

CPS Energy Cost of Service Study Results

PRESENTED TO
CPS Energy

PRESENTED BY
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THE **Brattle** GROUP

Agenda

- 1. Executive Summary**
- 2. Electric Cost of Service Study Results**
- 3. Gas Cost of Service Study Results**

Executive Summary

The Brattle Group was contracted to independently conduct FY2022 Cost of Service (COS) Study and review FY2017 COS Study results

- Brattle reviewed the FY2017 study and determined it was generally consistent with industry accepted methods, and found its results to be similar to FY2022 results
- For the FY2022 study the revenue to cost ratios improved for the gas system, while the disparity among rate groups increased for the electric system

Results of the FY2022 Cost of Service study

- 12% of total costs are driven by the gas business and 11% of revenue comes from gas, while 88% of total costs are driven by the electric business and 89% of revenue comes from electric
- The residential group continues to pay ~93-94% of their costs to serve
- Some commercial groups paid more than 110% of their allocated costs to serve
- Fixed Cost Recovery for CPS Energy is not aligned with the cost to serve
 - The current rate structure relies too heavily on variable charges to recover fixed costs; this is more severe for the Electric system than it is for the Gas system

Study Overview

- **Normalized FY2022 data was used as the test year**
- **Normalizing the test year data accounts for outliers and ensures the data reflects a typical year (this reduces the impact of extreme weather such as Winter Storm Uri or severe Bad Debt amounts due to the pandemic)**
- **Provides an industry accepted basis for attributing costs of electric and gas systems to each customer group**
- **Cost allocations adhere to industry-accepted methods and guidance from the Public Utility Commission of Texas (PUCT)**
 - Electric: NARUC’s Electric Utility Cost Allocation Manual
 - Gas: American Gas Association’s Gas Rate Fundamentals
- **Brattle also updated CPS Energy’s gas demand study as an input to the gas cost of service study**

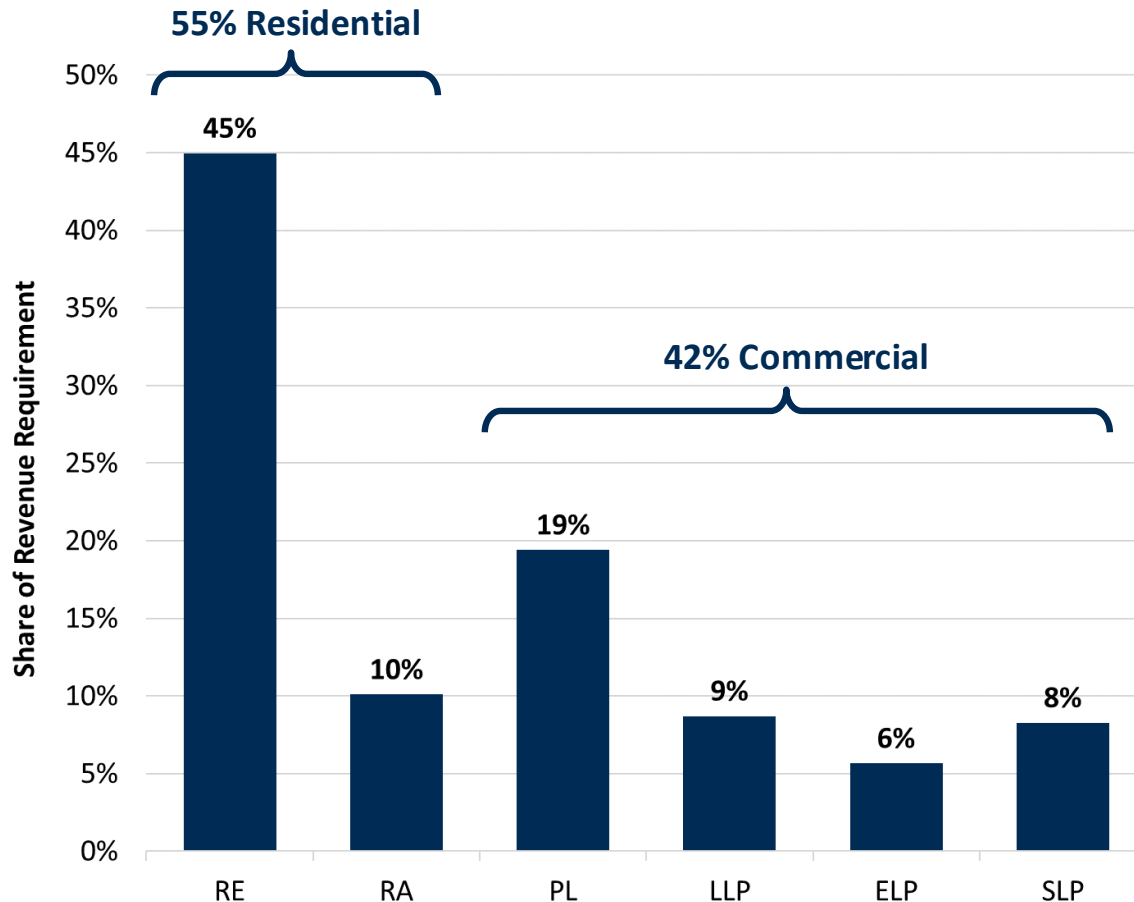
Agenda

1. Executive Summary
2. **Electric Cost of Service Study Results**
3. Gas Cost of Service Study Results

Cost to Serve by Customer Group – Electric COS

Share of Base Revenue Requirement

Base Revenue Requirement by Rate Group as % of Total

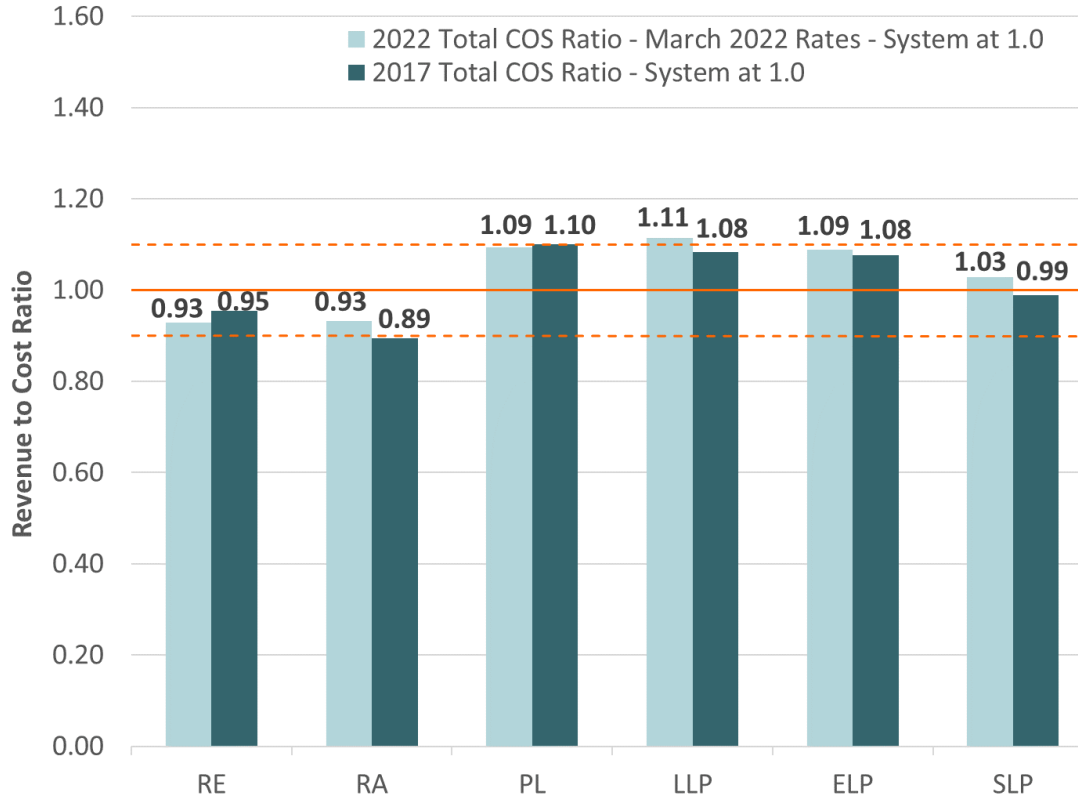


Comments

- Revenue Requirement = the dollars needed to cover the cost to serve
- Roughly half of CPS Energy's costs are associated with the Residential groups
- This chart reflects the base revenue requirement (does not include fuel and regulatory adjustment revenue)

Revenue to Cost Ratios for FY2022 vs. FY2017 – Total – Electric COS

Revenue to Cost Ratio – Total

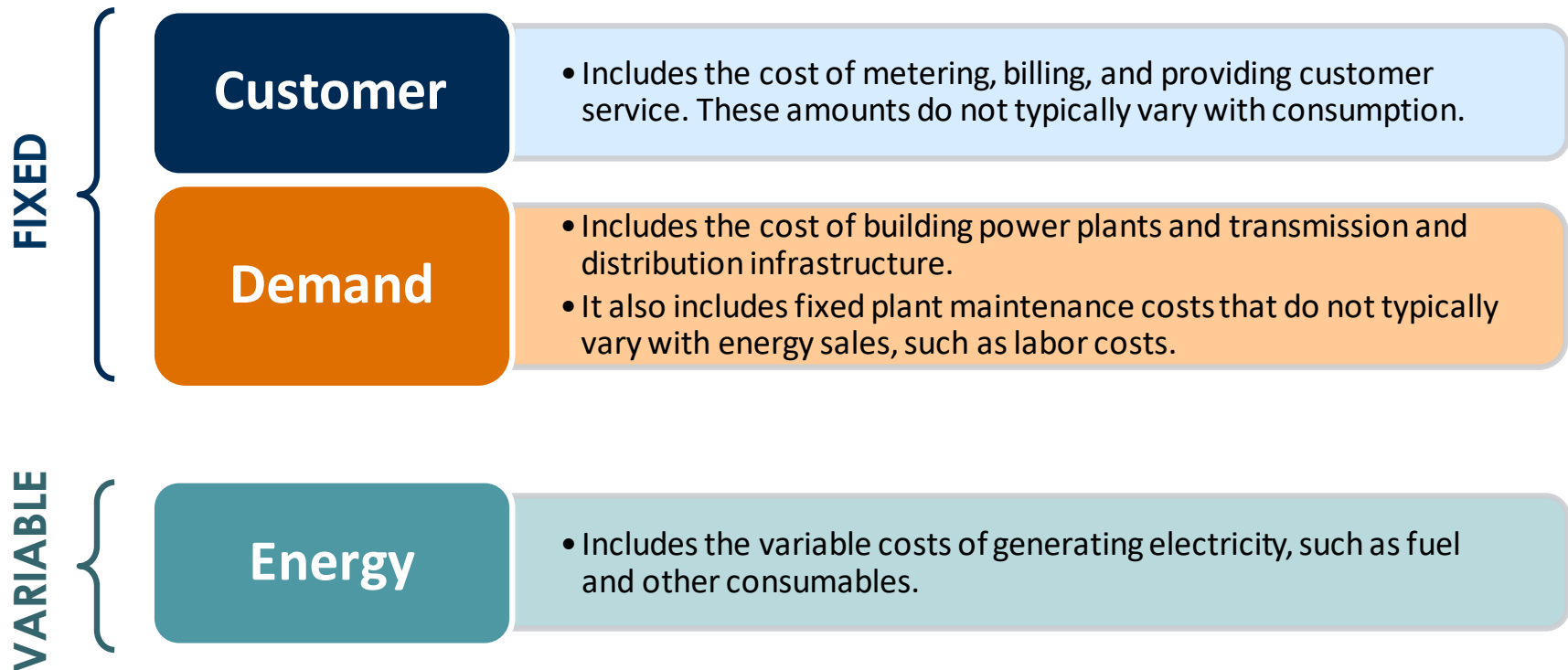


	Under(-)/Over(+) Recovery					
~ Total \$	-\$77M	-\$17M	+\$49M	+\$29M	+\$15M	+\$7M
~ \$/bill	+\$10	+\$10	-\$49	-\$1,291	-\$6,297	-\$14,896
As % Avg. Bill	8%	7%	9%	10%	8%	3%

Comments

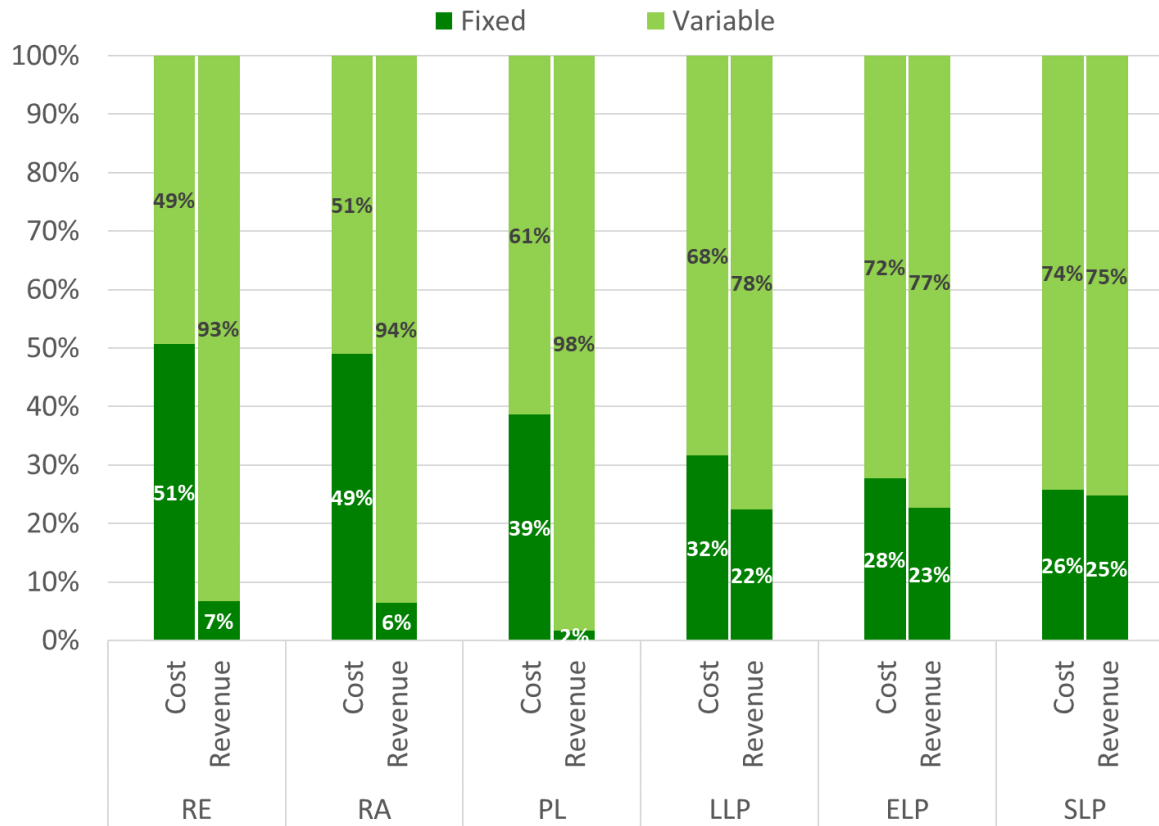
- CPS Energy continues to under-recover from the residential rate group (RE and RA) by ~\$94M
- Relative to FY2017, the COS ratio for large commercial rate groups increased in FY2022
- The LLP rate group is now paying more than 110% of their cost to serve, exceeding the threshold CPS Energy deems reasonable

Classification of Costs – Fixed vs. Variable



Fixed vs. Variable Cost to Serve Relative to Revenue – Total

Fixed vs. Variable Cost to Serve Relative to Revenue

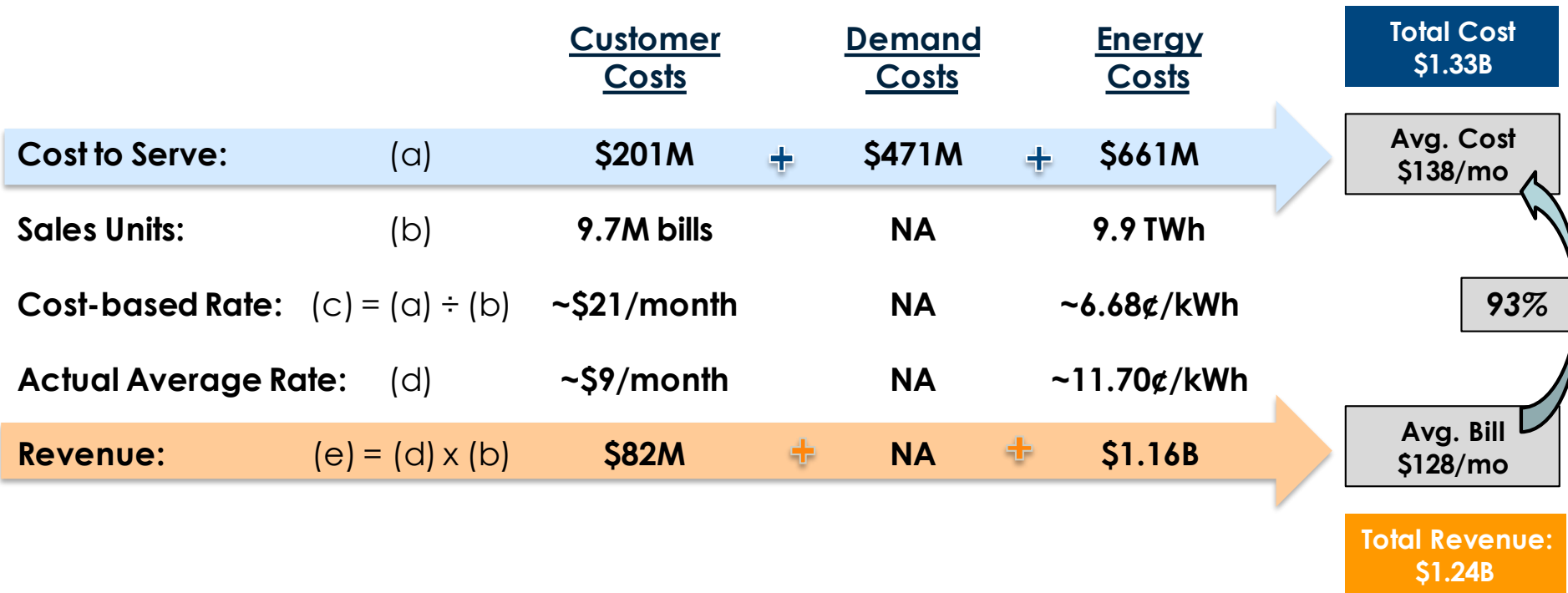


Comments

- For residential and small commercial customers there is significant misalignment between the cost and revenue structure
- For the residential rate group, about 50% of the total revenue requirement is comprised of fixed costs, while only 7% of the revenue is recovered via fixed charges
- The misalignment between the structure of cost and revenues is not as pronounced for the ELP and SLP rate groups

Revenue vs. Cost to Serve

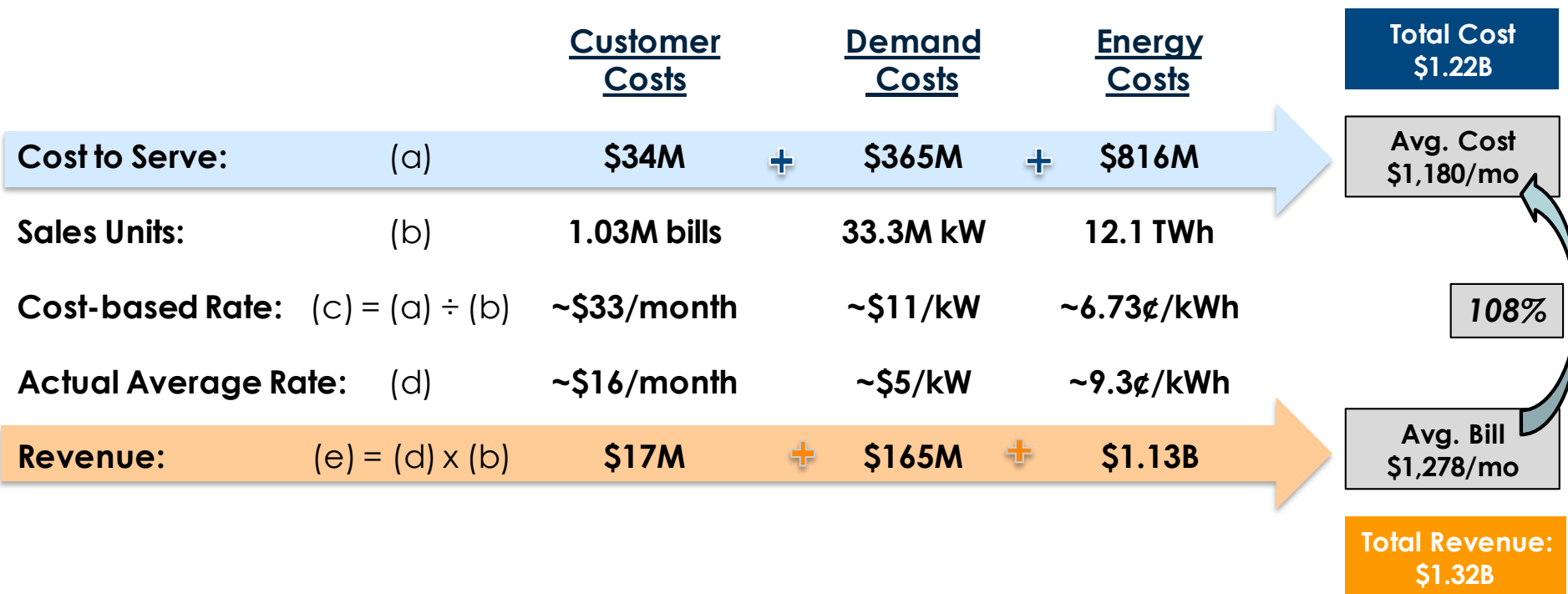
Residential Rate Groups – RE, RA, RCE



For Residential, ~50% of the Cost to Serve is comprised of fixed (customer & demand) costs, while only 7% of the revenue is recovered via fixed charges.

Revenue vs. Cost to Serve

Commercial/Industrial Rate Groups – PL, LLP, LTP, ELP, SLP



For Commercial, ~33% of the Cost to Serve is comprised of fixed (customer & demand) costs, while only 14% of the revenue is recovered via fixed charges.

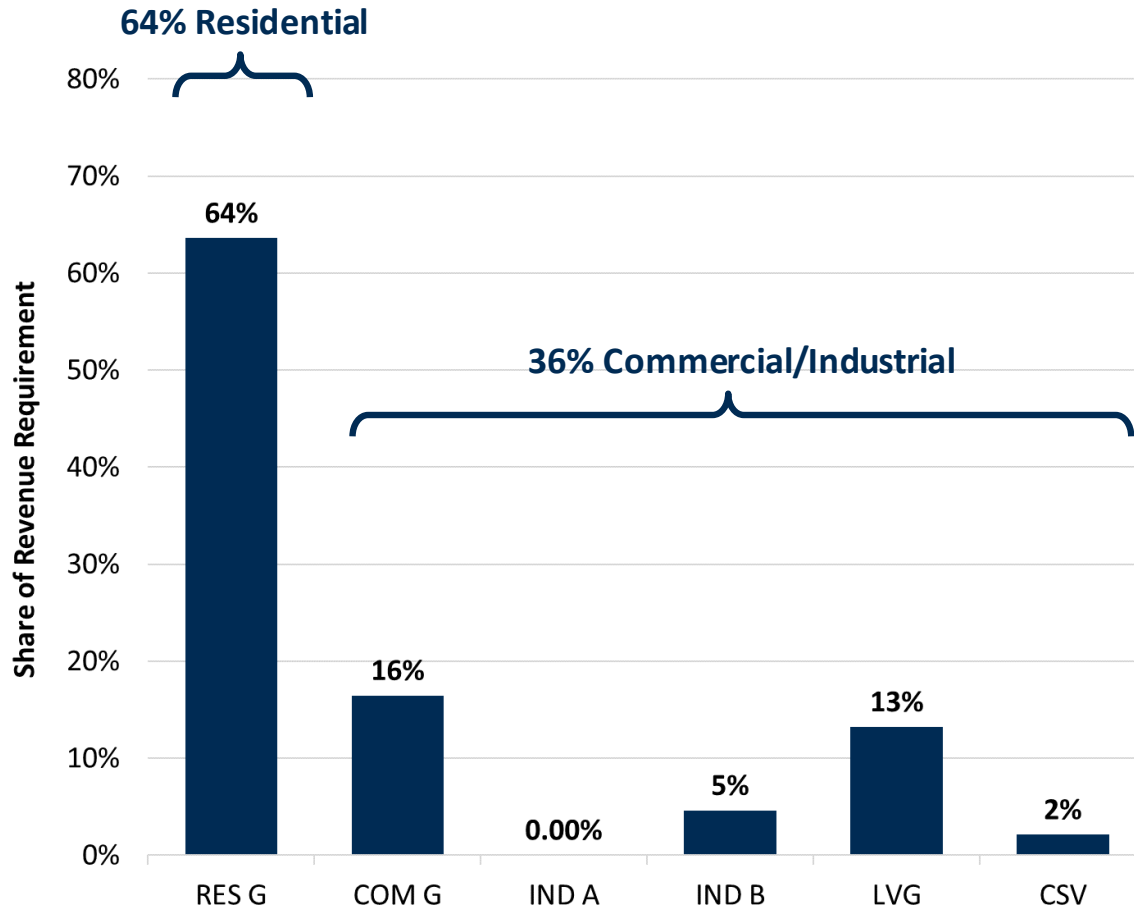
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2. Electric Cost of Service Study Results
3. Gas Cost of Service Study Results

Cost to Serve by Customer Group – Gas COS

Share of Base Revenue Requirement

Base Revenue Requirement by Rate Group as % of Total

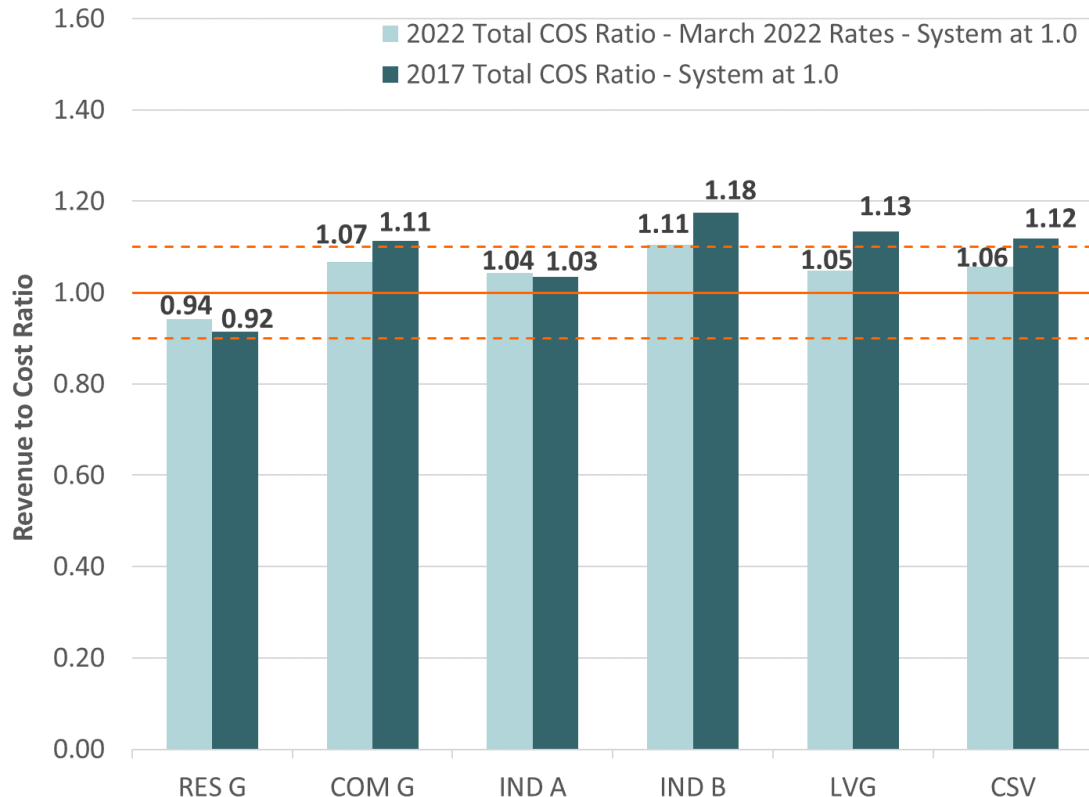


Comments

- Revenue Requirement = the dollars needed to cover the cost to serve
- 64% of CPS Energy’s costs are associated with the Residential rate group
- The remaining 36% are associated with the commercial and industrial rate groups
- This chart reflects the base revenue requirement which includes base fuel charges – does not include fuel adjustment revenue

Revenue to Cost Ratios for FY2022 vs. FY2017 – Total – Gas COS

Revenue to Cost Ratio – Total



	Under(-)/Over(+) Recovery					
~ Total \$	-\$10M	+\$4M	+\$0.2K	+\$2M	+\$3M	+\$0.6M
~ \$/bill	+\$2	-\$19	-\$2	-\$176	-\$1,762	-\$8,707
As % Avg. Bill	6%	6%	4%	10%	5%	5%

Comments

- CPS Energy continues to under-recover from the residential general service rate group
- The present COS study reflects over-recovery for the commercial general service and industrial rate groups, consistent with the findings of the 2017 study
- For the most part, revenue to cost ratios have improved for FY2022 relative to FY2017, showing a reduction in the disparity in cost recovery among customer groups

Appendix

A COS study is a key step in the rate setting process

The COS study aims to fairly allocate the utility's costs of providing service to each rate group, based on the principles of cost-causation

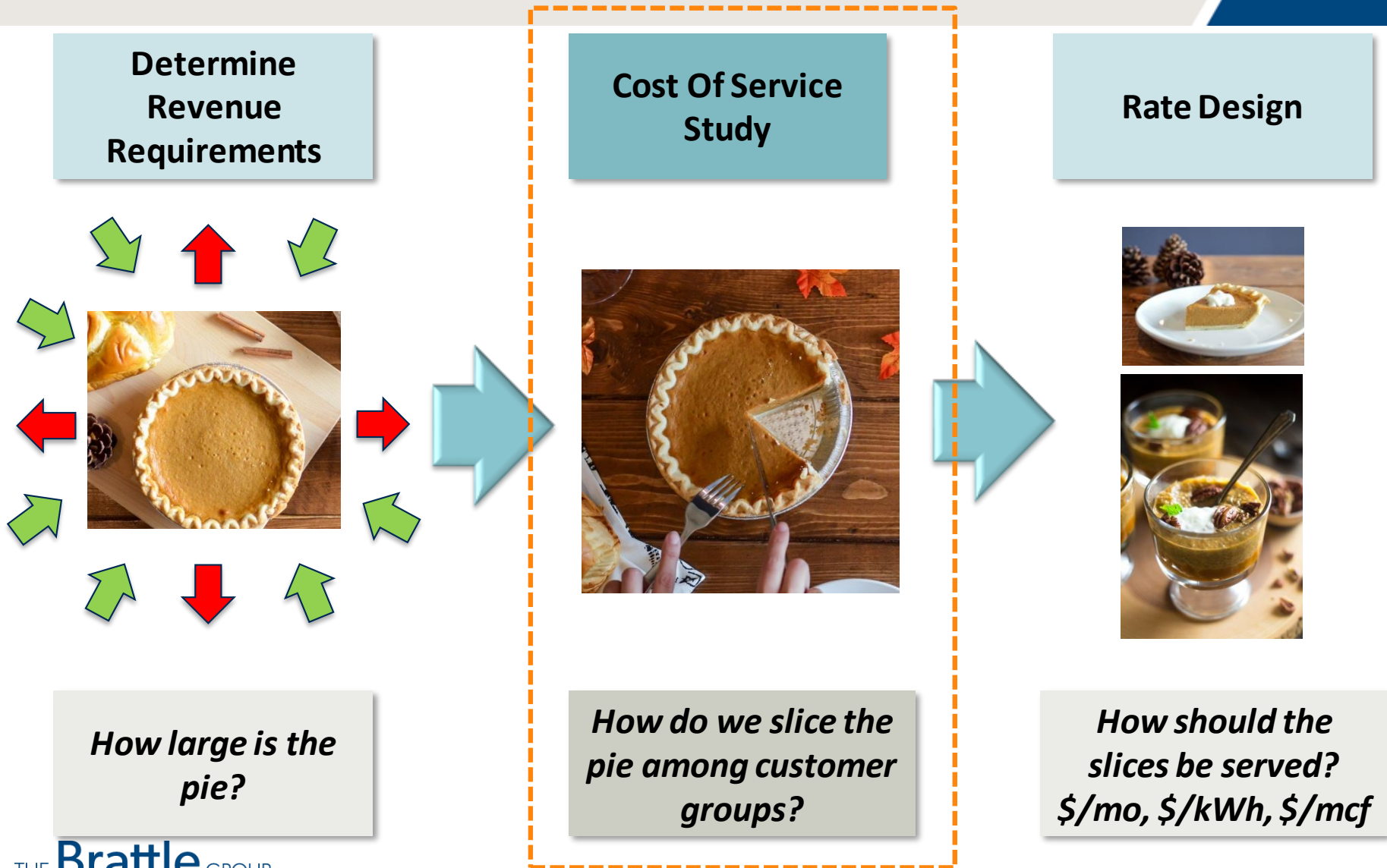
- The cost-causation principle consists of assigning costs to rate groups based on the drivers that caused these costs to be incurred by the utility

COS studies do not dictate the total amount of revenue that the utility must recover - instead, a COS study informs how costs should be recovered from different customers

COS studies provide insight into:

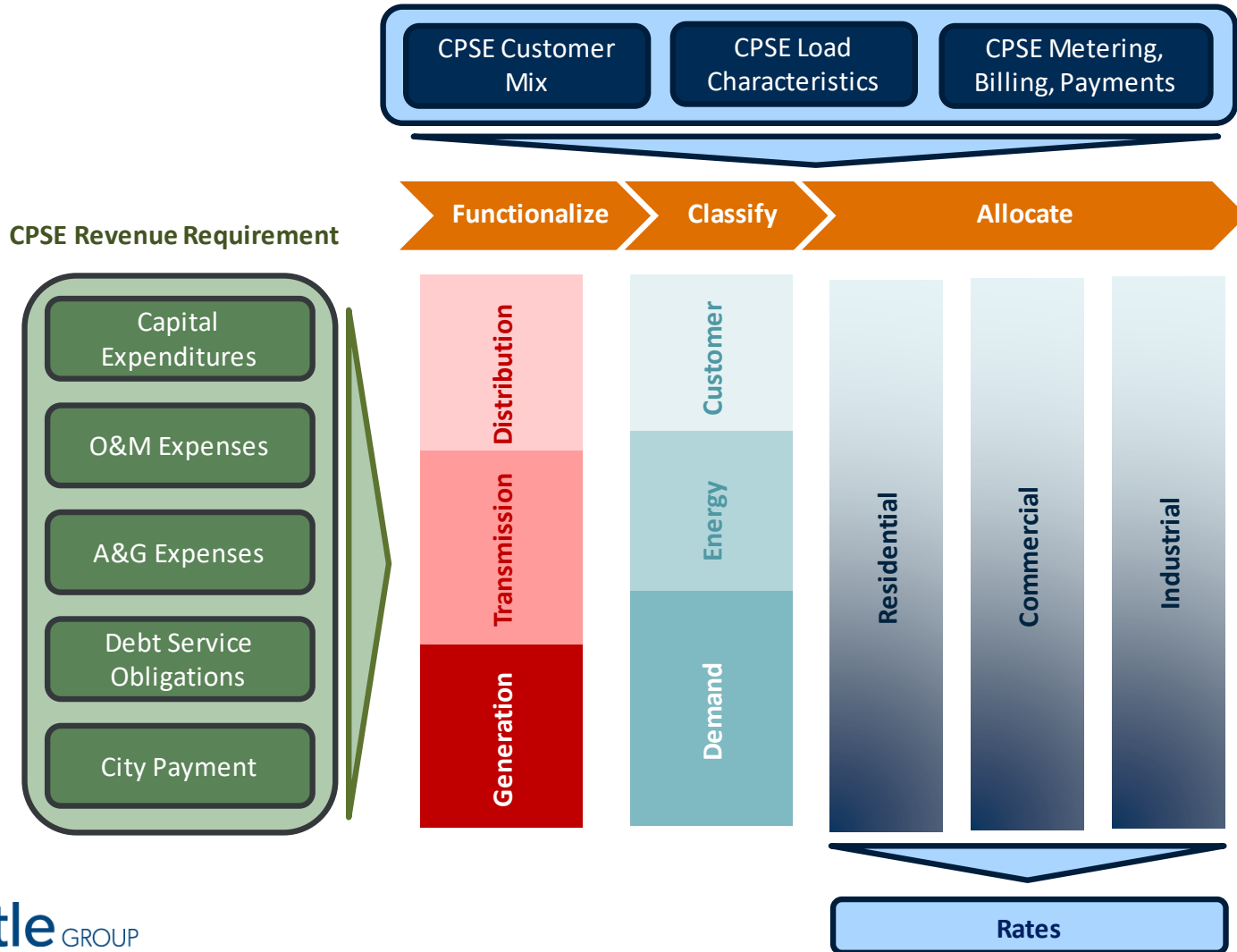
- Customer group contribution to cost responsibility
- Alignment of cost and revenue structure (fixed vs. variable)

50,000 foot view of rate setting process



Steps in an Embedded Cost of Service Study

The COS model functionalizes, classifies, and, finally, allocates the revenue requirement



Cost-Causation Explained

Costs are allocated based on what drives the costs incurred

- For example, the cost of billing customers is largely driven by the number of customers

As a result, the aggregate cost of billing customers is allocated to a particular group based on the number of customers in the group:

% customers in RE group = 62%

$$\begin{array}{ccc} \boxed{\begin{array}{c} \text{Total} \\ \text{Customer} \\ \text{Billing Costs} \end{array}} & \times & \frac{\boxed{\begin{array}{c} \text{Number of} \\ \text{Customers in} \\ \text{RE Group} \end{array}}}{\boxed{\begin{array}{c} \text{Number of} \\ \text{Customers in All} \\ \text{Groups} \end{array}}} = \boxed{\begin{array}{c} \text{Customer Billing} \\ \text{costs for RE} \\ \text{Group} \end{array}} \\ \text{Customer Billing Costs} & & \\ = 24 \text{ MM} & & \end{array}$$

$$24 \text{ MM} \times 62\% = 15 \text{ MM}$$

*RE Group is allocated 15 MM of customer billing costs
(FERC account 903: Customer Records and Collection)*

Explaining Unit-Cost Variability Across Rate Groups

On a unit basis, it is typically more costly to serve residential customers than their commercial or industrial counterparts

- Example 1: Meters. Higher total costs for large customers, lower unit costs due to sales

	Residential	Commercial	Industrial
Meter Cost, \$/meter	\$150	\$500	\$10,000
Energy Sales, kWh/customer	10,000	60,000	60,000,000
Meter Cost, cents/kWh	1.5000	0.8333	0.0167

- Example 2: Generation capacity costs. Lower unit costs at higher load factors
 - Load factor is a measure of system usage, and is computed by dividing the average load by the peak load
 - At higher load factors customers make more efficient use of the system relative to the system’s design capacity
 - For CPS, the Residential group has a relatively low load factor, meaning that its relative contribution to peak demand is higher than its relative contribution to energy sales. The inverse is true for industrial customers, making costs per kWh lower, in relative terms, for industrial customers.

	Residential	Commercial	Industrial
Approximate Load Factor	40%	60%	80%

- Example 3: residential customers take service at stepped down voltages, which requires investment in additional equipment not used by industrial customers

Appendix- Electric COS

Impact of Allocation Factors Electric System

Allocated amounts and allocator values

Allocated Base Revenue Requirement, by Factor

Allocator	\$, Millions	As %
Energy Sales	485	33.7%
A&E	424	29.4%
Customers	195	13.5%
NCP	180	12.5%
Total	1,284	89.2%

Allocation Factor Value, by Rate Group

Allocator	RE	RA	PL	LLP	ELP	SLP
Energy Sales	35.7%	8.4%	21.4%	11.5%	8.3%	12.4%
A&E	44.1%	9.8%	20.2%	9.3%	5.7%	8.4%
Customers	73.1%	15.6%	9.2%	0.2%	0.0%	0.0%
NCP	44.9%	10.0%	20.1%	9.1%	5.5%	8.1%

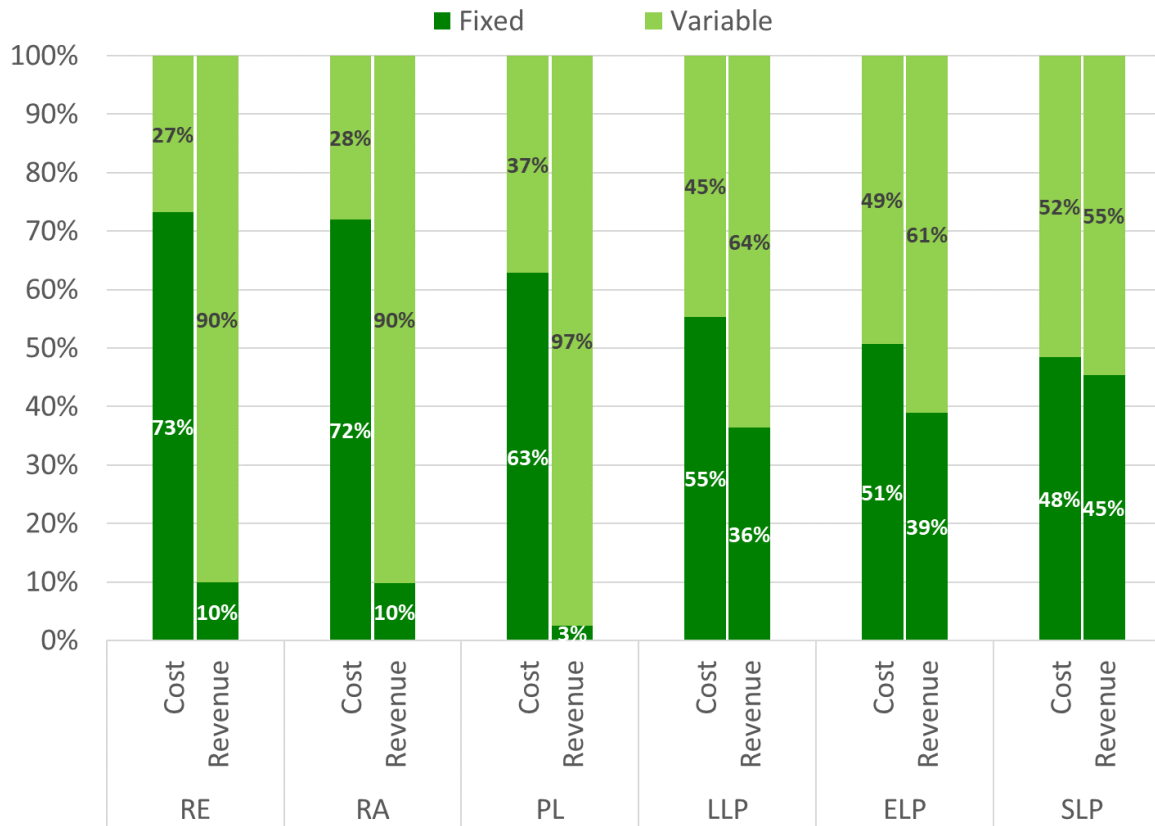
Comments

- Approximately 90% of the Base Revenue Requirement is allocated by just four allocation factors, with the remaining 10% allocated using a variety of factors
- The Energy Sales and Average & Excess allocators are responsible for the allocation of almost two thirds of the Base Revenue Requirement
- The low load factors for the RE and RA rate groups result in a smaller share of energy sales relative to their share of the A&E and NCP factors
- Improvements in the RE and RA load factors could result in a relative decrease in their cost responsibility

Fixed vs. Variable Cost to Serve Relative to Revenue – Base Rates Only

Electric System

Fixed vs. Variable Cost to Serve Relative to Revenue



Comments

- For residential and small commercial customers there is significant misalignment between the cost and revenue structure
- For the residential rate group, about 75% of the base revenue requirement is comprised of fixed costs, while only 10% of the revenue is recovered via fixed charges
- The misalignment between the structure of cost and revenues is not as pronounced for the ELP and SLP rate groups

Revenue vs. Cost to Serve Electric System

Summary of Revenue and Cost to Serve, \$ Million

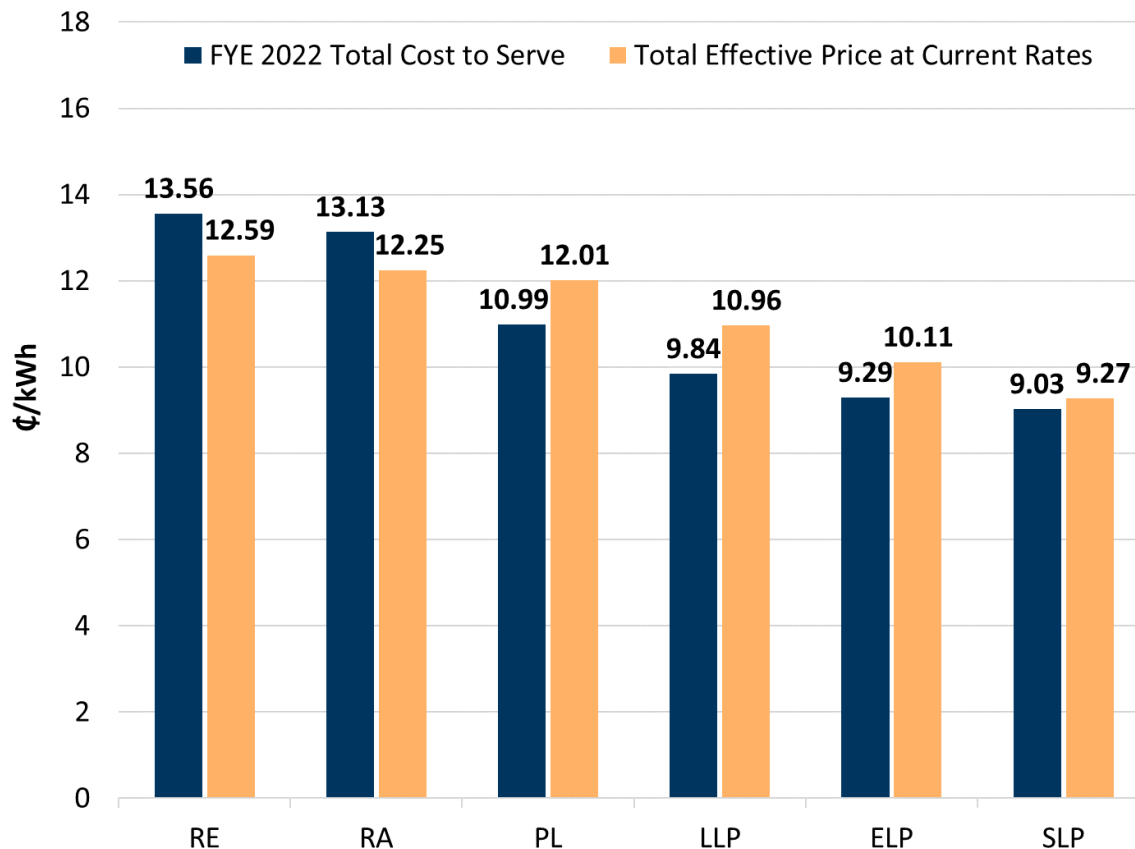
	RE	RA	PL	LLP	ELP	SLP
Base Revenue Requirement	752.9	167.8	324.2	145.2	95.1	138.4
Fuel and Regulatory Charges	333.6	78.2	203.2	109.1	78.8	121.7
Total Revenue Requirement	1,086.5	246.0	527.4	254.3	173.9	260.1
Total Revenue from Retail Sales (March '22 rates)	1,009.0	229.5	576.8	283.3	189.2	267.3
Revenue Shortfall	77.5	16.5	(49.4)	(29.0)	(15.3)	(7.1)
<i>Revenue Shortfall, as % of Base Revenue Requirement</i>	<i>10.3%</i>	<i>9.9%</i>	<i>-15.2%</i>	<i>-19.9%</i>	<i>-16.1%</i>	<i>-5.2%</i>

Cost to Serve vs. Revenue at Current Rates

Effective Price Inclusive of Pass-Through Charges

Electric System

Total Cost to Serve vs. Total Revenue at Current Rates



Comments

- CPS Energy under-recovers from residential rate groups, and over-recovers from commercial rate groups
- The cost to serve and the effective price at current rates include pass-through charges (fuel and regulatory adjustments)

Revenue vs. Cost by Customer Group

Electric System

Composition of Revenues

		Values, \$ in Thousands					As %				
		Residential	PL	LLP	ELP	SLP	Residential	PL	LLP	ELP	SLP
FIXED	Customer	81,686	9,587	4,145	2,765	500	7%	2%	1%	1%	0%
	Demand	173	0	59,389	40,216	65,610	0%	0%	21%	21%	25%
VARIABLE	Energy - Base	744,831	363,976	110,680	67,485	79,475	60%	63%	39%	36%	30%
	Energy - Fuel Adjustment	287,350	141,809	76,111	54,956	84,916	23%	25%	27%	29%	32%
	Energy - Regulatory Adjustment	124,472	61,427	32,969	23,805	36,783	10%	11%	12%	13%	14%
	Energy - Total	1,156,653	567,212	219,760	146,245	201,175	93%	98%	78%	77%	75%
	Total	1,238,513	576,798	283,293	189,226	267,285	100%	100%	100%	100%	100%

Composition of Cost to Serve

		Values, \$ in Thousands					As %				
		Residential	PL	LLP	ELP	SLP	Residential	PL	LLP	ELP	SLP
FIXED	Customer	200,537	29,942	2,246	865	1,137	15%	6%	1%	0%	0%
	Demand	471,479	173,654	78,177	47,407	65,893	35%	33%	31%	27%	25%
VARIABLE	Energy - Base	248,679	120,564	64,818	46,855	71,406	19%	23%	25%	27%	27%
	Energy - Fuel Adjustment	287,350	141,809	76,111	54,956	84,916	22%	27%	30%	32%	33%
	Energy - Regulatory Adjustment	124,472	61,427	32,969	23,805	36,783	9%	12%	13%	14%	14%
	Energy - Total	660,502	323,800	173,898	125,616	193,105	50%	61%	68%	72%	74%
	Total	1,332,518	527,396	254,320	173,888	260,135	100%	100%	100%	100%	100%

Revenue/Cost to Serve	93%	109%	111%	109%	103%
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Appendix- Gas COS

Revenue vs. Cost to Serve

Gas System

Summary of Revenue and Cost to Serve, \$ Thousands

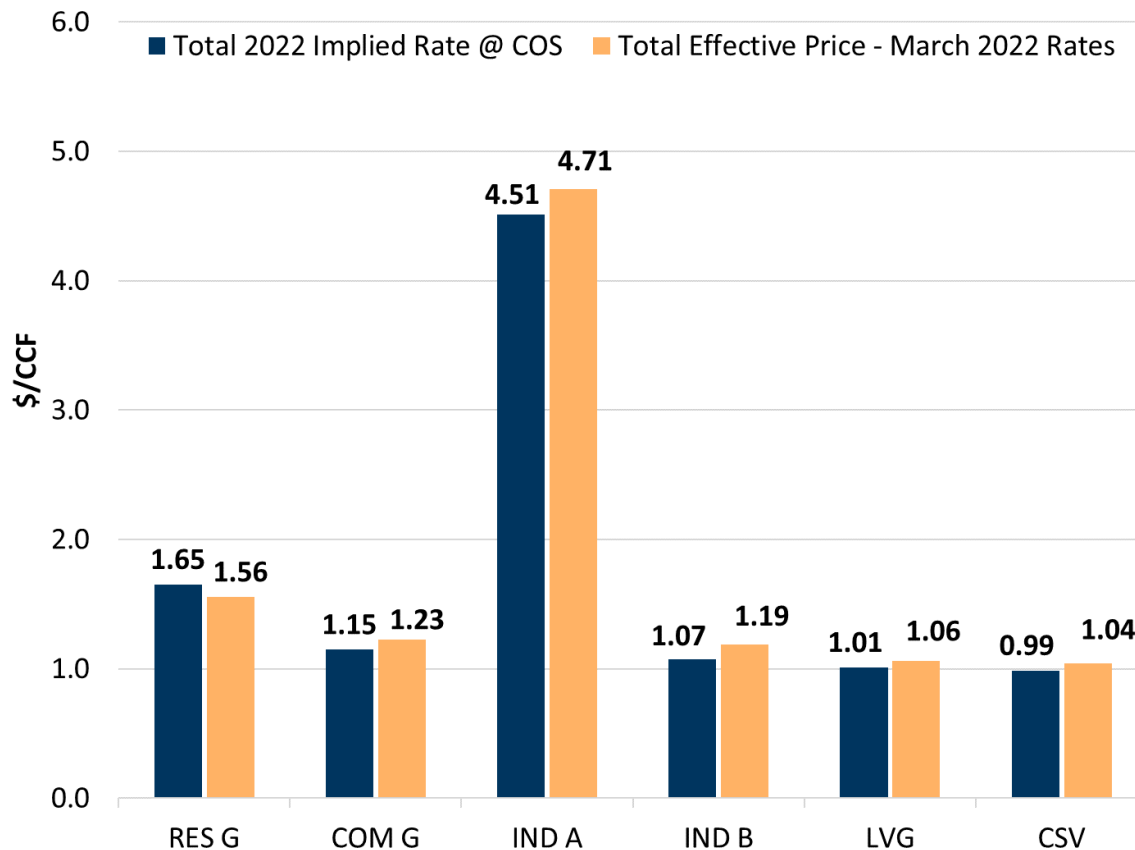
	RES G	COM G	IND A	IND B	LVG	CSV
Base Revenue Requirement	105.3	27.3	0.0	7.6	21.9	3.5
Fuel Adjustment Charges	72.7	38.8	0.0	12.9	44.0	7.6
Total Revenue Requirement	178.0	66.1	0.0	20.5	65.9	11.1
Total Revenue from Retail Sales (March '22 rates)	167.6	70.6	0.0	22.7	69.1	11.7
Revenue Shortfall	10.4	(4.5)	(0.0)	(2.2)	(3.2)	(0.6)
<i>Revenue Shortfall, as % of Base Revenue Requirement</i>	<i>9.9%</i>	<i>-16.4%</i>	<i>-5.0%</i>	<i>-28.3%</i>	<i>-14.5%</i>	<i>-17.9%</i>

Cost to Serve vs. Revenue at Current Rates

Effective Price Inclusive of Pass-Through Charges

Gas System

Total Cost to Serve vs. Total Revenue at Current Rates



Comments

- CPS Energy under-recovers from the residential general service group, and over-recovers from commercial rate groups
- The cost to serve and the effective price at current rates includes fuel cost adjustments