



Demand Side Response and Advanced Metering in Pennsylvania

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Electric Restructuring Update

- ⌚ **Electric restructuring legislation was passed in December 1996**
- ⌚ **Established framework for allowing retail consumers to choose electric supplier**
- ⌚ **Electric choice began with pilots - 11/97**
- ⌚ **Phase-in of 2/3 of customers - 1/99**
- ⌚ **All customers had choice - 1/00**

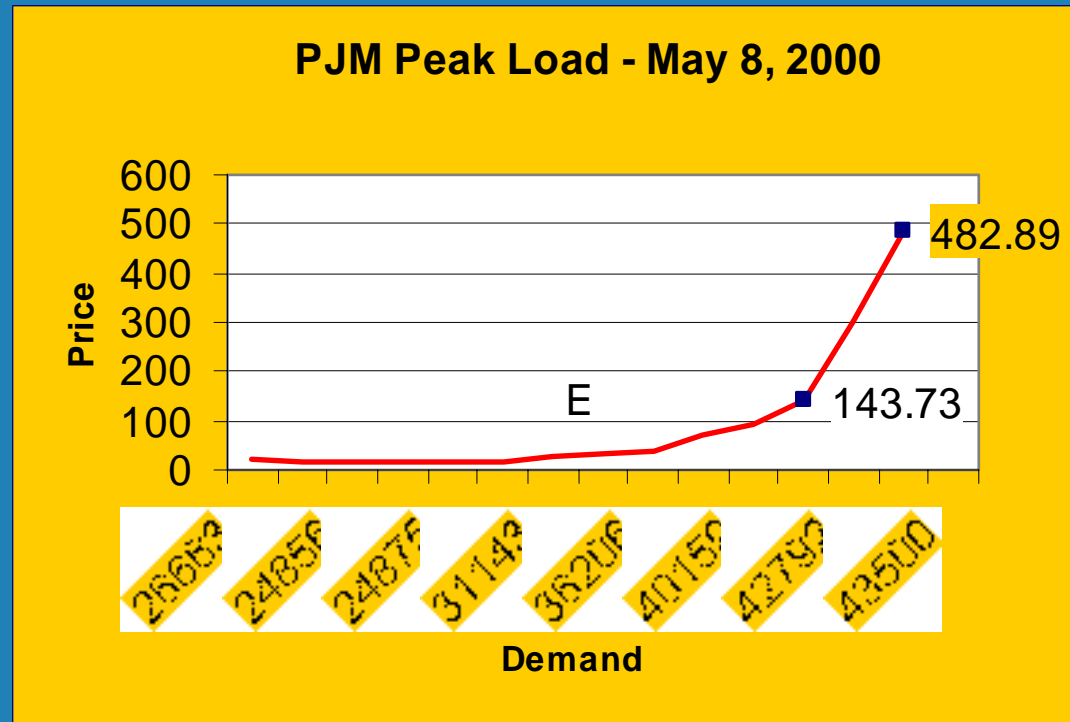
Electric Restructuring Update

- ⌚ By April 2000, about 1/3 of load was purchasing electricity from alternative supplier
- ⌚ Wholesale energy and capacity prices increased in late 2000 and early 2001
- ⌚ By July 2001, amount of load being served by alternative suppliers had dropped to less than 10%

Electric Restructuring Update

- ⌚ In PA, consumers have been shielded by from volatility and upward price trends in wholesale market by rate caps
- ⌚ Since PA is a net exporter and has several generation projects in the queue, availability of power is not a concern
- ⌚ Yet, it is important to explore methods for reducing volatility and price spikes

Effect Of Demand On Prices



\$482.89 = 43228 MW Demand

4% Demand Reduction

\$143.73 = 41453 MW Demand

70% Price Reduction



Demand Side Response

Ω Roundtable discussion in November 2000:

- Would promoting a demand-side response during peak periods enhance reliability and economic efficiency of wholesale and retail markets?
- Should policies to promote a demand-side response be implemented at wholesale and retail levels?
- What types of programs ?



Working Group Formed

- ⌚ Based upon testimony offered during roundtable discussion, Working Group was convened and began meeting in January
- ⌚ In Summer 2001, Working Group focused on programs targeting large commercial and industrial customers
- ⌚ Long-term goal is to expand programs to residential and small C&I customers

Summer 2001 Programs

- ⌚ **Voluntary Load Reduction Programs - Customer is offered payment to voluntarily reduce load during a peak period**
- ⌚ **Real-Time Pricing Programs - Customer receives information about prices for next day and makes business decision**
- ⌚ **Smart Thermostat - Customer's air conditioning unit is controlled by utility**

Consumer Education Subgroup

- Ω Message conveyed to consumers that on certain days the price they pay for electricity is less than it costs to produce
- Even though their prices stay the same, the higher cost of generation supply impacts them
 - When customer usage increases, production becomes more expensive
 - High electricity costs make it more difficult for competing suppliers to offer lower prices

Consumer Education Subgroup

∞ Simple steps offered to consumers

- Raise temperature to 78 degrees
- Turn off air conditioners when away from home
- Consider setback thermostat
- Clean or replace air conditioning filters
- Close windows, blinds, doors

∞ Conveyed by bill inserts, websites, press releases, environmental agencies



Programs Planned for 2002

Ω Programs that are planned for Summer of 2002 for residential and small business customers include:

- Smart Thermostat
- Time of Use Rates, Water Heating Programs
- Special Meters To Measure Hourly Usage
- Real-time Price Information
- Voluntary reductions in exchange for payment



Some Barriers to Programs

∩ **Costs**

∩ **Technology - metering, smart thermostats**

∩ **Costs**

∩ **Consumer Education**

∩ **Costs**

∩ **Customer-Utility Communication**

∩ **Costs**

Role of Advanced Metering

- ∞ Recognize importance of advanced metering in context of DSR programs
- ∞ Availability of hourly data enables:
 - utility to measure customers' reductions at peak periods
 - utility to price electricity differently depending upon time of use
 - customer to see effects of reducing consumption during peak periods

Recovery of Advanced Metering Costs by Electric Utilities

- ⌚ Recovery of costs is a problem because of rate caps imposed by Electric Choice Act
- ⌚ Distribution rate caps are continuing for major utilities through 2004-2007
- ⌚ Generation rate caps are in place through 2010 for many companies

Advanced Meter Deployment Regulations

- ⌚ Commission issued regulations seeking to facilitate deployment of advanced meters
- ⌚ Established working group to develop catalog of qualified advanced meters
- ⌚ Set forth advanced meter standards
 - Capable of measuring hourly usage
 - Provide communications port for customer to monitor usage
 - Measure in two directions

Recovery of Net Incremental Costs

- ∞ Regulations provide that customers, suppliers, or both, shall be responsible for net incremental costs incurred by utility
- Utility may assess bill surcharge on Customer
 - Supplier may pay Utility
 - Customer and Supplier may mutually agree to allocate charges between them

Utility's Responsibilities For Advanced Metering

- ∞ Upon written request of Customer or Supplier, Utility must install qualified advanced meter
- ∞ Meter is owned and operated by Utility
 - Utility is responsible for calibration, maintenance, testing, reading, safety and reliability
- ∞ Utility must educate customers about availability and uses of advanced meters

Competitive Metering

- ⌚ **Competition Act does not require but permits Commission to direct unbundling of metering services**
- ⌚ **Several restructuring settlements provided for competitive metering**
- ⌚ **Settlements provided opportunity for all customers to utilize advanced meters and advanced meter services from suppliers**

Key Settlement Provisions on Competitive Metering

- Ω Define advanced meters as being capable of storing consumption data at specified time intervals and remote meter reading
- Ω Provide for Suppliers to be certified by Commission to offer metering services
- Ω Set forth process for Suppliers to install, test, maintain and read meters
- Ω Establish credits for Customers' bills

Monthly Metering Credits

- ∞ **Bill credit given to Customer choosing to receive metering services from Supplier**
- ∞ **Monthly Credit for metering and meter reading**
- ∞ **E.g. - PECO Energy Company**
 - **Residential - \$1.39**
 - **Commercial - \$1.75**
 - **Industrial - \$44.62**

Role Of Competitive Metering

- ⌚ Especially with rate caps on Utilities, competitive metering is important to deployment of advanced meters
- ⌚ Limited activity by Suppliers to date
- ⌚ Supplier activity in advanced meters and demand side response programs would be beneficial to competition



Summary

- ∞ Explore cost-effective program ideas
- ∞ Search for available funds, low-cost programs, or programs that produce savings that can be shared with consumer
- ∞ Educate public about impact of usage during peak times on wholesale prices
- ∞ Afford consumers opportunity to respond to price signals and reduce usage