Wholesale Rate Structures for Retail Impact

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Joint Action Conference

January 6, 2019

UFS
Utility Financial Solutions, LLC

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Discussion

- Importance of sending proper price signals
  - Will responses create a win, win, win
- Impacts of incorrect price signals to members
- Creation of revenue stability
- Rate design objectives

Industry Challenges

- Declining consumption
- Rate structures that are not cost-based
- Stranded costs
- Little incentives for electric vehicles
- Market based energy prices lower than many utilities power supply costs
- Customers are requesting “green rates”

Industry Challenges

- Intervenors
- Conservation
- Installation of solar arrays
- Need to maintain bond ratings
- Aging Infrastructure

Retail Rate Design Objectives (Similar objectives often exist for JAA's)

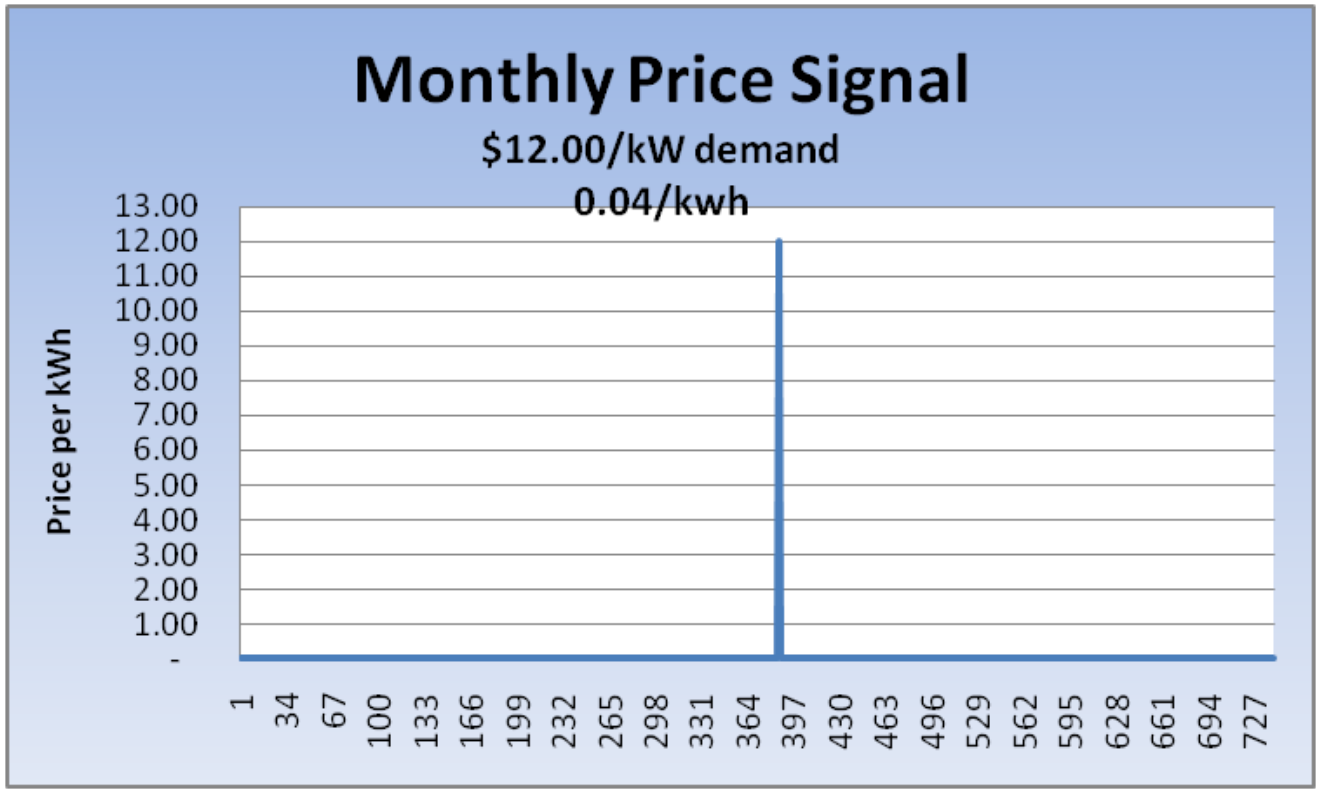
- Fairness to Customers (Members)
  - Cost based rates
  - Sending appropriate price signals
  - Rate Simplicity
- Promote Economic Development and growth
- Community Social Objectives:
  - Impacts on Low Income Users
  - Impacts on smaller member utilities

- Environmental Objectives
  - Promote Carbon Free Resources
    - Utility Scale Renewable projects
    - Roof Top Solar
    - Reduce customers energy Consumption
  - Promotion of Electric Vehicles
- Maintaining financial stability
- Provide stable rates for customers
- Allow customers (Members) greater control over rates and charges

Typical Price Signals

- Production demand charges are based on a single hour of the month
- Example Price Signal 0.04 Cents/kWh for all hours, but one hour $12.00/kWh

- Is this price signal consistent with JAA's production costs?



Ideal Cost Based Rate Structure

Cost Based Rate Design	Customer Rates	Billing Unit
Production Demand Coincident with System Peak	$12.72	KW
Distribution Based on Customers Maximum Demand	2.19	KW
Energy Charge - On Peak	0.0462	kWh
Energy Charge - Off Peak	0.0423	kWh
Customer Charge	21.44	Month
PILOT	XX%	Percent of Revenues

- Power supply capacity and energy costs tend to be based on marginal costs adjusted to match revenue requirements of the embedded cost of service study
- Distribution charges and customer charges tend to reflect embedded cost of service results
- PILOT is Payment in Lieu of Taxes to the Municipality and is often based on % of revenues or utilities investment in infrastructure

Members look to JAA's for direction and guidance

- Do your wholesale demand rates reflect marginal cost savings?
- If members send this price signal to customer will it shift costs to other JAA members?

When Demand Charges are not consistent with Marginal Costs

Members value created by solar may not be consistent with JAA's value

If this occurs, may result in upward pressure on JAA's rates

Properly valuing energy efficiency or demand side management programs

Does it attract new customers and provide incentives for existing customer to grow

Creating a Win, Win, Win

- Objective: If customer responds to a price signal: Customer Saves, Member Utility Saves and JAA saves
- To achieve this objective, movement toward marginal cost capacity charges
- Differences will exist between marginal costs and revenue requirements of JAA, recovery of differences:
  - Creation to two demand charges
  - Fixed monthly charge to ensure recovery of fixed costs

Long Run Marginal Cost Price Signals

Month	Production Capacity Rate	
January	$	10.73
February	$	10.44
March	$	10.39
April	$	10.38
May	$	11.49
June	$	13.25
July	$	16.50
August	$	16.97
September	$	12.39
October	$	10.50
November	$	10.46
December	$	10.43

Responses by JAA's

- BPA – Two demand tiers; first tier recovers fixed costs for hydro facilities, second tier based on marginal capacity costs
- TVA – moving a penny per kWh into members fixed customer charge
- JAA One – Tiered demand charges with first tier priced to recovery fixed cost and second tier to reflect marginal capacity prices
- JAA Two - Shifted costs above marginal demand costs into energy

Energy Price Signals

- Where markets exist, power supply is sold into the market at the prices where generation is located
- The member purchases power at the prices of the local node
- Cost savings from reduced energy use is the market price not the generator price
- Many utilities send energy price signals based on market prices through time of use price signals
- Some are adding additional time of use periods

MISO Market 2017 Prices

Month	Super Peak	On	Off
January	$ 36.13	$ 30.14	$ 27.53
February	$ 28.29	27.02	24.89
March	$ 33.61	30.92	30.45
April	$ 32.18	30.00	26.89
May	$ 36.81	33.89	27.01
June	$ 45.08	32.23	24.25
July	$ 44.47	37.89	27.52
August	$ 49.95	37.90	37.24
September	$ 49.61	36.98	27.21
October	$ 34.07	30.91	27.93
November	$ 32.69	25.99	23.54
December	$ 36.72	30.95	31.69

When Energy Prices are not consistent with Marginal Costs

Are prices providing cost based incentives for off peak usage - electric vehicles?

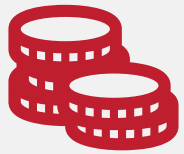
May over or under value of solar

May not provide proper incentive for customers to use or shift energy into lower cost time periods

JAA's (Utilities) Responses

Creating	Creating more time of use periods such as: • Super on peak, on peak, off peak, super off peak
Sending	Sending energy price signals based on market prices
Implementing	Implementing a fuel cost recovery mechanism or shifting cost differences into members fixed customer charges

Creating Revenue Stability



When price signals to members are above marginal costs creates less stable revenues for JAA's

Problem revenue requirements of JAA's often vary from marginal costs. Consider shifting cost variations into customer charges or implementing a cost recovery mechanism for members

If considering modifications of wholesale rates consider member impacts and develop a transition plans

Development of rate plans, rate strategies and rate transition plans are important to a utilities future financial stability and customer's satisfaction