

A “Regulatory View” of Demand Response

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Overview

- Objectives in Regulation
- The *Value Principle*
- Consumer View
- Value-Based Building Blocks
- Regulatory Value -- use our assistance

Objectives in Regulation

- Build consensus on industry direction and on regulatory reforms
- Emphasize the Value Principle
- Show how consumers' win
 - Maximum value business case for DR+AMI+EE
 - Show how the building blocks *stack*
- Expand the coalition of support

The Value Principle

- Marginal Cost of Service (MCOS) = market value (if market is competitive) or avoided cost
- Marginal Value of Service (MVOS) = customer value (VOLL, outage cost...)
- Optimal resource expansion rule: $MCOS = MVOS$ – this will change the industry
- Regulatory view – *least-cost, best fit*
- Use for energy/capacity markets & choices

Consumer View in Regulatory Settings

- Legacy of the *Golden Age* of utilities – declining average costs ($< MCOS$)
- The *rub* now is increasing MCOS – we need to educate much more on this
- When consumers see more cost and not increased value – resistance & conflict
 - Fixed-income, small loads, low-income...
- If consumers and consumer groups see more choice and greater value – better...

Value Continuum of DR Attributes

	Gen Capacity/ Energy	Trans Capacity/ Energy	Dist Capacity/ Energy	Env. Mitigation	Lower Market Prices	Mkt Mitigation	Hedge/ Insurance
Schedule/Bid							
AGC/Reg-Up – super fast ramp	High	NA	NA	High	High	High	High
1 to 10 Minute Ramping	High	High	High	High	High	High	High
Auto-DR	High	High	High	High	High	High	High
30 Minute	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Load Reduction	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Voluntary RTP/TOU	Medium	Low	Low	Medium	High	High	Low
Emergency Response							
Mandatory Interruptible	Medium	Medium	Medium	Medium	Low	Medium	Low
Voluntary Interruptible	Low	Low	Low	Medium	Low	Medium	Low

Value-Based Building Blocks

- Regulators want to know the business case – show how consumers' get value
- The industry wants to demonstrate the business case – show positive benefit-cost ratio
- The pieces of the business case:
 - T-stat/DCU, EMS, new meters, smart-systems
 - Generation, transmission, distribution, environmental, price-impacts avoided ...

DR+AMI+EE Benefits

- An introductory list:
 - Generation avoided – locational capacity & energy
 - Resource Adequacy
 - Operating Reserves (provided and reduced)
 - Emergency and/or Option (insurance) Value
 - LMPs & wholesale/retail losses
 - Transmission avoided – capacity & energy
 - Distribution avoided – capacity & energy
 - Environmental mitigation – capacity & energy
 - Connect/disconnect & power monitoring
 - Interval metering & meter-reading/collections
 - Dynamic (RTP/TOU) pricing
 - Smart-grid operations and advanced M&V

How Benefits *Stack* for DR – Case in Point

- Concurrent Benefits of MDPSC approved SMECO contract:
 - RPM/ILR generation capacity benefits
 - Lower use and prices for capacity/energy
 - Reduced need for Operating Reserves
 - Reduced network transmission costs
 - Reduced distribution build-out/reconductoring
 - Reduced environmental costs (SOx/NOx, CO2)
 - Reduced market volatility & market power
 - Fully outsourced DR contract – shifting risks

Regulatory Value

- Reforms to Capture Concurrent Benefits
 - At FERC in Organized Markets
 - At State Commissions
 - Need to proactively integrate future benefit streams
- Utility Incentives and Cost-Recovery
 - Rate-of-return *kicker* (e.g., Nevada)
 - Well defined cost-recovery
 - Decoupling (energy & capacity)
- Build Coalitions and Promote Consensus
- Engage Comverge and Use Our Expertise