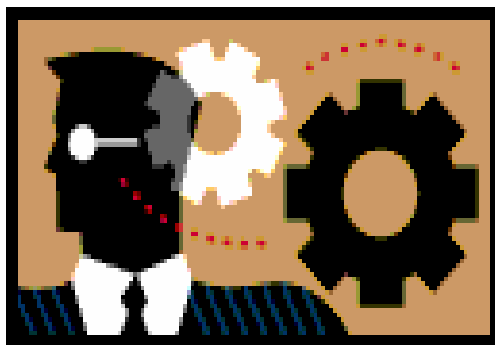
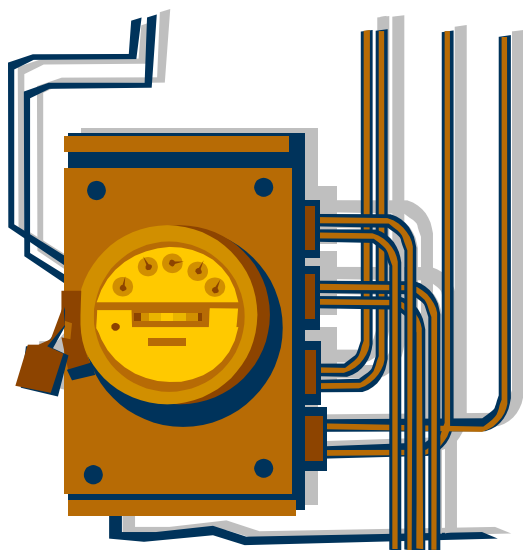


# nationalgrid

## Understanding Hourly Electricity Pricing



NYSEERDA Programs

# Today's Presentation

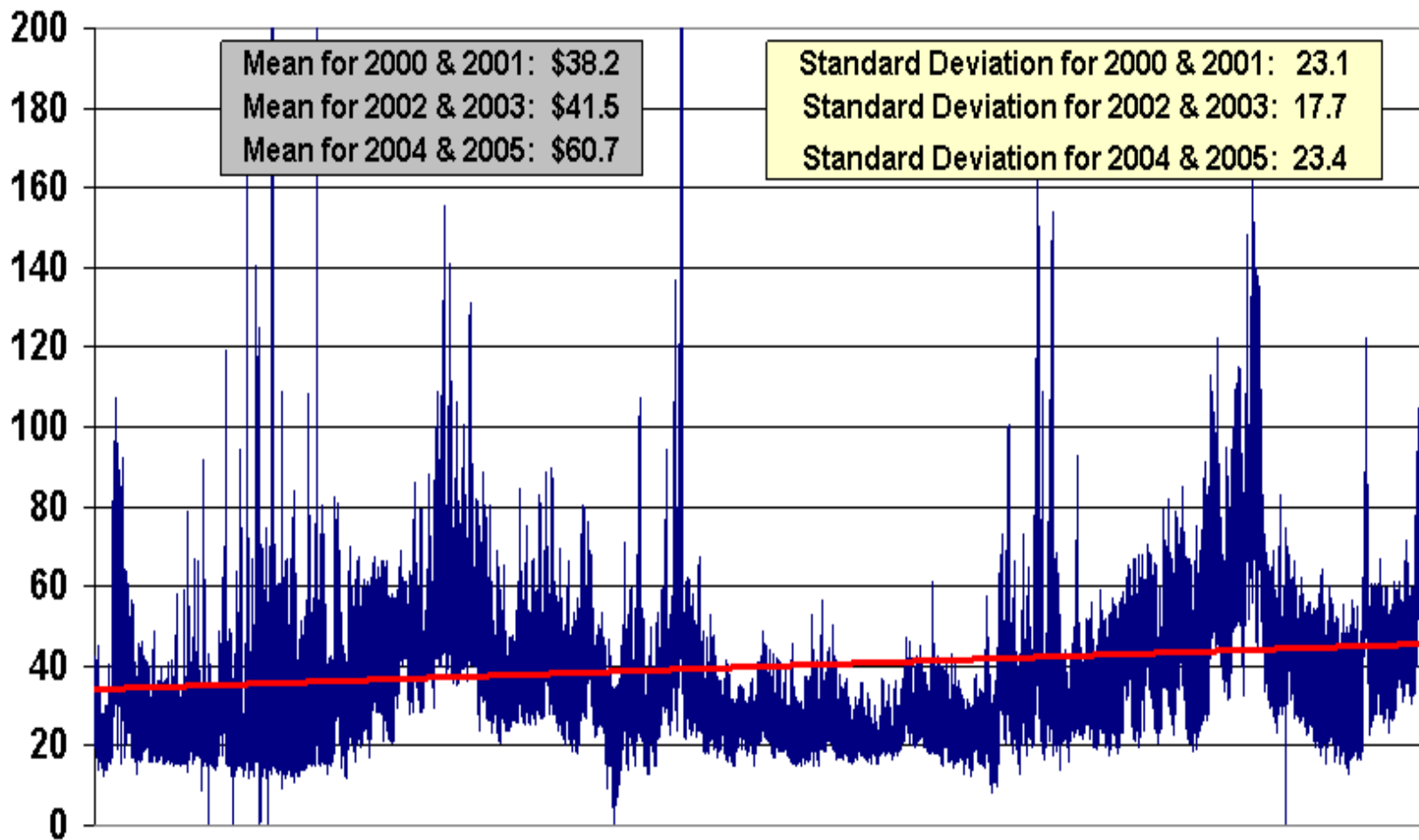
- General overview of Hourly Pricing
- Historical pricing information
- What does Hourly Pricing mean to the customer, price elastic/inelastic capability
- NYISO Demand Response Programs
- NYSERDA Programs

# Overview of Hourly Pricing (Day Ahead)

- NYISO DA hourly price determination
  - Hourly bids due by 5AM for next day
  - Hourly bids accepted/notification by 11:00 AM for next day
  - Hourly prices available for public at 11:00 AM for next day on NYISO website

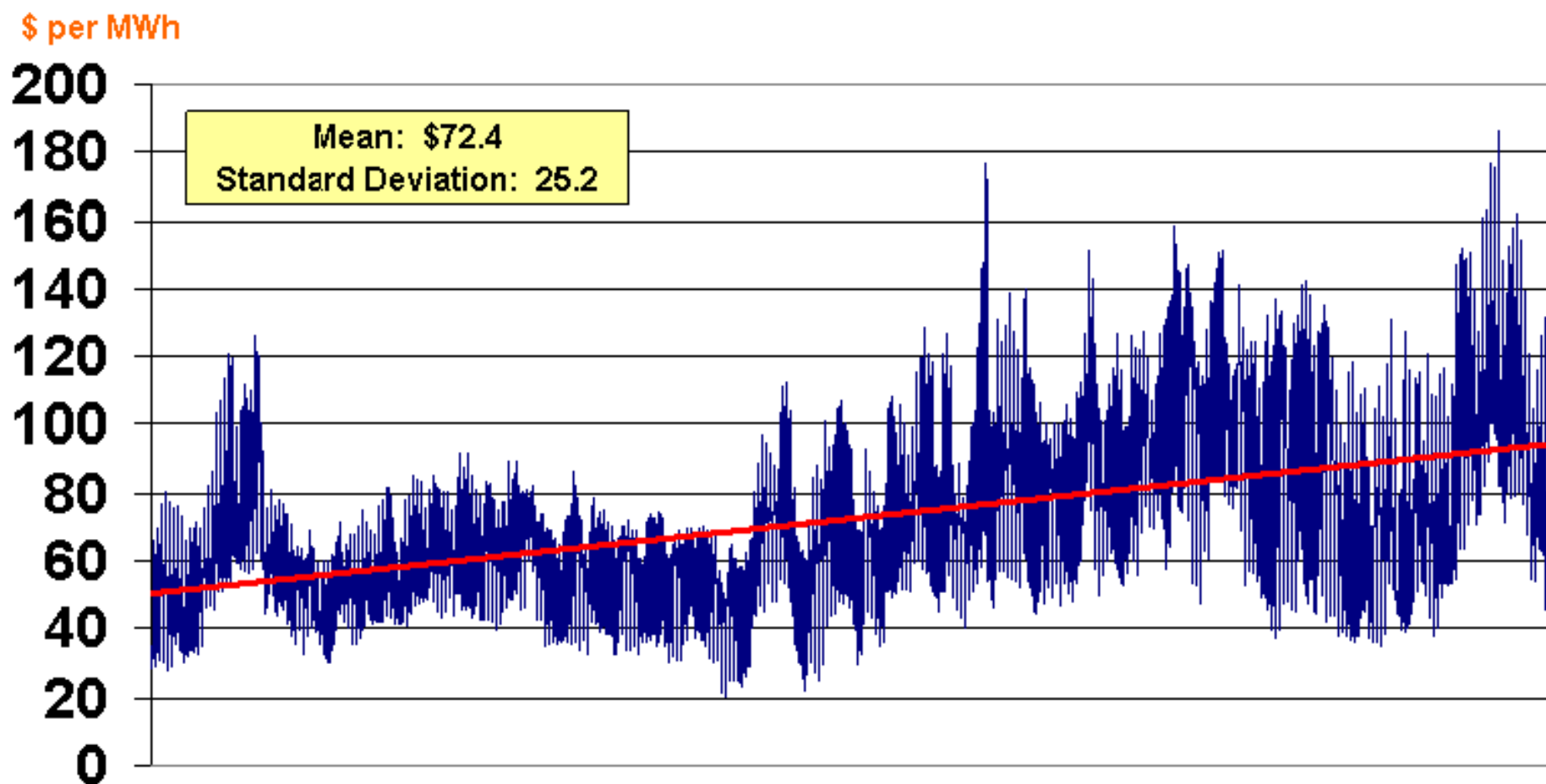
## "Rest of State"\* Average Hourly DA Electric Price January 2000 through December 2005 (Nominal\$)

\$ per MWh



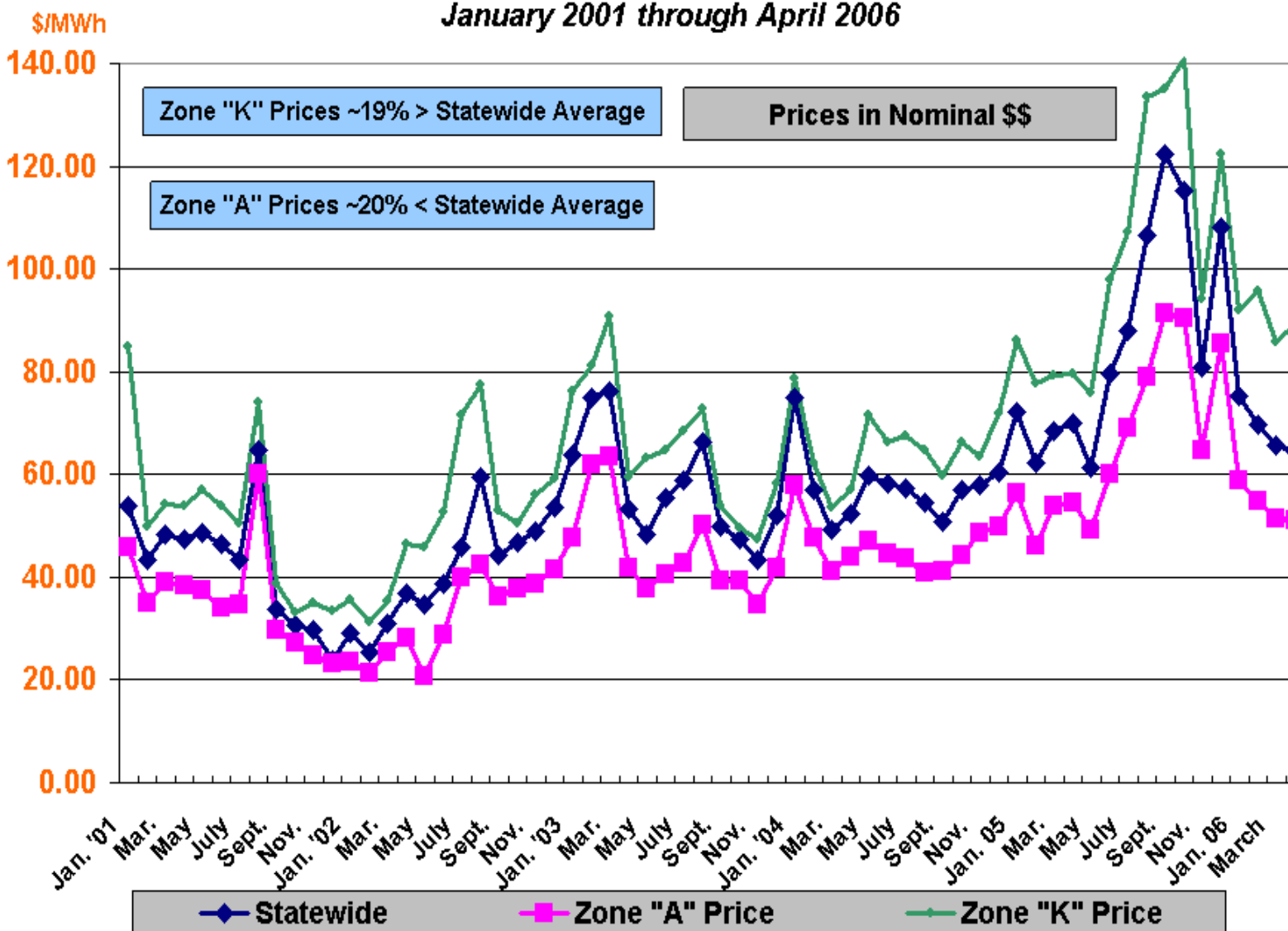
\*Rest of State is an average prices of zones "A" through "I"

## "Rest of State"\* Average Hourly DA Electric Prices Full Year 2005 Only (Nominal\$\$)



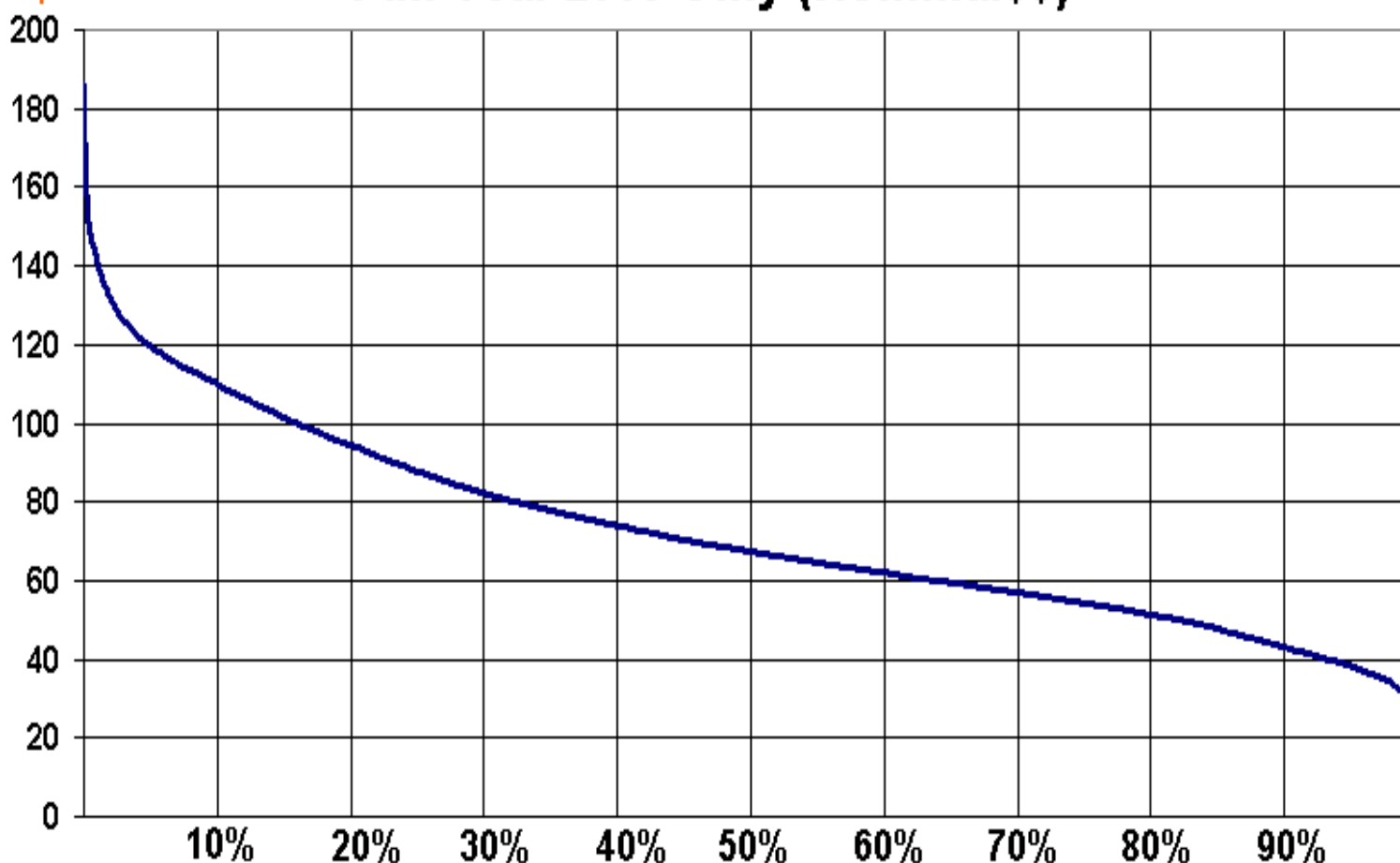
\*Rest of State is an average price in zones "A" through "I"

# Statewide, Zone "A", and Zone "K" Monthly Day-Ahead Electric Price January 2001 through April 2006



## "Rest of State"\* Day-Ahead Price Duration Curve Full Year 2005 Only (Nominal\$)

\$ per MWh



\*Rest of State is an average price for zones "A" through "I".

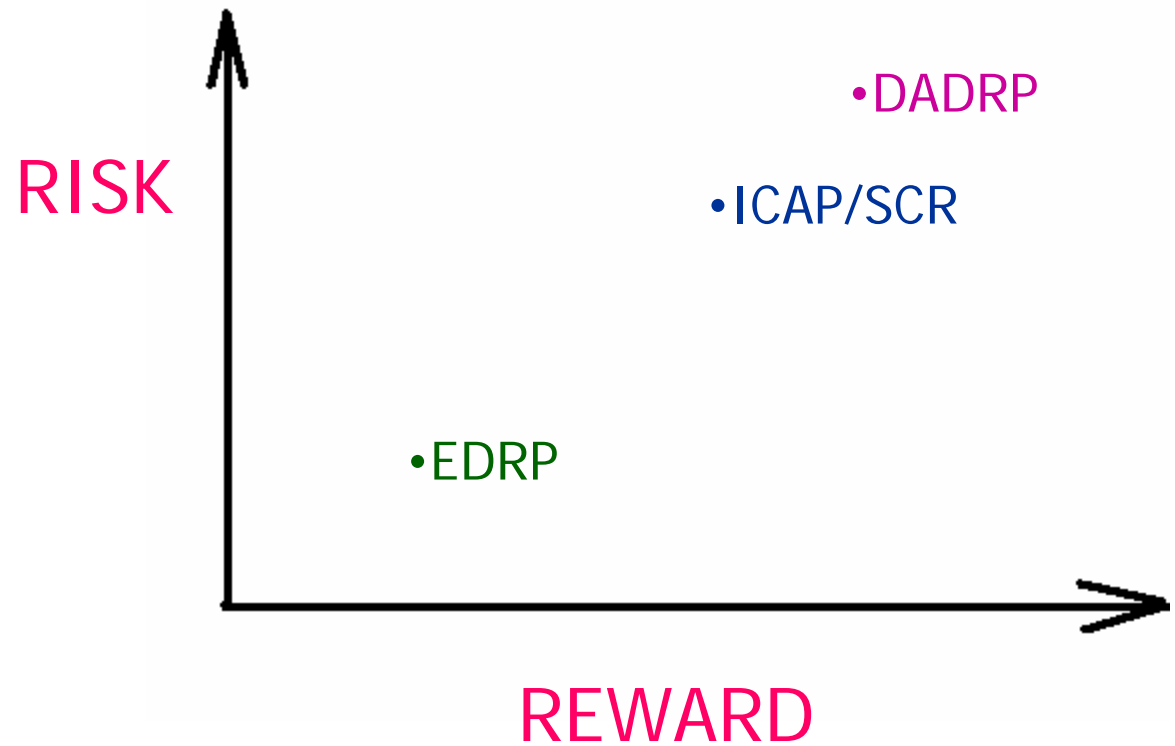
# What Does Hourly Pricing Mean to Customers

- Commodity portion approximately 55-65% most commercial, lower residential, higher industrial
- Whether the customer remains with the incumbent utility (full bundled service) or purchases competitively, some will take no action in response to high price periods - price inelastic
- Regardless of who the commodity is purchased from, some customers will take action to reduce loads during high price periods - price elastic



# NYISO Programs

- *EDRP (reliability)*
  - *NYISO initiated*
  - *Voluntary*
- *ICAP/SCR (reliability)*
  - *NYISO controlled*
  - *Penalties for non-performance*
- *DADRP (economic)*
  - *Customer controlled*
  - *Penalties for non-performance*



NYISO's Demand Response Programs are aimed at wholesale electricity Market Participants, Aggregators and NYISO Direct Customers

# NYISO EDRP

## *The Emergency Demand Response Program*

- Reliability Program
- Minimum Resource Size: 100 kW, may aggregate within Zones to reach threshold
- Activated in Response to forecast or actual Operating Reserve Deficiency
- Payment for Energy (kWh) Reduction
- Provider notified of activation 2 hours ahead, if possible
  - Paid the greater of real-time marginal price or \$500/MWh & guaranteed 4 hour minimum
  - May set real-time market price at \$500
- Available to curtailable load & emergency backup generation (including generation in excess of host load)
- Open to Load Serving Entities (LSEs), Direct Customers, and Aggregators (Curtailment Service Providers - CSPs)
- Activated after ICAP SCR resources if deemed necessary by Operations
- Voluntary Response – No Penalties for Non-Performance
- Credit Requirements: None
- Fee to become CSP: None



# ICAP/SCR

## *The ICAP Special Case Resources Program*

- Reliability Program
- Minimum Resource Size: 100 kW, may aggregate within Zones to reach threshold
- Activated in response to a forecast or actual Operating Reserve Deficiency
- Payment for Capacity (kW) Reduction plus Payment for Energy (kWh)
- Provider advised with day-ahead advisory and a 2-hour in-day notification
  - Paid for energy reduction: real-time market price or Strike Price (maximum \$500/MWh), whichever is greater & guaranteed 4 hour minimum
  - May set real time market price under scarcity pricing rules
- Available to curtailable load & emergency backup generation (including generation in excess of host load)
- Open to Load Serving Entities (LSEs), Direct Customers, and Aggregators (Responsible Interface Providers – RIPs)
- Activated prior to Emergency Demand Response resources
- Mandatory Response – Subject to penalties and derated for non-compliance
- Credit Requirements: None
- Fee to become RIP: None



# DADRP

## *The Day-Ahead Demand Response Program*

- Economic Program
- Minimum Resource Size: 1 MW, may aggregate within Zones
- Load Bids curtailment in Day-Ahead Market just like a generator - if chosen, can set marginal price. \$75/MWh minimum bid.
- Payment for Energy (kWh) Reduction
- Parties submitting accepted bids get:
  - Notified by 11:00 a.m. schedule commitment for the next day (midnight-midnight)
  - paid greater of marginal price or bid for actual interruption
- Available to interruptible load only (generation excluded)
- Open to Load Serving Entities (LSEs), Direct Customers, and Aggregators (Demand Reduction Providers – DRPs)
- Activated prior to Emergency Demand Response resources
- Mandatory Response – Penalties Assessed for Non-Compliance
  - penalized for buy-through at Day-Ahead or Real-Time marginal price, whichever is greater
- Credit Requirements: Relaxed from Generator Levels
- Fee to become DRP: None

# NYSERDA Programs

## Commercial Buildings Services

### Existing Buildings

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#### Energy Efficiency

- Technical Assistance
- Reimbursement Incentives
- Financing assistance
- Performance-based incentives

#### Load Management

- Peak load management services

### New Bldgs/Major Renovations

---

- Reimbursement Incentives
- Financing Assistance
- New Construction Services

# Technical Assistance Services

## FlexTech and Technical Assistance

- Studies to assist customers to make energy decisions
- 50% cost share, NYSERDA share up to \$50K
- FlexTech Contractors
  - 35 pre-qualified by NYSERDA
  - Open program,  
<http://www.nyserda.org/programs/flextech.asp>
- Technical Assistance Contractors
  - Customer choice of contractor to perform services
  - Customer reimbursed after study approval
  - [http://www.nyserda.org/programs/Technical\\_Assistance/default.asp](http://www.nyserda.org/programs/Technical_Assistance/default.asp)

# Technical Assistance Services

## FlexTech and Technical Assistance

- Energy Operations Management
- Comprehensive Energy Audits
- Energy Procurement
- Combined Heat and Power
- Renewables
- Load Curtailment
- Feasibility Studies
- Process Improvements

**1-866-NYSERDA(697-3732)**

***FlexTech***

**<http://www.nyserda.org/programs/flextech.asp>**

***Technical Assistance***

**[http://www.nyserda.org/programs/Technical\\_Assistance/default.asp](http://www.nyserda.org/programs/Technical_Assistance/default.asp)**



# Technical Assistance Services

## FlexTech and Technical Assistance

### Hourly Pricing Studies

- Strategies to minimize costs
- Real Time Pricing vs. Competitive Offerings
  - Hedge products for dynamic rates
- Identify and develop implementation plans for load shifting opportunities

***1-866-NYSERDA(697-3732)***

***FlexTech***

***<http://www.nyserda.org/programs/flextech.asp>***

***Technical Assistance***

***[http://www.nyserda.org/programs/Technical\\_Assistance/default.asp](http://www.nyserda.org/programs/Technical_Assistance/default.asp)***



# Peak Load Management Services

## Peak Load Reduction Program

- Permanent Demand Reduction
  - Time sensitive energy efficiency, lighting cooling, motors, etc.
  - Fuel switch (electric to other)
- Load Curtailment/Shifting (NYISO programs)
- Interval meters up to \$2,000 (NYISO programs)

# Peak Load Management Services

## Permanent Demand Reduction

- Implement projects that result in long term demand reduction/permanent shift
- Common measures include lighting, motors, cooling system upgrades, prescriptive lighting option, high efficiency chiller bonus
- Equipment efficiencies must meet or exceed minimum energy codes (ASHRAE 90.1 & NEMA)
- Fuel switch (electric to other)
- Simplified participation process for prescriptive lighting projects
- Bonus for super high efficiency chillers

# Peak Load Management Services

## Load Curtailment/Shifting

- Supports NYISO ICAP/SCR or DADRP or TO demand response programs
- Identify and control discretionary loads
- Common measures include EMS, duty cycling, cooling load reductions, process shifting, lighting reductions, etc.
- Automated process/direct load control encouraged (100% reimbursement)

# Peak Load Management Services

## Interval Meters

- Interval metering primarily intended for primary electric service entry
- Proof of registration in NYISO DRP, LSE LM, TOU/RTP program for no less than two years
- PSC revenue grade - \$2,000/meter
- NYISO compliant - \$1,500/meter

# Peak Load Management Services

## Peak Load Reduction Program

PDR		LCS		DG	IM	
Con Edison Territory	Non-Con Edison Service Territory	Con Edison Territory	Non-Con Edison Service Territory	Con Edison Territory only	Statewide PSC Approved	Statewide NYISO Compliant
$\$500+/kW^2$ <u>Electric-to-Steam</u> $COP^3 > 1.02$ \$1,000/kW $COP^3 \leq 1.02$ \$600/kW	$\$225+/kW^2$	\$200/kW	\$45/kW	\$120/kW existing DR \$160/kW new DR \$400/kW DG	\$2,000/meter	\$1,500/meter

**<http://www.nyserda.org/programs/peak-load.asp>**  
**1-866-NYSERDA(697-3732)**

# Reimbursement Incentives Services

## Smart Equipment Choices

- Helps buy down the cost of capital equipment, existing/new bldgs
- Similar to rebate, reimbursement upon installation
- Incentives for pre-qualified/custom measures
- Applicant may be owner or tenant
- Cap of \$25,000/applicant



**<http://www.nyserda.org/programs/SmartEC/default.asp>**

**1-866-NYSERDA(697-3732)**

# Financial Assistance Services

## Loan Fund

- Buy-down interest rate by 4.0% for energy efficiency measures
- 70 participating lenders
- Existing bldgs, new bldgs (measures incented under NCP/SEC to be eligible)
- Can be used in combination with other incentives
- \$1M cap. Additional \$500,000 for green building improvements
- Measure(s) must have simple payback <10 yr

**<http://www.nyserda.org/loanfund/default.asp>**

**1-866-NYSERDA(697-3732)**



# Performance-Based Incentives Services

## Commercial/Industrial Performance Program

- Standard performance contract between NYSERDA and contractor
- Incentives to contractors that deliver verifiable electric energy savings
  - Lighting \$0.05 per kWh saved
  - Motors/EMS/VSDs \$0.10 per kWh saved
  - Cooling \$0.20 per kWh saved
- Contractor Cap - \$5 million, Customer - \$1 million
- Project Cap – 30% of project costs



**[http://www.nyserda.org/programs/Commercial\\_Industrial/cipp.asp](http://www.nyserda.org/programs/Commercial_Industrial/cipp.asp)**  
**1-866-NYSERDA(697-3732)**



# New Bldg/Major Renovations

## New Construction Services

- New construction and substantial renovations (30 days vacant)
- Financial incentives offset added costs for more energy-efficient equipment
- Technical Assistance for:
  - Energy-Efficiency opportunity
  - Green Building
- Commissioning, LEED incentives
- Building cap \$1M, 3 projects/customer

**[http://www.nyserda.org/programs/New\\_Construction/default.asp](http://www.nyserda.org/programs/New_Construction/default.asp)**  
**1-866-NYSERDA(697-3732)**

# NYSERDA Programs

## Commercial Buildings Services

### Existing Buildings

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### New Bldgs/Major Renovations

---

- Reimbursement Incentives
- Financing Assistance
- New Construction Services

# Website



# Website


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## NEW YORK STATE



NYSERDA works to help New York State save energy, reduce energy costs, protect the environment and improve the economy.



George E. Pataki, Governor

FIND IT: <input type="text"/> <b>SEARCH</b>	ABOUT NYSDA	FUNDING OPPORTUNITIES	EVENTS	CONTACT US/DIRECTIONS
 <p>New York State Energy Research and Development Authority</p>				
<b>NEWS AND NOTES</b> <ul style="list-style-type: none"> <li>&gt; Check out our latest energy saving tips and materials for schools!</li> <li>&gt; School Energy Benchmarking</li> <li>&gt; Wind Energy Toolkit: Community Resources for Wind Development</li> <li>&gt; Fuel-Saving Tips from NYSDA</li> <li>&gt; New Con Edison Gas Efficiency Program</li> <li>&gt; Minimum Energy Efficiency Standards</li> <li>&gt; Enacted for State Purchased</li> </ul>	<b>WHERE CAN I FIND...?</b> <ul style="list-style-type: none"> <li>Funding Opportunities</li> <li>Energy Prices</li> <li>Events</li> <li>State Energy Planning</li> <li>Success Stories!</li> <li>Forms/Applications</li> <li>Contact Us/</li> </ul>	<b>INCENTIVES FOR...</b> <ul style="list-style-type: none"> <li>Agricultural</li> <li>Commercial / Industrial</li> <li>Con Edison Gas</li> <li>Hospitals / Institutions</li> <li>Municipal</li> <li>Residential</li> <li>Residential Family</li> </ul>	<b>PROGRAMS</b> <ul style="list-style-type: none"> <li>Commercial / Industrial</li> <li>Economic Development</li> <li>Energy Analysis</li> <li>Research &amp; Development</li> <li>Residential</li> <li>Transportation</li> </ul>	<b>OTHER NYSDA SITES</b> <ul style="list-style-type: none"> <li>GetEnergySmart.org (Residential Info.)</li> <li>HVAC</li> <li>Premium-Efficiency Motors Program</li> <li>Renewables - Power...Naturally.org</li> <li>Small Commercial Lighting Program - The Right Light™</li> </ul>

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**NYSERDA** New York State Energy Research and Development Authority

FIND IT <input type="text"/>	PROGRAMS	FUNDING OPPORTUNITIES	INCENTIVES FOR...	WHERE CAN I FIND...?
<input type="button" value="SEARCH"/>	EVENTS	CONTACT US/DIRECTIONS	ABOUT NYSERDA	OTHER NYSERDA SITES

Wednesday January 25, 2006 You Are Here: [Home](#) > [Funding](#) > NYSERDA - Funding Opportunities

## Current Funding Opportunities

Technical questions should be directed to the appropriate project managers. The main NYSERDA phone number is **toll-free 1-866-NYSERDA** or **local (518) 862-1090**; extensions and e-mail addresses for the project managers are listed below.

**Sign up to receive e-mail updates for new Funding Opportunities**

TITLE	DESCRIPTION	CONTACT NAME	DATE DUE
<b>Flexible Technical Assistance (Flex Tech)</b>	Customers seeking FlexTech assistance for buildings - Provides cost-sharing on technical assistance services tailored to answer customer-specific energy questions. Services are performed by pre-qualified FlexTech Consultants.	Jaime Ritchey ext. 3517	Continuous
<b>EnVest Program</b>	Provides State-owned and operated buildings a streamlined method to use an energy-performance contract to complete energy-efficiency improvements.	Tom Barone Ext. 3307	Continuous

- > Current Opportunities
- > Upcoming Opportunities
- > Completed Opportunities
- > Doing Business With NYSERDA
- > Standard Forms & Agreements
- > External Funding
- > Recently Signed Contracts

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# Questions?

- General program information, 1-866-NYSERDA (697-3732)
- Hourly Pricing information PLRP 518-862-1090
  - Chris Smith ext 3360-CJS@NYSERDA.ORG
  - Pete Savio ext 3334-PPS@NYSERDA.ORG
  - Lee Smith ext 3313-LLS@NYSERDA.ORG
  - Ann Trivison (administrative) ext 3241 AMT@NYSERDA.ORG
  - <http://www.nyserda.org/funding/955pon.pdf>
- FlexTech/Technical Assistance
  - Jaime Ritchey ext 3517 –JJR@NYSERDA.ORG
  - <http://www.nyserda.org/programs/flextech.asp>
  - [http://www.nyserda.org/programs/Technical\\_Assistance/default.asp](http://www.nyserda.org/programs/Technical_Assistance/default.asp)