



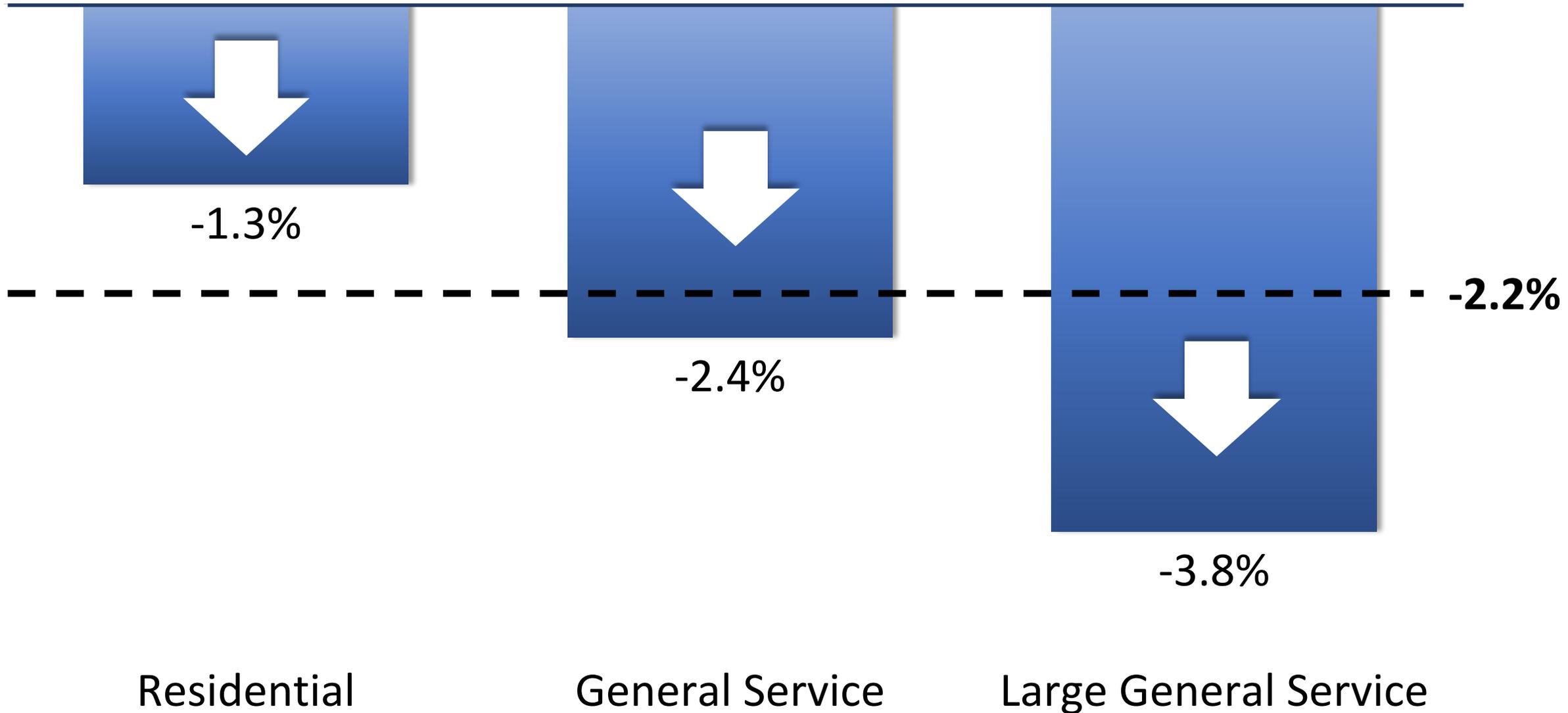
## Proposed Adjustments to SRP's Standard Electric Price Plans Effective with the May 2019 Billing Cycle

March 11, 2019



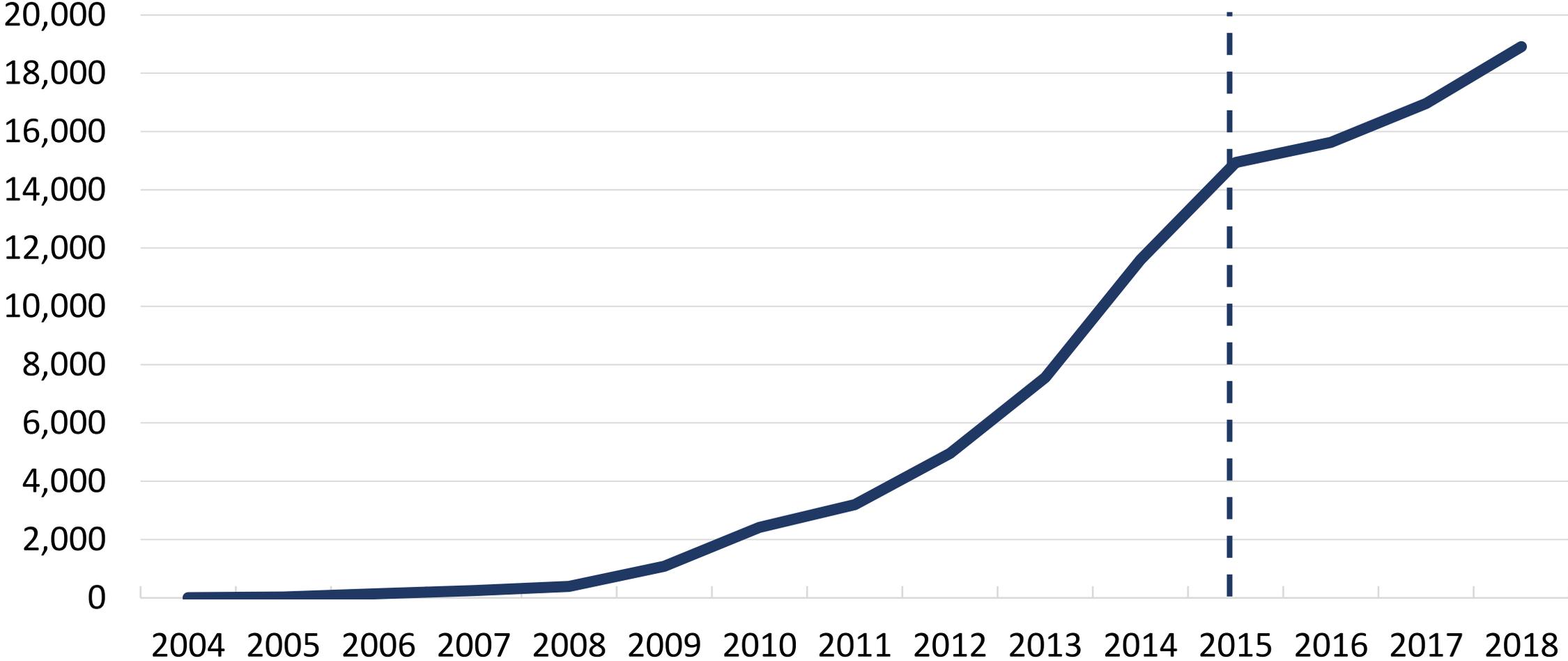
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# Proposed Average Adjustment by Class

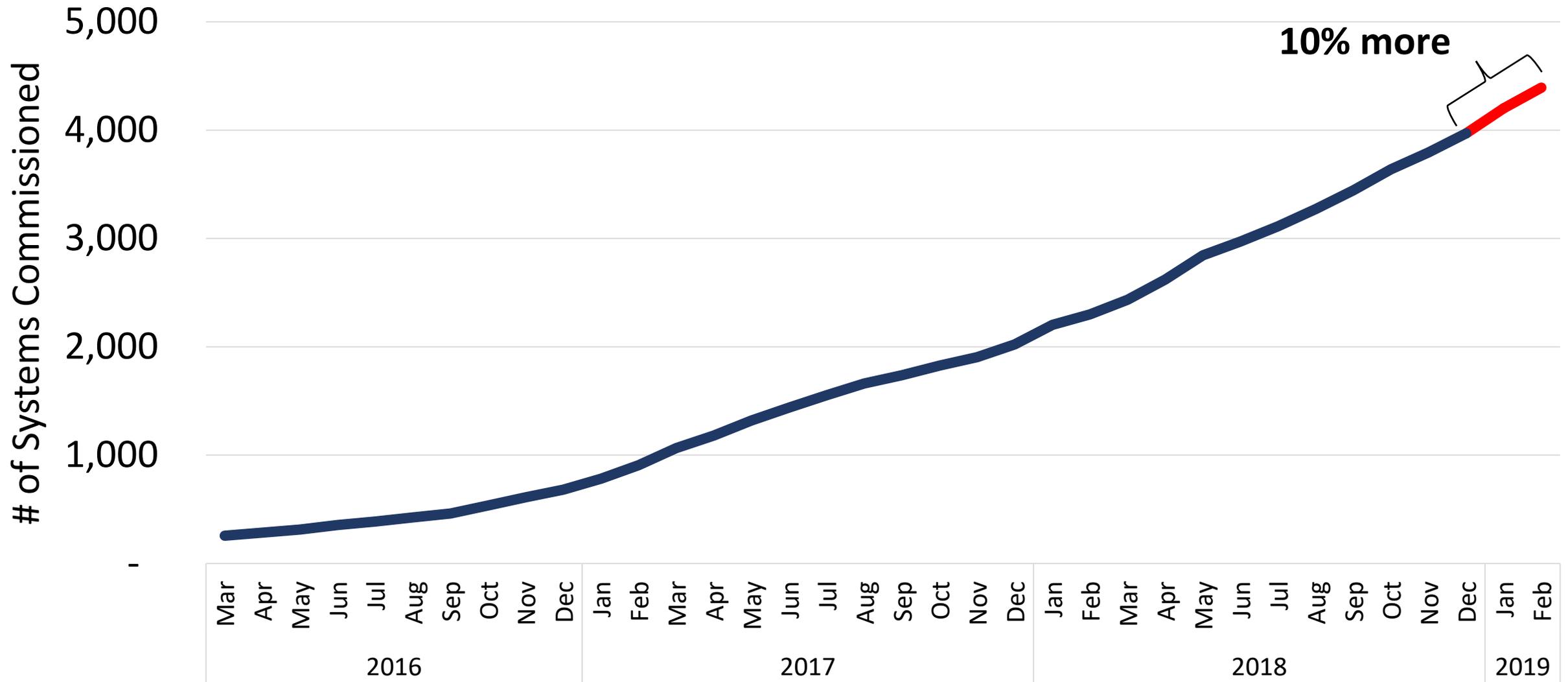


# Customer Generation Price Plans

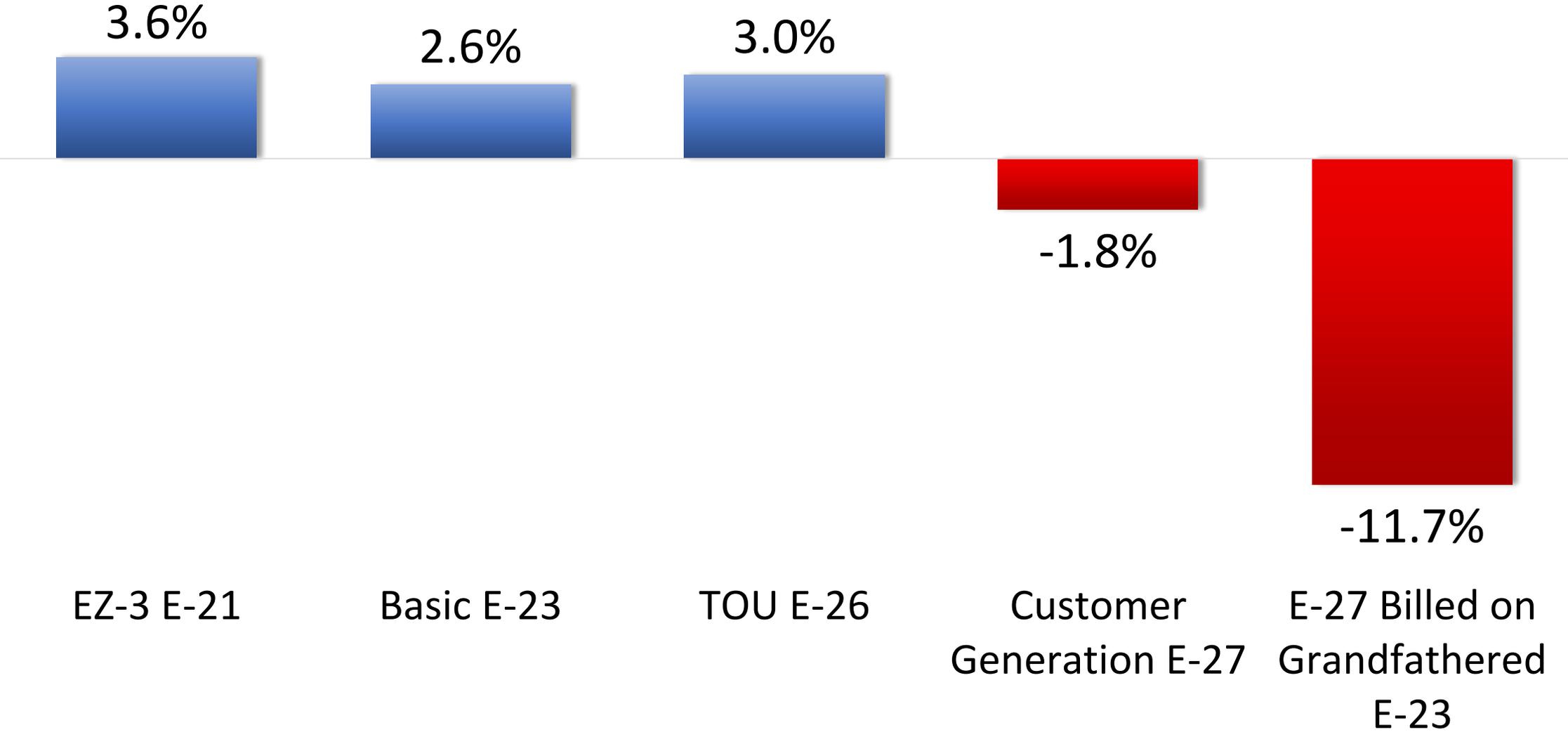
# Number of Cumulative Completed Solar Installations



# Cumulative Number of E-27 Systems Commissioned



# Residential Returns: Management's Proposal



# Rate of Return Management's Proposal vs. ASDA vs. Grandfathered

E-13 Management's Proposal

ASDA Proposal  
(8.5 ¢/kWh Export, \$20 MSC)

E-27 Billed on Grandfathered E-23



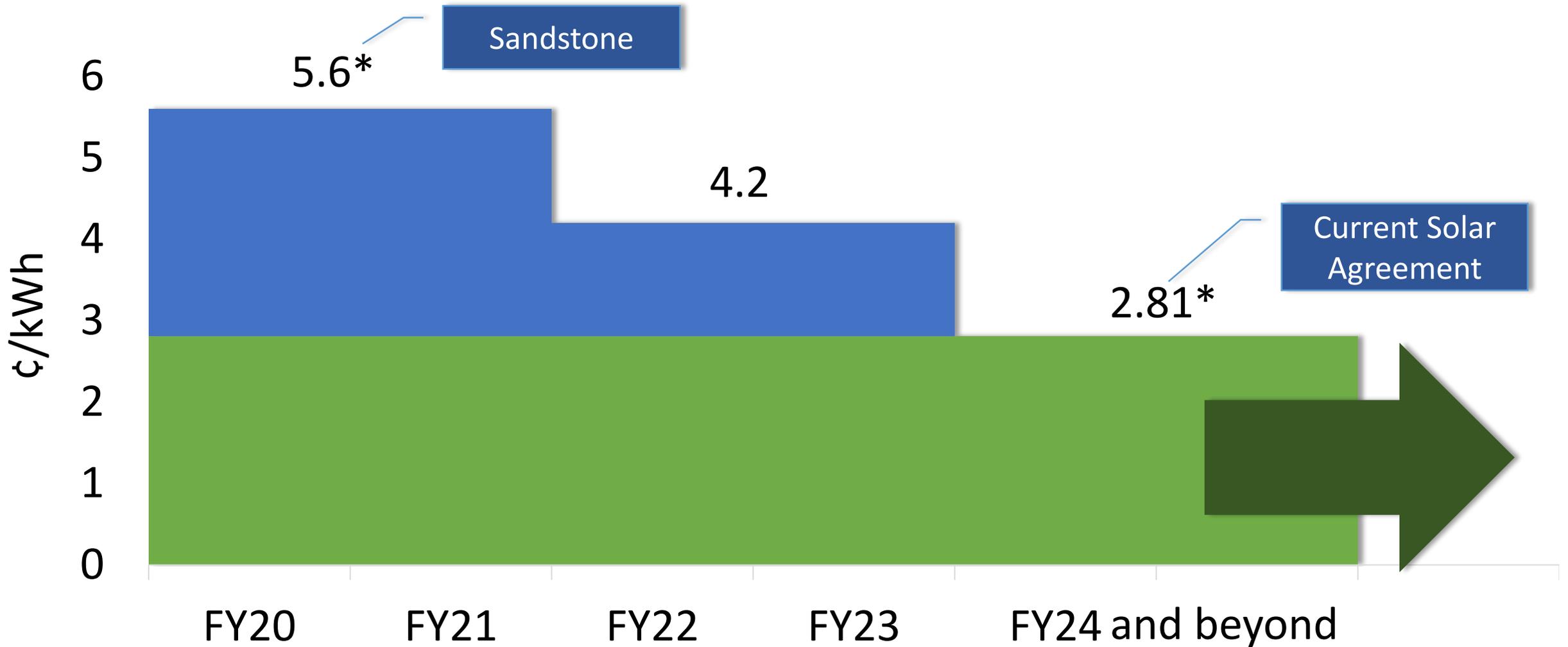
■ Management's Proposal      ■ Difference

# ACC Investigation of Value and Cost of Distributed Generation

“Use of utility-scale solar obligations represents the most reliable and objective avoided cost proxy for rooftop solar and diminishes concerns for the inclusion of societal and environmental factors and other externalities in valuing solar DG exports.”

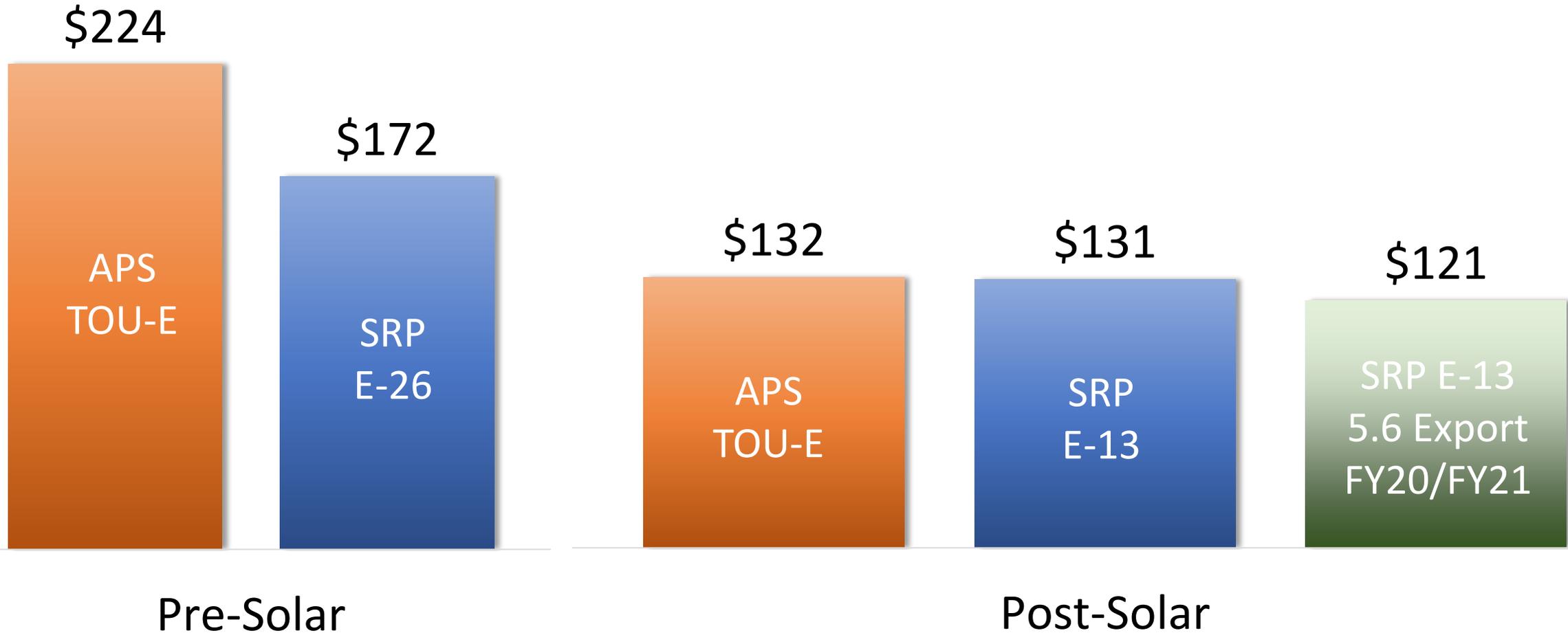
Source: Arizona Corporation Commission, Docket No. E-00000J- 14-0023, Decision No. 75859, page 170

# E-13 Alternative Export Rate Sandstone Transition



\*Loss adjusted

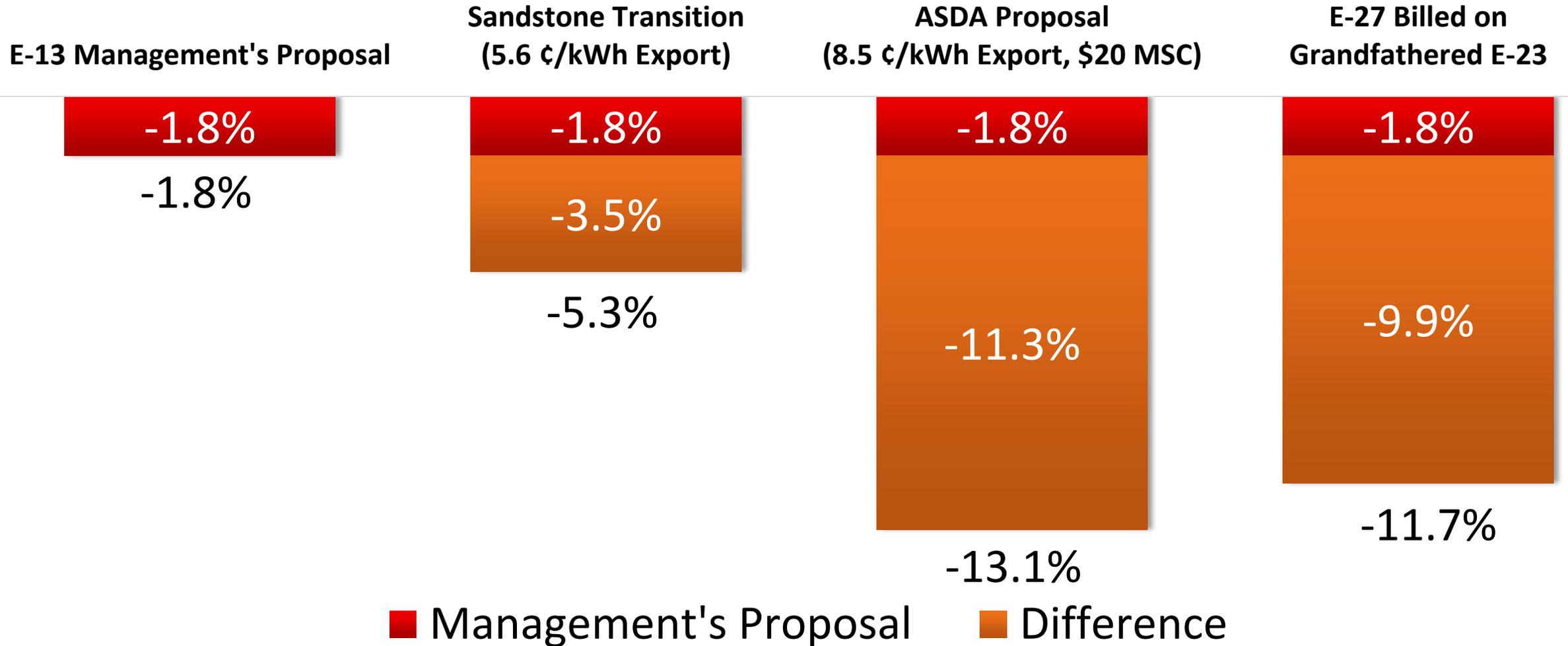
# Monthly Bill Comparison, Time-of-Use Rates



Note: APS bills include currently approved adjustors.

# Rate of Return

## Sandstone Transition – FY20 & FY21



# Revenue Loss Sandstone Transition

	FY20 Impact	FY20 – FY23 Impact
5,000 New Customers	\$0.7M	\$2.1M
Existing Customers	\$0.6M	\$1.8M
<b>Total</b>	<b>\$1.3M</b>	<b>\$3.9M*</b>

\*If SRP added 5,000 customers per year, the total cost would increase by \$2.3M to \$6.2M. As of February 2019, there were 4,472 customers on E-27.

# Rooftop Solar vs Utility Scale

	Capacity Factor	Today's Installed Cost
Rooftop	20% <sup>1</sup>	\$2.93/watt <sup>2</sup>
Utility Scale	35% <sup>3</sup>	\$0.92-\$0.99/watt <sup>3</sup>

<sup>1</sup> Average of rooftop solar on SRP's grid

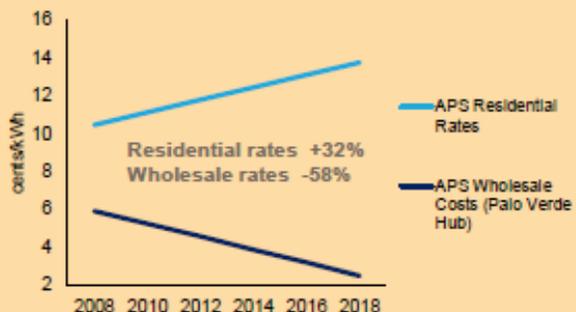
<sup>2</sup> Based on 2018 installations on SRP's grid

<sup>3</sup> Based on results of recent RFP, specific prices subject to NDA

# Customer Value Proposition will Continue to Improve

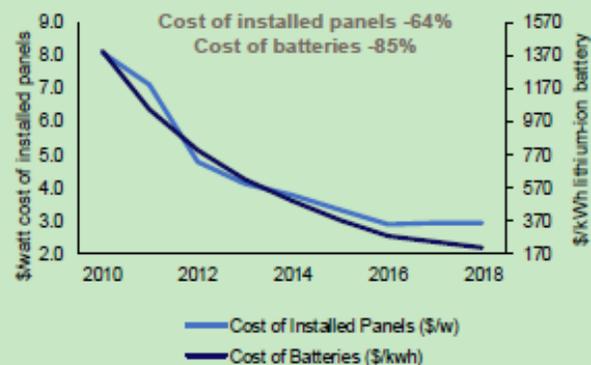
Cost advantage for consumer-centered resources is systematic 2008 - 2028

## Declining wholesale rates disguise cost of capex<sup>(1)</sup>



- With the expected capex trends and stagnant demand, even if wholesale prices fall to zero, retail rates will accelerate over the next ten years.<sup>(2)</sup>
- Aging infrastructure and extreme weather are likely to increase the frequency of outages.

## Costs of solar modules and batteries have declined significantly<sup>(3)</sup>



- Market researchers forecast the cost of installed solar panels will decline 61% while the cost of batteries declines 49% over the next 10 years.<sup>(4)</sup>

(1) APS Residential & APS Wholesale Data: eia.gov

(2) Projected retail rates based on historic actual CAGR adjusted for current market conditions and wholesale rates based on 2% inflation

(3) Historic solar costs represent costs of residential systems according to GTM Research Solar Market Insight reports (2012-2018) and the California Solar Statistics database (2010-2011); Historic battery cost estimates according to GTM Research "US Front of the Meter Energy Storage System Prices" (February 2018).

(4) Projected Cost of Panels Data: Bloomberg New Energy Finance - 2H 2017 U.S. Renewable Energy Market Outlook & Projected Cost of Lithium Ion Battery Data: Lux Research

The issues discussed around Customer Generation price plans are about solar installer and customer economics, not necessarily about achieving carbon goals.

It is inconsistent with pricing principles to ask 1,000,000 other customers to cover these costs when lower cost alternatives exist.

The program described starts at a legacy Sandstone rate and moves to current utility scale prices over four years, but at a higher cost than other solar alternatives.

- The exposure to higher costs by SRP's other 1,000,000 customers is limited.
- Maintains a link to recent utility scale solar cost.

# Director Woods' Proposal

- “Move up pricing from 2.81 cents/kWh to 8.5 cents/kWh with SRP funding the difference in price from a new residential community solar program....”
- Would need 7 customers paying \$3 a month towards this program to support 1 rooftop solar customer
- In order to support 5,000 rooftop solar customers, this program would need approximately 35,000 participants each paying \$3 a month
- Other comparable programs:
  - Solar for Nonprofits: 4,500 participating customers at its peak
  - EarthWise Energy: 6,500 participating customers

Based on contribution levels in comparable SRP solar programs, it is unlikely that non-solar residential customers will voluntarily fund an 8.5 cent/kWh export rate for solar customers. **Therefore, management does not recommend that the Board adopt this specific offering.**

**Community solar options are a good idea. Management's proposal includes an umbrella rider for future programs.** One such program could allow customers to participate in lower cost utility scale solar similar to the large customer program once new solar units are added.

# Battery Pilot Program

# Residential Battery Incentive Program

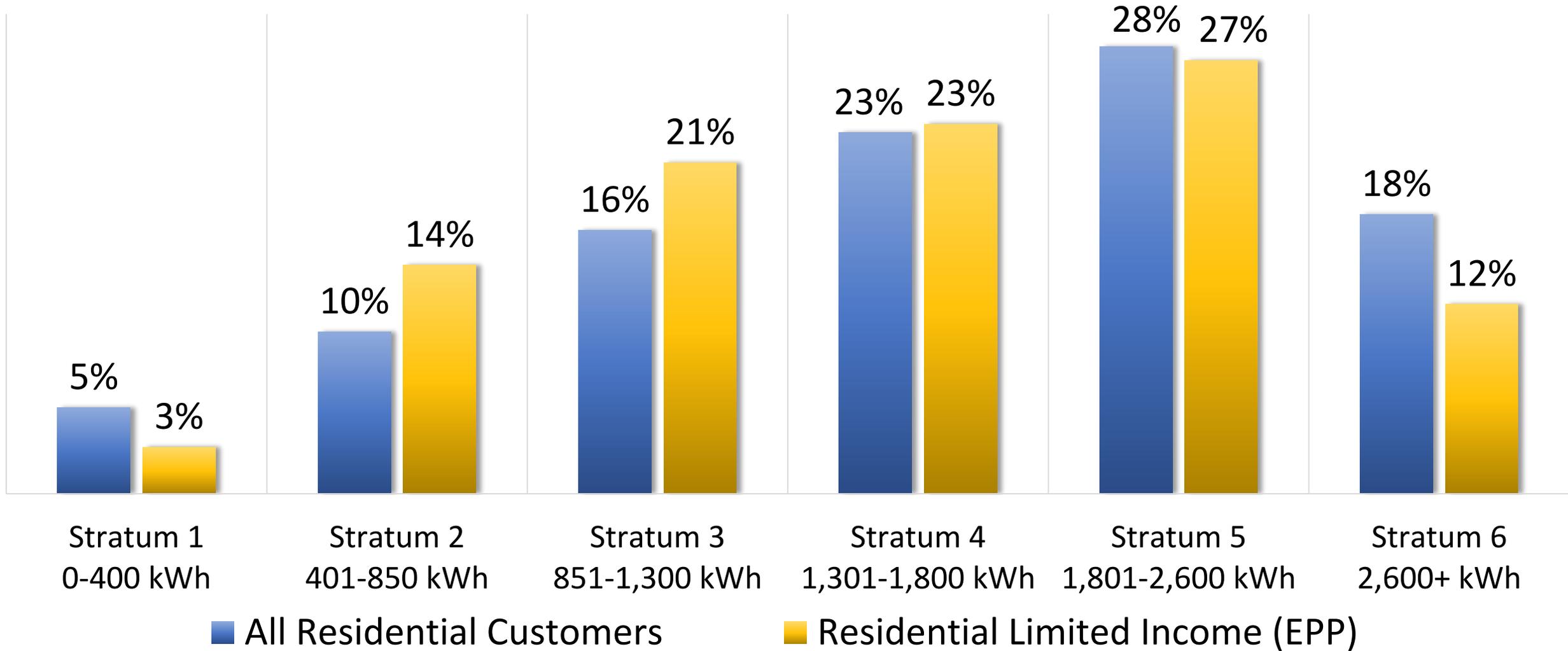
- Provide an additional incentive that increases the overall total from \$150/kWh to \$300/kWh; up to a maximum of \$3,600/system
- Doubling the incentive begins on May 1, 2019 and runs through the end of the existing program, which is April 30, 2021
- If the remaining 4,000+ customers participate, total funding would be about \$15.5 million
  - The current incentive budget is \$8.1 million

**Management can support additional incentives for residential battery installations.** This emerging consumer technology provides flexibility for customers to manage load which can benefit both customers and SRP.

Customers can pursue value from their battery installations through the current and proposed price plans.

# Monthly Service Charge Limited Income

# Residential and Limited Income Customers by Stratum



Note: Strata are defined by the customer's average monthly summer gross kWh for June through September 2018

# Bill Impact of Proposed Bills vs. \$17 MSC

	Customers with Bill Increases	Average Monthly Increase for those w/ Increases
All Residential Customers	~ 340,000	\$1.47 (0.6%)
Limited Income Residential Customers	~ 15,000	\$1.16 (0.6%)

Note: Extrapolated from customer data with 12 months of history

# Basic E-23 Current Price Plan

## Approximate Return by Stratum

Stratum	Average Monthly Summer kWh	Current Return	Return w/\$17 MSC
1	0-400	2.5%	0.2%
2	401-850	2.9%	2.5%
3	851-1,300	2.7%	2.9%
4	1,301-1,800	2.1%	2.6%
5	1,801-2,600	2.4%	3.0%
6	2,600+	5.0%	5.9%

# Impact / Energy Efficiency

- Impact of reducing MSC to \$17 and increasing kWh charge
  - 10% reduction in energy usage results in only \$0.30/month of additional savings
    - With \$20 MSC, 10% energy reduction = \$10.72/month
    - With \$17 MSC, 10% energy reduction = \$11.02/month
- Increased EE funding FY16 vs FY20 under current pricing structure
  - Annual EE funding has increased 28% since FY16 (\$39M to \$50M)
  - Funding over last 5 years: \$220M

# Management's Proposed Response to Wildfire's Requests

## Formerly Arizona Community Action Association

- Increase to a minimum annual SRP Bill Assistance Program contribution of \$500,000/year for 5 years
- Increase the SRP Bill Assistance Program qualification requirement from 150% to 200% of the Federal Poverty Guideline
- Increase the monthly bill credit for the SRP Economy Discount Rider to \$23/month for every month rather than a winter/summer split of \$20 and \$21
  - Estimated cost increase of approximately \$2 million per year

Because of impacts to customers (including low-income customers) that otherwise receive a decrease, **Management does not recommend restructuring rates to reflect a \$17 monthly service charge (MSC).**

Prices will be less aligned with costs and the incremental bill savings from reducing consumption is small. SRP has made significant increases to energy efficiency program funding over the last four years to help customers reduce their electricity use at home.

**Alternatively, Management recommends increasing low-income support to provide better value than the \$17 MSC for these customers.**

# Buy-Through

# Buy -Through

## APS AG-X

- Developed as part of an overall rate case settlement
- No public information about settlement economics/cost shift

## Market Price Pilot Rider

- Provides option for customers to substitute market price for the Fuel and Purchased Power Adjustment Mechanism
- Supplemental to dedicated substation price plans (E-65, E-66 and E-67)

# ACC Policy Statement for Buy-Through Programs dated December 10, 2018

- Program may offer different purchasing structures based on size and load factor of eligible customers
- **Program shall not shift costs to non-participating customers**
- Program shall address any implications for a utility's renewable and energy efficiency standard compliance
- Program shall consider consumer protections for both participants and non-participants

**Management does not support adding buy-through as an option as part of this price process.**

Large customers can receive a market price under the proposed Market Price Pilot Rider. Customers under this program avoid SRP's fuel and purchased power costs, but do not shift costs to other customers.

Development of any buy-through program must have diverse stakeholder involvement and extensive customer outreach to ensure non-participating customers are not adversely impacted by such a program.

# Impacts of Potential Modifications to Proposal

	FY20 Impact	FY20 – FY23 Impact
Low Income Credit	\$2.0M	\$7.9M
Max Storage Incentive*	\$3.7M	\$7.4M
Sandstone Transition (5,000 customers)	\$0.7M	\$2.1M
Sandstone Transition (current customers)	\$0.6M	\$1.8M
<b>Total</b>	<b>\$7.0M</b>	<b>\$19.2M**</b>

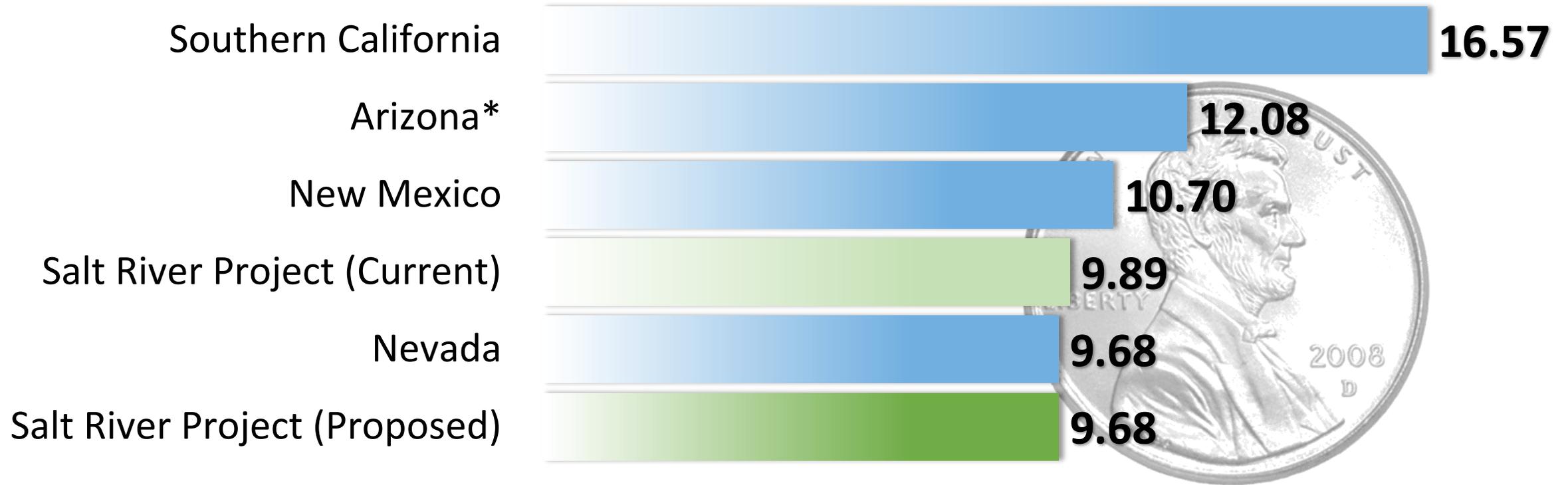
\*Assumes additional ~2,100 customers per year

\*\* If SRP added 5,000 additional solar customers per year, the cost would increase by \$2.3M to \$21.5M.



# Price Comparison

## Overall Price (Cents per kWh)



Source: Dept. of Energy EIA-826 Reports for 12 months ending September 30, 2018

Source for SRP Prices: SRP Test Year Data

\*Arizona does not include SRP

# JD Power 2018 Electric Residential Satisfaction Scorecard



Index Scores	2018	vs. 2017	vs. West Large Average	West Large Rank (of 13)	vs. Large Average	Large Rank (of 58)	vs. National Average
Overall Satisfaction	782	+7	+68	● 1	+62	● 1	+62
<b>Factors</b>							
Power Quality & Reliability	834	+6	+71	● 1	+66	● 1	+64
Price	719	+1	+77	● 1	+66	● 1	+65
Billing & Payment	835	+14	+55	● 1	+52	● 1	+52
Corporate Citizenship	731	+13	+70	● 1	+69	● 1	+69
Communications	730	+4	+63	● 1	+56	● 1	+58
Customer Service	840	+15	+58	● 1	+60	● 1	+60

Rank Quartile      ● 1st      ● 2nd      ● 3rd      ● 4th