



An Exelon Company

Demand Response Stakeholder Advisory Group Meeting

March 3, 2009

Jim Eber

- ✓ Market Research
- ✓ Demand Response 101 - 401
- ✓ ComEd's Portfolio
- ✓ ComEd's Role
- ✓ Q & A

✓ According to DOE, Demand Response is -

“ Changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time, or to incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized.” - ***U.S. Department of Energy, Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them, February 2006***

ISSUE: “Incentives” vs. Market-Based Price Signals

Demand Response = Multiple Products

From DOE Report to Congress Feb 2006

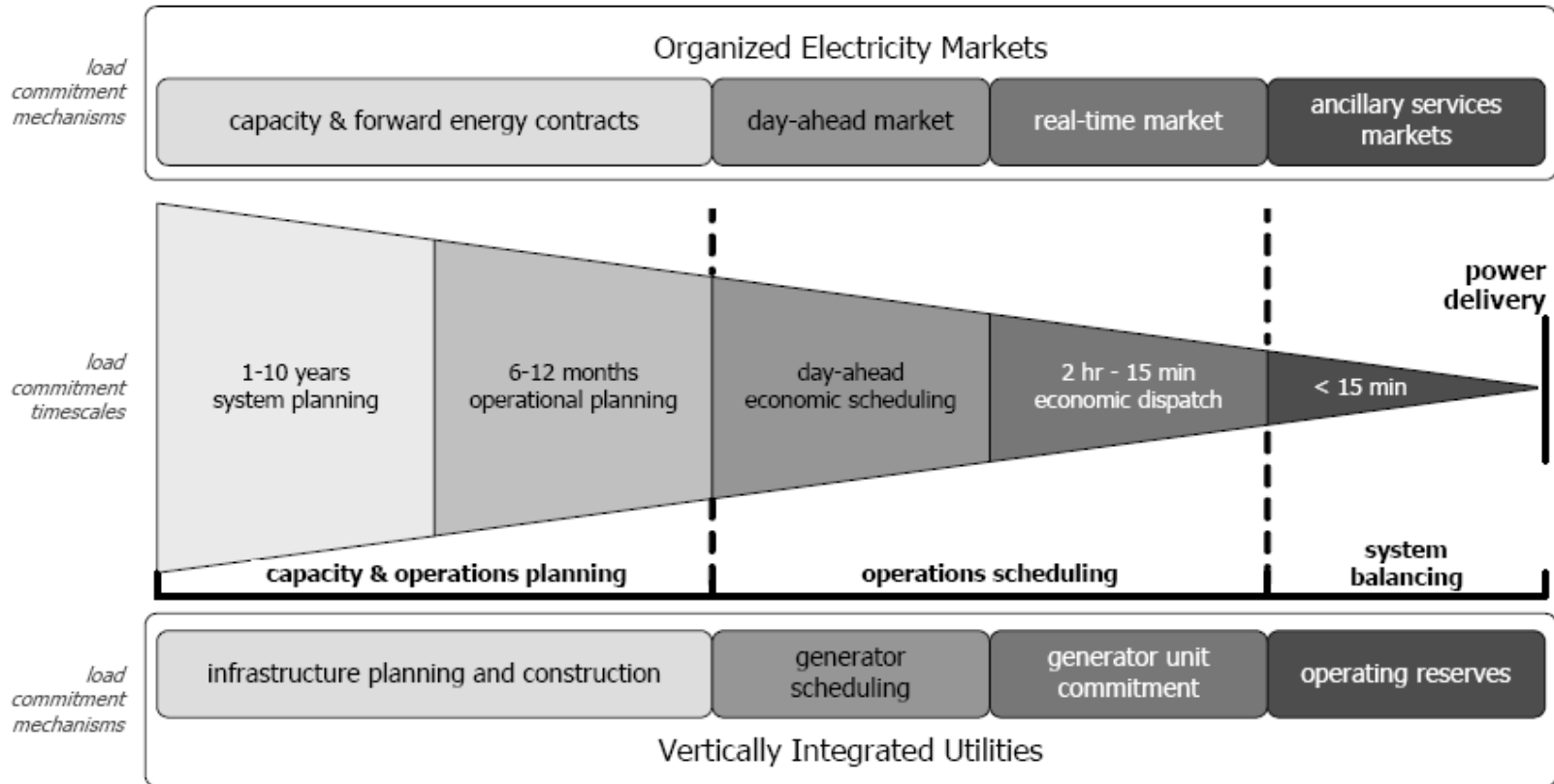
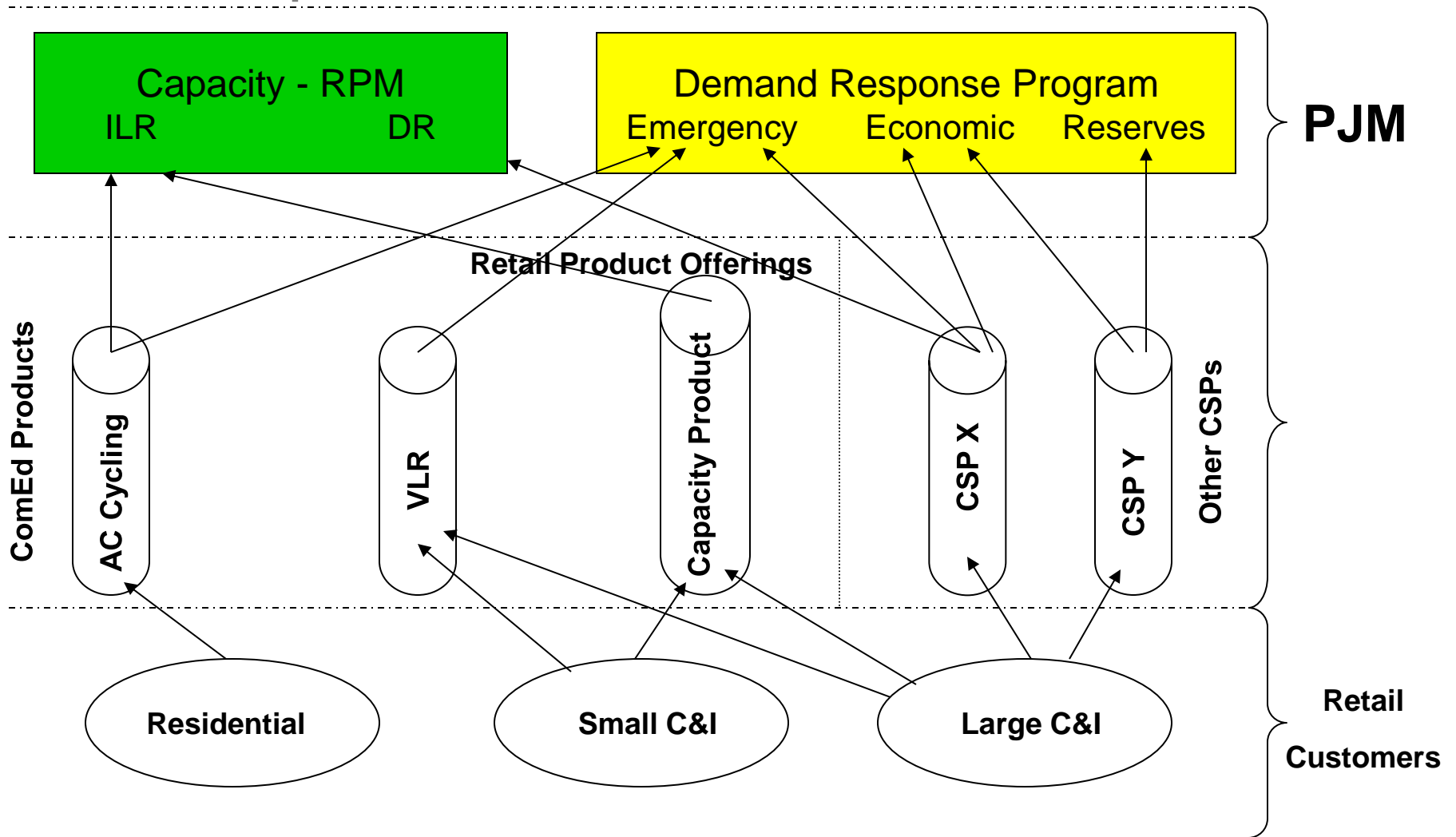


Figure 2-2. Electric System Planning and Scheduling: Timescales and Decision Mechanisms

Demand Response = Multiple Providers

Demand Response Framework

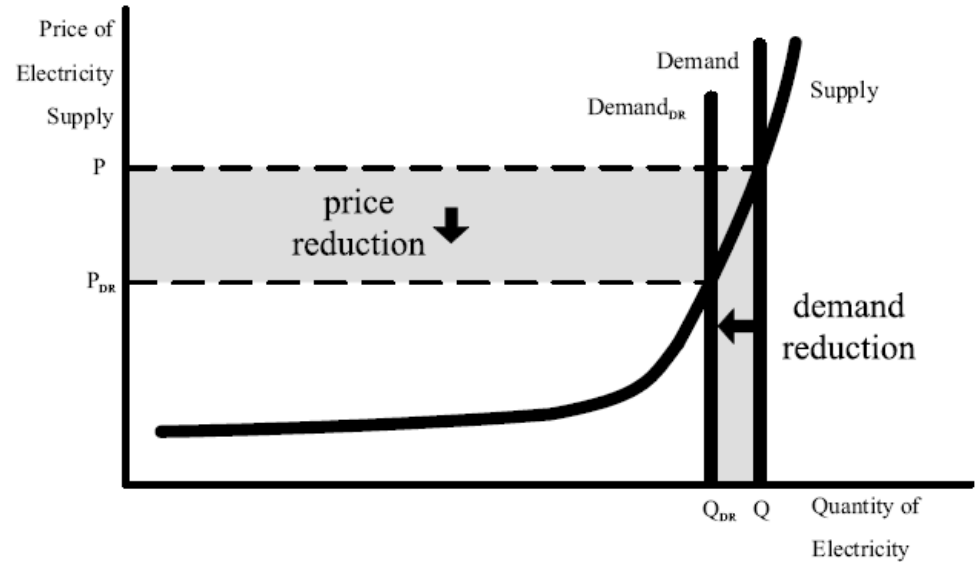


Two Versions



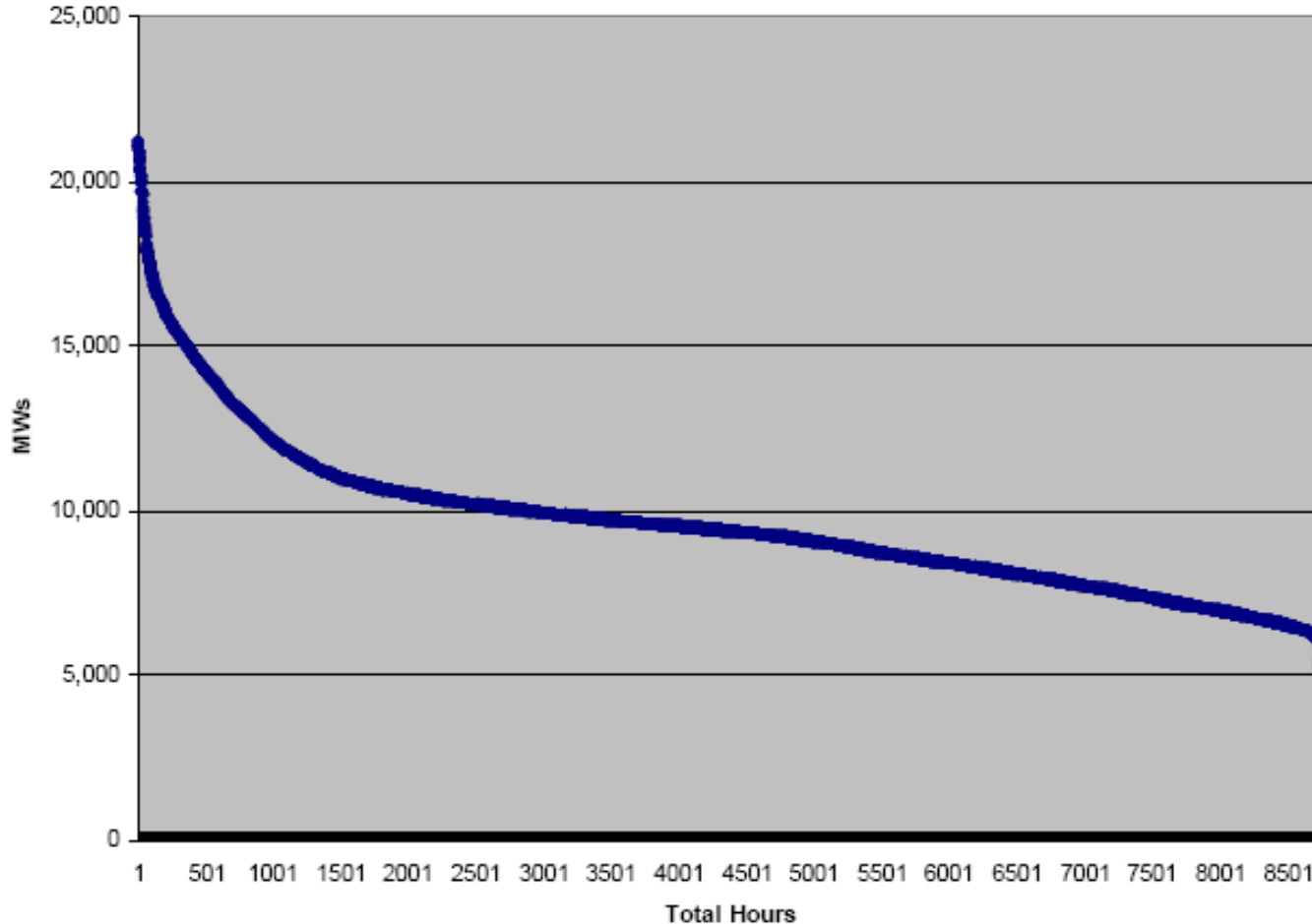
Canadian Version

US DOE Version

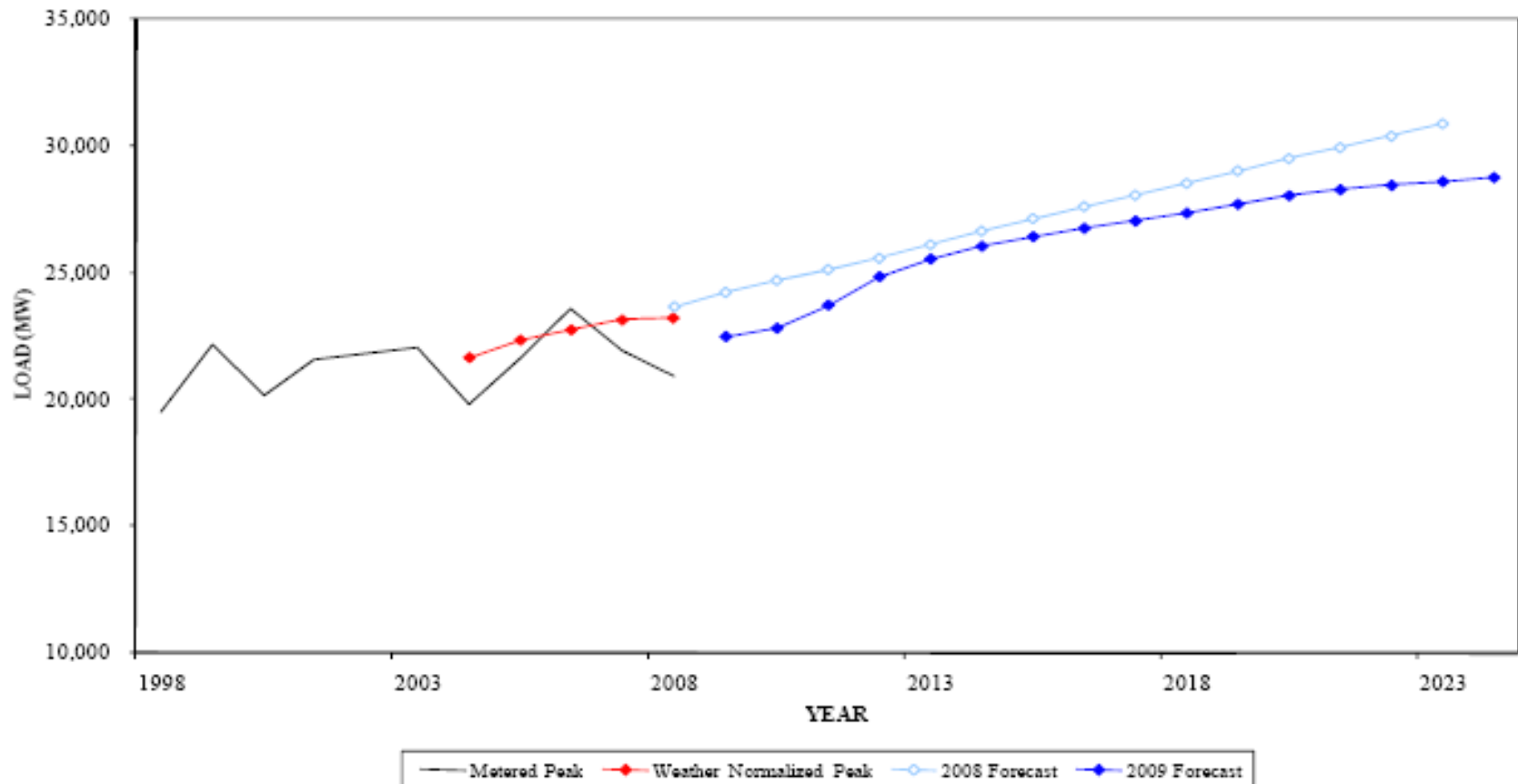


Capacity Products – Load Duration Curve

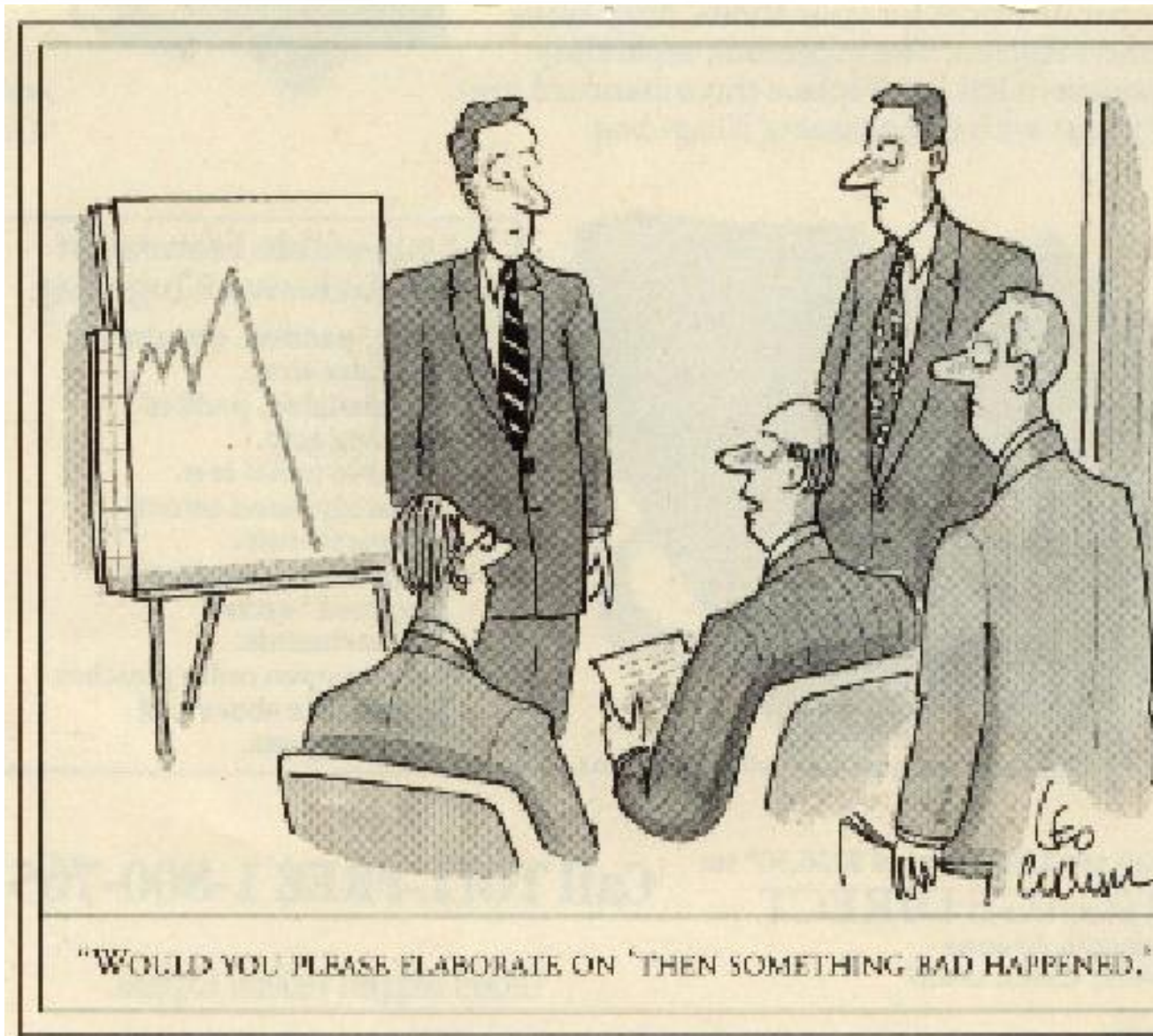
Lots of MWs needed for very few hours

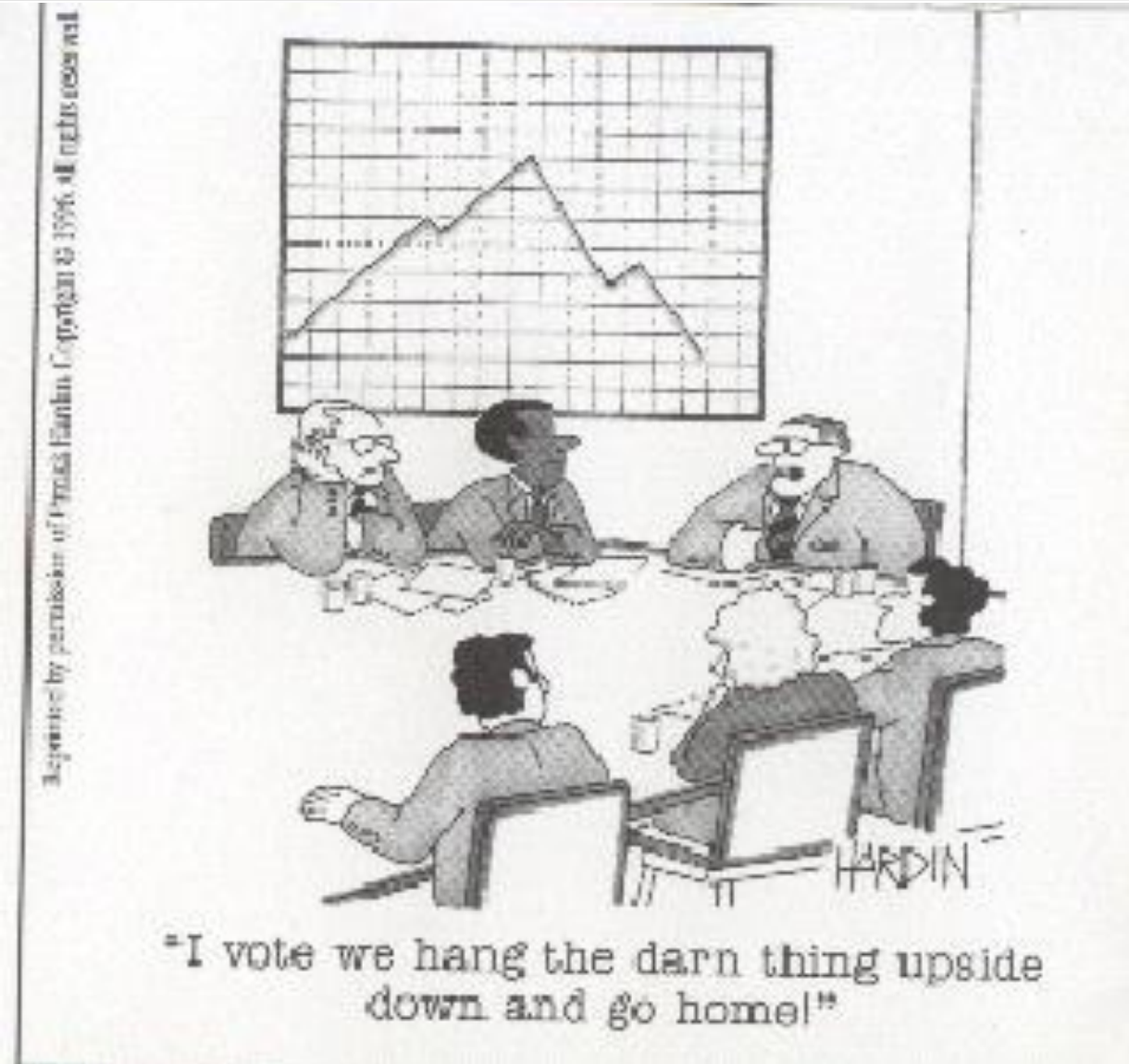


SUMMER PEAK DEMAND FOR COMED
GEOGRAPHIC ZONE



Source: PJM Load Forecast Report Jan 2009





OPTIONS AND PAYMENTS

Synchronous Reserves

- Commitment to respond to a PJM all-call due to a system contingency within 10 minutes
- Paid the market clearing price inclusive of opportunity costs

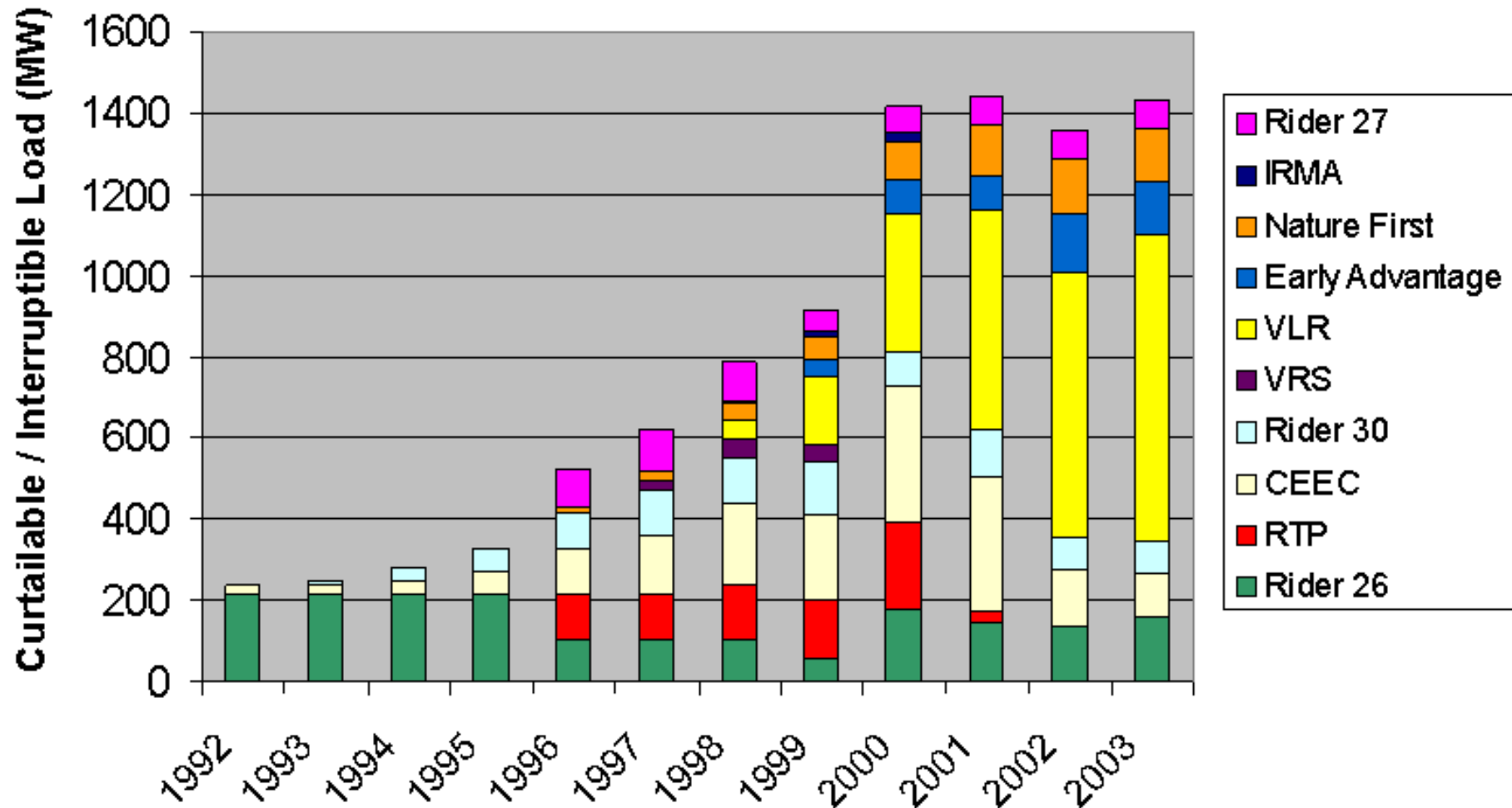
Regulation (Frequency Response)

- Respond to regulation signals as needed to keep system at 60 Hz
- Paid market clearing price inclusive of opportunity costs

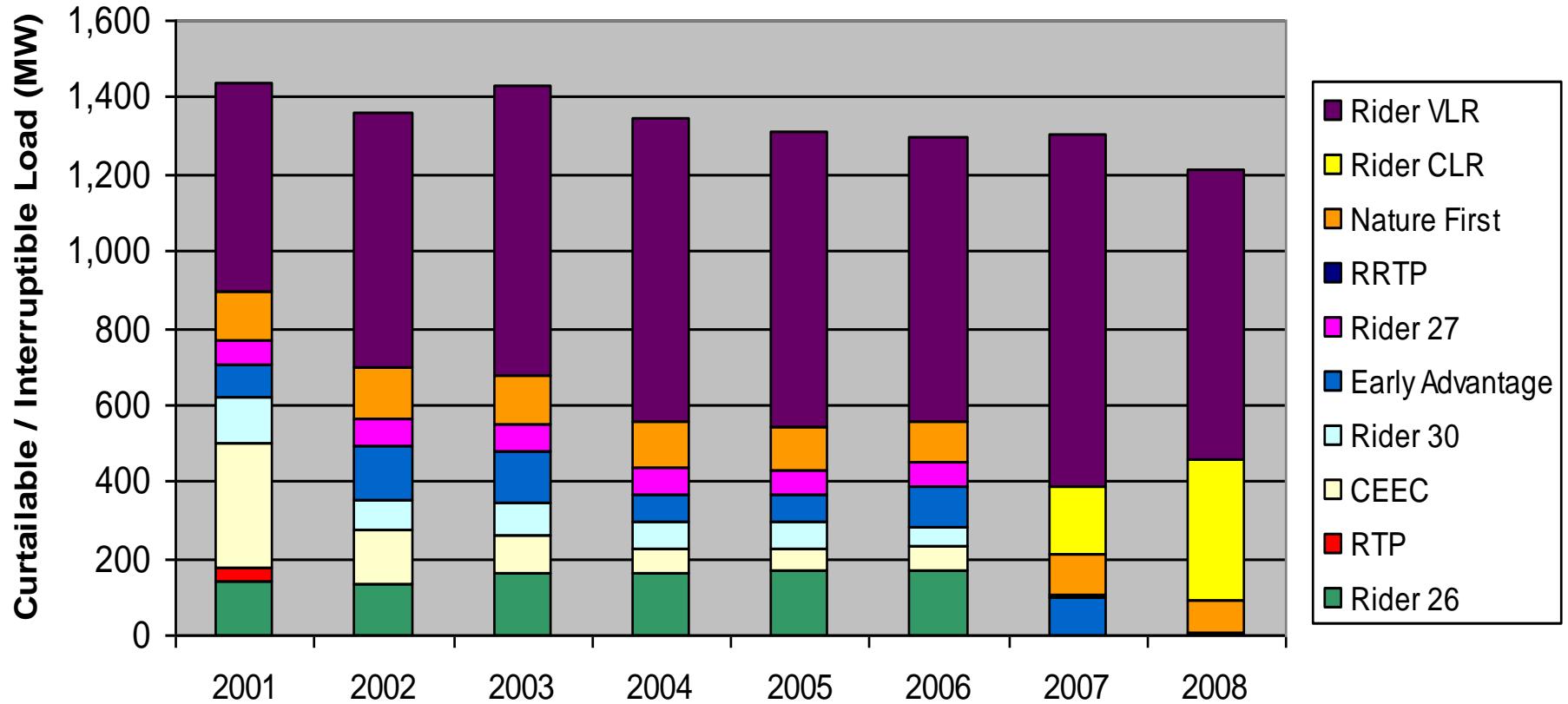
Day-ahead Scheduling Reserve

- Commitment to be available to respond within 30 minutes of a signal to respond in real-time
- Paid market clearing price inclusive of opportunity costs

Hugh Growth thru the '90s



Maintain and Migrate in the 2000s



ComEd will continue its support, transition, and development of reliability and market-based demand response, to enhance the reliability of the distribution system, and market efficiency.

- ✓ Dynamic Pricing
 - Expansion of RRTP program over next 2 years.
 - Provide customer education, and ensure positive customer experience.
- ✓ Residential AC Cycling Program Expansion
 - Provides technology solution which enables control of peak period loads.
 - Grow by about 10 MWs annually under EE/DR plan for next 2 years.
 - Potentially research AMI enabled technology.
- ✓ C&I Load Response (Over 5000 participants – 1000 MW potential peak reduction)
 - Continue to support distribution, energy, and capacity demand response to C&I customers.
 - Transition with RPM, and participate in PJM process to refine DR participation in markets.

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ENERGY INSIGHTS ONLINE
Average Profiles

EPO Basic | **Historical Comparison**

Profile for Account "RCEC8003688013"

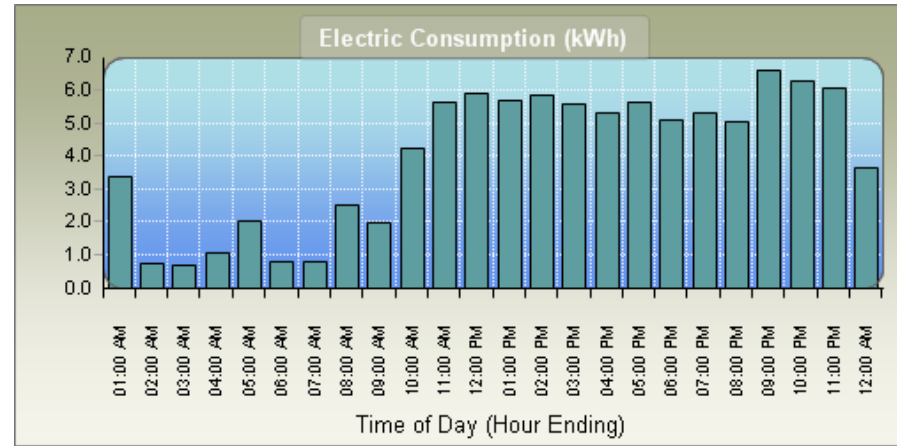
Redraw

Normalize:
None

Overlay

- Average Weekday
- Average Weekend
- Peak Day: 11/30/2008 18:30
- Date: 11/01/2008
- Date: 11/01/2008

Selected Date Range Saturday, November 01, 2008 Through Wednesday, December 10, 2008



Price of Electricity

ComEd

01/06/2009 23:10

3.217 ¢

Select Link to ...

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Price Services

Tuesday, January 06, 2009 11:20:25 PM

Hourly Pricing 5 Mins. Hourly Events

5.13	11:00 AM
4.80	10:00 AM
4.60	9:00 AM
4.56	8:00 AM
5.50	7:00 AM
6.11	6:00 AM
3.81	5:00 AM
3.21	4:00 AM
3.09	3:00 AM
3.22	2:00 AM
2.35	1:00 AM
3.40	12:00 AM

Active Events: None

Powered by: Invaluable Technologies ENERGY CONSULTING

PowerMeter Demo

1726 Martin Luther King Jr Way, Berkeley, CA Day

0 kW

12a 6a 12p 6p 12a 6a 12p 6p 12a

Yesterday: 7.87 kWh used (\$1.34)

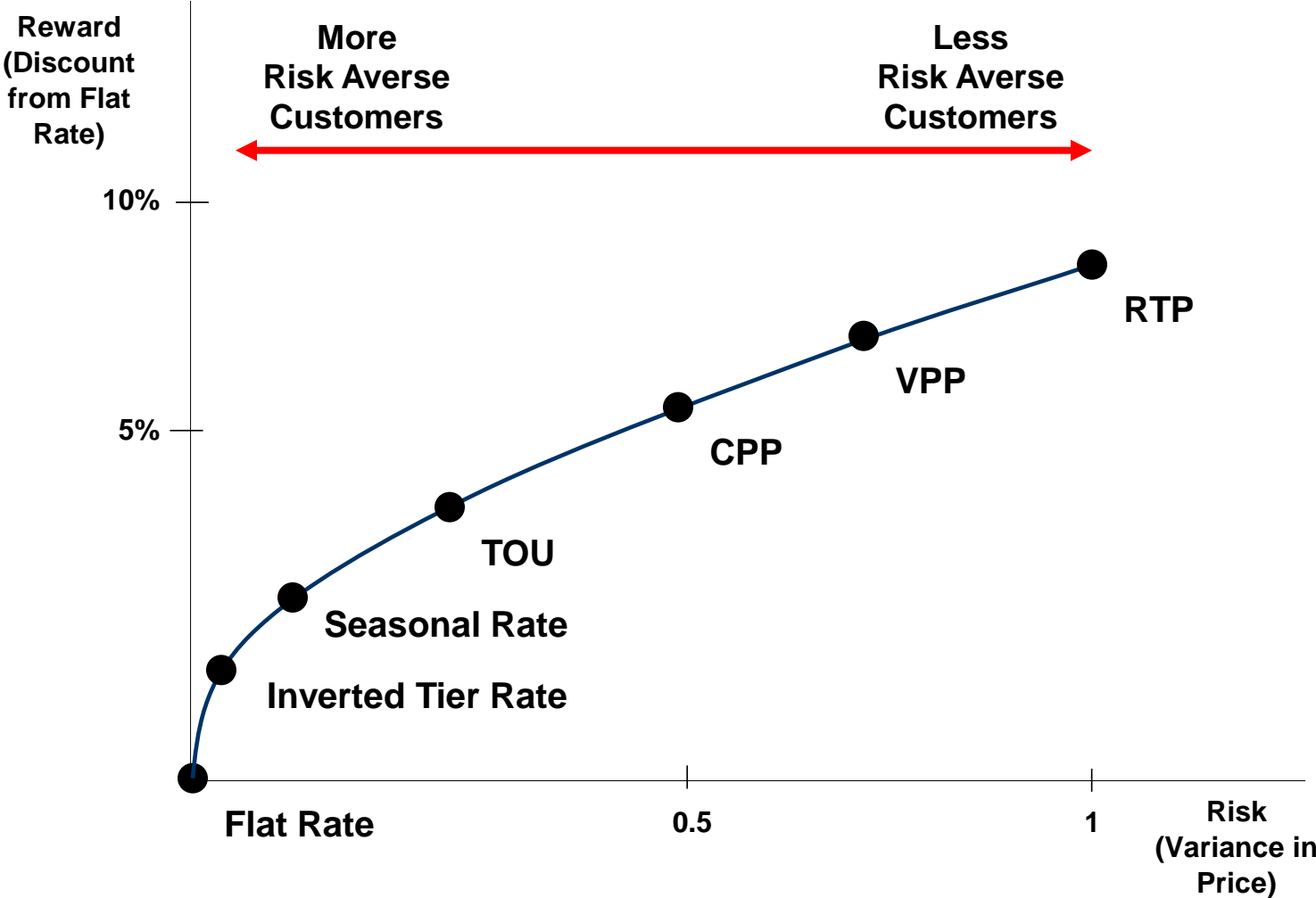
Today, as of 2:59 PM: 4.81 kWh used (\$0.82)

Lower than 58% of users.

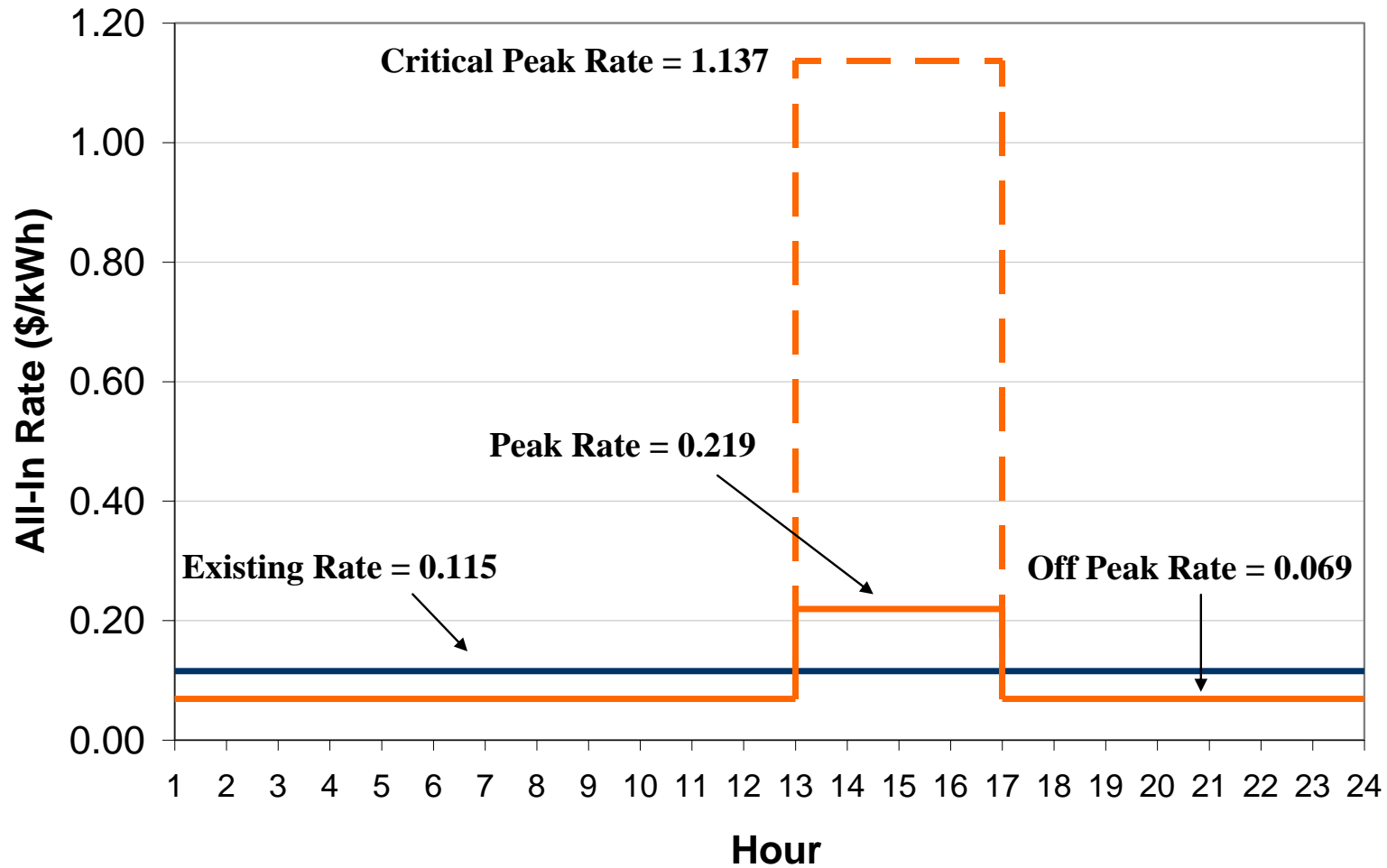
Average (all users): 12.4kWh

Share/Report/Bus

Application – Dynamic Pricing

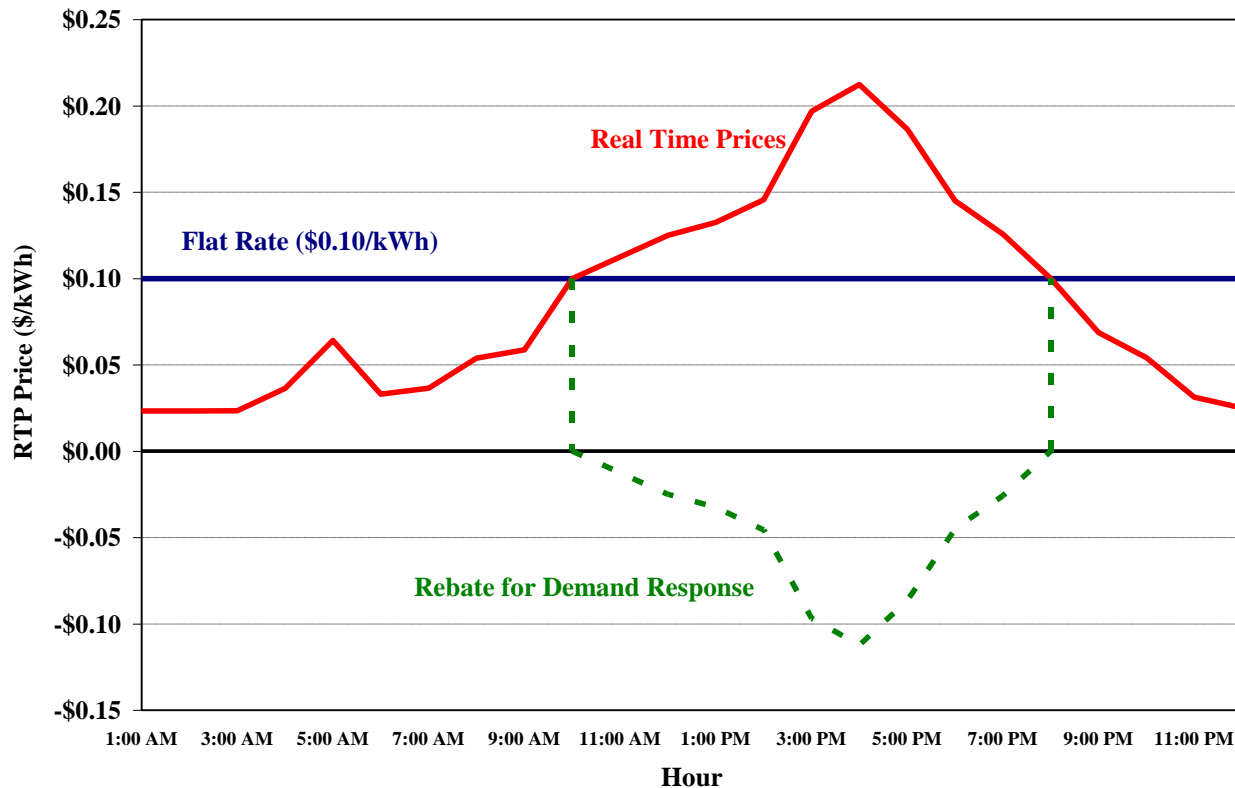


Illustrative CPP-TOU



- Customers pay the flat rate in all hours
 - Can earn a rebate by reducing consumption in hours when the real time price is higher than the flat rate

Illustration of Real Time Rebate



Application – In-Home Displays

✓ High End

Energy Cost
\$0.18 / Hour
Today: \$2.45
Month: \$54.39

Energy Dashboard
Line graph showing kW and \$ over time (12:00 to 12:25).

Smart Ideas
Energy Saving Tip #5
Turn your water heater down to 120° or the "Normal" setting when home, and to the lowest setting when away.

Weather
Chicago, IL 60657
Hi / Lo: 54 / 72 °F
Humidity: 77 %
Wind: 5 mph NW
Pressure: 30.40 in
71° F

Saturday, May 17
6:54 PM

✓ Middle of the Road



✓ Low End



Application – HAN Control Systems

