Caught in a Fix

The Problem with Fixed Charges for Electricity

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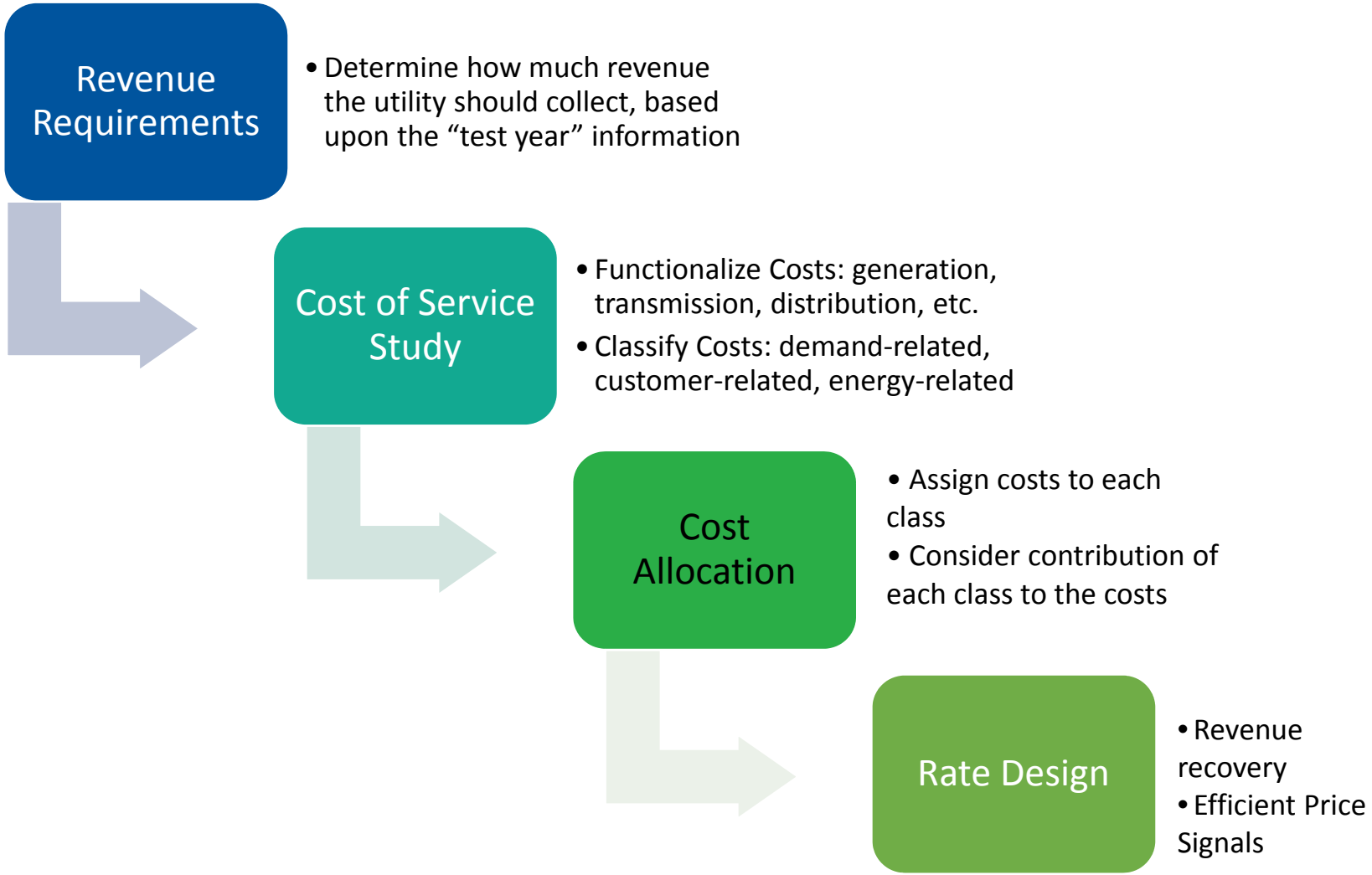
The Problem with Fixed Charges for Electricity

- Report prepared with support from the Energy Foundation and Consumers Union.

- Available at: http://www.synapse-energy.com/Caught-in-a-Fix

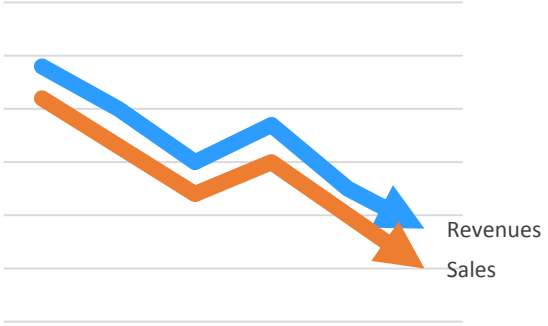
Background

Basic Steps in Ratemaking

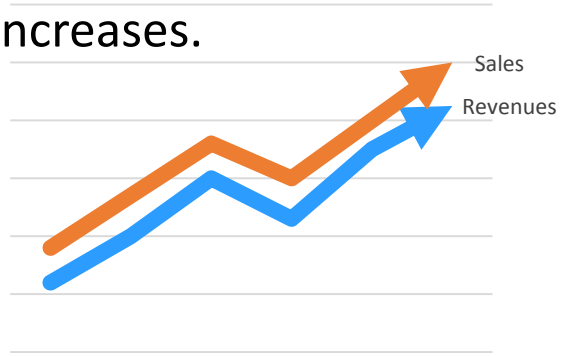


Rates, Revenues, and Sales

- For residential customers, most revenue is collected through the volumetric charge: $/kWh
- Rates are set in a rate case and typically remain fixed until the next rate case, regardless of whether sales increase or decrease.
- If sales decline before the next rate case, revenue declines.

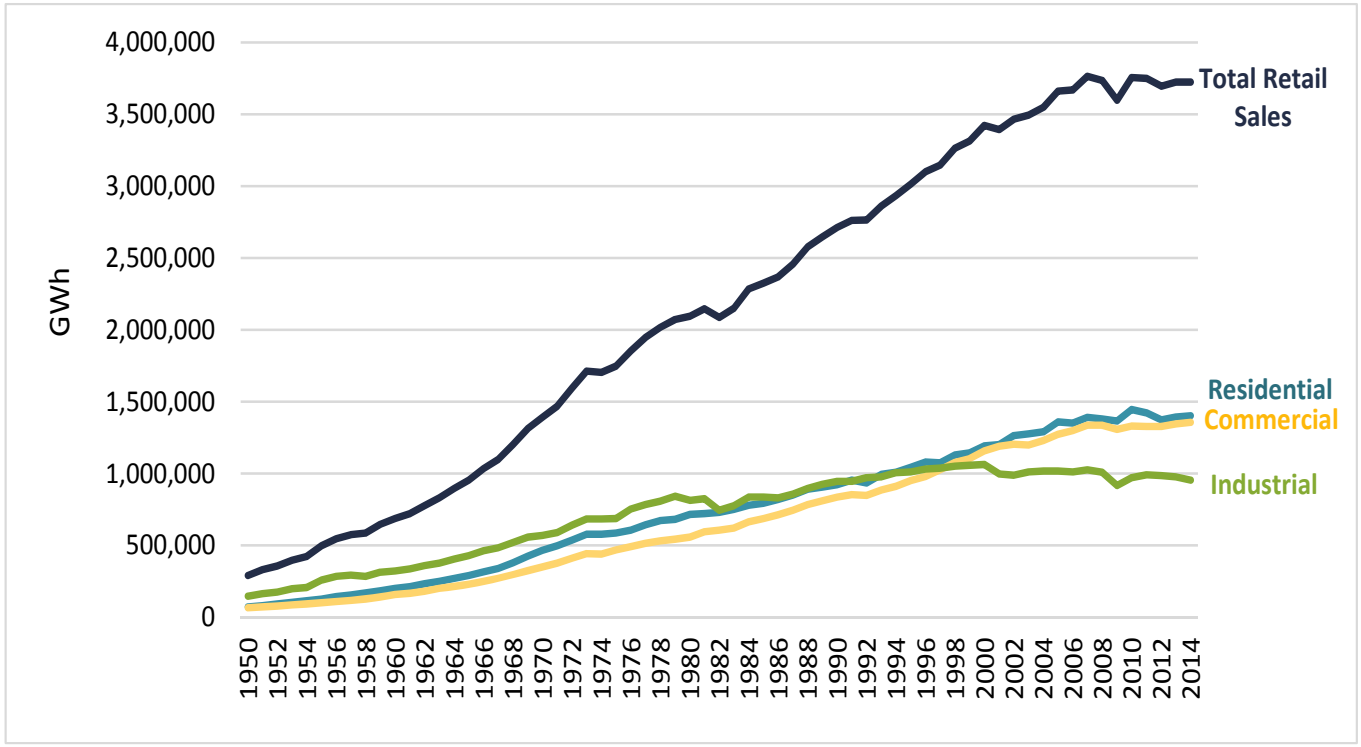


- If sales increase before the next rate case, revenue increases.



Sales

- Historically, sales were generally increasing, and costs were relatively stable.
- Today, sales are often flat or declining.
- Utilities are concerned about anything that has the potential to reduce sales and utility profits (energy efficiency, distributed generation, economy)



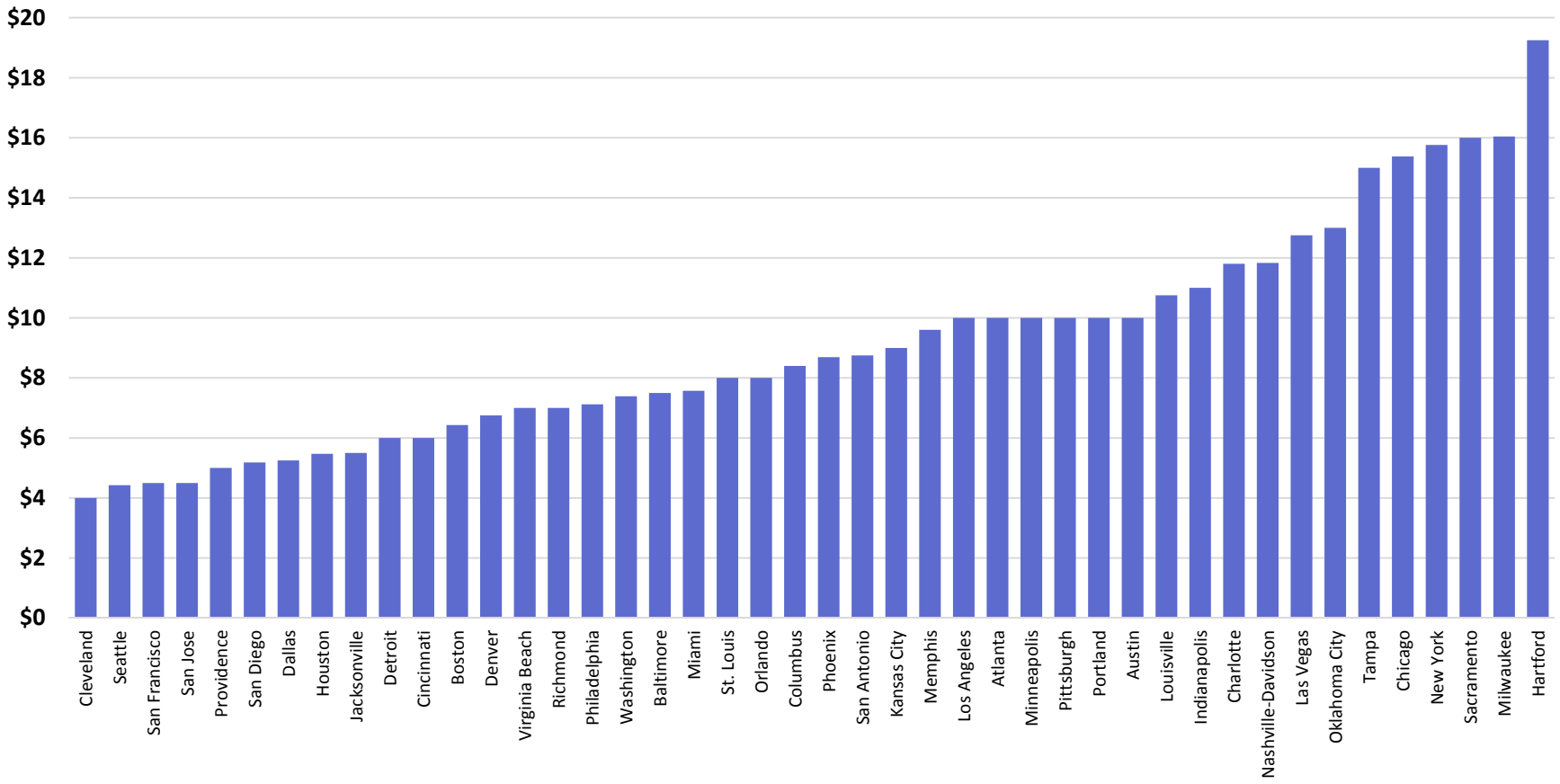
Source: EIA

Fixed Charges

- Not all revenues are collected through the energy charge ($/kWh)
- Other types of charges:
  - **Fixed charge**: dollars per customer (per month)
    - *Also called the customer charge. Generally designed to recover customer-related costs.*
  - Demand charge: dollars per kilowatt (kW) of maximum demand
    - *Typically not applied to residential customers*
    - *Where there is no demand charge, utilities sometimes argue that many demand-related costs should be recovered through the fixed charge instead of the energy charge.*
- Utilities want to increase the fixed charge (and decrease the energy charge) to protect themselves from impacts of reduced sales

Fixed Charges in Major U.S. Cities

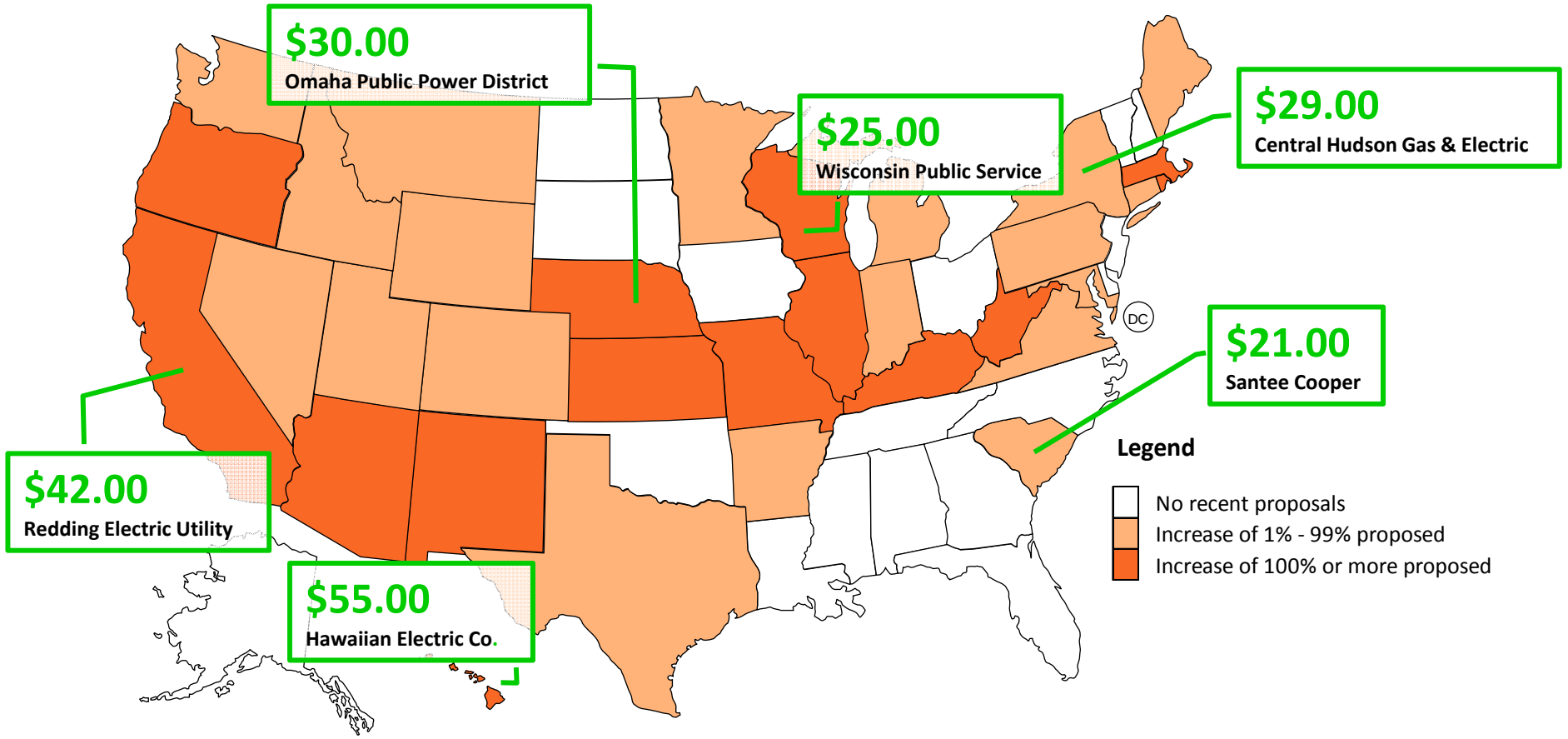
Most residential fixed charges range from **$5** to **$10**/month



Source: Synapse research based on utility tariff sheets as of August 19, 2015.

Proposals to increase the fixed charge

- **75** recent fixed charges identified in report (late 2014 – 2015)
- Many utilities proposing steep fixed charge hikes, with an average proposed increase of **96%**



Why are fixed charges bad for customers?

#1. Fixed charges reduce customer control

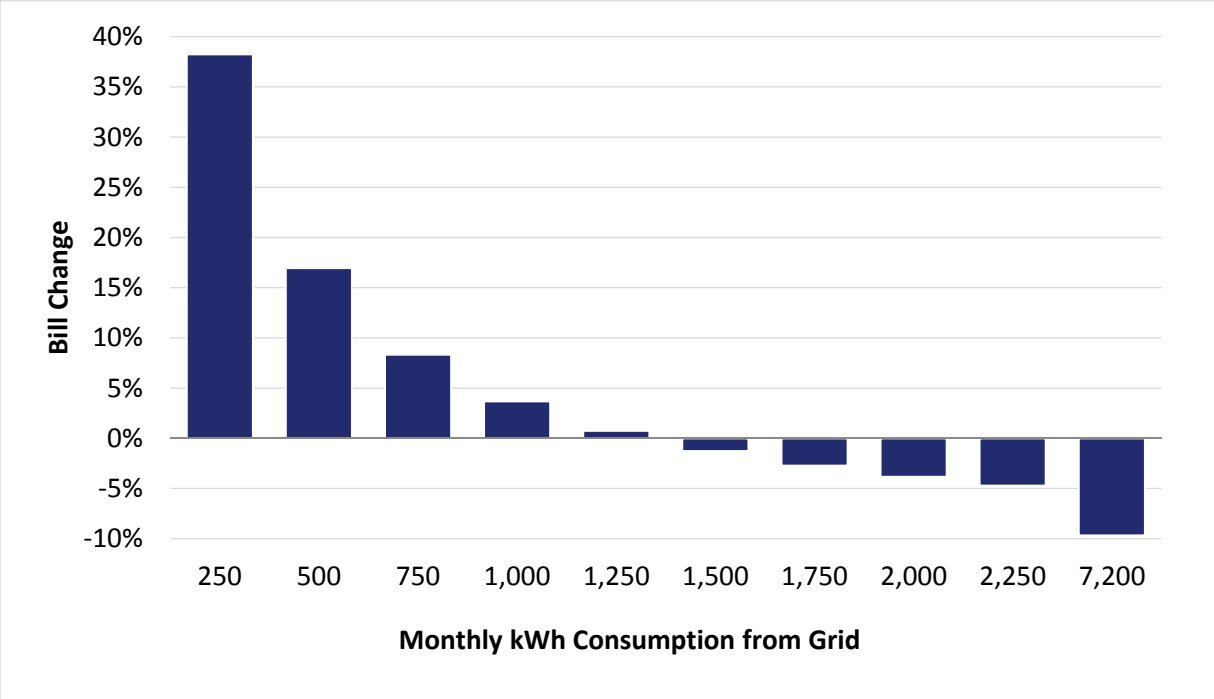
- Fixed charges disempower customers. The only way to avoid the charge is to stop being a utility customer.
- Customers oppose the loss of control

"If there has to be an increase, at least leave the control in the consumers' hands. Charge based on the usage. At least you are not penalizing people who have sacrificed to conserve energy or cut their expenses."

D. Pocsay, Customer of Connecticut Light & Power

#2. Low usage customers hit hardest

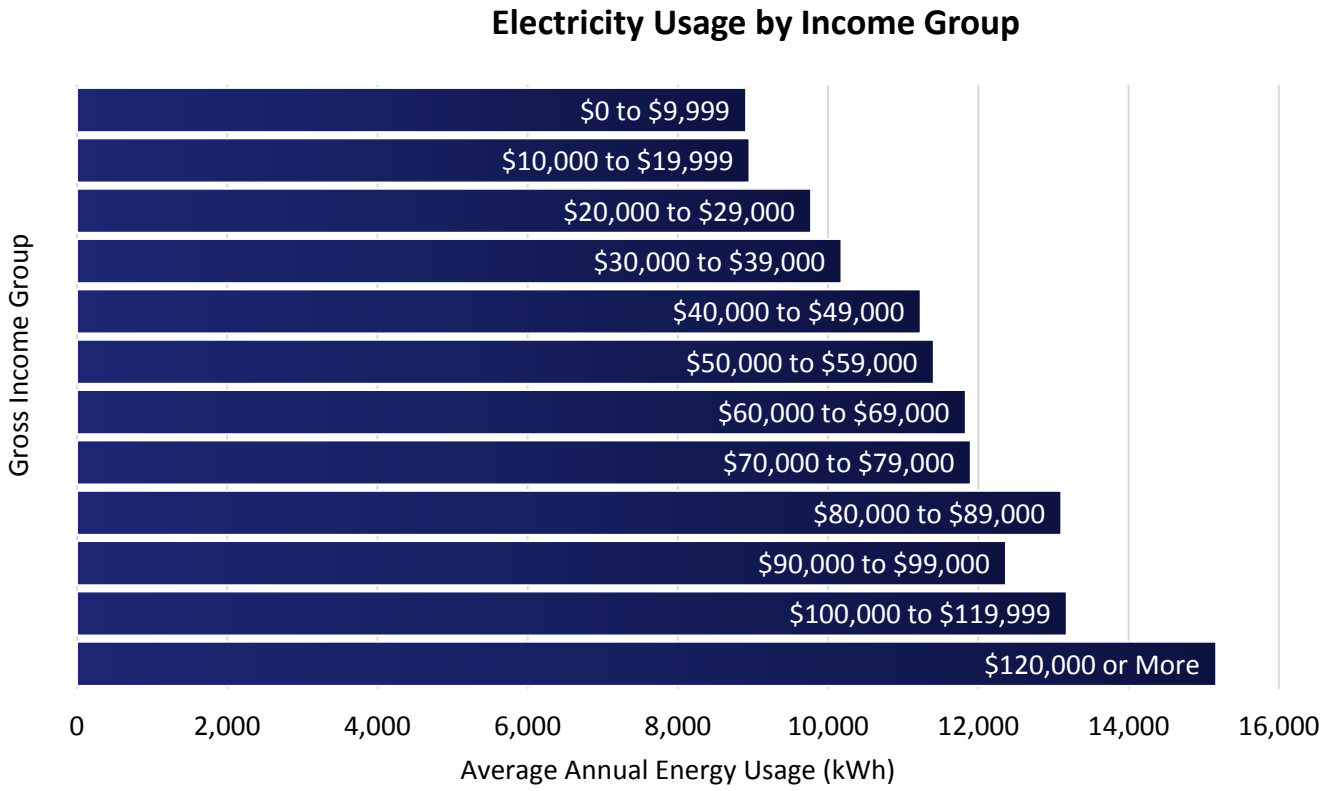
Example: Estimated impact of revenue-neutral increase in fixed charge from $9/month to $25/month (with simultaneous decrease in $/kWh):



Customers using 250 kWh will see an increase of nearly **40%** in their bills, while high-usage customers see a decrease in their bills.

#3. Disproportionate impacts on low-income customers

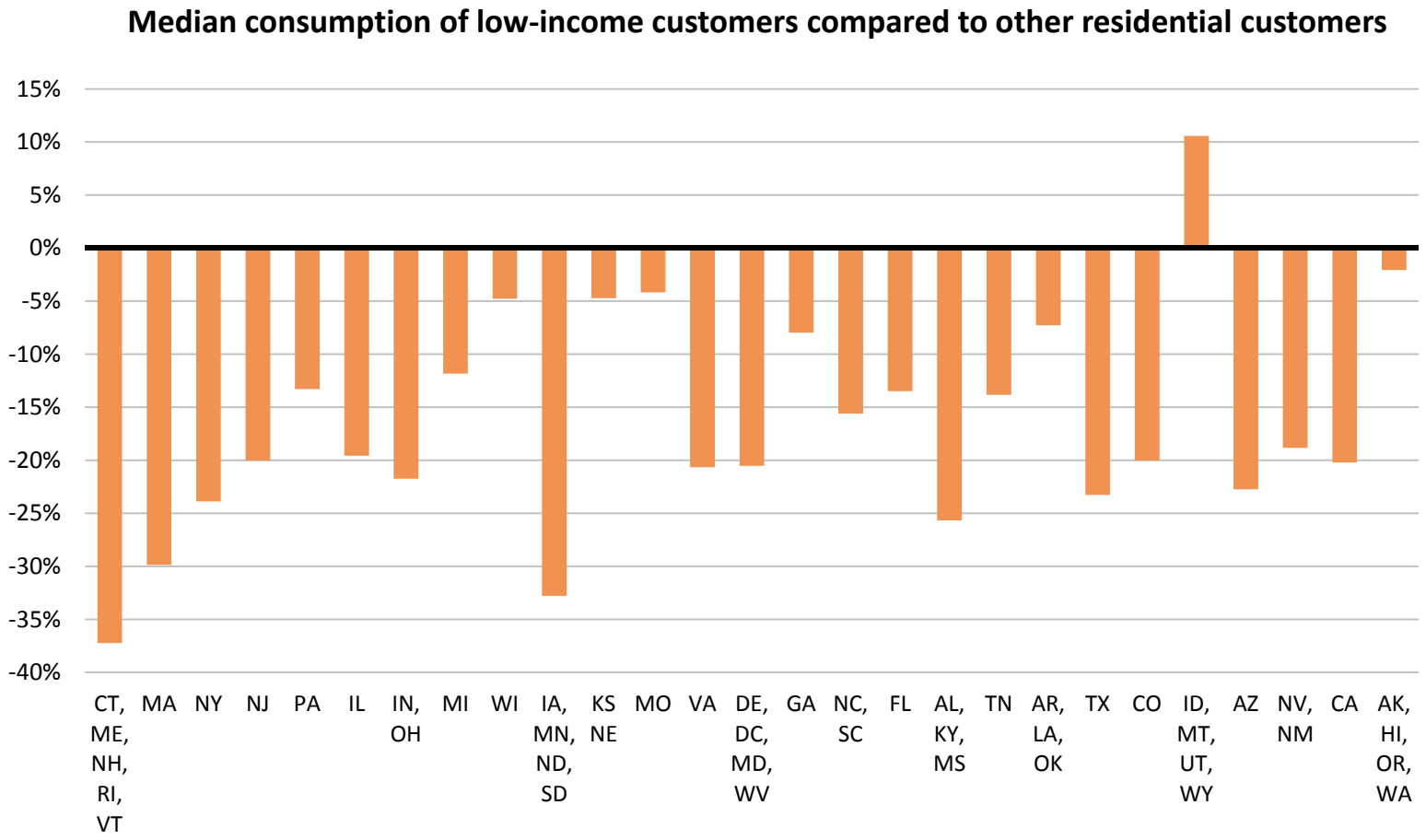
- Low-income customers tend to be low-usage



Source: EIA Residential Energy Consumption Survey (2009)

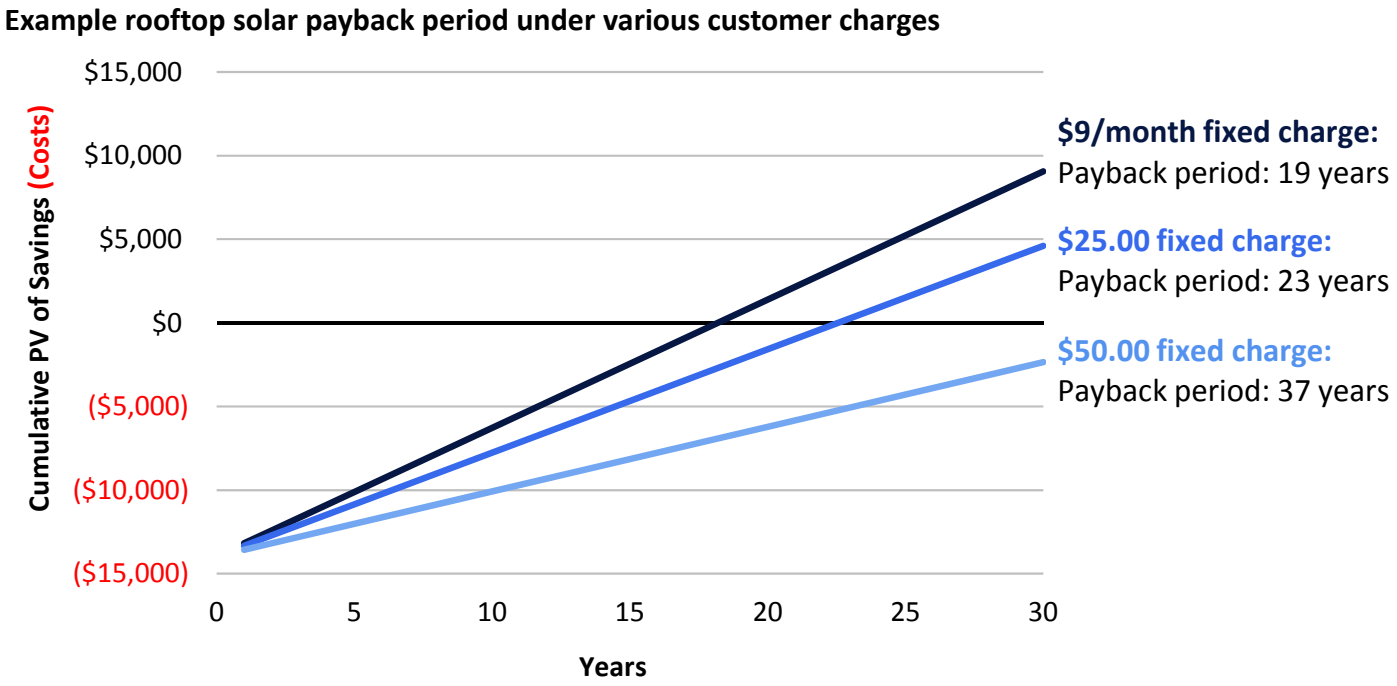
#3. Disproportionate impacts on low-income customers

- Relationship holds true in nearly every state



#4. Reduced incentives for EE and DG

- Holding all else equal, a higher fixed charge means a **lower $/kWh** charge
- With a high fixed charge, every kWh saved through energy efficiency or distributed generation is less valuable.



All three scenarios assume monthly consumption of 850 kWh. The $9.00 per month fixed charge assumes a corresponding energy charge of 10.36 cents per kWh, while the $25 fixed charge assumes an energy charge of 8.48 cents per kWh, and the $50 fixed charge assumes an energy charge of 5.54 cents per kWh.

#5. Increased electric system costs

- Higher fixed charges reduce incentives to invest in energy efficiency and distributed generation.
- Customers may actually **increase** electricity usage, since electricity is cheaper on a per kWh basis
- Higher electricity usage will lead to **more infrastructure investments** sooner, increasing system costs.
- May also lead to higher costs to comply with Clean Power Plan or other regulations, since energy efficiency programs will **cost more to achieve the same savings** as before.

Common Myths

Myth: “Most utility costs are fixed”

- **What costs are fixed costs?** Depends on the time frame. Few costs are fixed over the utility’s planning horizon.
- **What time frame is appropriate for rate design?** Bonbright argues that the appropriate time frame is the utility’s long-term planning horizon. One of the primary purposes of rate design is to send efficient price signals to customers regarding long-run marginal electricity costs.

> “…the more significant marginal or incremental costs are those of a relatively long-run variety – of a variety which treats even capital costs or "capacity costs" as variable costs.”

James Bonbright, Principles of Public Utility Rates (New York: Columbia University Press, 1961), p. 336.

Myth: "Fixed costs are unavoidable"

- **Are infrastructure costs fixed and unavoidable?** No, only ***sunk*** costs are. Past investments in electricity infrastructure must ultimately be recovered, and rates should allow utilities to recover these sunk costs.

However:

- **Infrastructure costs change over time:**
  - *Rising demand creates the need for new power plants*
  - *Increased usage causes distribution infrastructure to wear out and be replaced*
  - *Infrastructure upgrades become necessary as load and demand grows*
- **Utilities do not make future investment decisions based on sunk costs,** rather, they make investment decisions on a forward-looking basis.
- **Customer consumption drives future utility investments.**
- **Rates should reflect forward-going (long-run) costs** to ensure that customers are being sent **efficient price signals.**

Myth: Cost-of-service studies should dictate rate design

- **The cost-of-service study helps to guide rate design**, but does not fully capture all of the considerations that should be taken into account.
- **Cost-of-service studies reflect historical embedded costs**, not future long-run marginal costs. Thus, they do not lead to efficient price signals.
- **Cost-of-service studies focus on *costs***. They do not account for all of the **benefits** that some customers (such as those with distributed generation) provide to the grid.
- **Regulators have an important role in setting prices** that more closely reflect long-run marginal costs and better account for the benefits provided by some customers.

Karl Rabago, former Texas utility commissioner

"I know of no ratemaking or economic principle that finds that cost structure must be replicated in rate design, especially when significant negative policy impacts are attendant to that approach."

Myth: "Demand-related costs should be recovered through the fixed charge"

- **Are demand-related costs better recovered through the fixed charge or the energy rate?**
  - Demand-related costs are correlated with energy usage
  - High energy users are more likely to have high demands
- Correlation demonstrated by empirical research:

  There is "a strong and significant correlation between monthly kWh consumption and monthly maximum kW demand," which suggests that "it is correct to collect most of the demand-related capacity costs through the kWh energy charge."

  - *Larry Blank and Doug Gegax, "Residential Winners and Losers behind the Energy versus Customer Charge Debate," Fortnightly 27, no. 4 (May 2014).*

Myth: "Low-usage customers and DG customers aren't paying their fair share"

Low-Usage Customers

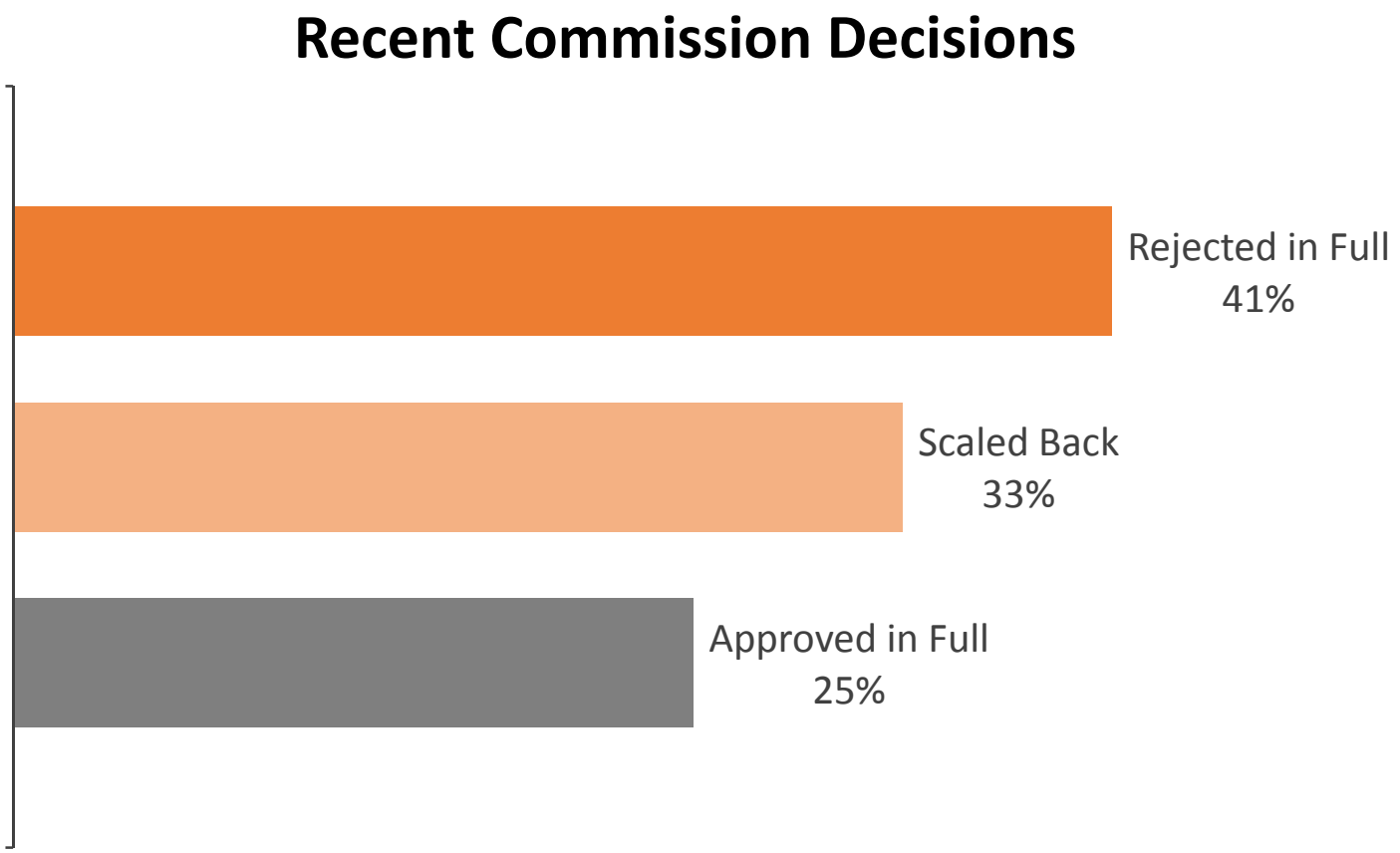
- Low-usage customers likely impose lower costs on the grid, because:
  - They tend to have lower demands
  - Many low-usage customers live in multi-family housing or in dense neighborhoods, and therefore impose lower distribution costs

DG Customers

- Customers with DG may or may not be paying their fair share, but fixed charges do nothing to evaluate or recognize the full value of the DG resource.
  - DG customers may have less costly load profiles than non-DG customers
  - Rate design should account for all of the benefits, as well as the costs

Recent Commission Activity

Fixed Charges Falling out of Favor



What Commissions are Saying

Missouri PSC
Docket ER-2014-0258

"Residential customers should have as much control over the amount of their bills as possible so that they can reduce their monthly expenses by using less power, either for economic reasons or because of a general desire to conserve energy. "

"…basic charges should reflect only 'direct customer costs' such as meter reading and billing. Including distribution costs in the basic charge and increasing it 81 percent… does not promote, and may be antithetical to, the realization of conservation goals."

Washington UTC
Docket UE-140762

"[Raising the fixed charge] would give too much weight to… [the utility's] class-cost-of-service study and not enough weight to affordability and energy conservation."

Minnesota PUC
Docket No. E-002/GR-13-868

Rate Design Alternatives to Fixed Charges

- Status quo: change may not be really needed
- More frequent rate cases
- Minimum bills: an interim measure
- Demand charges: may not be a good option; suffer from many of the same problems as fixed charges
- Time-of-use rates: where metering is available
- DG-specific tariffs: To reflect the full value of the resources

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About Synapse Energy Economics

- Synapse Energy Economics is a research and consulting firm specializing in energy, economic, and environmental topics. Since its inception in 1996, Synapse has grown to become a leader in providing rigorous analysis of the electric power sector for public interest and governmental clients.
- Staff of 30+ experts
- Located in Cambridge, Massachusetts