Hawaiian Electric
Advanced Rate Design Workshop

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SMUD Overview

- 70+ years community owned, not for profit
- Safe, reliable electricity at affordable rates
- Elected 7-member Board of Directors
- 628,000 accounts serving 1.5 million
- Taking steps to reduce reliance on carbon-based fuels
- 900 Square foot district in Northern California serving the state’s Capitol

SMUD®
The SMUD Board of Directors created 18 Strategic Directions to guide decisions we make about SMUD policies and operations.

PURPOSE STATEMENT
- Our purpose is to enhance the quality of life for our customers and community through creative energy solutions.

VISION STATEMENT
- SMUD’s vision is to be the trusted partner with our customers and community, providing innovative solutions to
  - ensure energy affordability and reliability
  - improve the environment
  - reduce our region’s carbon footprint
  - enhance the vitality of our community

17 additional SDs- aspiration with natural friction between SDs
- Example: Reliability, Customer Relations, Environmental Leadership, Innovation, Enterprise Risk Management, and Economic Development
Strategic Direction 2: Competitive Rates

Maintaining competitive rates is a core value of SMUD. In addition, SMUD rates shall be designed to balance and achieve the following goals:

- Reflect the cost of energy when used
- Reduce use on peak
- Be simple & easy to understand
- Minimize “sticker” shock
- Equitably allocate costs across & within customer classes
- Encourage energy efficiency & conservation
- Offer flexibility & options
- Meet the needs of people with fixed low incomes

As the business evolves and markets change, these principles guide SMUD’s pricing changes.
Pricing As a Strategic Function

Pricing is the primary means to interact with majority of our customers.

Previously: Pricing was a back office function to ensure rates covered costs

Now:
Dynamic strategic function to support SMUD’s long-term ability to deliver on vision and purpose
Adopting Longer Term Outlook with a Rates Roadmap

- **Rate structure needs to evolve** with business and market changes
  - Urgency because gap currently exists between cost causation and revenue collection, and is quickly widening
  - Urgency because customers adopting DERs and non-adopters may have competing interests

- **Recognizing that pricing changes** can take multiple years for a utility to update, within two response time cadences:
  - behavioral based responses - take longer to enact but are lasting
  - technology based - can be enacted and responded to almost immediately

- **Rates need to be evolving** now with both a short and long-term vision and with an identified path to avoid more significant rate impacts and exacerbate cost shifting between parties
SMUD’s Rates Journey

HISTORICAL ACTION

- **SmartPricing Options Pilot** (SPO) Residential pricing study with 12,000 participants to inform design of future tariff
  - 95% of participants reported they were satisfied with the new pricing plans

- **Flattening of Tiered Rates** from 3-tiered structure to flat rate before TOD
  - Results: pure TOD price signals

- **Increased residential monthly charge** from $7.50 to $20 per month
  - Results: increased recovery of fixed costs

NOW

- **Overhauling low income rate** (Energy Assistance Program Rate or EAPR) to provide the greatest discount on a sliding scale based on Federal Poverty Level (FPL)
  - Results: greatest benefit to those most in need

- **TOD implemented** as a standard for residential customers

- **New commercial restructure**

- **Rate increase** in support of low carbon plan, wildfire mitigation, and technology
A Deeper Dive

Direct Linkage Between Pricing & Achievement of SMUD's Strategies
“Addressing energy affordability can help break the cycle of poverty and improve economic development, educational achievement and public health.” ACEEE, April 2016

2006 – 2016: The Sacramento metropolitan statistical area ranks in the bottom-third of the 100 largest metro areas in composite rankings measuring improvements in growth, prosperity, and inclusion, 3 critical elements of regional economies that work for everybody.
Pricing Strategies – Sustainable Communities

• Economic Development Rate in 2018

• Higher discount applied to businesses that locate in disadvantaged communities

• Extended discount to business which add to a communities’ place making
  - Education, art, entertainment, recreation, accommodations, food service, government and retail

• Greater Sacramento Economic Council (GSEC)
The cost of EAPR subsidies has risen 324%, while enrollments have only increased 131% over the last 10 years.

10% of EAPR customers continue to have unaffordable electric bill burdens, especially those in the lowest of poverty levels.

Providing the subsidy alone doesn’t address the underlying issues of energy consumption.

TOU could potentially worsen electric bill burdens for low income customers, unless we provide targeted information, education and energy efficiency programs.
Low Income Assistance EAPR Rate Restructured

- EAPR customers on TOD rate
- Energy bill discounts on a **sliding scale of need** using the Federal Poverty Level (FPL)
- 2016 – 2019: education and investment in energy efficiency
- **Feedback** response to TOD rates has been **most positive** from low income communities due to increased feeling of control of energy bill
- Energy Efficiency investments to **address root cause**, permanently reducing energy bill to offset reduction in subsidy

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<td>150% - 200%</td>
<td>$30</td>
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Sustainable Community Strategy Results

100,000 +
Customers reached through education, outreach and recruitment

13,774
Pilots, weatherization and mobile home installations including education

$878K
Estimated bill savings 2016 to current

6.7
GWh savings since 2016
SMUD Board adopted aggressive Integrated Resource Plan with the strategic objective to establish long-term GHG reduction goals while balancing environmental leadership, cost and customer impacts, reliability and local benefits.
Residential Customers

- Peak reduction and to reduce reliance on higher carbon emitting plants and higher commodity costs
- Transportation electrification and charging for optimized load shape
- Equitable costs sharing and fixed cost recovery
- NET Energy Metering Compensation
  - TOD pricing balancing complexity and appropriate compensation for over generation
  - Shifting of peak from 4-7pm to 5-8pm better reflect the value of solar in our price signals; 1 hour shift reduced value of solar by 2¢/kWh
Energy Rate Restructured for Residential Customers

Residential Time of Day (TOD)

- Default Standard Rate
- Alternate fixed rate priced higher to reflect indifference to price signal
- 99% adoption of TOD rate
- EV customers have additional 1.5¢ whole house discount from midnight to 6 am

Rate details

On the Time-of-Day (5-8 p.m.) Rate, you pay different rates for electricity based on the season and the time of day that you use it. The charts below show the time periods and rates for the non-summer months and summer season.

- **Summer** (June 1 - September 30)
  - Off-peak: Midnight - noon, $0.1166 kWh
  - All day weekends and holidays
  - Mid-peak: Noon - 5 p.m., $0.1411 kWh
  - Peak: 5 p.m. - 8 p.m., $0.2835 kWh
  - Mid-peak: 8 p.m. - midnight, $0.1611 kWh

- **Non-summer** (October 1 - May 31)
  - Off-peak: Midnight - 5 p.m., $0.0969 kWh
  - All day weekends and holidays
  - Mid-peak: 5 p.m. - 8 p.m., $0.1238 kWh
  - Peak: 8 p.m. - midnight, $0.0969 kWh

SMUD®
Pricing Strategies – Net Zero Carbon Goal

Commercial Customers

• Commercial customers have larger energy bills so are more responsive to price signals and are more apt to be motivated by more complex rate designs.

• Fairness between customers and customer classes; more reliably collect for fixed costs.

• Price signals that distinguish between service level demand and coincident demand.

• Staking middle ground as storage is still infancy and during transition, is easier to adjust in the future.

• Not create price signal that drives behavior that favors the individual over the system.

• Moving energy costs closer to generation costs to make electrification attractive.

• Energy charges that target load shapes; targeted energy efficiency.

• Optimize investments by SMUD and our customers.
Energy Rate Restructured for Commercial Customers

1. **Increase the fixed charges and decrease energy charges** to be revenue neutral

2. **Adjusted the time period** to reflect price of energy, encourage electrification, especially when generation source is low-cost renewables
   - Created new day-time off peak super saver rate for 8 non-summer months

3. **Created consistency** across 10 commercial classes
   - Adjust Demand Charges (5 classes had increases; 2 classes had decreases; 3 classes had no change)
   - Added a Summer Peak Demand Charge to all but the smallest commercial customers
   - Reduced the energy charge

4. **Created multi-year transition plan** to avoid rate shock
One Last Note About the Importance of Programs

- Customer Programs and Rates are two biggest tools we have to drive market transformation
- Pilots to test tariffs
- Bridge to new program design to mitigate impact of pricing channels
  - EAPR restructure
  - Commercial restructure
- More responsive than tariff to rapid change to DERs and technology
- Facilitate small wins that over time become additive and compliment Pricing in achieving our strategies
Rates Roadmap Next Steps

NEM successor rate and Fixed Cost Recovery

- SMUD desires least cost solution; though neutral on specific solutions
- Valuing the community over the individual
- Least total cost for the system
Pricing Challenges and Opportunities

• **Provide visibility of price signals** so customers can understand the long term value proposition before making the investment to avoid misalignment between DER adopters and non-adopters

• **Embedded costs** (historical investments) greater than current marginal cost (cost to add 1 more customer)

• **Balance** between tangible, immediate benefits vs. intangible longer-term benefits

• **Maintaining SMUD’s financial health** so we can harness the benefits of the energy revolution for all of our customers