocates all play vital roles in making the former a reality. Historically, ratemaking has been criticized as an insular and highly technical process that caters to utilities rather than customers. But states like California and New York are making strides by broadening PUC legal authority to include explicit consideration of equity issues, adjusting incentives and values within the rate formula, implementing novel rate designs alongside other low-income customer protections, and instituting measures to make ratemaking a more procedurally just process. Other states should replicate these efforts, and those that have started making progress must continue, as energy insecurity persists.

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- State and federal legislation review
- PUC dockets, court rulings, and case documentation review
- Academic and grey literature review: affordability, energy equity, and utility ratemaking analysis and frameworks
- Expert Interviews



* Emma Shumway is a Climate Justice Fellow at the Sabin Center for Climate Change Law at Columbia Law School. Diana Hernández is the Managing Director of Domestic Programs at the Energy Opportunity Lab.



Foundational Legal Standards and Ratemaking Principles

- Public Interest
- Cost of service ratemaking
- Just, reasonable, and non-discriminatory
- Cost causation principle

Cost of Service Ratemaking:

- Can encourage utilities to expand their capital base to increase shareholder returns (Averch-Johnson effect).
- Confidential utility data reduces transparency, limiting external parties' ability to independently verify assumptions and assess the filings.

Cost Causation Principle:

- Inherently subjective, relying on contested assumptions and methodologies that can lead to widely varying rate allocations.
- Industrial and commercial customers are better resourced to navigate the cost allocation process and advocate for outcomes that reduce their share of costs.
- Cost causation alone is an insufficient foundation for serving the broader public interest, as perfectly cost-causal rates are practically unattainable.



Mapping Interventions Across the Ratemaking Lifecycle

- We reviewed the decision points across the ratemaking process that shape affordability outcomes: from upstream **systems planning through revenue requirement, class allocation, rate design, and bill discounts**
- For each stage, we identified what's currently being implemented, actively discussed, or piloted by regulators, utilities, and advocates: drawing on rate case filings, PUC dockets, and academic and policy literature
- The further left we go, the more affordability becomes a design feature rather than an outcome to soften



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Affordability as a Late-Stage Intervention

- ➡ Electricity affordability is mostly addressed remedially, through bill assistance and discounts
- ➡ A significant gap of affordability considerations in the early decisions

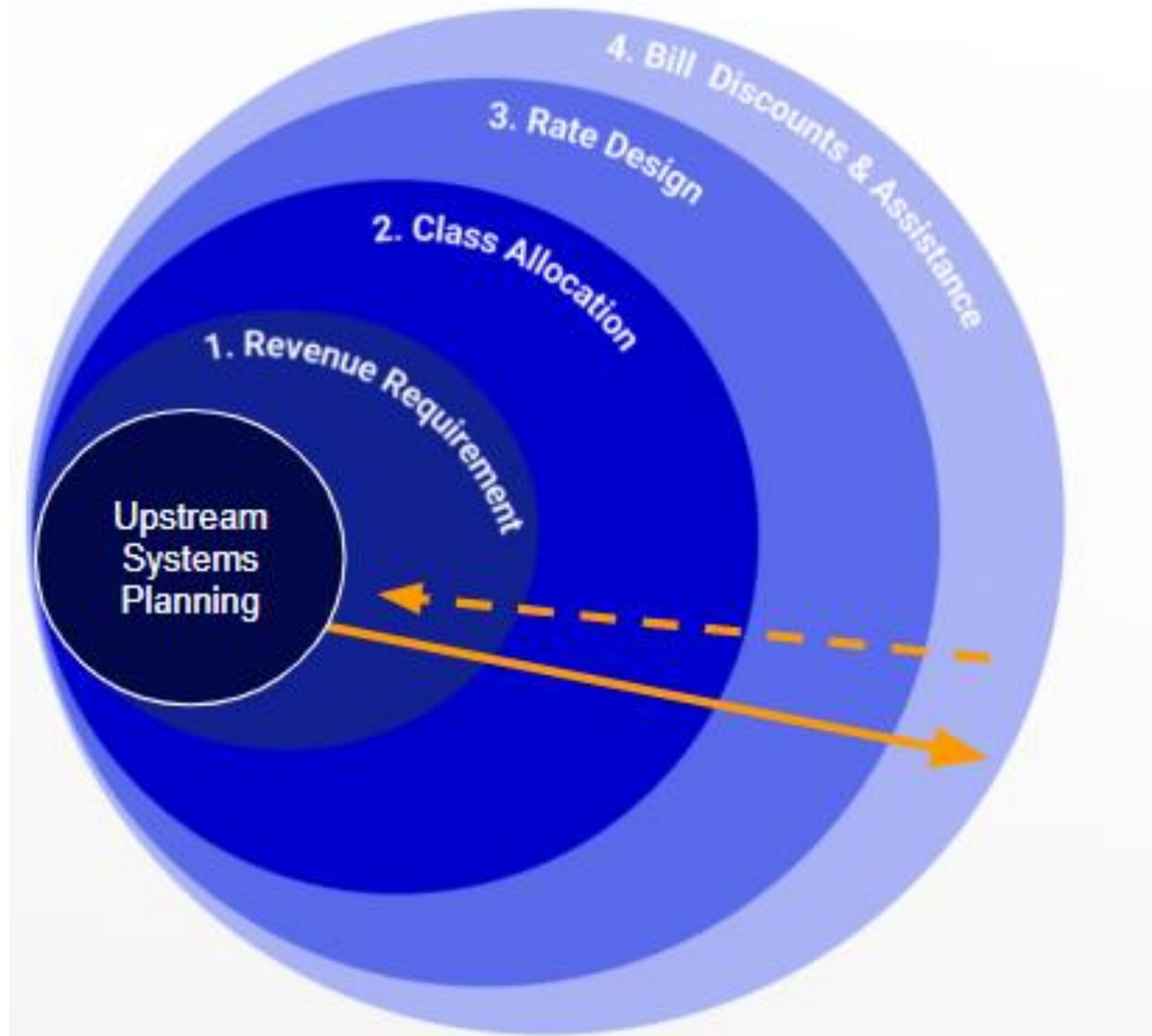


Moving Affordability *More to the Core*

- Affordability is currently treated as an outcome to soften, not a variable to design for

But:

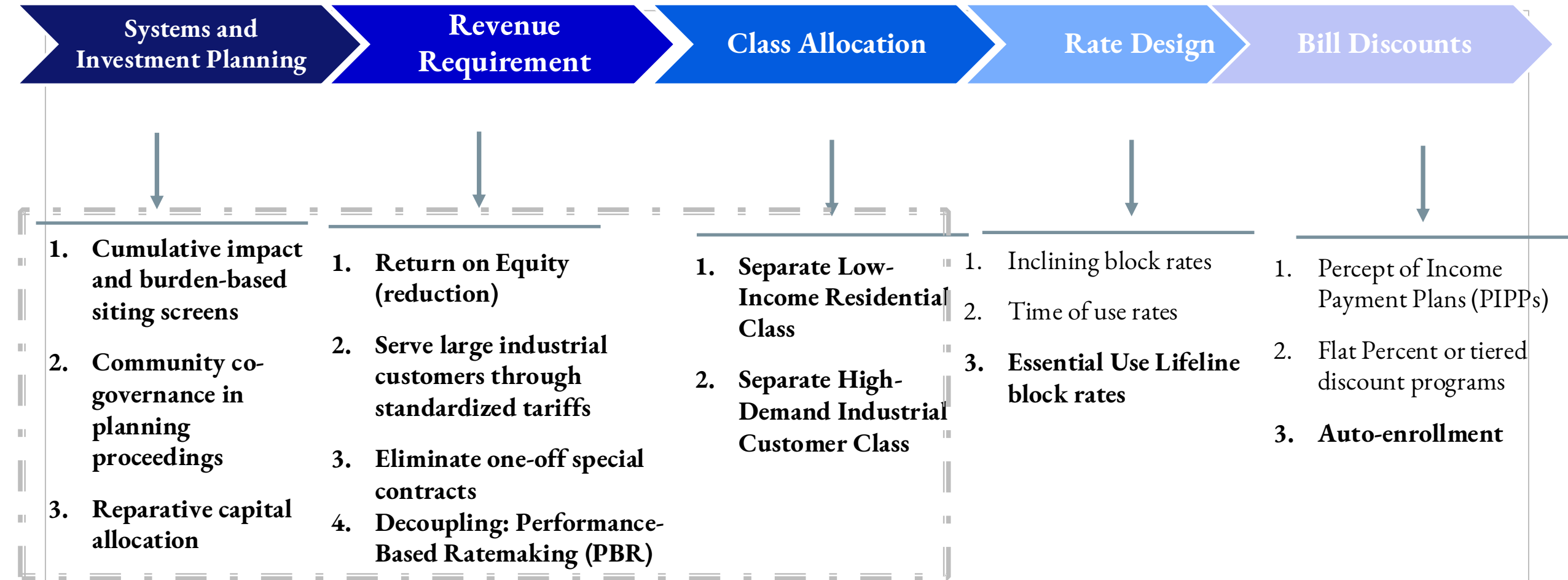
- Upstream systems and investment planning determines what gets built and what it costs
- Revenue requirement and class allocation determine how those costs get recovered and who they land on
- By the time rate design or bill discounts come into play, the burden is already largely set



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What does moving to the core look like?

From Remedial Fixes to Proactive Affordability Interventions



Interventions Closer *to the Core*

- **Systems and Investment Planning** - *determine what gets built, where, and for whom, before any cost is incurred:*
Cumulative impact and burden-based siting screens, community co-governance in planning proceedings, community benefits requirements, reparative capital allocation.
- **Revenue Requirement** - *determine how much is recovered and from which cost drivers:*
ROE, standardized tariffs for large industrial customers, elimination of one-off special contracts, decoupling/performance-based ratemaking.
- **Class Allocation** - *determine how that recovered cost is divided across customer groups:*
Separate low-income residential and high-demand industrial customer classes



Not All Interventions Carry the Same Weight

Among these stages, interventions can range from more structural, and have more long-term effect in making the utility system fairer, to more superficial, addressing symptoms without shifting the underlying rules.

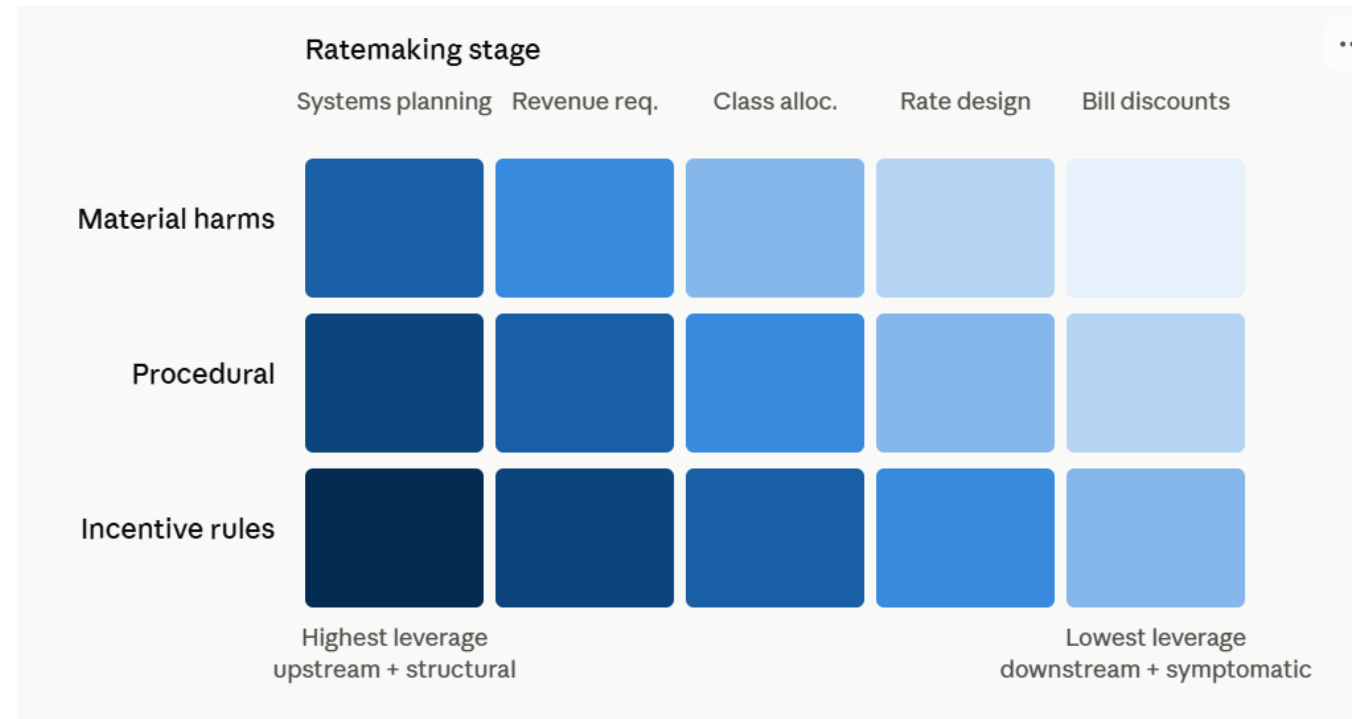
- **Material harms and outcomes** - the visible effects of unaffordability (high bills, arrears, debt) are what most interventions are ultimately trying to address, but only responding to them directly does little to change how they arise. Examples: Bill discounts, PIPPs.
- **Procedural barriers** - who gets to participate, what's disclosed, and how decisions are contested. Interventions here are meant to address or improve who gets to participate and how. Examples: autoenrollment, intervenor funding, data disclosure mandates, community co-governance in planning proceedings
- **Incentive Structures** - how utilities are rewarded or penalized within the existing system. Interventions here are meant to realign what utilities are financially motivated to do. Examples: Return on Equity, Decoupling, PBR, Cumulative Burden and Benefit Analysis, Reparative Capital Allocation



Two Ways to Read the Same Map

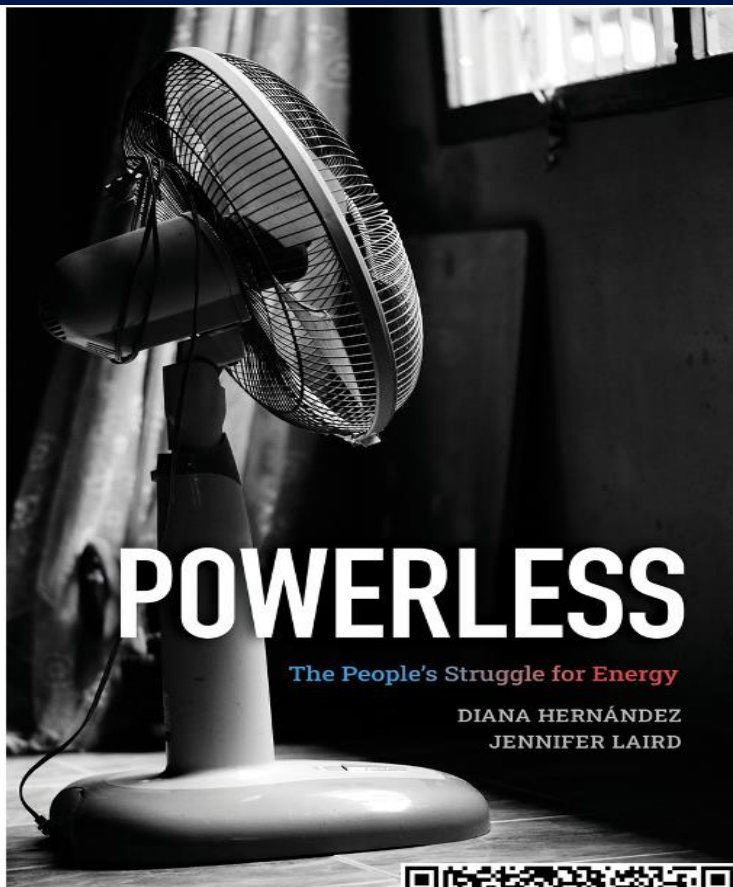
Across this talk, we've looked at the ratemaking lifecycle two ways: where a decision gets made, and how deep an intervention reaches

- Horizontally, across the lifecycle: the further upstream an intervention sits, the more affordability becomes a design feature rather than an outcome to soften
- Vertically, at any single stage: interventions can still differ by depth, relieving harm directly, expanding participation, or realigning the rules and incentives underneath
- Durable affordability reform means moving on both axes at once, earlier in the lifecycle and deeper in what's actually being changed





Thank you!



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