

# Demand Reduction Through Price Plan Design

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PLMA Spring Conference  
Santa Monica, CA  
April 29 – 30, 2010



# SRP Facts & Figures

- Established in 1903 as the nation's first multipurpose reclamation project
  - Agricultural Improvement & Power District
  - Municipal Water Users' Association
- Political subdivision of State of Arizona
- Nation's 3<sup>rd</sup> largest public power utility
  - Serves over 930,000 customers
  - \$2.8 billion revenue in FY 2009

# Time-of-Use Pricing at SRP

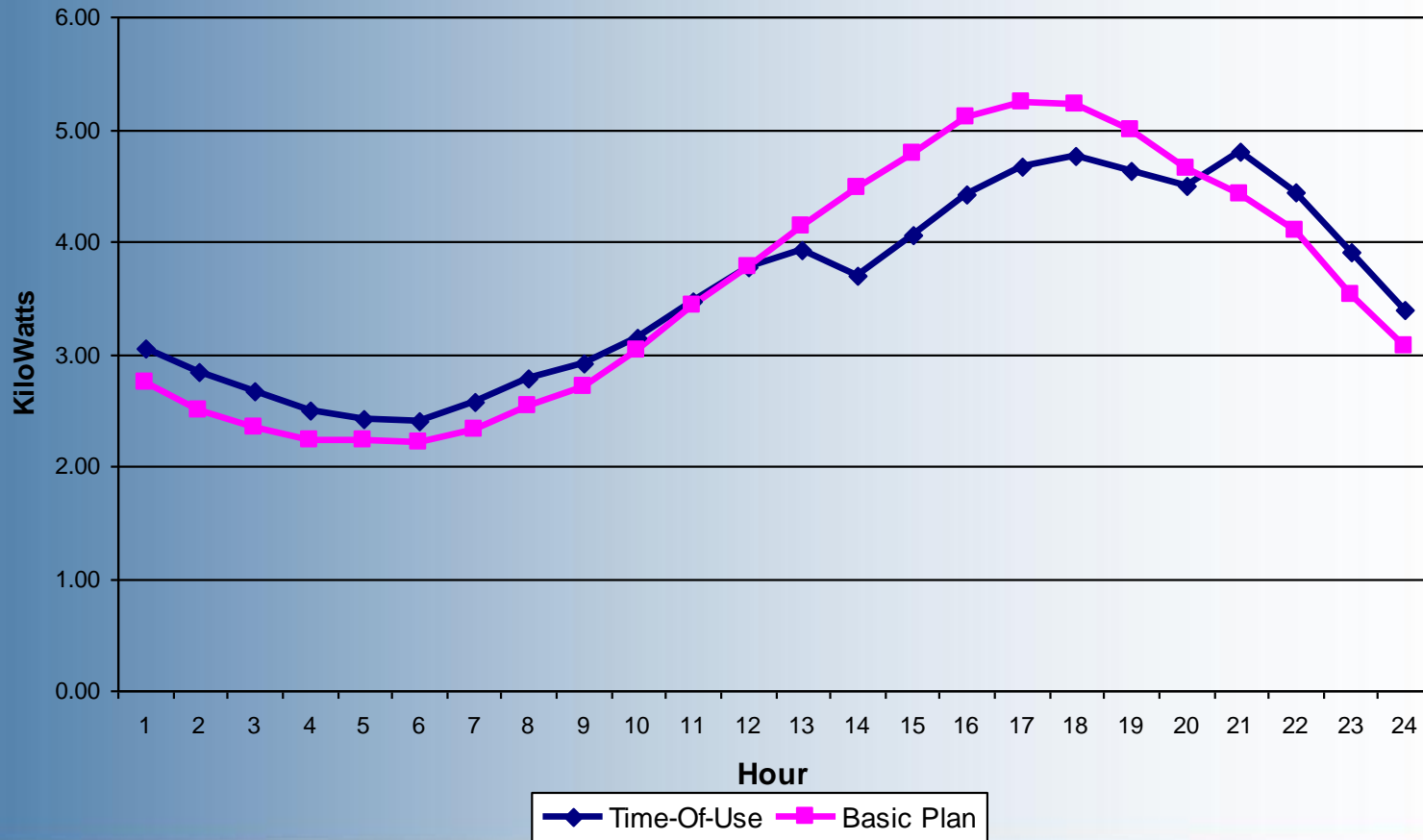
- SRP introduced optional residential TOU pricing in 1980
  - Encourage customers to shift usage from high cost on-peak hours
- Original design: 12 hour summer on-peak period
- Current design: 7 hour summer on-peak period
  - 1 pm to 8 pm, Monday through Friday
- Over 200,000 customers on TOU (E-26)
  - 70% are higher usage (> 1,800 kWh/month)

# TOU Price Plan (E-26)

- Customers reduce usage over peak by an average of 0.5 kW
  - Represents about 100 MW demand reduction
  - No reduction in overall energy use
- Average TOU customer saves approximately 6.5% annually compared to non-time-of-use basic price plan
  - Aggressive shifters achieve up to 28% annual savings
- Mature product, but prospects remain

# TOU Price Plan (E-26)

Typical Summer Day



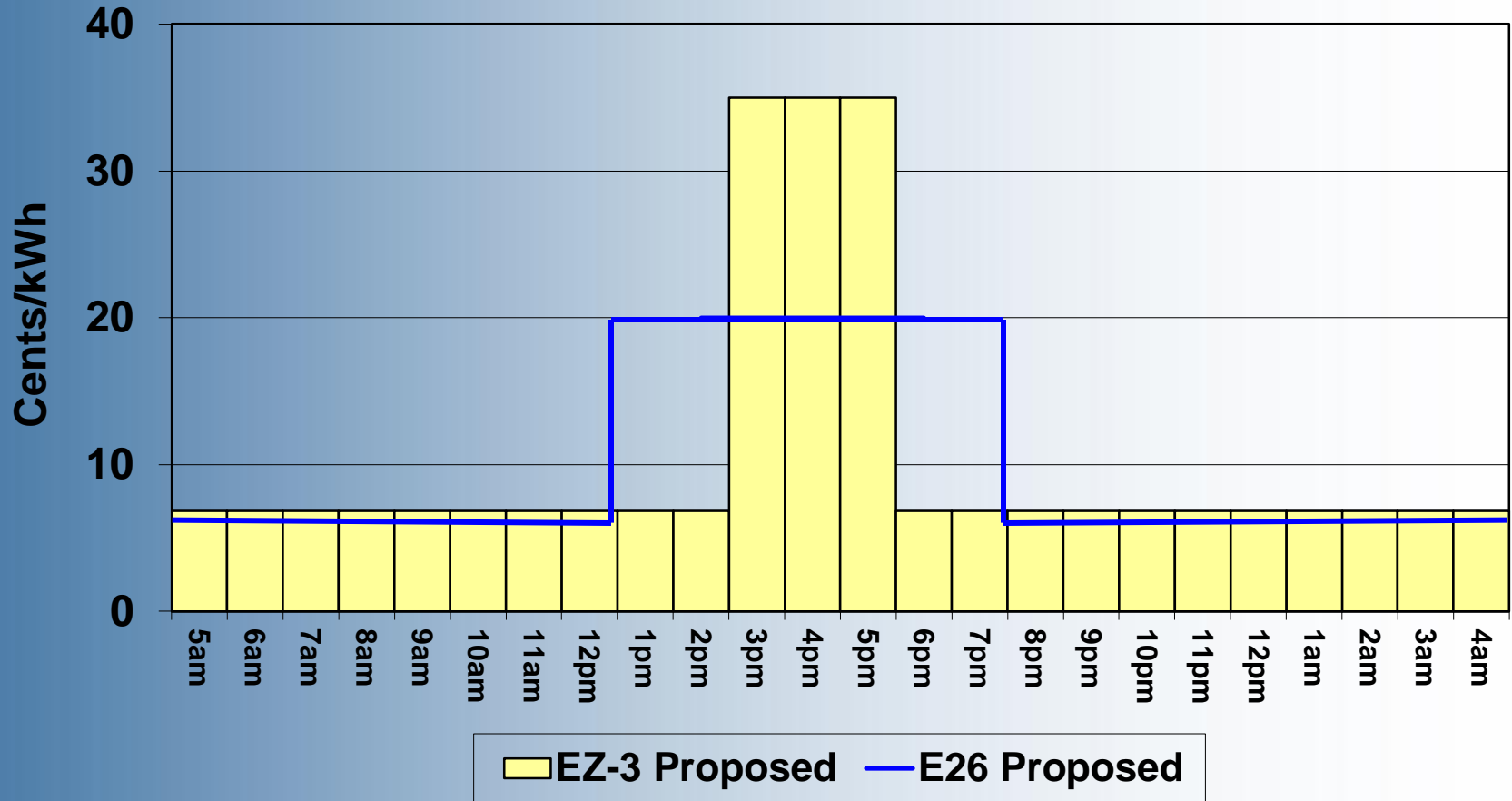
# Initial EZ-3 Design (2008)

- Encourage more customers to switch to a time-of-use price plan
- Provide an easy alternative – one with only three hours of on-peak
  - EZ-3 summer on-peak hours are 3 pm to 6 pm, Monday through Friday
    - SRP system peak typically occurs in the hour ending at 5pm on a summer weekday

# Initial EZ-3 Design (2008)

- Launched as a limited experimental price plan in May 2008
  - Attracted over 9,000 participants
  - 80% are higher usage (> 1,800 kWh/month)
- Required a “smart meter” already installed on the home
- Featured much higher on-peak prices and slightly higher off-peak prices compared to TOU
- Revenue neutral to TOU if no change in behavior

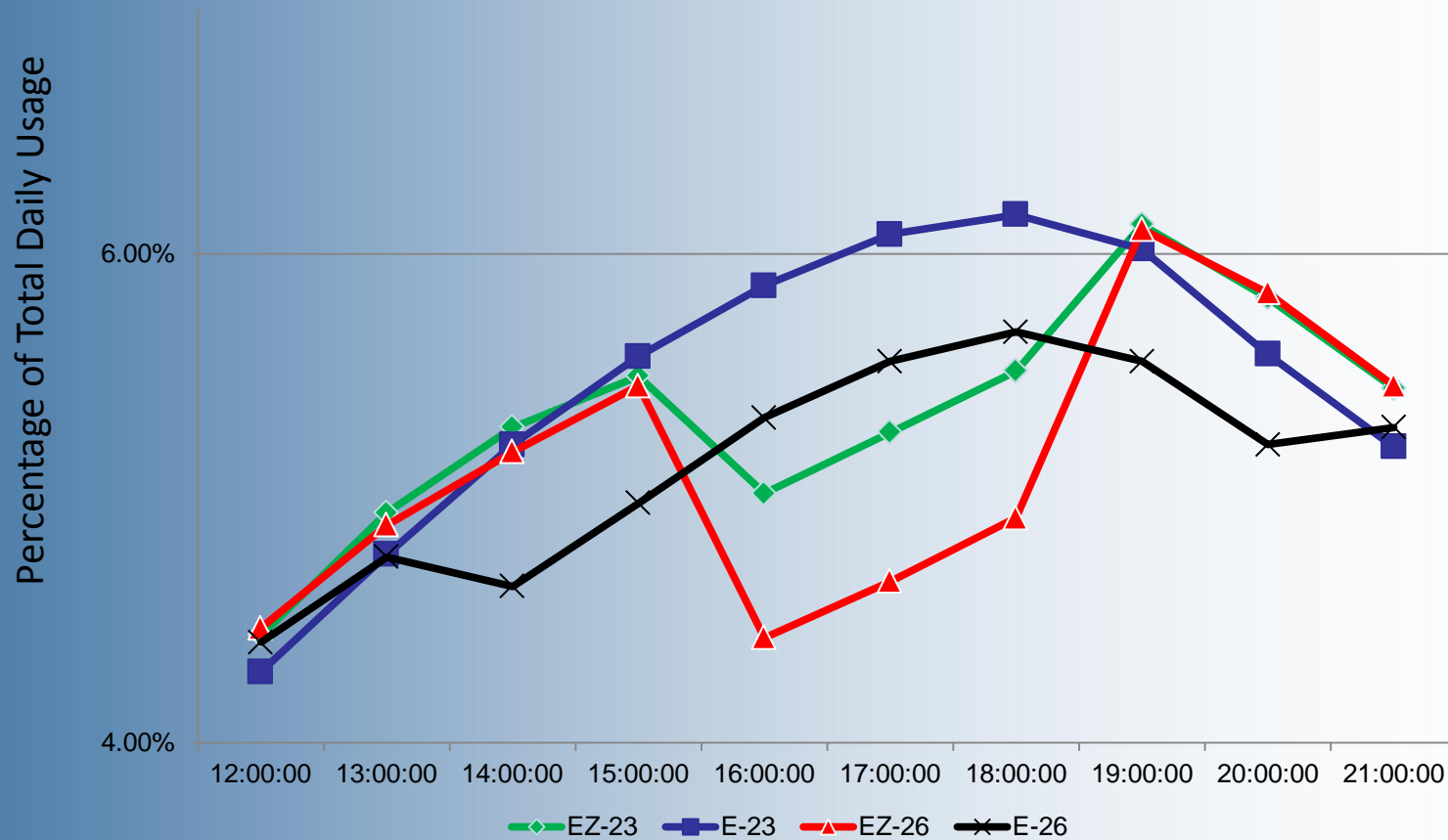
# Initial EZ-3 Design (2008)



# EZ-3 Load Research Study

- Methodology
  - Pre-test/post-test/control group design
  - “Very small neighborhood” sampling
  - Recruited higher use customers (>1,800 kWh/month)
    - 400 basic plan and 400 TOU customers for test group
    - 800 basic plan and 800 TOU customers for control group
  - 2<sup>nd</sup> Phase launched in 2009
    - 120 basic plan and 120 TOU control group customers recruited to switch to EZ-3
  - Daily interval data collected from smart meters

# EZ-3 Load Research Study



# EZ-3 Load Research Study

- Customers reduce usage over peak by an average of 1.5 kW
  - No reduction in overall energy use (similar to TOU)
- Former TOU customers shift more load on EZ-3 than former basic price plan customers
- Consistent results between phases 1 and 2

# Modifications to EZ-3 (2010)

- Open to any customer effective May 2010
- Potential for savings relative to TOU reduced
  - Average EZ-3 customer saves about 4.5% annually compared to non-time-of-use basic price plan
  - Shifting load for more hours under TOU is rewarded
  - More aggressive load shifting required under EZ-3 to attain comparable savings

# Conclusions

- TOU and EZ-3 produce demand reduction due to price signal
- Portfolio provides customers with choice
  - Customer lifestyle determines which price plan works best
- Customers adopt daily habits to shift and save
- Recent modifications to basic price plan should encourage more customers to switch
  - Summer inclining blocks at 700 kWh and 2,000 kWh

# Next Steps

- Aggressively market EZ-3 and TOU
  - 20,000 combined goal for EZ-3 and TOU this year
  - 90 day savings guarantee program
- Continue EZ-3 load research study
  - Assess impacts of 2010 modifications to EZ-3
- Evaluate feasibility of a three hour time-of-use price plan for commercial customers

# EZ-3 Price Response!

Actual Customer - Summer 2008 Peak Day

