Demand Response

Presentation to Reducing Energy Use Workgroup
September 8, 2008

Delaware Division of the Public Advocate

Sarah Buttner

Energy Transition Consulting

This Presentation

- What is demand response
- Need for and benefits of demand response
- How is demand response achieved
- What's state of play
- Tool for this group?

Demand Response

- Tool to shave electric peaks
- Give customers
  - Incentives to reduce use at peak
  - Tools to control cost
- Different from energy efficiency
  - Some cross benefits
- DPA supports demand response

Why Do We Need Demand Response?

- Demand growing—19% over next decade
- Capacity projected to grow just 6%
- Customer electricity bills rising
  - Give customers ability to control usage
- Consensus forming
  - Deploy an integrated approach
    - Supply side
    - Demand side

The Brattle Group, Discussion Paper May 16, 2007

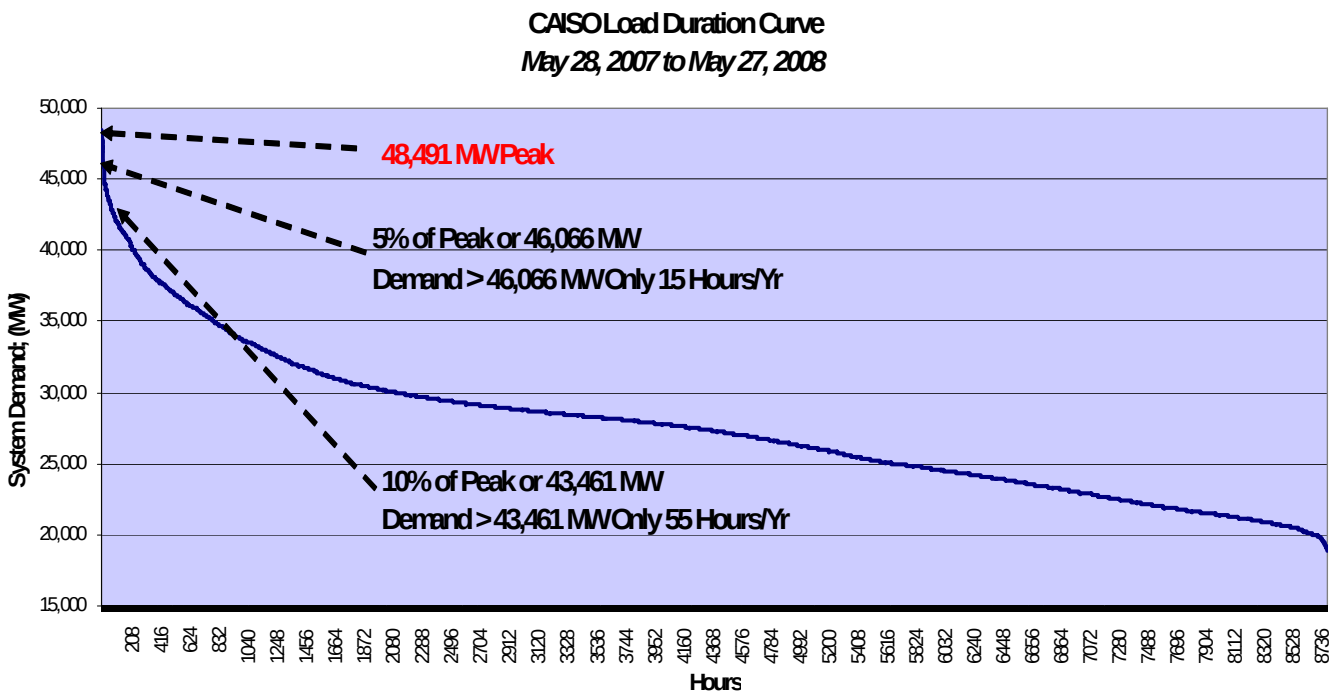
Concentration of Demand

- Demand highly concentrated in top 1% of hours
- PJM: these 80 – 100 hours account for 16% of peak demand

The Brattle Group, Discussion Paper May 16, 2007

High Demand Just Few Hours/Year

Load Duration Curve: 2007-2008

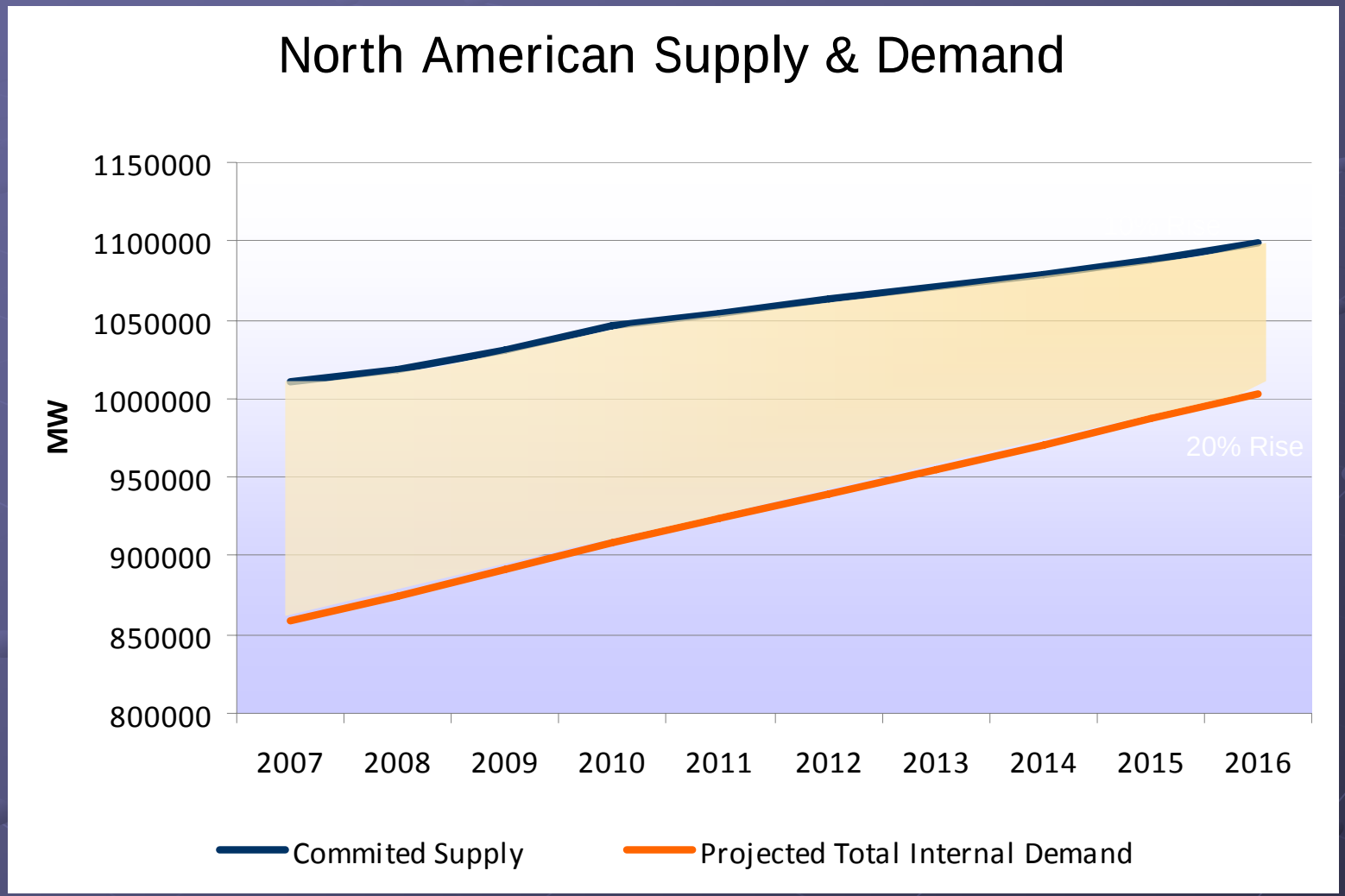


California ISO
Your Link to Power

Presentation by John Goodin

U.S. Demand Response Coordinating Committee,
Town Hall Meeting May 12,13, 2008

Peak Demand Rising



Rick Sergel, President & CEO, NERC

Demand Response Town Meeting, June 2, 2008

20% More Resources Needed

- Generation
- Transmission
- Distribution

- Demand Response
- Efficiency
- Resource Management

Rick Sergel, President & CEO, NERC

Demand Response Town Meeting, June 2, 2008

Why Use Demand Response?

- Fewer new plants that would be used less than 100 hours/year
  - These peaking plants less efficient
- Provide accurate price signals to customers
  - Convey true cost of power
    - Electricity at peak very expensive
  - Customers decide whether to continue to buy at high price
- Save substantial money for society, too

The Brattle Group, Discussion Paper May 16, 2007

Brattle Group Study

- 5% reduction in peak demand
- Eliminate need for installing 625 peaking plants
- Savings of $3 billion a year
  - $35 billion over 20 years
- In addition, downward pressure on prices
  - Temporary benefit
  - Significant: $5 billion to $10 billion nationally

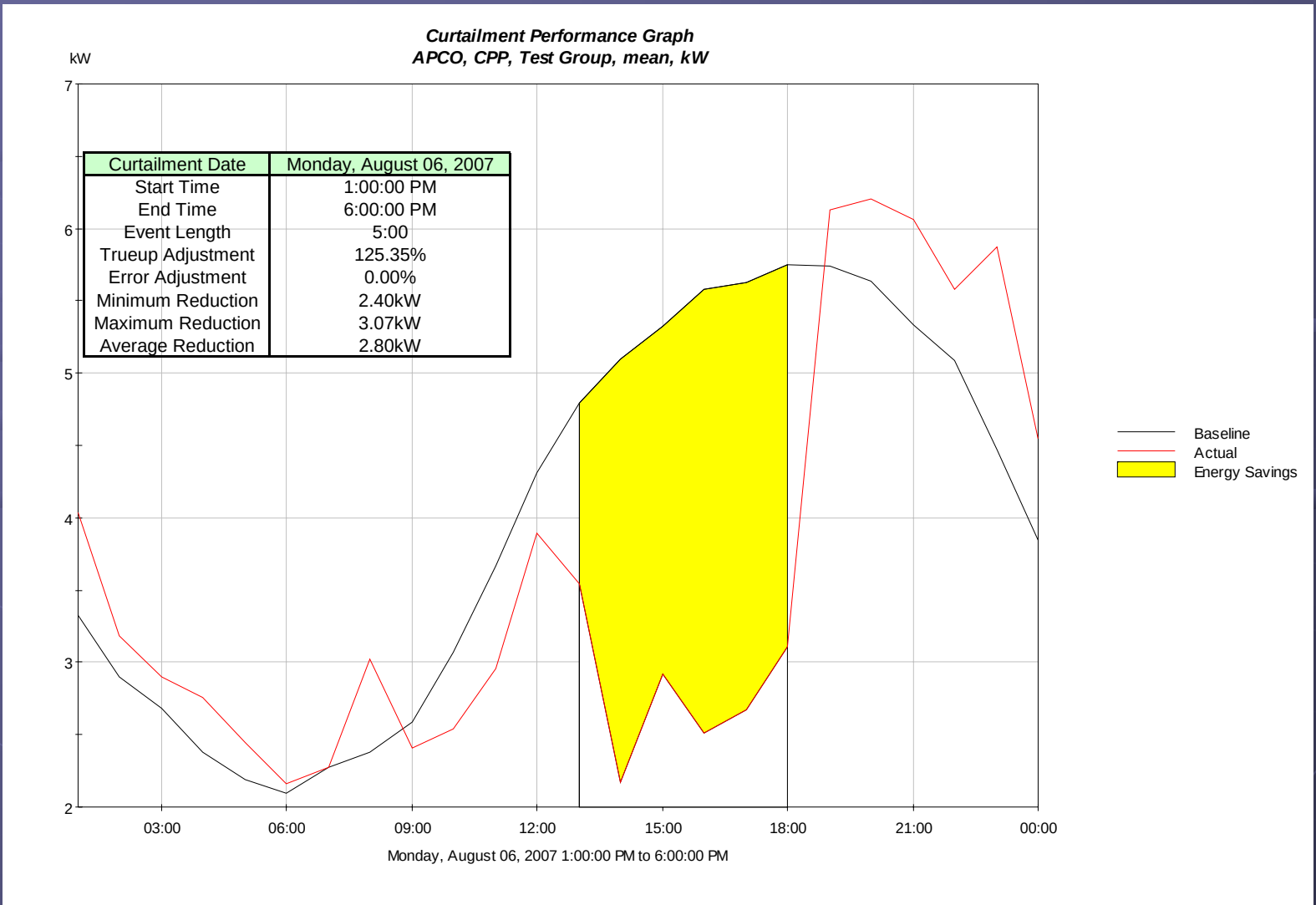
The Brattle Group, Discussion Paper May 16, 2007

Operational Benefits for Utilities

- Automatic outage detection
- Avoided meter reading costs
- Easier service connect/disconnect

These benefits can help pay for infrastructure

August 6th



Alabama Power Presentation, John Kelley

U.S. Demand response Coordinating Committee, June 2 – 3, 2008

How Demand Response Is Achieved

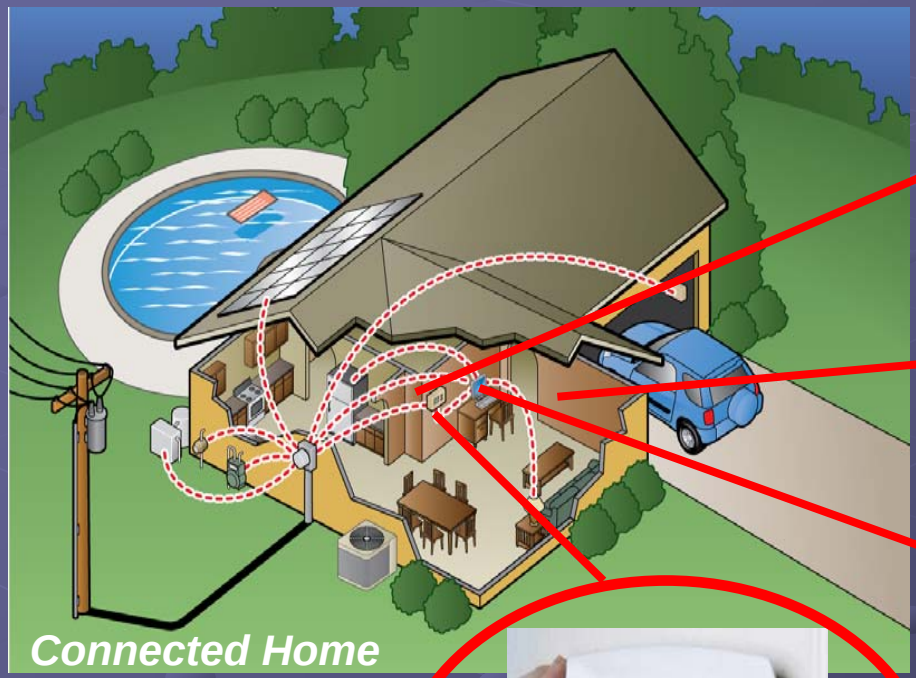
- Automated Metering Infrastructure
- Smart thermostats
- Smart appliances
- Direct load control
- Dynamic pricing
  - Time of Use rates
  - Real time
  - Critical peak

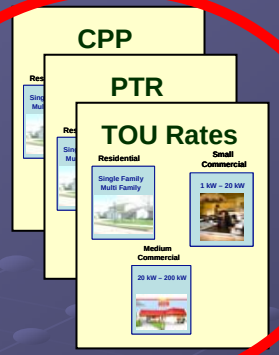
FERC Definition

- **Definition of Advanced Metering:** Advanced metering is a metering system that records customer consumption [and possibly other parameters] hourly or more frequently and that provides for daily or more frequent transmittal of measurements over a communication network to a central collection point.

http://www.ferc.gov/industries/electric/indus-act/demand-response/dem-res-adv-metering.asp

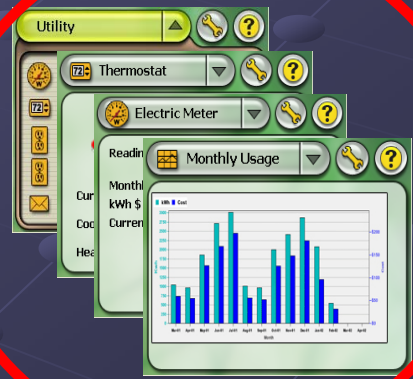
Empowering Customer Choice





Rates and Rebates

Smart appliances



Energy information

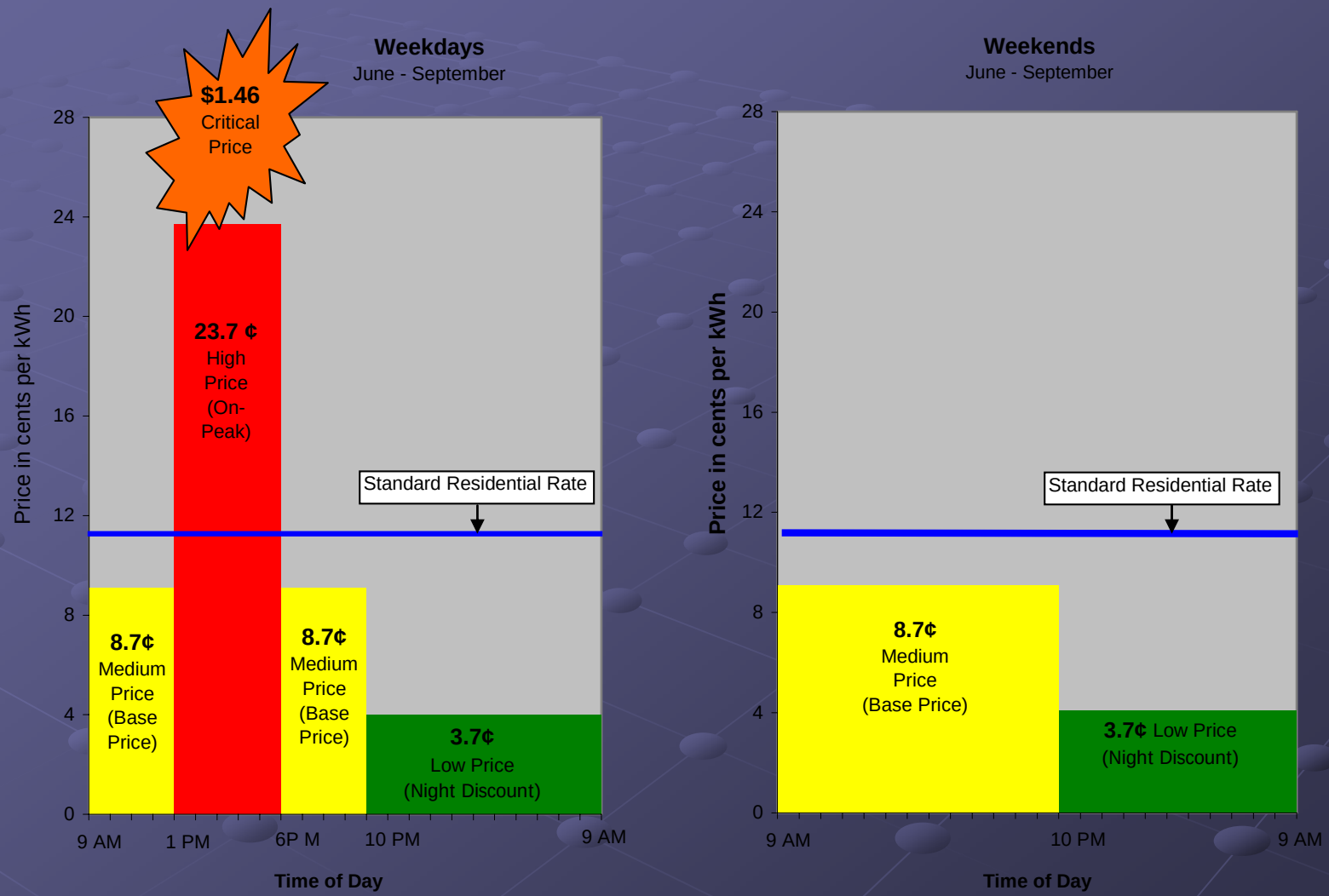
Smart thermostats

Larry Oliva, Director, Tariff Programs and Services, June 3, 2008

SOUTHERN CALIFORNIA EDISON®

An *EDISON INTERNATIONAL*® Company

myPower Time-of-Use – Critical Peak Pricing (TOU-CPP) Summer 2007 Pricing Plan



Presentation at National Town Meeting on Demand Response, Washington, DC, June 3, 2008
Fred Lynk, Manager – Market Strategy and Planning

PSE&G

What's state of play

- Pilots, FERC-NARUC Collaborative, Energy Act of 2005
- PJM programs
- U.S. Demand Response Coordinating Committee, MADRI, MWDRI,
- Delmarva Blueprint for the Future

Demand Response a Tool for This Group?

- Relationship to reducing energy use
- Benefit to consumers
  - Way to control costs
- Reduces overall costs of electric system
  - Fewer peaking plants needed
  - Downward pressure on price at peak
- Improved electric service and utility expenses reduced

Questions?