

Review of Proposed Price Plan

PRESENTED TO
Salt River Project Board

PRESENTED BY
Philip Q Hanser

February 18, 2019



THE **Brattle** GROUP

Agenda

Introduction

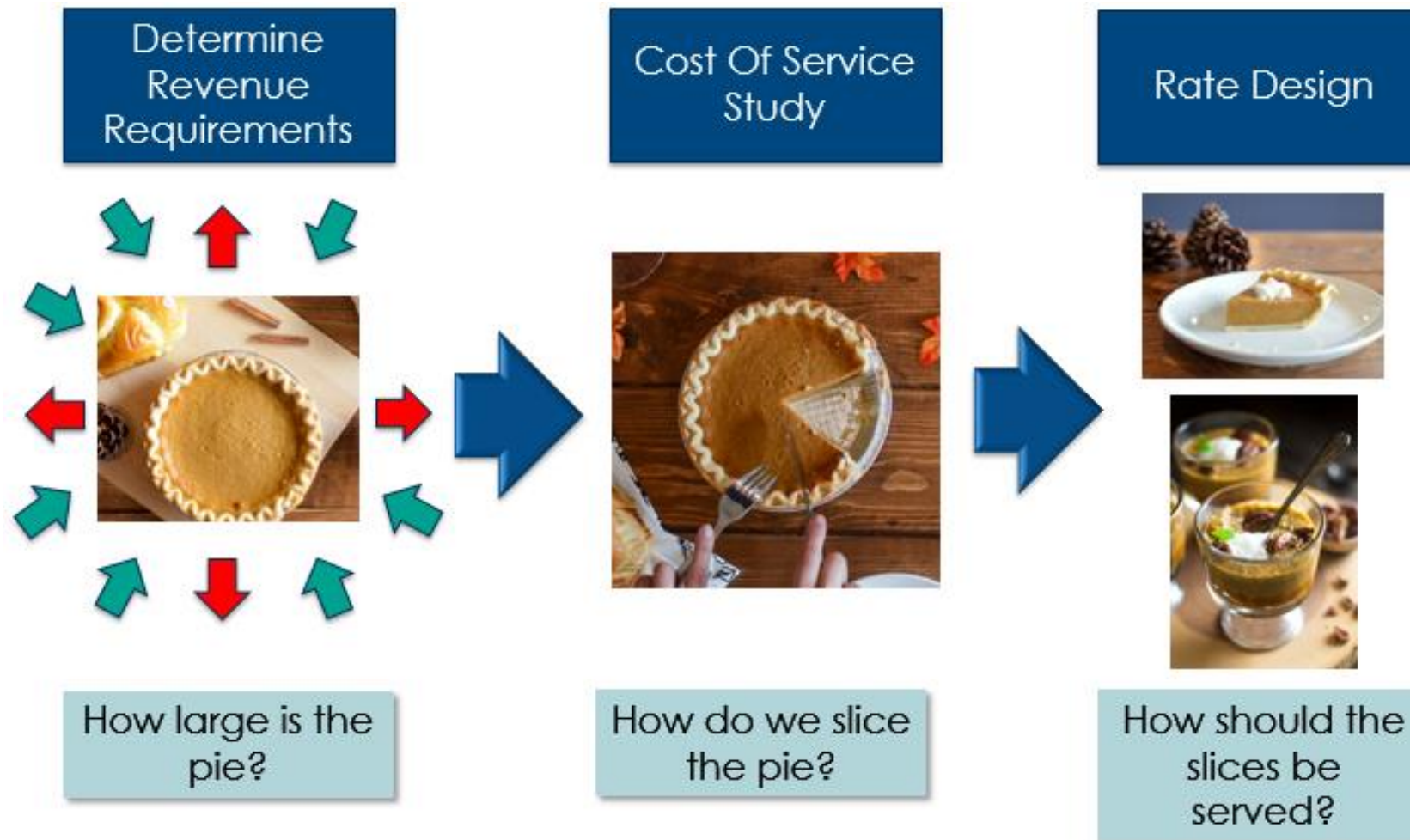
Revenue Requirement

Cost of Service

Rate Design

Brattle independently assessed the reasonableness of SRP's price process

The price process can be split into three distinct steps:



Overall we found SRP management's proposal to be reasonable

1. Revenue Requirements

Proposed FY19

Total Retail Cost
\$2.7 Billion

Revenue Requirement:

- Proposal is consistent with the financial plan presented to the board on March 13, 2018

Overall we found SRP management's proposal to be reasonable



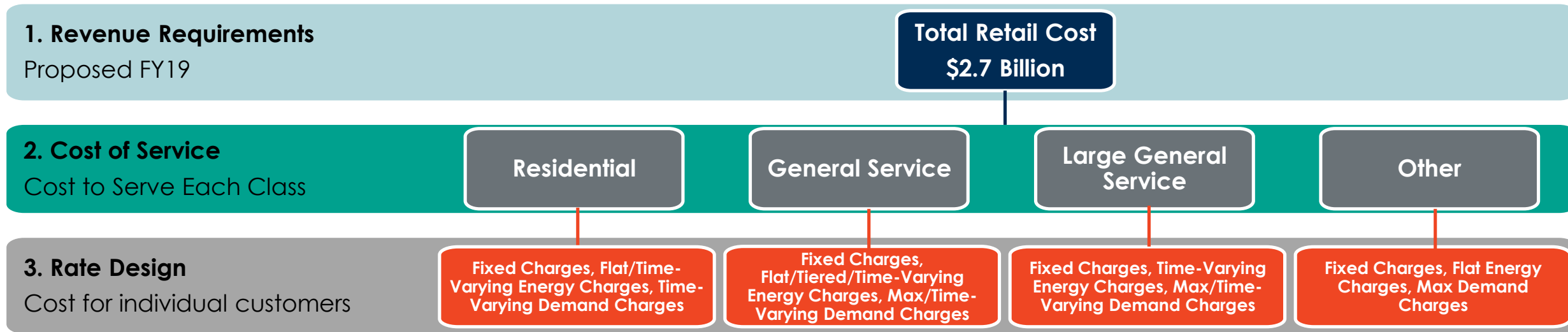
Revenue Requirement:

- Proposal is consistent with the financial plan presented to the board on March 13, 2018

Cost of Service:

- Methodologies used are generally accepted and commonly used
- Costs are by-and-large allocated on the basis of cost causation

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Revenue Requirement:

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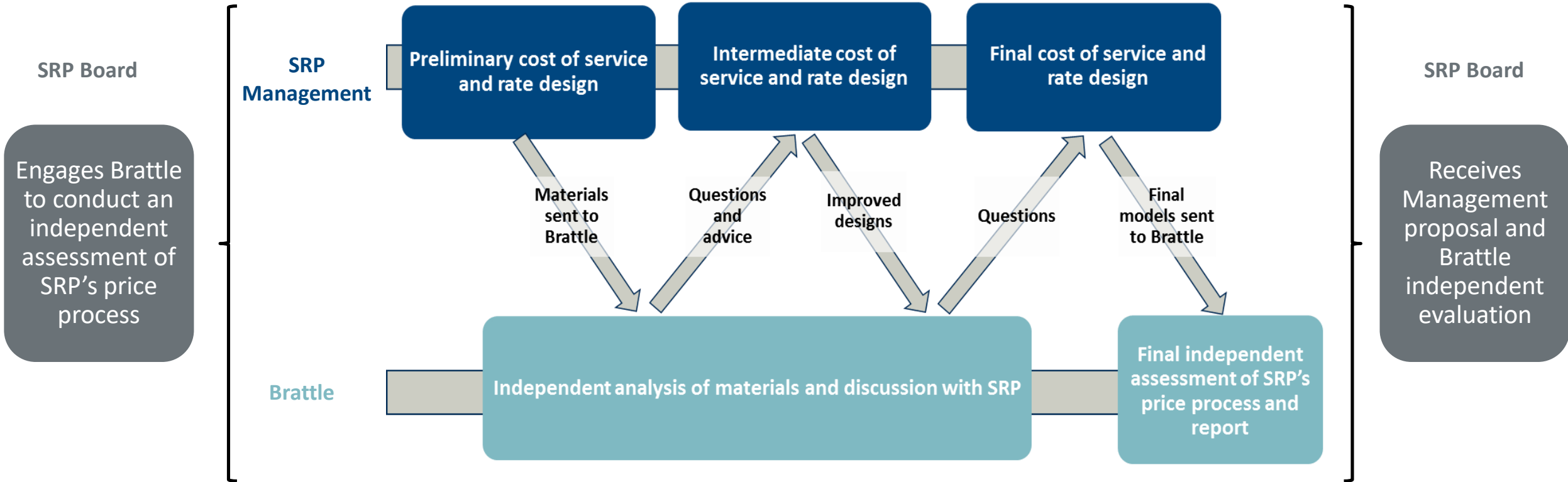
Cost of Service:

- Methodologies used are generally accepted and commonly used
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Rate Design:

- In accordance with SRP's rate-making principles
- Gradually moving towards greater marginal cost reflectivity
- More choice for customers with on-site generation

Brattle's report and recommendations are an independent assessment of the price process



During the engagement, Brattle met with SRP's rates team via teleconferences and site visits

- Suggested enhancements to SRP's cost of service and rate design
- Where practicable, enhancements were incorporated into the final rate proposal

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SRP is asking for an overall rate decrease of 2.2 percent

Most customers will experience bill decreases

Expected fuel costs are decreasing by 3.9%

- Expected lower market prices
- Optimization of the generation fleet
- Refunding customers for over-collections from previous periods

SRP has requested an increase in the base electricity rate of 1.7%

- Will allow for 3.8% rate of return
 - Sufficient to continue reduction in debt service ratio over time
 - Maintain credit rating
 - Below previous approved return of 5.4%

Proposal is consistent with the financial plan presented to the board on March 13, 2018

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The goal of a cost of service study is to apportion shared costs fairly & reasonably based on cost causation

Cost of service consists of three steps:

1. Functionalization: separate the revenue requirement according to operational function

- For example, generation fuel expense

2. Classification: determine the primary cost driver for each function

- For example, kWh generated

3. Allocation: allocate each customer class their share of costs based on their share of the cost driver

- For example, residential customers pay 50% of generation fuel expense because they use 50% of kWh generated



Cost of service is an art not a science – reasonable people may disagree

SRP's cost of service study makes fair and reasonable decisions in allocating costs to customers

Methodologies used are generally accepted and commonly employed

- Classification and cost drivers are in line with standard industry practices
- Methodological changes are justified

Transition towards marginal cost-based rates is underway

- Allocate future expenses to those customers who incur them
- May differ from those who incurred similar expenses in the past

Costs are by-and-large allocated on the basis of cost causation

- For example, large customers with higher load factors have a lower average cost per kWh

Minor contemporaneous issues were addressed by SRP

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Current residential rates are largely volumetric, while costs are largely fixed

	Energy (kWh)		Demand (kW)		Fixed Charge
	Flat	Time Varying	Max	Time Varying	Fixed
Existing rates					
E-21: Residential Super-Peak ToU		On/Off-Peak			x
E-23: Residential Standard	2 Tiers				x
E-24: Residential Pre-Pay	x				x
E-26: Residential Standard ToU		On/Off-Peak			x
E-27: Residential Customer Generation		On/Off-Peak		On-Peak (3 Tiers)	x
Existing pilots					
E-27P: Residential Demand Rate Service		On/Off-Peak		On-Peak (3 Tiers)	x
E-29: EV Super Off-Peak ToU		On/Off/Super-Off-Peak			x
New rates					
E-13: DG ToU Export		Delivered On/Off-Peak			x
E-14: DG EV ToU Export		Delivered On/Off/Super-Off-Peak			x
E-15: DG Average Demand		On/Off-Peak		Average On-Peak Daily	x

Residential customers without onsite generation have several rate choices

Customers without onsite generation can choose between a flat rate, two different TOU rates, and two prepay rates, amongst others

- The residential standard rate, E-23, is currently the most popular (48% of customers)
- More than a third of customers are on a TOU rate
 - New customers default onto the Super-Peak TOU, EZ-3 (22% of customers)
 - Shorter peak period and higher peak price than Standard TOU, E-26, (13% of customers)
- A further 16% of residential customers are on the prepaid M-Power rate

A three-part rate, super-off peak TOU rate (for EVs) and a prepaid TOU rate are also offered as ongoing pilots

The proposed rate design expands rate choice to customers with onsite generation

New onsite generation customers currently on mandatory three-part rate, E-27

- Fewer than 1% of customers

Three new proposed rates for onsite generation customers

- E-15, retains the three-part structure of E-27, but uses an alternative metric to measure demand
 - Uses daily maximum demand, which reduces bill volatility
- The other two options remove the demand charge and have a different price for exported and imported energy. For imports, energy is charged based on a ToU charge, while for exports the customer is credited a flat fee per kWh.
 - The flat fee is based on the cost of new utility scale solar
 - Accounts for the losses that SRP would have incurred in delivering the electricity to the end-customer.

SRP expect these three plans to be revenue neutral to E-27.

Three-part rates, with fixed and demand charges, better reflect underlying costs relative volumetric rates

E-27 is a three-part rate with:

- Tiered on-peak demand charge (monthly maximum demand in the peak period)
- Time-varying energy charge
 - Levied on net consumption: imports from the grid less exports to the grid.
 - Implies exports and imports have the same energy price.
- Fixed monthly charge

Setting the energy price for E-27 requires multiple considerations

- Implications from both importing and exporting
- Moving the energy rate closer to marginal cost would better align both import and export prices with costs

Proposed new residential rates E-27P and E-15 are also three-part rates

Most general service customers also face three-part rates that better reflect underlying service costs

However, a larger part of the revenue for the general service class is still recovered from energy than a (embedded) cost-reflective rate structure would suggest.

The proposed relative structure of general service rates remains unchanged

	Energy (kWh)		Demand (kW)		Fixed Charge
	Flat	Time Varying	Max	Time Varying	Fixed
Existing rates					
E-32: General Service ToU		On/Shoulder/Off-Peak		On-Peak & Shoulder/Off-Peak	x
E-34: General Service Pre-Pay	x				x
E-36: General Service Standard	4 Tiers (Based on Load Factor)		x		x
Existing pilots					
E-33: General Service Super- Peak ToU		On/Off-Peak	(Summer and Peak Months)	On-Peak (Winter Months)	x

All large general service customers face three-part rates with Time of Use energy

	Energy (kWh)		Demand (kW)		Fixed Charge
	Flat	Time Varying	Max	Time Varying	Fixed
Existing rates					
E-61: Large General Service Secondary		On/Shoulder/Off-Peak	x	On-Peak	x
E-63: Large General Service Primary		On/Shoulder/Off-Peak	x	On-Peak	x
E-65: Large General Service Substation		On/Shoulder/Off-Peak		On-Peak	x
E-66: LGS Substation with Interruptible Load		On/Shoulder/Off-Peak		On-Peak	x
Existing Pilot					
CPP: Large General Service CPP		CPP-On/Other-On/Shoulder/Off-Peak		On-Peak	x
New rates					
E-67: Large General Service High Load Factor		On/Shoulder/Off-Peak	x		x

More revenue is currently collected from energy than (embedded) costs would imply, BUT SRP is actively transitioning to more cost reflective rates

- All of the proposed rates have lower energy charges and higher demand charges than current rates.
- The proposed new high load factor rate, E-67, better reflects underlying costs
- The Critical Peak Price (CPP) pilot rate allows SRP's customers the opportunity to respond to day ahead price signals associated with SRP's most expensive days to serve.

Recommendations for improving future price processes

Continue transition towards a more cost-reflective rate structure

- Create roadmap for transition to marginal cost-based rates
- Continue to shift costs away from energy charges towards demand and fixed charges

Continue to re-examine peak period definitions

- Timing may change further with significant penetration of DERs
- Midday peak is likely to disappear

Reward flexibility

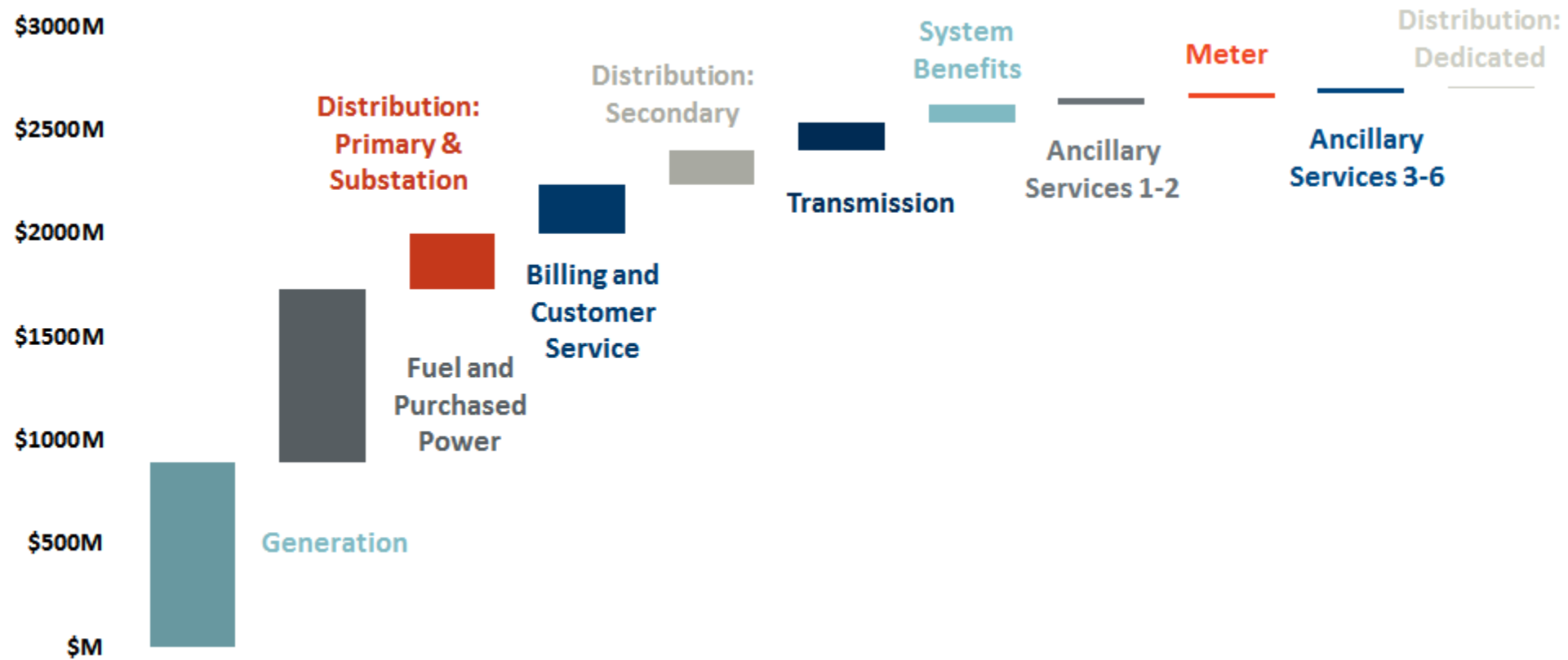
- Explore further reducing the super off-peak price for EV
- Consider introducing CPP or demand response more broadly to all classes

Phase out rate structures that do not reflect costs

- Phase out tiered energy rates

Appendix A: Cost of Service

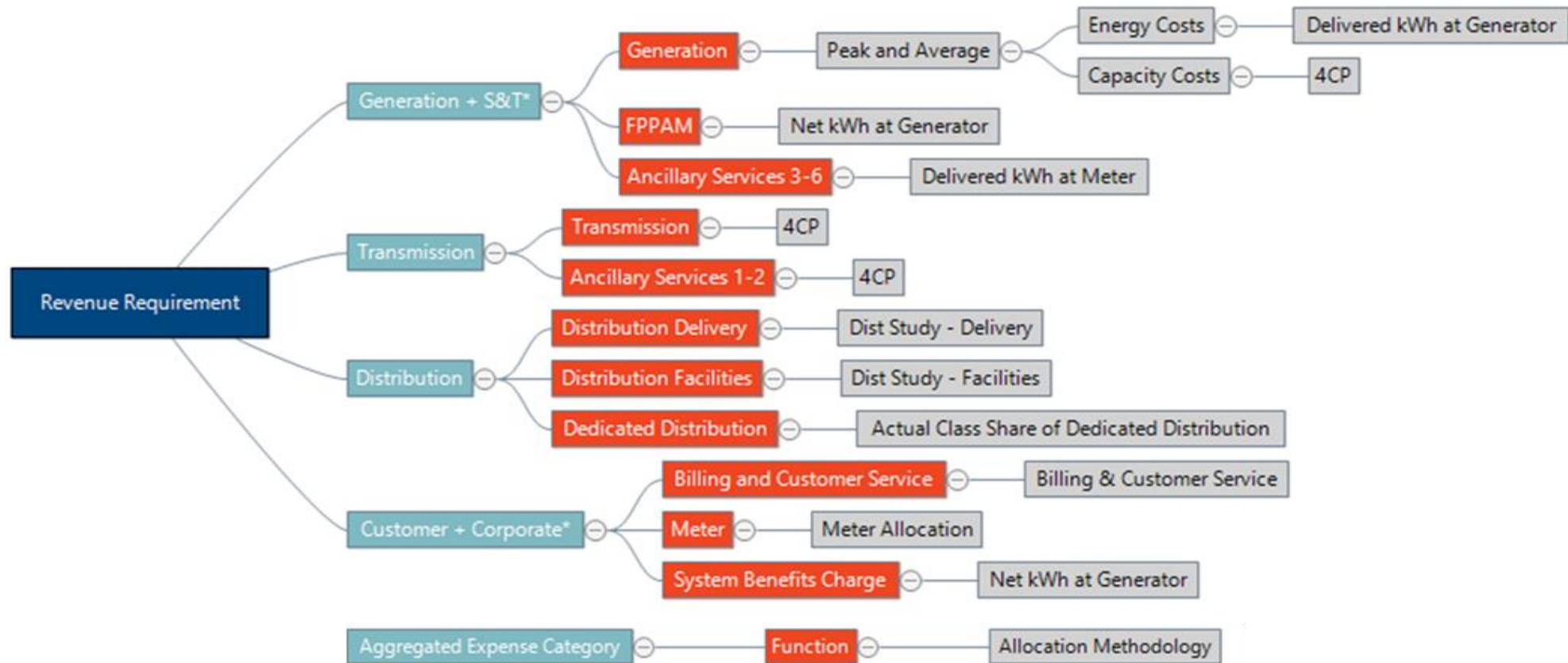
SRP's functionalized proposed revenue requirement (\$2.7B)



Functionalization is based on budgeted expenses

- Bottom-up approach
- Independently collected and budgeted for from different departments.
- Expense specific escalations

Functionalized costs are classified according to their primary cost driver



Each class is then allocated their share of that cost according to their *share* of the cost driver
Classification and cost drivers are in line with standard industry practices

SRP has proposed several changes to the cost of service compared to previous studies

Move EPCAF to Base Rates and FPPAM (eliminate category)

EPCAF primarily consists of expenses related to renewable generation and energy efficiency
Now considered to be part of SRP's core operations
EPCAF related expenses are re-functionalized among generation, SBC, and FPPAM.

Marginal Cost-based Distribution Cost Allocation

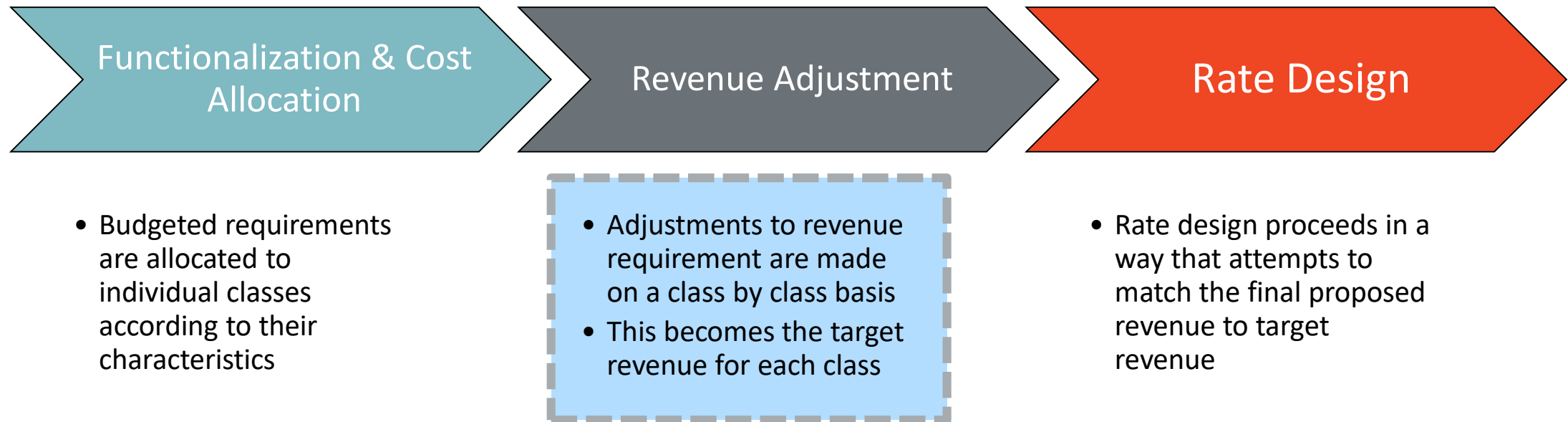
SRP has recently undertaken a marginal cost study and is transitioning to marginal cost-based tariffs
SRP has proposed changing the allocation factors on Distribution Delivery and Facilities from NCP and SNCP, respectively, to using the marginal investment costs

Elimination of Reliability-Must-Run Designation

RMR formerly accounted for generation units dispatched to relieve transmission constraints
These constraints no longer occur
RMR expenses are all totalled towards generation

Appendix B: Rate Design

A revenue adjustment is made after the cost allocation process



SRP has provided appropriate reasons for the proposed revenue adjustments

\$56 million allocated across all classes (1.9% increase)

- Classes with above average rate of return (and E-24 + E-27) received below average increase of 1.4%
- Other classes received increase of 2.5%

Downward adjustment of \$2.5 million for E-24

- For price convergence with E-23
- Will be combined into one rate in the future

Energy Efficiency cap of \$300,000

- Payments above \$300,000 returned to customers
- Paid by all remaining customers

Revenue decrease of \$3.7 million for E-65

- Made in anticipation of eligible migration to new E-67 class. Reduces overall rate of return for SRP



Overall, a final target of \$50 million increase to base rates (1.7%) contributes to the final 3.8% rate of return and 2.2% decrease in rates.

In designing rates, SRP balances several ratemaking principles

Cost Relation - Prices need to reflect cost of service

Equity - Treat all customers in an economically fair manner

Sufficiency - Prices need to maintain enterprise financial health (including water storage and delivery obligations)

Gradualism – Stabilize price levels, smoothing the impact of cost movements

Customer Choice – Promote pricing options that help customers manage their bills (for example, TOU)



Adopted by the SRP Board of Directors in December 2000

PRESENTED BY

Philip Q Hanser

Principal, Boston

+1.617.864.7900

Phil.Hanser@brattle.com



Philip Q Hanser is a principal emeritus of The Brattle Group and has over thirty-five years of consulting and litigation experience in the energy industry. He has appeared as an expert witness before the U.S. Federal Energy Regulatory Commission (FERC), and numerous state public utility commissions, environmental agencies, Canadian utility boards, as well as arbitration panels, and in federal and state courts. Prior to joining The Brattle Group, Mr. Hanser held teaching positions at the University of the Pacific, University of California at Davis, and Columbia University, and served as a guest lecturer at the Massachusetts Institute of Technology, Stanford University, and the University of Chicago. He was a Senior Associate in the Mossavar-Rahmani Center for Business and Government at the Harvard Kennedy School and co-led its seminar in public policy analysis. He serves as a Lecturer in Boston University's Questrom School of Business's Department of Markets, Public Policy, and Law and as a Senior Fellow in BU's Institute for Sustainable Energy. He has also served as the manager of the Demand-Side Management Program at the Electric Power Research Institute (EPRI).

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