Action Items for Time-Sensitive and Dynamic Pricing: Pilots and Issues

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Matrix of Rate Design Options By Customer Class

	Typical Current Rate Design	Inverted Rate	TOU Rate (Fixed time periods)	TOU plus Critical Peak Pricing	Baseline-Referenced RTP	Market Indexed RTP
Residential	Flat Energy Charge	Default (if kwh-only metering in place)	Default (if TOU meters in place)	*Optional*	*Not Available*	*Not Available*
Small Commercial 0 - 20 kw demand	Flat Energy Charge	*Not Available*	Default (if TOU meters in place)	*Optional*	*Not Available*	*Not Available*
Medium General Service 20 - 250 kw	Demand Charge --- Flat Energy Charge	*Not Available*	Default (until interval metering installed)	Default (after interval metering installed)	*Not Available*	*Not Available*
Large General Service 250 - 2,000 kw	Demand Charge --- Flat Energy Charge	*Not Available*	*Not Available*	Default	*Optional*	*Optional*
Extra Large General Service >2000 kw	Demand Charge --- Flat Energy Charge	*Not Available*	*Not Available*	*Not Available*	Customer Must Choose Between These Two Options	

Source: New England Demand Response Initiative

Pricing of Default Service

- Default service in the MADRI states is provided under a variety of traditional rate structures:
  - Block rates
  - TOU, seasonal
  - Capacity and energy
- There are also some new approaches, e.g., RTP for C&I customers in New Jersey
- In MADRI, interest in more dynamic pricing structures has coalesced around critical peak pricing

Illustration: Critical Peak Time-of-Use Pricing

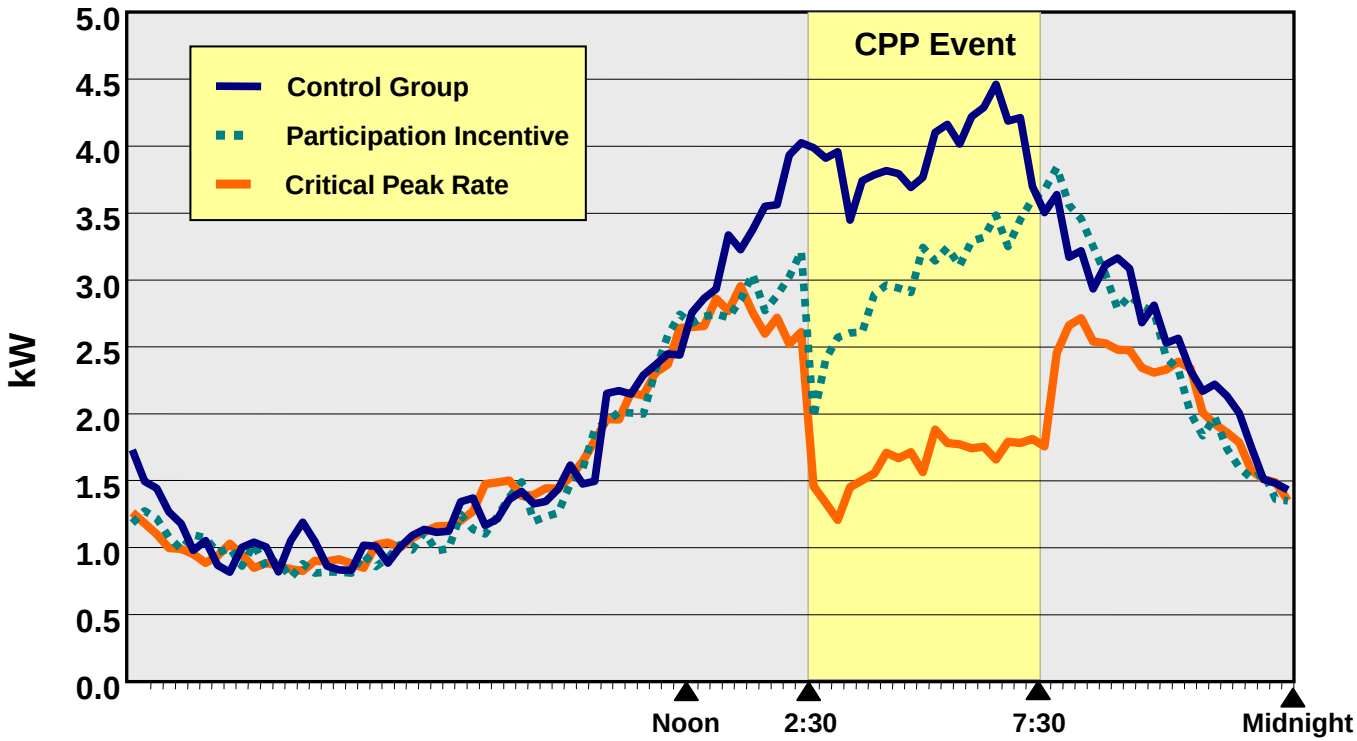
- Flat or TOU rate during all “normal” hours.
- Defined or Market price effective when market price exceeds defined threshold.
- Customers get notice when Critical Peak rate is in effect.

Defined Critical Peak	Price
On-Peak (except Critical)	$ 0.117
Off-Peak	$ 0.05
Critical kWh	$ 0.60

Market Critical Peak Price	
On-Peak (except Critical)	$ 0.117
Off-Peak	$ 0.05
Critical kWh	Market + margin

CA Pilot: Residential Load Impacts (Incentives)

Residential Response with Automation: Participation Incentive vs. Critical Peak Rate



Hot Day, August 15, 2003, Average Peak Temperature 88.5^0

Source: Levy Associates, October 2005

Critical Peak Pricing: Issues

- Programs in Florida and California (and New Jersey) have shown that CPP elicits meaningful, persistent demand response
- Can CPP in the MADRI be likewise successful?
- And, if so, are regulators and policymakers prepared to implement it?
  - California is now considering whether CPP should be a condition of default service.

Questions

- What is the size of the demand-response resource associated with CPP?
- What actions should be taken to answer this question?
  - Rate design dockets
  - Pilots such at the PSG&E critical peak pricing pilot
    - Are the lessons from the California pilot applicable in the MADRI region?

Possible Pilots

- Designed to make use of existing infrastructure
  - Different pilots in different service territories
  - To answer the question: what are the costs and challenges of upgrading a system to enable more dynamic pricing and demand response capabilities?
- Program 1: “Smart Thermostat” program
  - Business Subgroup has focused on this

Possible Pilots

- Program 2: One-year turn-key pilot for ~20 MW of economic- and reliability-based demand reduction
  - Operated by utility: PECO, PPL?
  - Leverages existing metering system for verification
  - Aims to quantify substation and circuit benefits
  - $400-$500 one-time cost for demand response infrastructure to go along with the existing metering
- Program 3: Greenfield pilot of “Gulf Power” type system
  - Enables price–responsive demand through critical peak pricing
  - Existing infrastructure is insufficient: $600-$1,000 one-time cost for fully integrated two-way AMI
  - Connectiv, JCP&L, PEPCO?

Implementing Pilots

- Requires regulatory action, leadership
- Pilot design
  - Joint action of regulators, utilities, default service providers, and other interested stakeholders
  - Mechanisms for the recovery of the costs of the pilot and, if appropriate, net lost revenues
    - Impacts on default service providers if implemented outside the default service procurement process?

A Related Issue: Dynamic Pricing and Default Service

- What effects does implementation of CPP and other time-sensitive pricing have on the procurement and provision of default service?
- Typically today
  - Classes and Rate designs specified in RFP
  - Suppliers bid prices at which they're willing to serve
    - State-by-state variations on this theme

Dynamic Pricing and Default Service

- Introduction of a new rate structure, e.g., CPP, needn't change approach to procurement
  - RFP sets the terms of the CPP program
    - Historic load shapes and billing determinants
    - Underlying rate design: flat rate or TOU?
    - Number and duration of CP events
    - Possibly even the CP price
  - Bidders bear and value the risk (positive or negative?) of price-induced demand response
    - Reflected in bid prices
    - Price-induced demand response should benefit providers by yielding better load factors: cut peaks, cut costs