



Efficiency Committee Load Management Standards Rates, Incentives, and Market Integration Workshop

Tuesday, June 10, 2008
California Energy Commission, Sacramento

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SDG&E Policy & Philosophy

- Support and advocate policies, regulations, investments and rates that enable and promote load management & demand response
- Move towards cost based rates and transparent price signals
- All customer classes can and should contribute to demand response
- Recognize Federal and State approach to demand response and price signals are evolving and the need to be flexible

Peak Time Rebate (PTR) for all Residential and Small Business

- Transition dynamic rate because of AB1X constraint
 - Residential on AB1X tiered rate (4 tiers)
 - Proposed AB1X gradual roll-off in GRC Phase 2
 - Default dynamic rate post-AB1X
- Incentive based rate
 - Reduced kWh during PTR event (on-peak) from customer reference level (CRL)
 - Two level PTR structure
 - \$0.75 per kWh for reductions without enabling technologies
 - \$1.25 per kWh reductions w/enabling technologies
 - Encourages technology adoption
 - Rewards the right customers (increases certainty of pay-out to non-structural beneficiaries)
- Small Business customers on flat A-rate(< 20 kW)
 - PTR is a transition rate - default TOU after Smart Meter
- Revenue and rate recovery
 - Energy Resource and Recovery Account (ERRA) – class specific recovery
 - PTR reflects the \$69 kW-year value of avoided capacity

Critical Peak Pricing (CPP) for C&I Customers \geq 20 kW

- Default or opt-out for all commercial & industrial customers \geq 20 kW
 - Approximately 20,000 customers
 - \geq 200 kW customers moved to CPP-D effective May 1, 2008
 - Schedule for remaining customers converted to CPP-D depends on Smart Meter installation
- CPP-D structure
 - Underlying 3-period TOU structure – average prices (summer)
 - Off-peak: \$0.06058 /kWh
 - Semi-peak: \$0.08205 /kWh
 - On-peak (weekdays 11AM – 6PM): \$0.10237 /kWh
 - CPP: \$1.06238 /kWh
 - CPP events with soft trigger- forecasted temperature and system load
 - Capacity reservation charge (CRC)
 - Allows customer to hedge against CPP uncertainty (# of events)
 - Default set at 50% of historic customer demand during on-peak
 - \$6.16 per kW (average monthly rate)
- Opt-out to AL-TOU (3-period) and other optional DR rates

Changing Customer Behavior and Perspective

- **Customer Experience Management**
 - Behavioral segmentation and tailored segment strategies
 - 30% of customers provided 80% of DR in SPP
 - Bundled service offerings by segment and optimize contact and service delivery channels
- **PTR & CPP**
 - Short-term demand response – short run price elasticity and change in behavior
 - Longer-term – long run price elasticity and investment decisions
 - Encourages deployment of enabling technologies
 - Leverage Home Area Network (HAN) capabilities for energy management systems
 - AMI funding includes 56,000 PCTs for small and medium business customers
- **Value of energy usage and price information**
 - Provide hourly usage for residential and 15 minute usage for business customers on Web next day
 - Implementing Web based “Energy, Bill and Rate Analysis” tool
 - Encouraging development of low cost in-home displays compatible with HAN

Extent and Pace of Demand Response and Dynamic Pricing, aka Challenges and Barriers

- Infrastructure and technology
 - Smart meter deployment
 - Energy management technology development, maturity, adoption, and penetration
 - Smart homes – HAN evolution
 - Distributed generation
- Regulatory and legislative
 - AB1X
 - Outcome of MRTU
- Environmental
 - Increased renewable generation => impact on peaking requirements => variability of energy resource availability => greater need for policy instruments to flatten demand
- Information content of price signals
 - Real-time market – short run marginal cost
 - Avoided capacity – long run marginal cost
 - Environmental impacts – social marginal cost

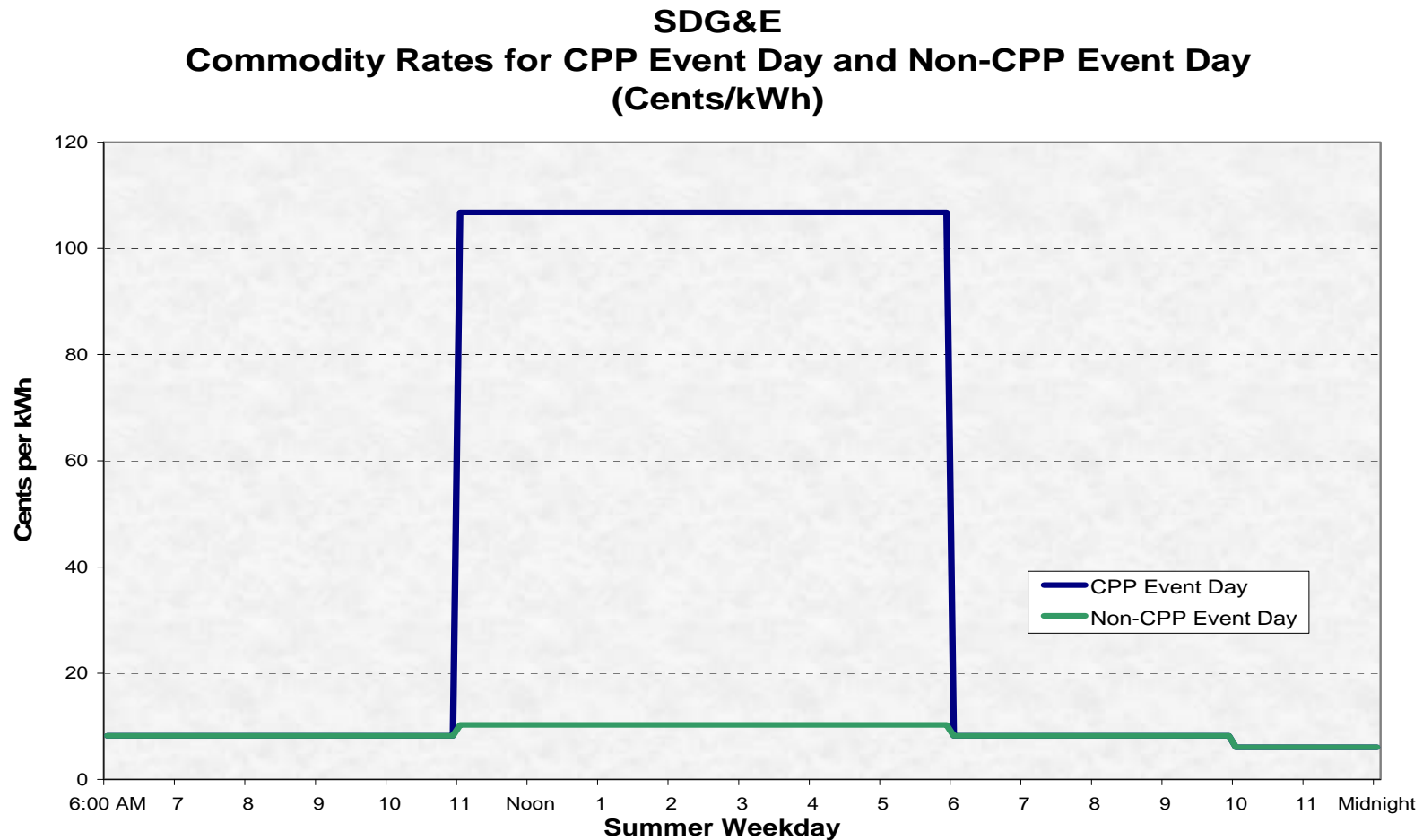
Conclusion

- SDG&E long-time proponent of demand response and dynamic rates
- Default dynamic rates have been authorized by the CPUC
- Technology will continue to evolve and become even more sophisticated, including smart meters and smart homes
- Evolving communication channels and in-home energy management technologies will provide greater information feedback, raise awareness, and expanded energy options for customers
- Encourage the CEC and CPUC to continue to move the ball in the right direction



Attachments

CPP - Default



Based on Schedule EECC-CPP-D, Rates Effective June 1, 2008

SDG&E Background on Demand Response and Dynamic Rates

- **Dynamic rates**
 - First to propose and receive CPUC approval of default Critical Peak Pricing (CPP) and Peak-time Rebate (PTR)
 - GRC Phase 2 CPUC authorization, D.08-02-034
- **Pro-active leader in demand response and dynamic rates**
 - First application to CPUC for “real-time” metering for large customers in 2000
 - Proponent, supporter and advocate of AB 29X “real-time” meters
 - Proposed and implemented one-part RTP in 2003 for large customers
 - Active participant in Statewide Pricing Pilot (SPP) and Advanced Demand Response System (ADRS) pilot
- **Smart Meter (aka Advanced Metering Infrastructure-AMI)**
 - CPUC authorization and approval for electric and gas in D.07-04-043
 - 1.4 million electric meters and 0.9 million gas modules
 - Deploy by 2011
 - Implementation of dynamic rates

2007 Demand Response Programs

Interruptible Programs	MWs Subscribed	Service Accounts
BIP	1.8	3
Peak Generation (RBRP)	29.7	60
Clean Generator Program (Celerity)	25.0	13
Smart Thermostat	1.4	3,920
Summer Saver	44.5	25,627
Sub-Total	102.4	29,623
AMDRMA Programs	MWs Subscribed	Service Accounts
DBP	10.9	313
CBP	21.2	185
CPP-Voluntary	21.0	239
CPP-Emergency	5.1	10
Peak Day Credit (20/20)	34.5	833
Sub-Total	92.7	1,580
Total of all Programs	195.1	31,203

2009 - 2011 Demand Response Programs

SDG&E Demand Response Program 2009-2011 Forecast Load Impacts for a Typical Event Day 1 in 2 Weather Year (MW)			
DR Activities -	2009	2010	2011
Day-Ahead Price Triggered			
PTR- Residential	0	44	84
PTR-Small C&I (<20 kW)	0	3	8
CPP-D - Medium C&I (20-200 kW)	0	16	63
CPP-D - Large C&I (>200 kW)	58	60	61
CBP Day-Ahead	14	17	20
Day-Of Price Triggered			
CBP Day-Of	3.5	4	4.5
Summer Saver Residential	10	16	16
Summer Saver Small Commercial	5	6	6
Day-Of Reliability Trigger			
CPP-E	3	3	3
BIP	5	5	5
Other DR Activities			
Permanent Load Shifting (PLS)	1	1	1
Technology Incentives (TI)	14	28	42
SLRP	0	0	0
OBMC	0	0	0
Total	114	203	314

Residential Solar Rate Option

Schedule DR: most residential customers taking service on this tariff.				
Usage Charge (\$/kWh)		UDC	Commodity (EECC + DWR-BC)	Total
Summer				
	<i>Tier 1</i>	\$0.02670	\$0.10364	\$0.13034
	<i>Tier 2</i>	\$0.04790	\$0.10364	\$0.15154
	<i>Tier 3</i>	\$0.11227	\$0.10364	\$0.21591
	<i>Tier 4</i>	\$0.13634	\$0.10364	\$0.23998
Winter				
	<i>Tier 1</i>	\$0.05228	\$0.07806	\$0.13034
	<i>Tier 2</i>	\$0.07348	\$0.07806	\$0.15154
	<i>Tier 3</i>	\$0.12229	\$0.07806	\$0.20035
	<i>Tier 4</i>	\$0.14611	\$0.07806	\$0.22417
Schedule DR-SES: Voluntary rate for solar customers that do not contain AB1X rate cap or baseline discounts.				
Metering Charge (\$/month)		\$3.81000	\$0.00000	\$3.81000
Usage Charge (\$/kWh)				
Summer				
	<i>On-Peak</i>	\$0.07577	\$0.18742	\$0.26319
	<i>Semi-Peak</i>	\$0.07577	\$0.09126	\$0.16703
	<i>Off-Peak</i>	\$0.07577	\$0.07265	\$0.14842
Winter				
	<i>Semi-Peak</i>	\$0.07577	\$0.08453	\$0.16030
	<i>Off-Peak</i>	\$0.07577	\$0.07464	\$0.15041