

# PA PUC Demand Side Response Working Group

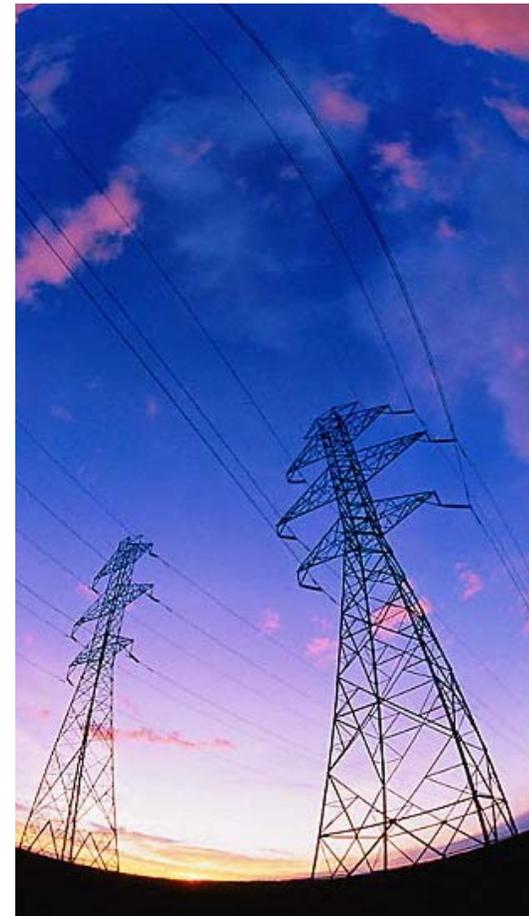
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# NYSERDA's Role

- Administrator
  - Design and Implement Programs
- Support Regulators
  - State Appliance Standards and Energy Code
  - Green Building Tax Credit
  - Renewable Portfolio Standard
- Facilitator
  - Robust Network of Energy Service Providers
  - Leveraged Financing
- Policy Maker
  - Executive Order “Green & Clean”
- Innovator
  - R&D Technologies



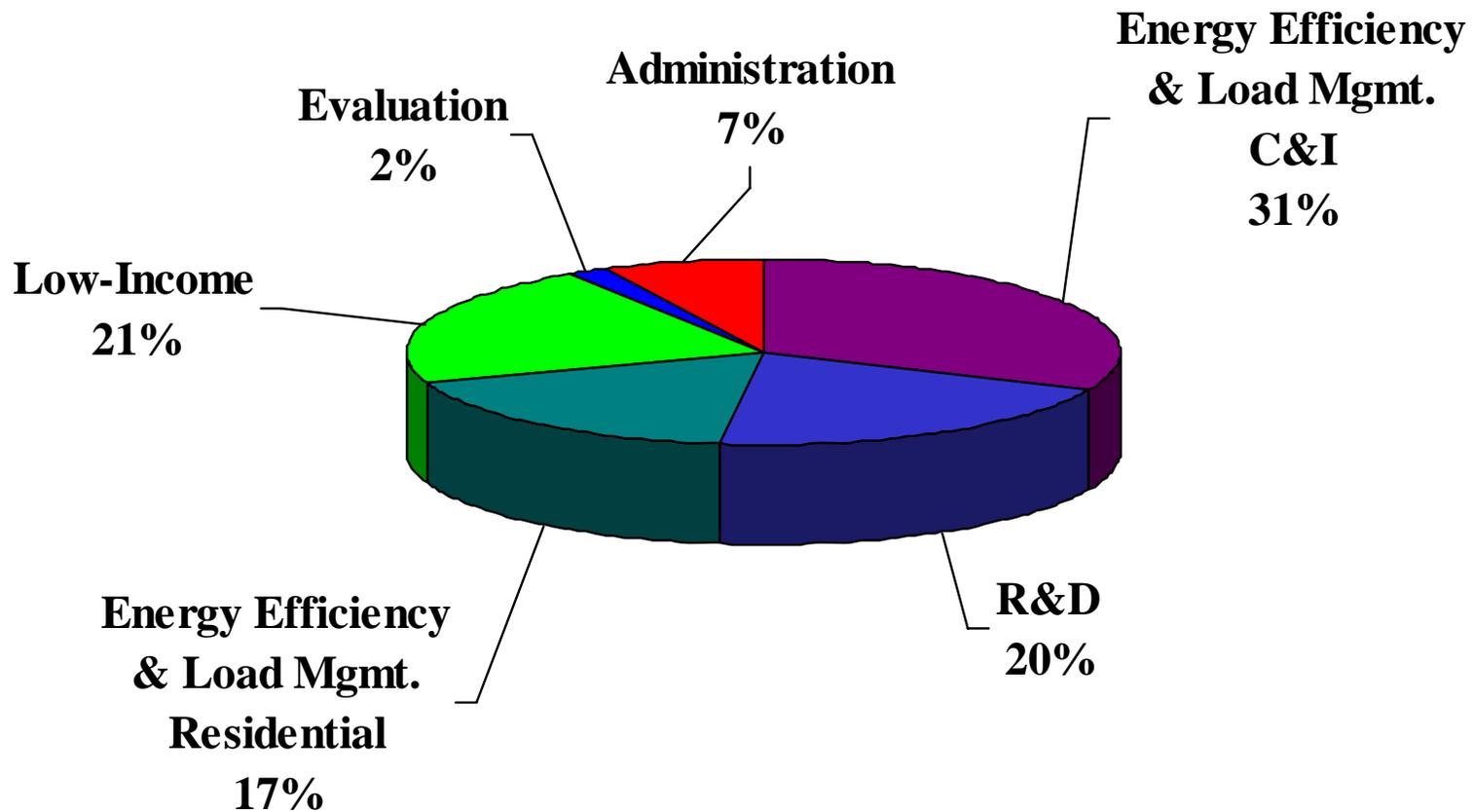
# New York State Policy Environment

- New York Energy \$mart<sup>sm</sup> Program
  - By Regulatory Order of the NYS Public Service Commission
  - NYSERDA as the system-wide, non-utility administrator
  - 8-year program (thru June 2006); \$962 million
  - Public purpose goals of energy efficiency and cleaner environment
  - SBC Advisory Group: “Independent Evaluator”
  - SBC Renewed thru June 2011; \$895 million

## New York State Policy Environment (Cont'd)

- Utility Rate Settlement Cases
  - NYC gas efficiency program – NYSERDA \$5m
  - NYC demand management – starting 2006
    - Offset load growth by 2008 – 300 MW
    - \$120m to NYSERDA for system wide program
    - \$120m to Con Edison for targeted load pockets
- Additional \$~140 M/yr in energy programs by NYPA (\$103 M Loans) & LIPA (\$36 M SBC)
- Directives/Laws
  - Executive Orders – EE goals & product purchasing standards
  - NY Green Building Tax Credit - \$50 m
  - Appliance/Equipment Standards & codes
- Renewable Portfolio Standards
- Environmental Compliance Violations
- Northeast Regional Greenhouse Gas Initiative

# 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 Sept. 2006**):

- \$310 million in annual energy bill savings
- Leveraging \$2.5 for every energy program \$1
- **\$2.8 Billion in capital investments in NY**
- 1,090 MW of demand reduction
- 2,360 GWh per year saved
- 4,290 jobs created and retained
- CO<sub>2</sub> reductions – 1.5 million tons  
(=> 300,000 cars removed)

# Assistance Provided to Market Place by NYSERDA

## Upstream

Industry  
Processing  
Trade Associations

**Manufacturing**

RD&D  
Proof of concept  
Product development  
Demonstration  
Testing  
Manufacturing

## Midstream

Wholesalers  
Energy companies  
Equipment suppliers  
Trade professionals

**Distributors  
& Vendors**

Information  
Training  
Financial incentives  
(sales and stocking)  
Marketing assistance

Big box  
Small retail  
Mail order  
E-commerce

**Retailers**

Information  
Training  
Financial incentives  
(sales and stocking)  
Marketing assistance

## Downstream

Consumers  
Final consumption

**End-Users**

Financial incentives  
Technical assistance

# Commercial and Industrial Energy Efficiency and Load Management

- FlexTech/Technical Assistance
- Commercial/Industrial Performance Program
- Peak Load Management
- New Construction/Green Buildings
- Market Transformation
- Loan Fund



# FlexTech

- Cost sharing 50% up to \$50,000
- Over 3,300 Businesses and Institutions served
  - Over 280 TA providers
- Stretches valuable public funds
  - 1 kwh saved = \$0.003 public funds spent
- Leverages economic development
  - Leveraging \$17 for each \$1 SBC invested
- CHP, Industry, Water, Ag program components



# Example of New Energy Efficient

## Energy Features

- High performance glazing
- Reduced lighting power densities
- High-efficiency chillers
- Variable speed fans and pumps
- Building commissioning

## Green Features

- Urban redevelopment
- Certified wood
- CO<sub>2</sub> monitoring
- High recycled content materials
- Low-emitting materials

## “Green” Facility



# Current Status of C/I Performance Program

(As of 1/2007)

- 1,140 Projects with more than \$113 million in total incentives
- Annual savings of 1,010 million kWh
- Incentives ~17% of project cost
- Leveraging over \$680 million in engineering and construction work
- Installation complete on 800 projects delivering 170 MW of peak demand reduction



# Combined Heat and Power

- NYSERDA has cost-shared:
  - Over 100 CHP Installations
  - Over 125 CHP Feasibility Studies
- Examples:
  - Cornell University:
    - Planned 30 MW Gas Turbine CHP System
    - 2 phases of NYSERDA cost-shared study
    - Proposal submitted for CHP Demonstration funding
    - More information at [www.utilities.cornell.edu/utl\\_ldcchp.html](http://www.utilities.cornell.edu/utl_ldcchp.html)
  - Turning Stone Casino:
    - 5.5 MW Gas Turbine CHP System
    - NYSERDA cost-shared study
    - Operational in November of 2004



# 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
  - Accelerate the replacement of old, inefficient products
  - Enable customers to participate in NYISO or TO's emergency programs
  - Educate public on energy efficiency and to shift consumption to off-peak periods



# Load Curtailment/Shifting

- Direct Load Control – Load centrally controlled via cellular or internet communication to each stores' EMS, which activates pre-programmed curtailment settings
  - 21 BJ's Wholesale Club locations (1 MW)
  - 16 Stop & Shop Supermarkets (0.8 MW)
  - 36 Home Depot locations (4.4 MW)
  - 30 Pathmark Stores (2 MW)
- Remote control of over 17,000 residential/small commercial central AC systems (over 20 MW)



# Program Design

- What You Likely Think of:
  - Studies
  - Rebates for Efficiency Projects
- Opportunities You May Not Think of:
  - Electric System Reliability
  - Build Robust Service Provider Network
  - Long Term Energy Planning and Management
  - Energy Pricing – non-utility providers
  - Power Systems/CHP/Distributed Generation
  - Labs; Cold Storage; Data Centers
  - Load Management/Demand Response
  - Benchmarking; System Commissioning
  - Process and Productivity Improvements



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