



Advanced Metering

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Peak Load Management Alliance

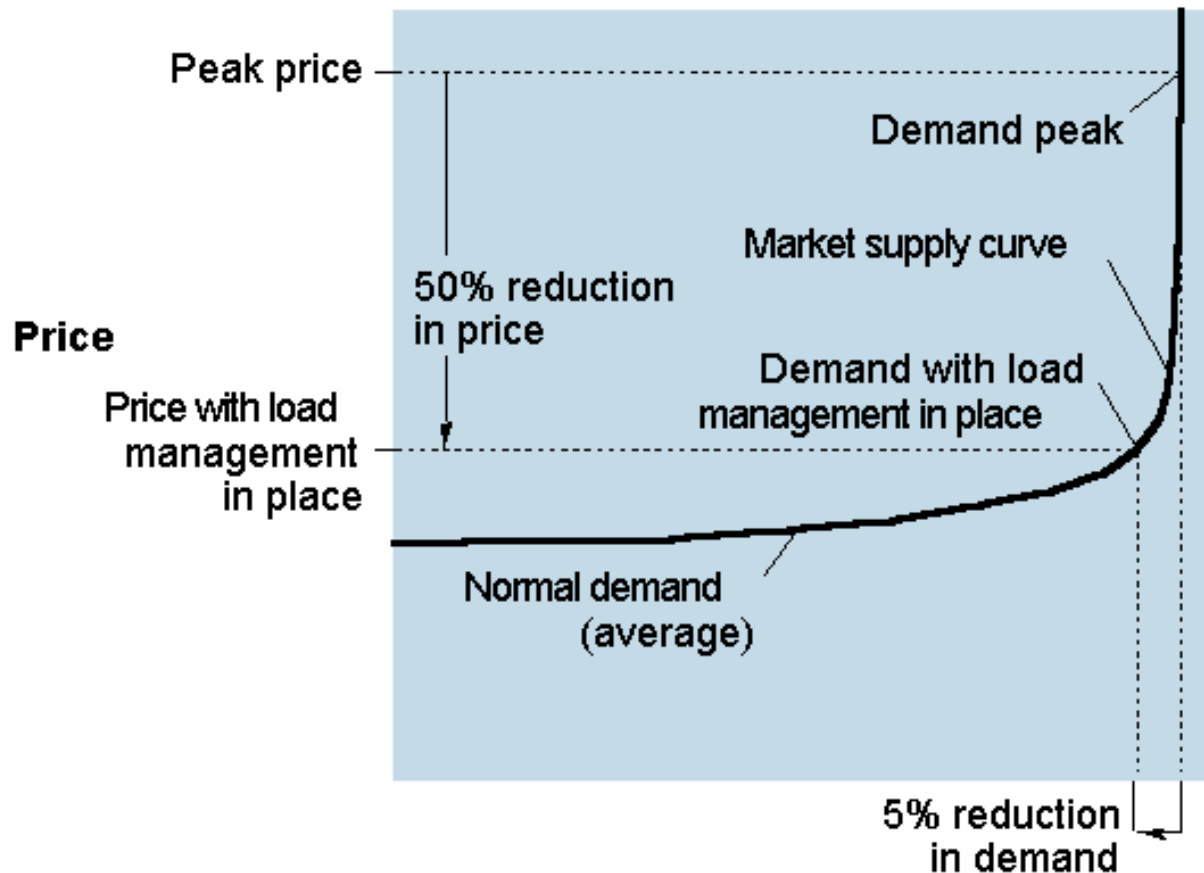
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Dallas, Texas

Benefits of Demand Response

- Individual customers reduce their energy costs
- Risk of forced outages is reduced
- Prices drop for all customers
 - “Without the ability of end-use customers to respond to price, there is virtually no limit on the price suppliers can fetch in shortage conditions.”
 - FERC Commissioner Massey
 - 250 MW demand reduction during peak would reduce costs by \$100 million per year
 - NY PSC staff analysis

Small Reductions in Demand — Big Impact on Price



Advanced v. Competitive Metering

- Competitive: provided by companies other than regulated utilities
- Advanced: communicating, interval meters
- Advanced metering is prerequisite for large-scale demand response
 - Along with supported rates
 - Competitive metering is not

Competitive Metering

- Competitive electricity supplier or competitive metering company provides the advanced meters.
- Individual customers pay
- Expensive
- Not especially successful, so far
 - In CA, < 0.1% of customers were receiving competitive metering services 2 years after the opening of the metering market
 - Activity was even lower among customers that were not required to install advanced meters

Delivery & Payment Mechanisms

- Utility metering – individual customers pay
- Utility metering – all customers pay
- Taxpayers pay

Individual Customers Pay

- Utility provides advanced meters for customers that request them
- Individual customers pay
- Traditional approach
- Has resulted in very little activity
 - Few customers have interval meters
 - Fewer have access to data (modems or contact closures)

All Customers Pay

- Utility provides advanced meters for all customers, or all customers meeting certain requirements, e.g., above a certain size.
- All customers share the cost.
 - All customers benefit from electricity price reductions and avoidance of blackouts.
 - Advanced meters treated as a distribution system cost.
- Surest route to widescale deployment, and thus widescale benefits.

Who benefits?

Who should pay?

- “Our conservative estimate is that the wide-scale (i.e., national) implementation of dynamic pricing would result in annual electricity cost savings on the order of \$10 billion to \$15 billion.”
- “Approximately 20 percent of total financial savings comes from individuals reducing their consumption during peaks; the remaining 80 percent is generated by the lower wholesale peak prices that result from reducing peak load and accrues to all consumers.”
 - McKinsey and Company, May 2001
- Who should pay?
 - Meter users (20% of benefits)
 - System (80% of benefits)
- Debate reminiscent of early days of DSM

Virginia

- 1999 Electric Utility Restructuring Act calls for SCC to investigate competitive metering
- 2000 Electric Utility Restructuring Act revised, calls for competitive metering
 - Shall be implemented for “large” C/I by 1/1/02
 - May be implemented for Residential and Small Business by 1/1/03
- 2001 Commission Order delays C/I to 1/1/03
 - Working Group established
 - Limited participation by competitive providers

Virginia

- Staff recommends phased-in approach (7/01)
 - Meter functionality, choices and data access choices
 - Interval data recorders
 - On-demand reading
 - Provided by utility
- Still studying
 - Financial ownership of meter
 - Customer can own, from select list
 - Installation, maintenance and calibration by utility
 - Definition of “large”

Virginia

- Advanced v. competitive metering
 - Rules already in place requiring utility to provide advanced metering at cost
 - Customer provides modem and phone line
 - Dominion's fees for customers >500kW
 - Installation ~\$765-843
 - Monthly ~\$3-4

Oregon

- Senate Bill requires advanced metering for all customers > 30 kW
- All ratepayers pay for network
- Individual customers pay for metering

Oregon—Portland General

- Funding approved for an RF network
 - \$27 million (over 15 years)
 - Analysis of telco v. RF presented
 - >6,500 meters, RF less costly
 - Have to re-evaluate with current vendors
- All customers > 30kW
 - 15,000 meters of 720,000 total
 - \$6/month

Oregon—Portland General Electric

- Another 40,000 residential customers
 - 20,000 in geographic test area
 - Test feeders, distribution, theft detection
 - 20,000 who opt in
 - Voluntarily get on TOU rate
 - Go from 7¢/kWh to 1.8¢ night and 10¢ peak
 - \$2-3/month

QuickTime™ and a
Photo - JPEG decompressor
are needed to see this picture.

Odometer	246	kWh
Power	1458	W
Budget	246.4	kWh
Trip	1.810	kWh

California

- CEC spent \$35M to install advanced metering
 - customers > 200 kW
 - 24,000 meters
- Took much longer than expected
- Expensive
- After 2002??

Questions/Comments

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