

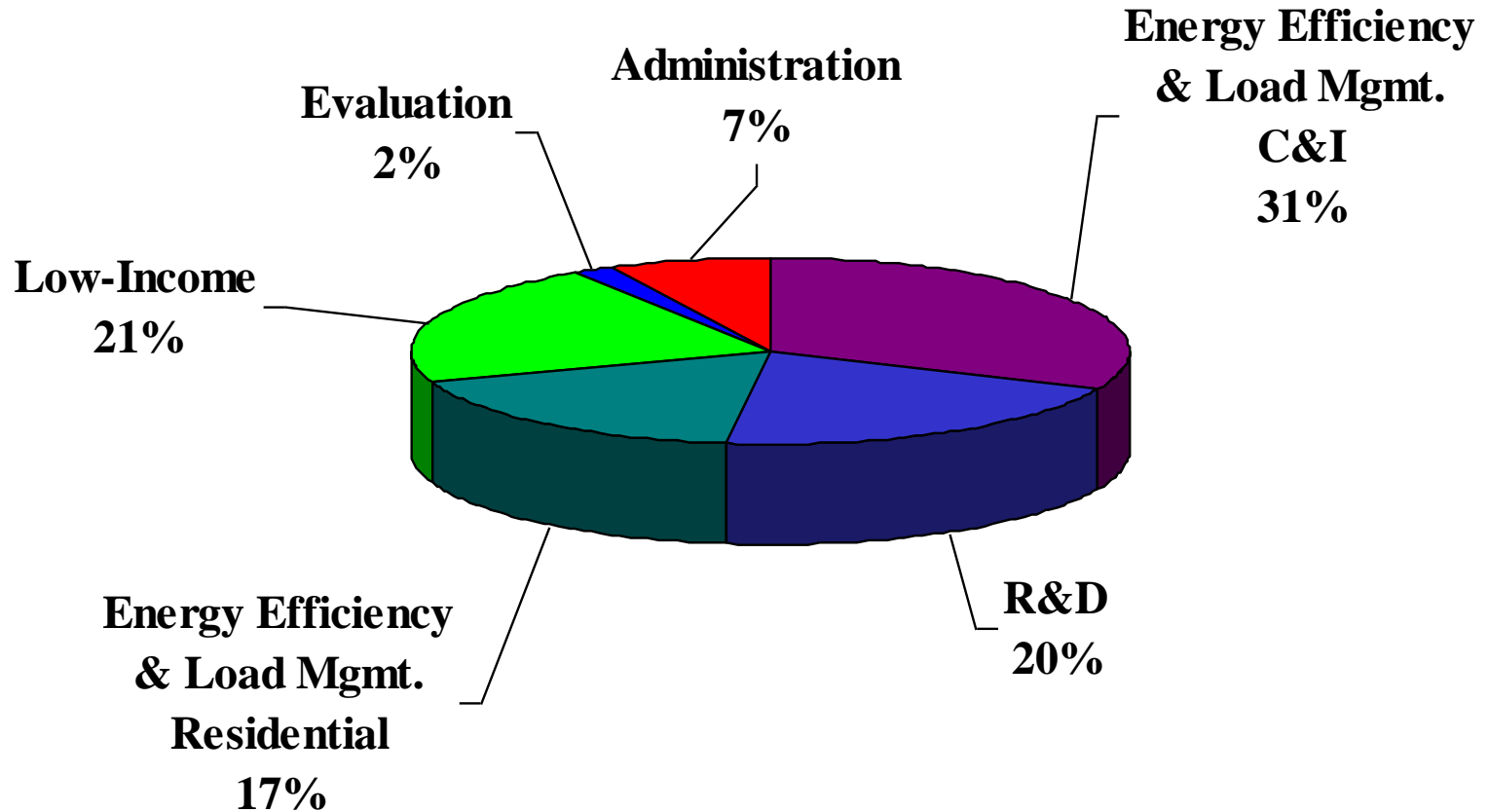
# Efficiency and DR Strategies for Meeting Load Growth

PLMA, New York City  
November 8, 2006

Peter R. Smith  
President & CEO  
NYSERDA



# New York Energy \$mart<sup>sm</sup> Budget (~\$175 m/yr)



# Saving Money, Energy, Jobs and the Environment

New York Energy \$mart<sup>sm</sup> has created a wealth of benefits (**thru August 2006**):

- Nearly \$300 million in annual energy bill savings
- Leveraging \$2.80 for every energy program \$1
- 1,100 MW of demand reduction
- 2,080 GWh per year saved
- 4,700 jobs created and retained
- CO<sub>2</sub> reductions – 1.4 million tons  
(=> 295,000 cars removed)

# Coordinated Peak Demand Reduction

- CEDRI Working Group
- Program Objectives
  - Drive the market for energy-efficient products and services
  - Control and reduce loads on specific NY electric utility systems
  - Enable customers to participate in NYISO or TO's emergency programs
  - Educate public on energy efficiency and to shift consumption to off-peak periods



# Peak Load Reduction through Energy Efficiency

- Incentives are kW based, rather than kWh
- Advances in chiller technologies have created large savings opportunities
- Gas or steam cooling can have significant peak savings
- Hybrid cooling plants can create demand reductions, while making end users price elastic

# One New York Plaza



- Installed two, 2,000 ton steam chillers and two, 2,000 ton gas chillers
- Reduced demand by 2,150 kW
- Can now choose between cooling with electric, gas, or steam - based on price
- NYSERDA provided \$560,000

# Peak Load Reduction Through Load Management

- Load shifting can reduce peak and provide cost savings to end users
- Difficulty is in finding loads that can be shifted off peak
- Manufacturing can often shift schedules
- Ice storage allows for off peak cooling

# Morgan Stanley – 2000 Westchester Ave



- Installed 48 Ice Storage tanks to shift cooling off peak
- Provides over 1,000 tons of cooling
- 765 kW Peak Reduction
- NYSERDA incentive of \$314,000

# Peak Load Reduction through DR

- Demand Response Providers have been critical in growing the market
- Positive cash flows and an interest in being a good corporate citizen keep customers interested
- NYSEERDA's incentives for enabling technologies help reach "tough customers"
  - Class A offices, retail, even single family

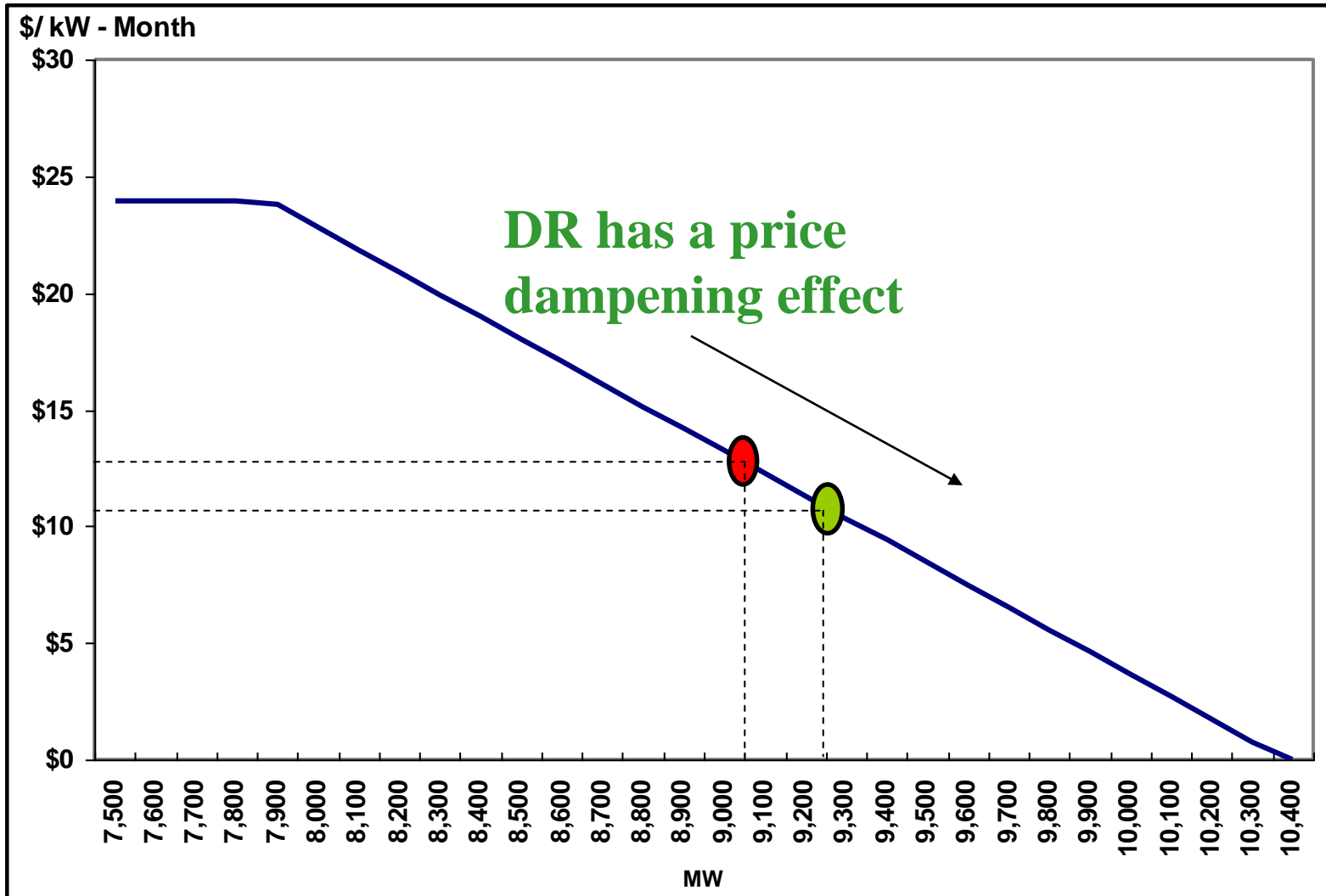
# AC Control Results

- Over 15,000 residential units installed
- Over 2,200 small commercial units installed
- Over 20 MW of load reduction
- NYSERDA provided \$3.5 Million

# The Social Value of DR

- In NY, DR capacity clears in the same auctions as generation capacity
- More DR = More Capacity Available
- More Capacity = Lower Prices For Ratepayers

# NY's Capacity Demand Curve



# Integrating EE with DR

- Enhanced Controls = Reliable DR + More Efficient Facility Management
- Cash flow from DR can be used to fund Energy Efficiency projects
- Example: Dimmable Ballasts show promise in combining lighting efficiency projects with DR

# Load Curtailment/Shifting Lafarge Cement



- Lafarge installed a facility wide energy monitoring and control system that allowed them to curtail up to 22 MW from a central office
- \$200,000 incentive

# Keys to Continued Success

- Use all the tools in the toolbox – Energy Efficiency, Load Management, Demand Response, Combined Heat and Power
- Work to create markets with strong business cases – this will attract project developers
- Work with the middle market – ESCO's, Demand Response Providers, etc.
- Value Demand Response equal to generation