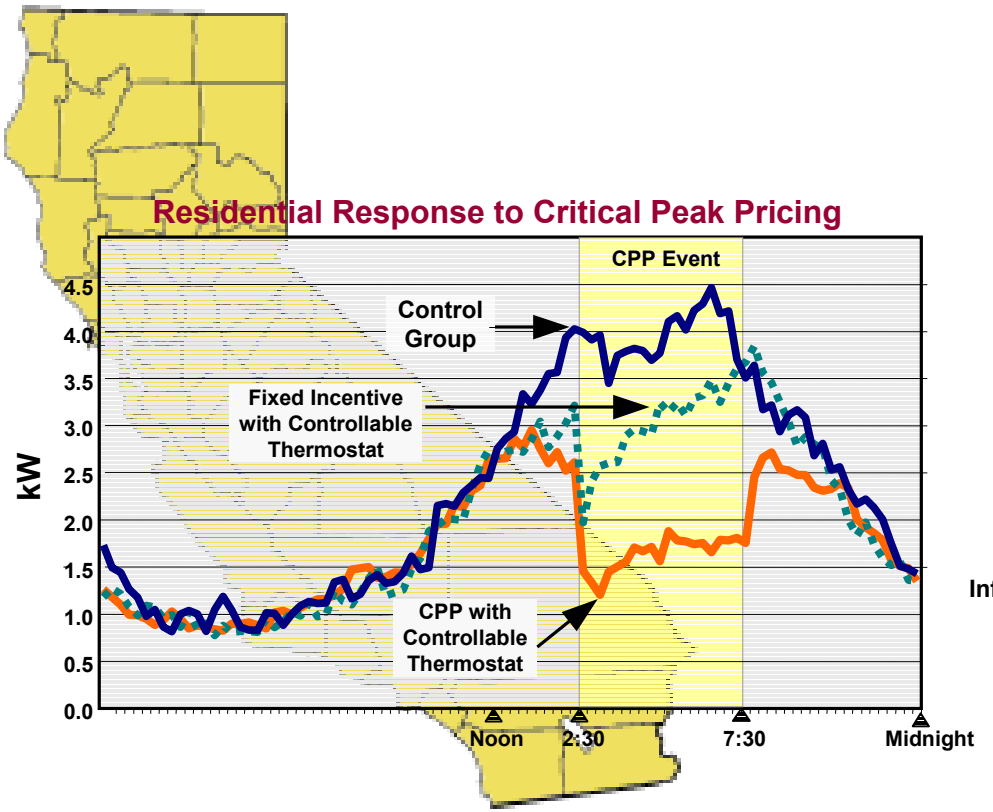
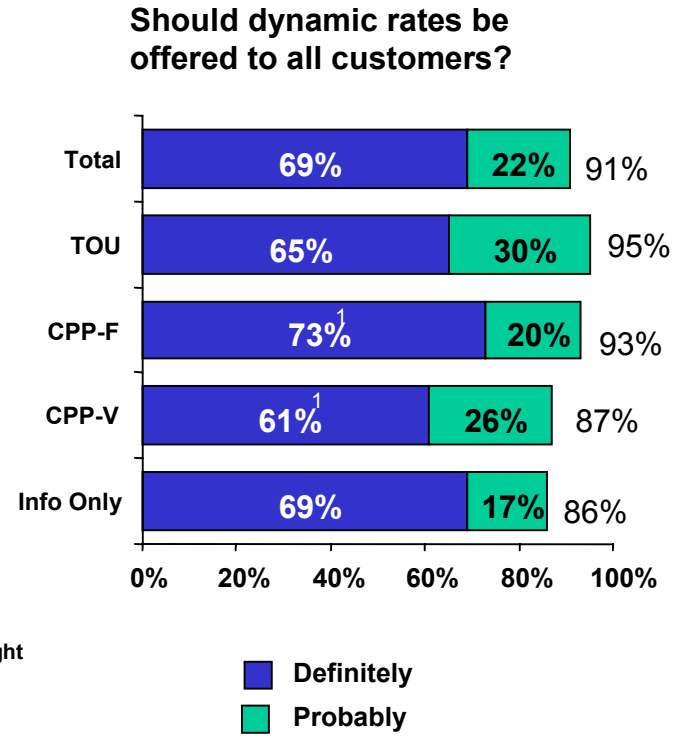
Statewide Pricing Pilot (SPP)

Overview and Results

2003-2004





Outline of Presentation

- Discuss Research Objectives and Sample Design for Statewide Pricing Pilot
- Identify Key Findings from Research Projects:
  - Price Elasticity/ Load Impacts
  - Customer Bill Impacts ($/yr)
  - Customer Acceptance of Rate Forms
  - ADRS Pilot Results
  - Information Display Pilot Results
- Status of AMI/Rate Design Policy Initiatives

Policy Objectives for the Statewide Residential and Small Commercial Pricing Pilot

- Test customer acceptance of dynamic pricing rates and usage feedback
- Measure average load impacts from different types of dynamic rates and notification strategies
- Estimate Price elasticities for different customer types as a function of appliances, weather and notification period
- Evaluate customer use and acceptance of Advanced Demand response systems which automatically reduce load based on price
- Test new forms of information displays that provide notification and feedback to customers
- Evaluate customers willingness to stay on dynamic rates and pay for controls

SPP Conclusions

System Wide Impacts

Deployment of Residential critical peak pricing rates as a default rate with opt out option could reduce California's peak load by 1,500 to over 3,000 mW. Additional savings from CPP rates for small commercial and large commercial customer could increase savings to 5000 mW or 10% of statewide peak demand

Conservation and Peak Load Impacts

Sending Dynamic rates to customers achieved average peak load reductions ranging from 12% to 40% of baseline peak usage for different customer cohorts, The degree of reduction depended on the rate form, weather, customer appliance holdings and availability and use of demand response controls.

Customer Acceptance

Residential and small to medium commercial and industrial customers understand and overwhelmingly prefer dynamic rates to existing inverted tier rates. Sending dynamic prices to residential customers led to average peak savings of 14% and bill savings of $60 per year.

Source: CEC staff conclusions based on review of collective SPP reports.

SPP Background / Design

SPP Background / Design

Pricing Pilot – Research Objectives

1. Estimate usage (kWh) and demand (kW) impacts during summer peak periods from different time-differentiated rate forms.
2. Estimate price elasticities and develop econometric models to examine the effects of weather, customer usage and a other customer characteristics.
3. Estimate customer preferences for dynamic and current rate forms.

SPP Background / Design

Significant Design Features

1. Approximately 2,500 participating customers spread across all of California to represent population.
2. CPUC, CEC and CPA cooperative regulatory proceeding.
3. SCE, PG&E and SDG&E cooperative joint-venture pilot.
   - ❑ Revenue neutral rate designs.
   - ❑ CPP-V participants linked to existing thermostat pilots mandated under SB970.
4. Cost – approximately $20 million.

SPP Background / Design

Statewide Pricing Pilot (SPP) Research Projects

Projects	Objectives	Authors
Customer Demand Elasticity's	Econometrically measure customer price elasticity and model customer response to critical peak pricing.	Charles River Associates
Customer Load Impacts	Measure customer load impacts in response to critical peak pricing.	California Energy Commission
Market Research Participant Response	Establish pilot participant demographic and behavioral response to pricing options.	Momentum Market Intelligence
Market Research Statewide Preferences	Establish customer demographic, knowledge and pricing preferences statewide.	Momentum Market Intelligence
Technology Impacts ADRS Pilot	Measure full automation impacts on customer response to critical peak pricing.	•Invensys •Rocky Mountain Institute •Boice Dunham Group
Information Impacts ORB Pilot	Determine the impact of information display options on customer response to critical peak pricing.	•Nexus •Primen

Rate Forms

Inverted Tier

- Existing Rate
- Rate increases in stages based on monthly usage.

Time of Use (TOU)

- Experimental Rate – applicable statewide
- Seasonal, different rate for fixed on-peak and off-peak time periods.

Critical Peak Fixed (CPP-F)

- Experimental Rate – applicable statewide
- Time-of-use rate with an additional 'critical peak' price that can be dispatched during the peak-period for up to 15 times each year, with day ahead notice.

Critical Peak Variable (CPP-V)

- Experimental Rate – applicable target population only
- A Critical Peak Fixed rate with a critical peak price that can be dispatched during the peak-period for 2-5 hours, with 4 hour advance notice.

Note: TOU, CPP-F and CPP-V layered on top of existing Inverted Tier rates.

SPP Background / Design

Experimental Design

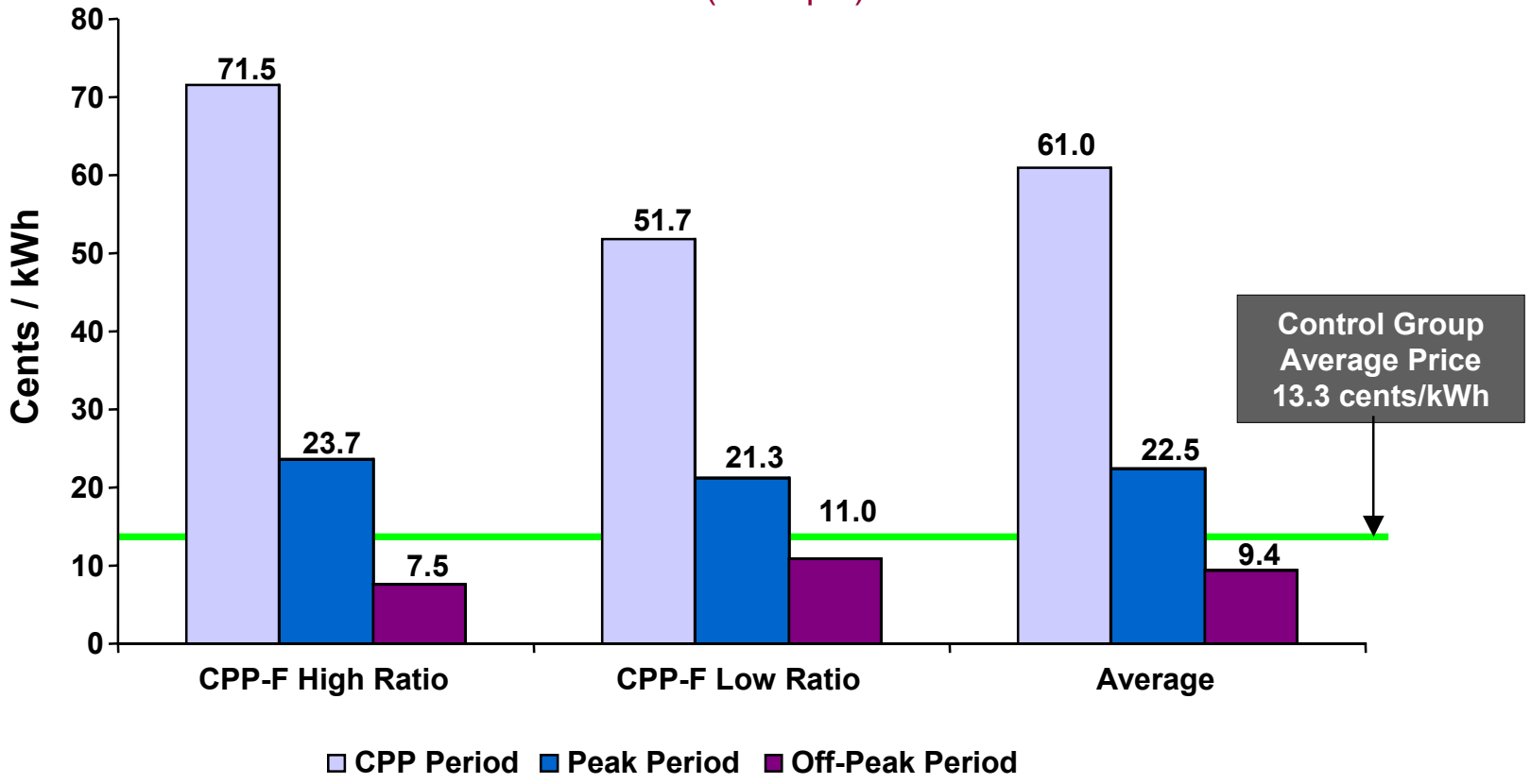
	Control	CPP-F	CPP-F Info Only	CPP-V SDGE	Info Only	TOU	Total Participants
Track A – Random Sampling with Opt Out Design							
Residential	470	542	0	125	126	200	1463
Commercial < 20kW	88	0	0	58	0	50	196
Commercial > 20kW < 200kW	88	0	0	80	0	50	218
Track B – San Francisco Cooperative							
Residential (PGE)	0	64	126	0	63	0	253
Track C – AB 970 Sub-Sample							
Residential	20	0	0	125	0	0	145
Commercial < 20kW	42	0	0	56	0	0	98
Commercial >20kW < 200kW	42	0	0	76	0	0	118
TOTAL PARTICIPANTS	750	606	126	520	189	300	2,491

Source: Statewide Pricing Pilot, Summer 2003 Impact Analysis, Charles River Associates, August 9, 2004.

SPP Background / Design

Residential CPP-F Rate Design

(Example)

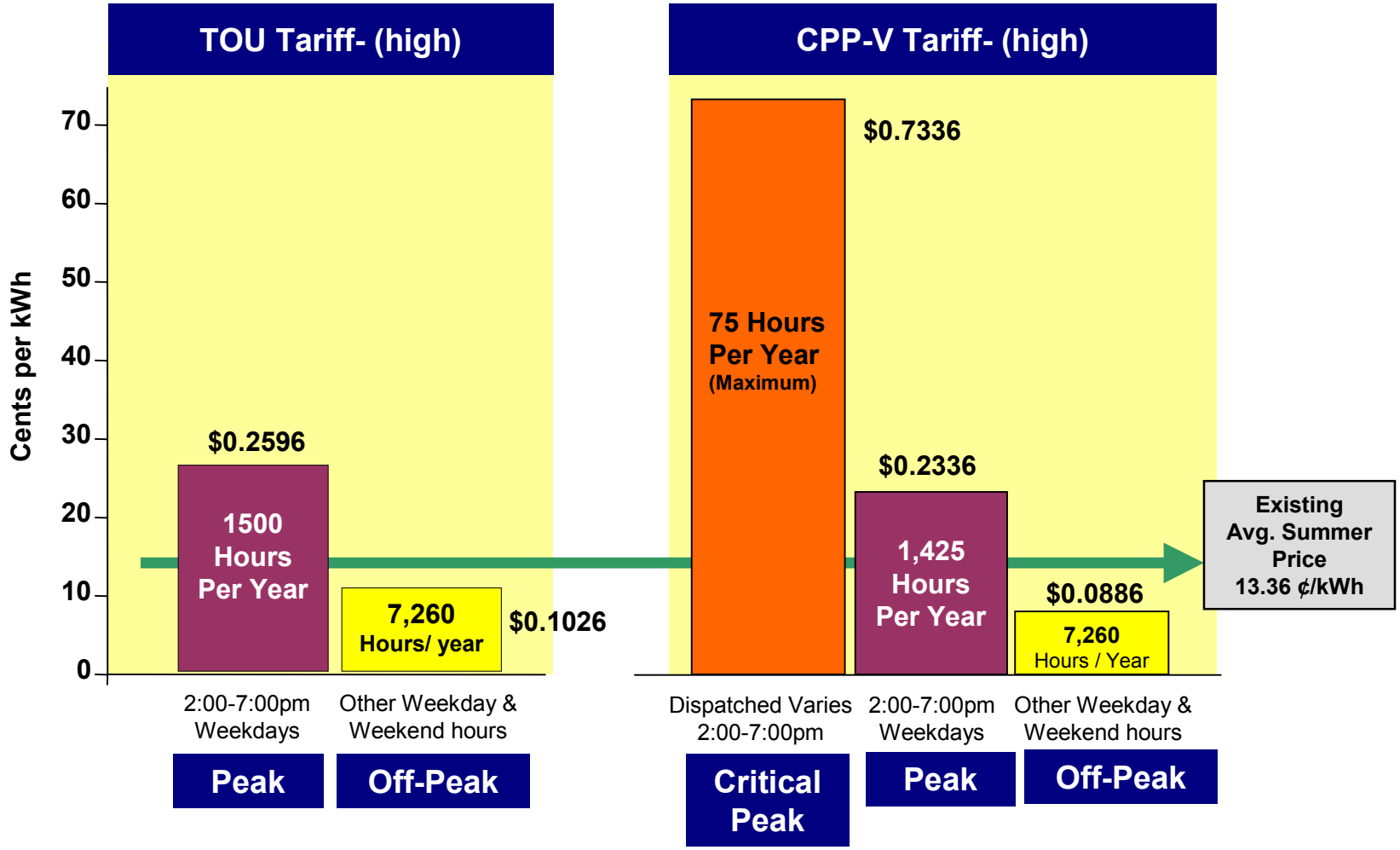


Source: SPP Summer 2003 Update Analysis, Charles River Associates, June 9, 2004.

SPP Background / Design

SPP Residential Rate Forms

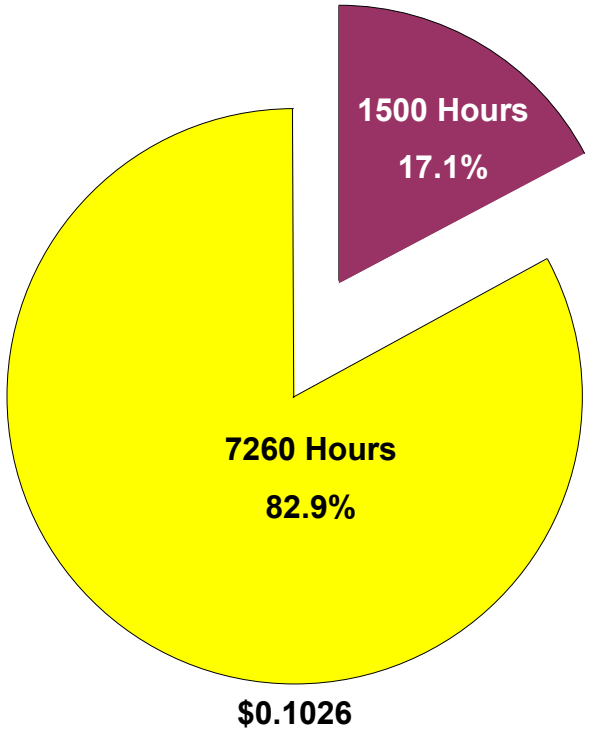
(Example TOU & CPP High Options)



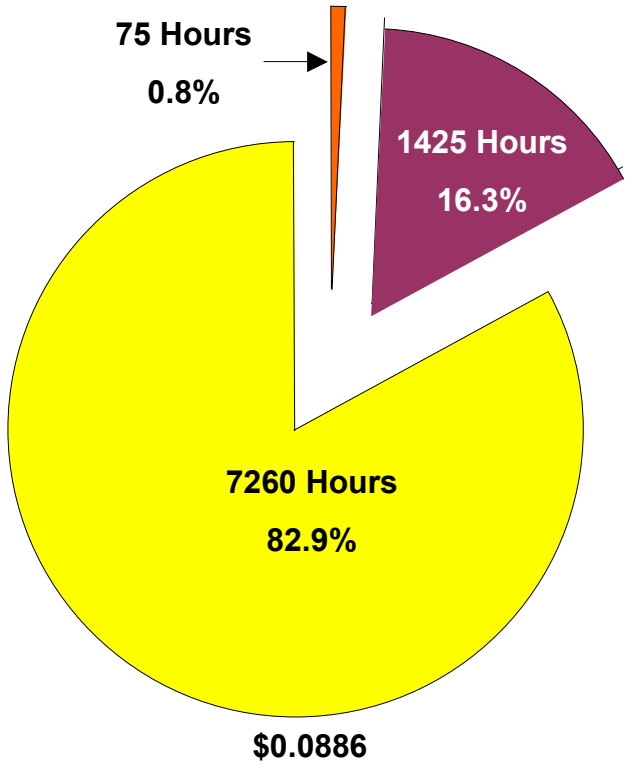
SPP Background / Design

SPP Residential Rate Forms

Time-of-Use (TOU)
Hours per Year (%)



Critical Peak Pricing (CPP)
Hours per Year (%)



SPP Background / Design

Small and Medium Commercial Rate Forms

SPP TOU & CPP High Options

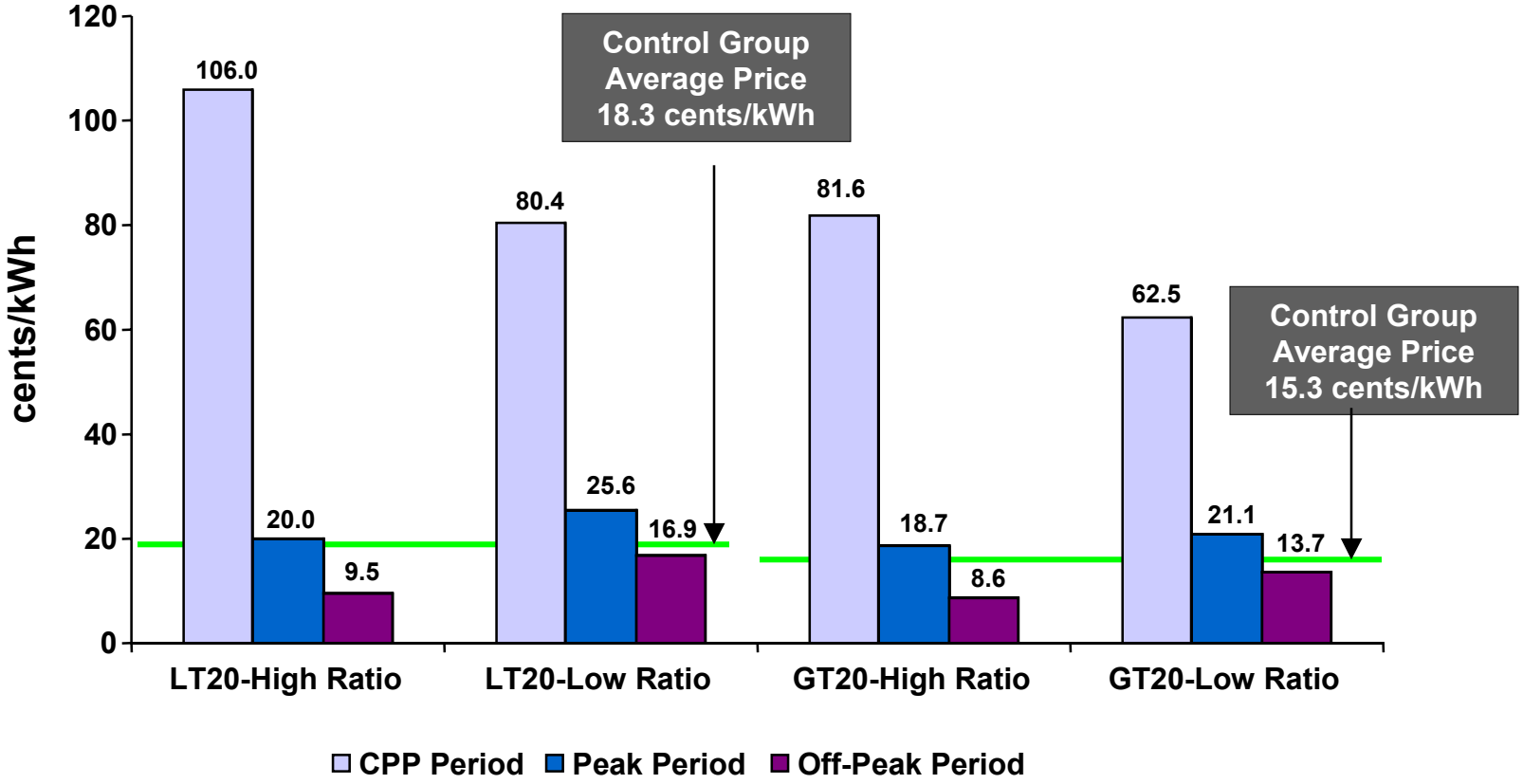
Average Prices For C&I Customers During Treatment Period ($/kWh)						
Customer Segment	Rate Treatment	Price Ratio	Non-CPP Day		CPP-Day	
			Peak Period	Off-Peak Period	Peak Period	Off-Peak Period
Less Than 20 kW	Avg. Inverted Tier	n/a	Average Tier 0.186		Average Tier 0.186	
	TOU	**High**	**0.272**	**0.094**	**0.272**	**0.094**
		Low	0.325	0.159	0.325	0.159
	CPP-V	**High**	**0.200**	**0.095**	**1.070**	**0.091**
		Low	0.256	0.169	0.813	0.166
Greater Than 20 kW	Avg. Inverted Tier	n/a	Average Tier 0.154		Average Tier 0.154	
	TOU	**High**	**0.224**	**0.100**	**0.224**	**0.100**
		Low	0.254	0.144	0.254	0.144
	CPP-V	**High**	**0.187**	**0.086**	**0.820**	**0.084**
		Low	0.212	0.137	0.629	0.136

Source: SPP Summer 2003 Update Analysis, Charles River Associates, June 9, 2004.

SPP Background / Design

Small and Medium Commercial CPP-V Rate

(Example)



Source: SPP Summer 2003 Update Analysis, Charles River Associates, June 9, 2004.

Price Elasticity's – Load Impacts

Conclusions

- Residential CPP-F rates reduced peak period (2PM to 7PM) demand on Critical peak pricing days by more than 14%.
- Residential peak period reductions were almost identical in the summers of 2003 and 2004.
- Average Residential peak period impacts held steady throughout multiple day peak pricing events usually associated with heat storms.
- Small commercial customers (<20kW) reduced peak period demand on CPP days between 6% to 9%.
- Medium commercial customers (>20kW but < 200kW) reduce peak period demand on CPP days between 8% to 10%.
- Observed peak load Impacts persist across multiple consecutive CPP days and across two years of the experiment.
- Residential customers are more price responsive than Commercial customers but absolute load impacts may be greater for small Commercial customers because of higher AC loads.

Source: California's Statewide Pricing Pilot: Update of Results, Charles River Associates, January 7, 2005.

Price Elasticity's

	Residential		Commercial			
	CPP-F	Info Only	Track A <20kW	Track A >20kW	Track C <20kW	Track C >20kW
Daily Price Elasticity	- 0.041	NS	NS	NS	NS	NS
Elasticity of Substitution	- 0.086	NS	- 0.045	- 0.069	- 0.055	- 0.063

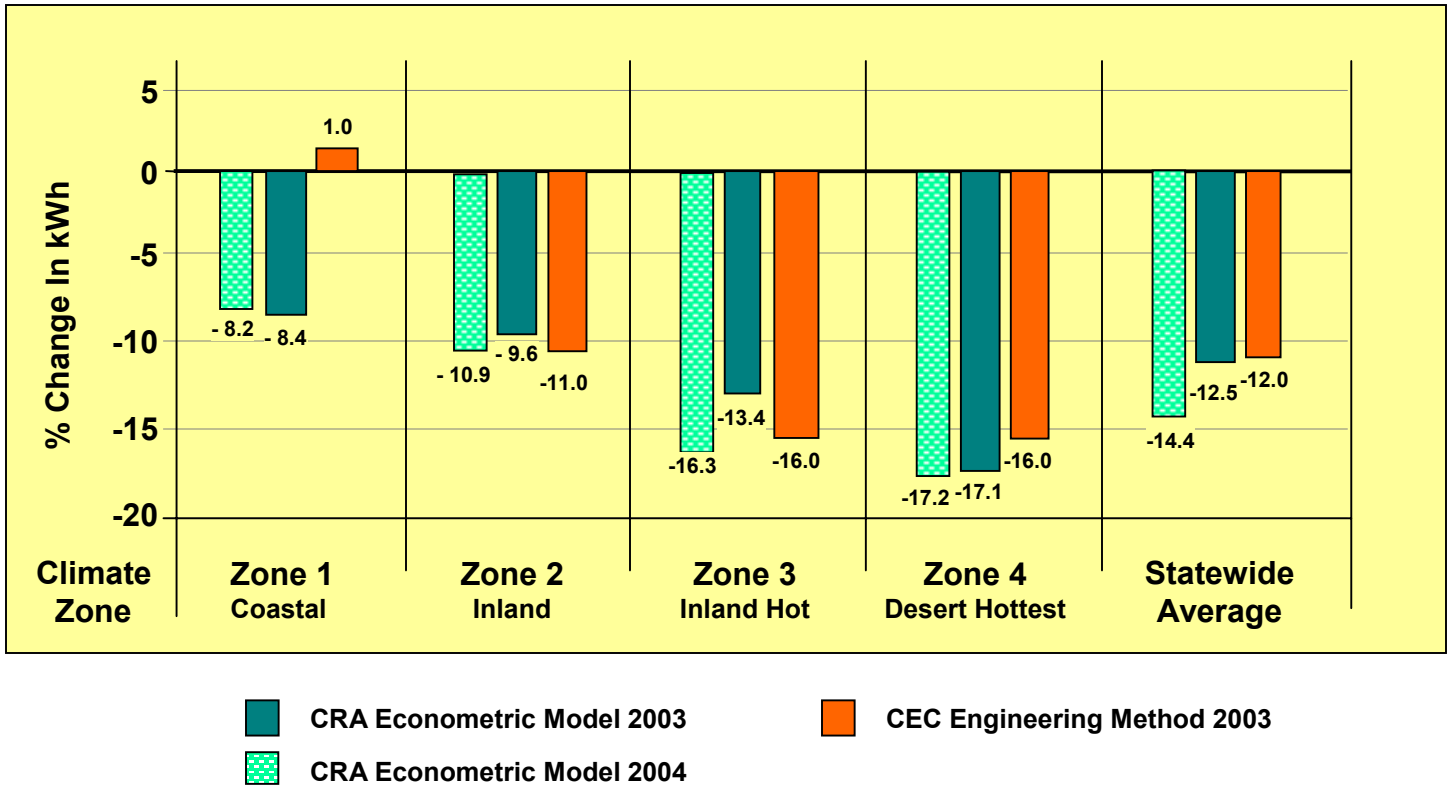
NS – results were not statistically significant
Track A – More representative of population than Track C. 33% of <20kW and 60% of >20kW chose Smart Thermostat.
Track C – Participants from SCE Thermostat Pilot.
Rate Treatments: Residential on CPP-F. Commercial on CPP-V with day-of notification.
Elasticity of Substitution= % change in use in peak period/ % change in use for off peak period
Daily Price Elasticity = measure of reduction in total energy usage (conservation)

Source: California's Statewide Pricing Pilot: Update of Results, Charles River Associates, January 7, 2005.

Price Elasticity's – Load Impacts

Percent Change In Peak Period Energy Use

CPP-F Customers on Critical Peak Days By Weather Zone

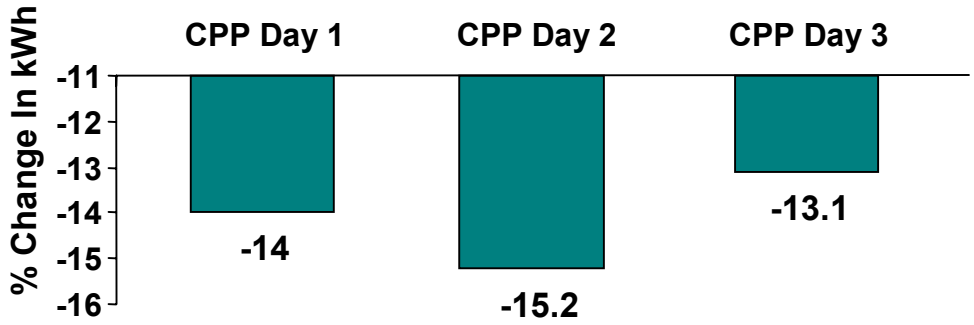


Source:
Statewide Pricing Pilot, Summer 2003 Impact Analysis, Charles River Associates, August 9, 2004, Table 5-4
California's Statewide Pricing Pilot: Update of Results, Charles River Associates, January 7, 2005, Slide 4.

Price Elasticity's – Load Impacts

Percent Change in Residential Energy Use during Peak Periods on Consecutive Event Days

(Average CPP-F Prices and Average 2004 CPP-day weather)



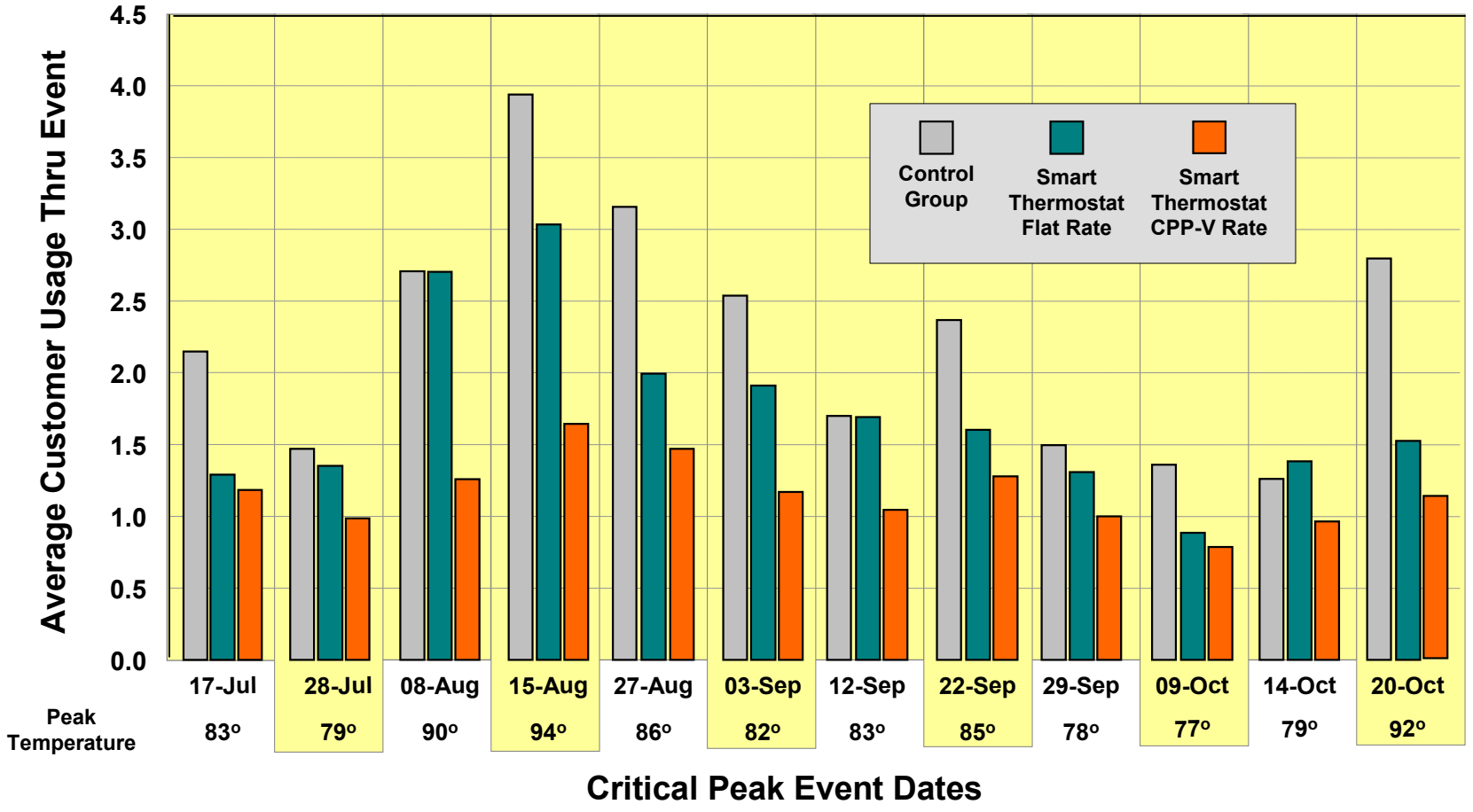
The impact on each CPP day type is significantly different from the non-CPP day impact, but the three day-type impacts are not statistically different from each other based on the Chi-square test.

Source: California's Statewide Pricing Pilot: Update of Results, Charles River Associates, January 7, 2005, Slide 9.

Price Elasticity's – Load Impacts

Residential Critical Peak Impacts

Control Group, AB970 Smart Thermostat and CPP-V Treatments

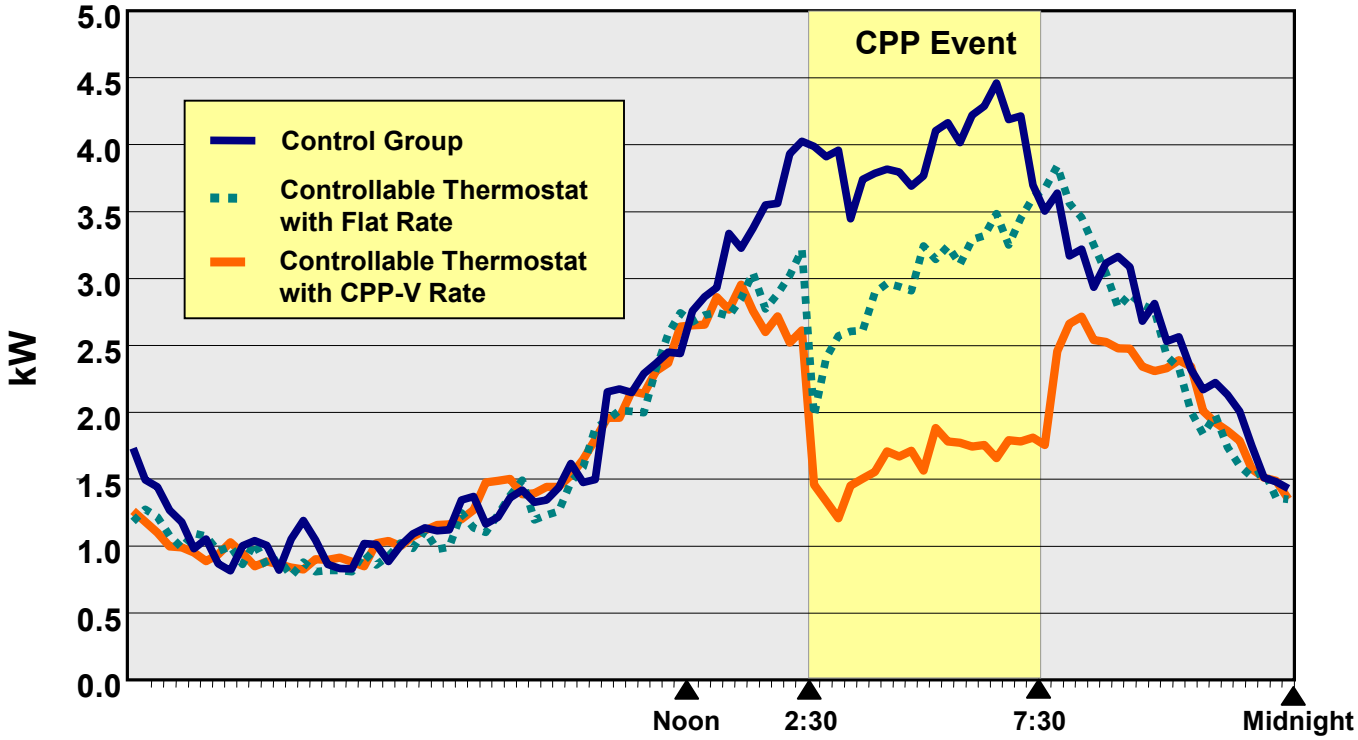


Source: Response of Residential Customers to Critical Peak Pricing and Time-of-Use Rates during the Summer of 2003, September 13, 2004, CEC Report.

Price Elasticity's – Load Impacts

Residential Response
Control vs. Flat Incentive vs. CPP-V Rate

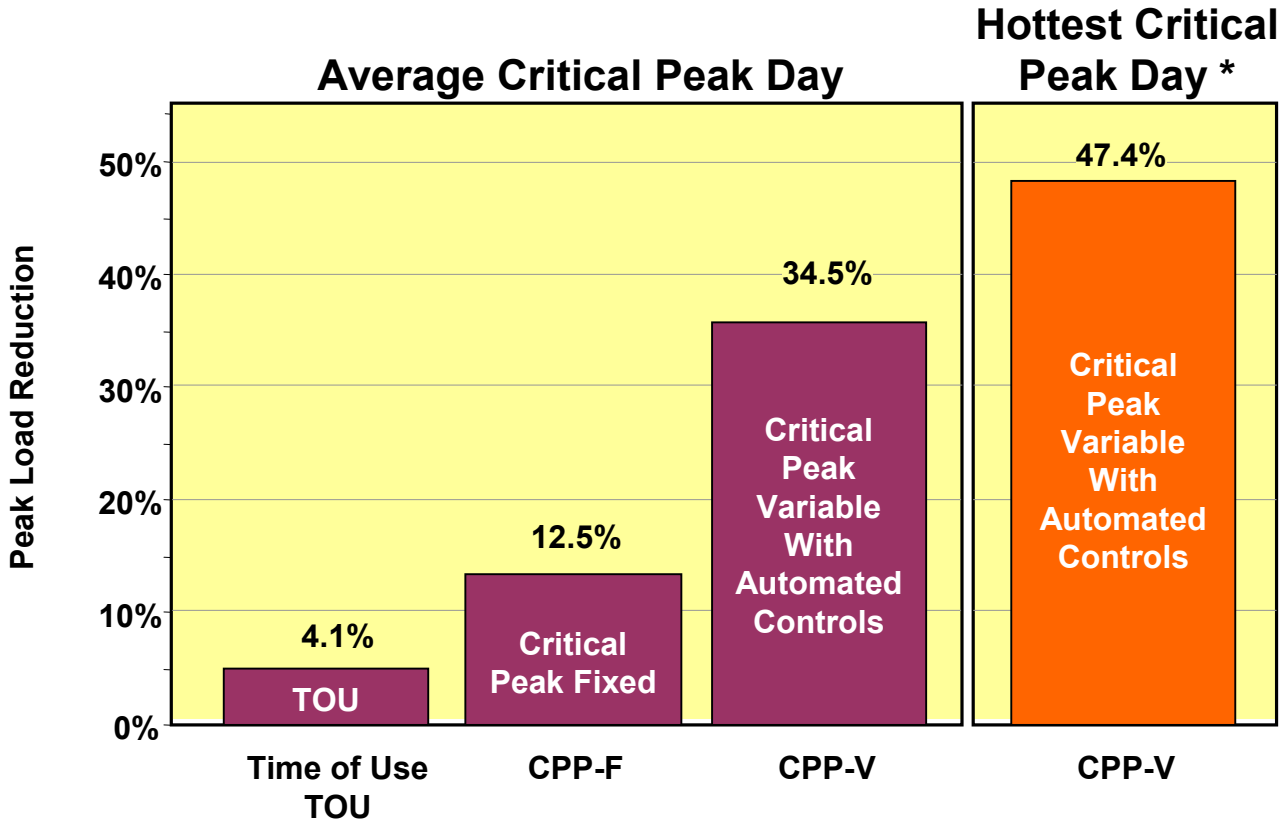
(Hot Day, August 15, 2003, Average Peak Temperature 88.5^0)



Source: Response of Residential Customers to Critical Peak Pricing and Time-of-Use Rates during the Summer of 2003, September 13, 2004, CEC Report.

Price Elasticity's – Load Impacts

Residential Critical Peak Impacts 2003
By Rate Treatment



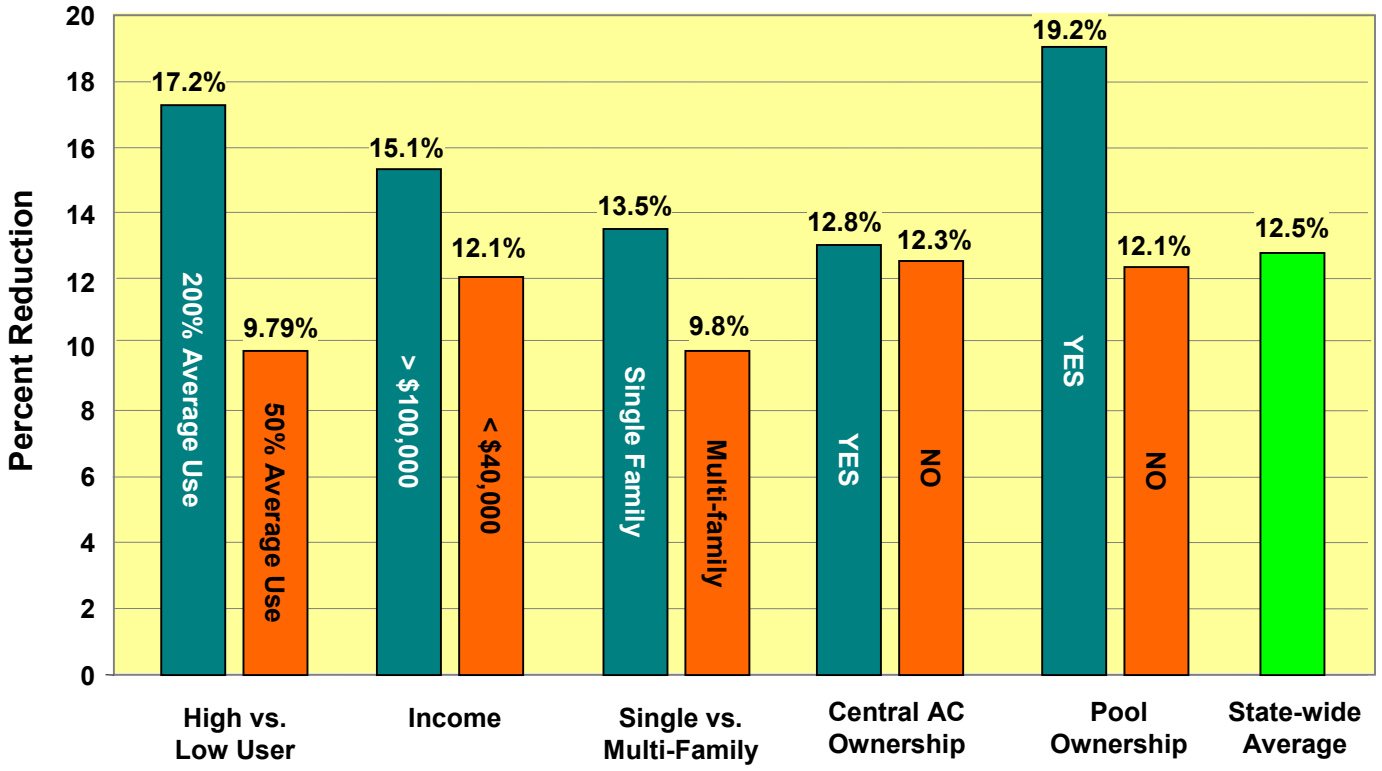
Source: Statewide Pricing Pilot Summer 2003 Impact Analysis, Charles River Associates, Table 1-3, 1-4, August 9, 2004.

* Hottest day impacts discussed on page 105.

Price Elasticity's – Load Impacts

Residential 2003 CPP Response by Attribute

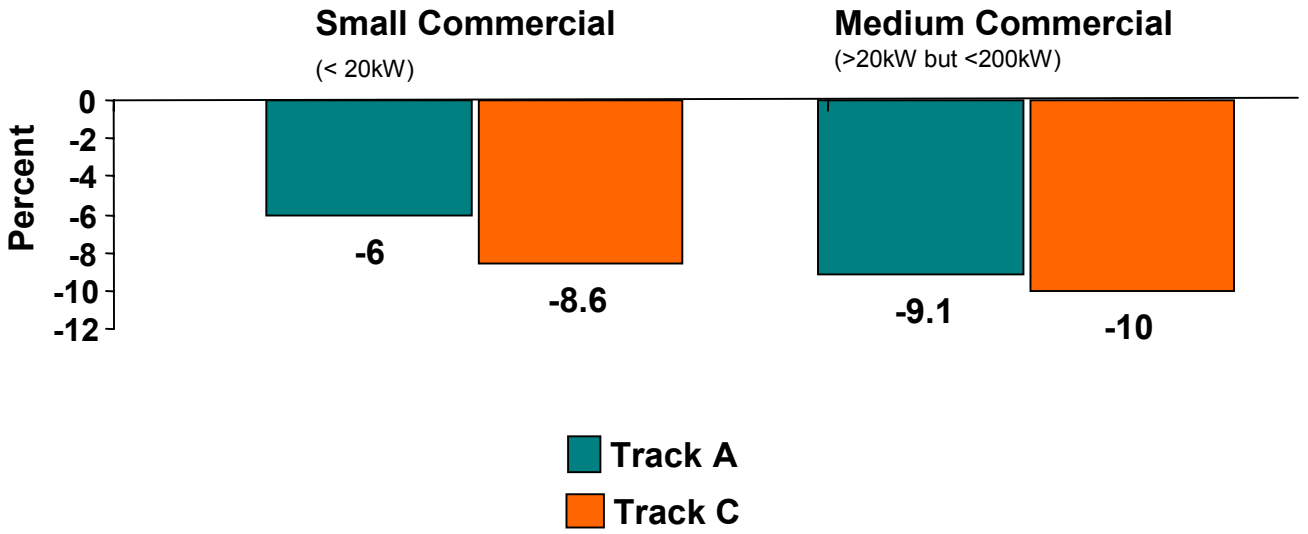
Percent Reduction in Peak Period Usage



Source: Statewide Pricing Pilot, Summer 2003 Impact Analysis, CRA, August 9, 2004, Table 5-9, p.90

Price Elasticity's – Load Impacts

Commercial Customer CPP Day
Percent Reduction in Peak Period Energy Use 2004



Source: California's Statewide Pricing Pilot: Update of Results, Charles River Associates, January 7, 2005, Slide 13. Track A= General population with choice of smart thermostat; Track C=load reductions for customer already participating in smart thermostat program

Customer Bill Impacts

Customer Bill Impacts

Residential Participant Bill Impacts

(based on analysis of customer usage with new and old tariffs)

		2003			2004			
		CPPV	CPPF-A	TOU	CPPV	CPPF-A	CPPF-B	TOU
Customers With Bill Savings	Participants (%)	71.1%	73.7%	70.0%	71.9%	74.1%	93.7%	65.7%
	Average Monthly Savings (%)	5.1%	5.5%	4.5%	5.8%	6.2%	8.3%	4.0%
	Average Monthly Savings ($)	$6.81	$3.89	$3.25	$8.46	$4.89	$4.12	$3.15
Customers With Bill Increases	Participants (%)	28.9%	26.3%	30.0%	28.1%	25.9%	6.3%	34.3%
	Average Monthly Increase (%)	4.0%	6.2%	3.0%	2.9%	6.0%	2.9%	1.6%
	Average Monthly Increase ($)	$5.03	$4.93	$3.32	$5.32	$5.62	$0.68	$0.47

CPPF-A Statewide Representative Sample

CPPF-B Residential Low Income, SF Hunters Point

Source: Statewide Pricing Pilot, Shadow Bill Results, WG3 report, June 9, 2004 and Joint Utility Bill Analysis, January 12, 2004.

Customer Bill Impacts

Commercial Participant Bill Impacts

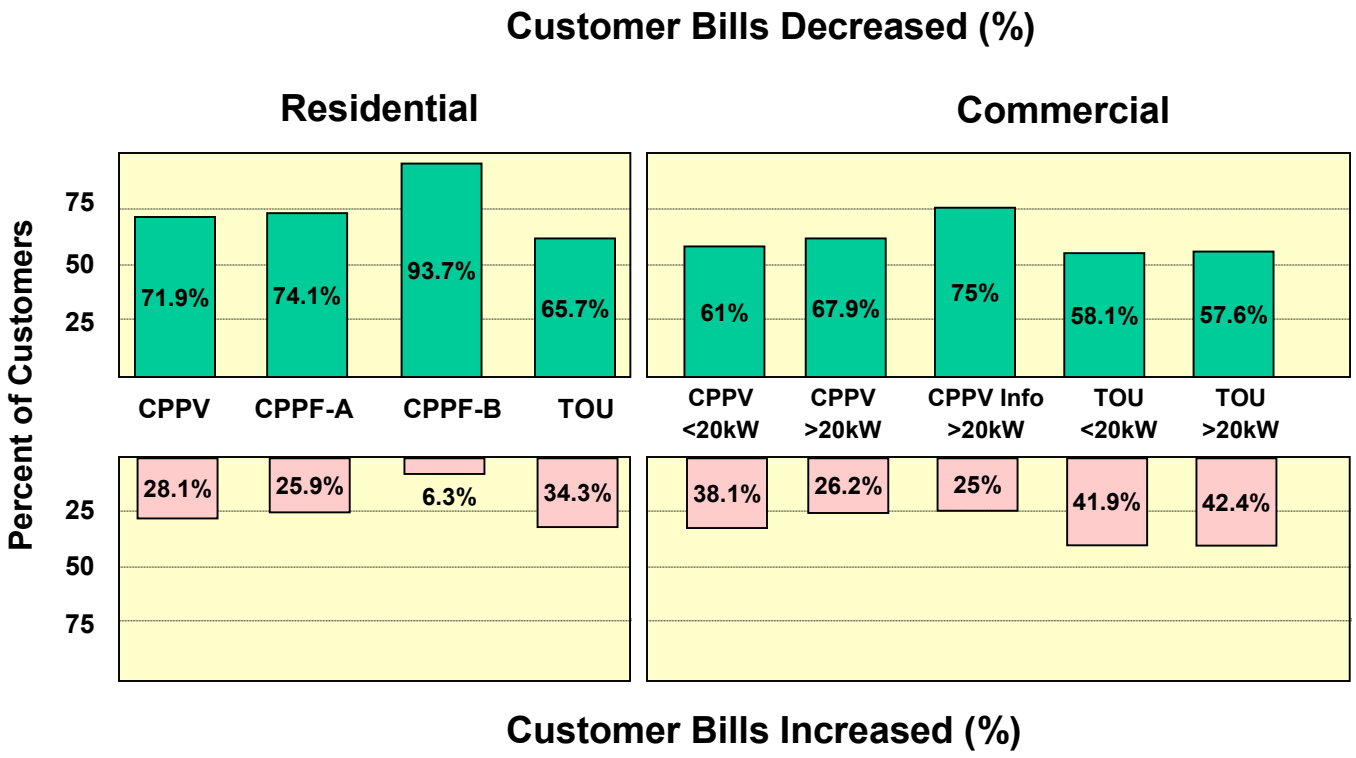
(based on analysis of customer usage with new and old tariffs)

		2003		2004				
		CPPV	TOU	CPPV <20kW	CPPV >20kW	CPPV Info >20 kW	TOU <20 kW	TOU >20kW
Customers With Bill Savings	Participants (%)	80.3%	58.2%	61.0%	67.9%	75.0%	58.1%	57.6%
	Average Monthly Savings (%)	12.2%	9.6%	12.1%	11.4%	15.5%	12.1%	8.7%
	Average Monthly Savings ($)	$155.17	$90.65	$46.83	$184.59	$32.75	$26.45	$176.39
Customers With Bill Increases	Participants (%)	19.7%	41.8%	38.1%	26.2%	25.0%	41.9%	42.4%
	Average Monthly Increase (%)	5.0%	10.0%	7.1%	6.5%	3.3%	8.5%	5.6%
	Average Monthly Increase ($)	$22.89	$62.52	$18.24	$75.12	$23.48	$24.02	$92.99

Source: Statewide Pricing Pilot, Shadow Bill Results, WG3 report, June 9, 2004 and Joint Utility Bill Analysis, January 12, 2004.

Customer Bill Impacts

Participant Bill Impacts - 2004



Customer Acceptance

Conclusions

- Residential and commercial participants show strong support for critical peak pricing (CPP), time-of-use (TOU) or information only programs.
- Support for alternatives to the inverted tier rates has increased in the second summer of 2004 from results in 2003.
- Participants have a good understanding of how the pilot rates work but misunderstand some of the specifics.
- Participants associate dynamic rates with opportunities to save money and implement conservation and report making behavioral changes in how they use energy as a result.
- Residential and commercial participants stated they use energy management strategies that reduce electricity use for more than just the key high use time periods, resulting in long term energy efficiency/ conservation.
- The vast majority of residential and commercial participants respond to critical peak periods by reducing or shifting for the entire duration of the event. Very few choose not to respond to critical peak events.
- Over 70% of pilot participants have initially chosen to remain on their CPP rate even if they have to pay an additional monthly meter charge.

Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

Customer Acceptance

Statewide Market Research

Customer Understanding of Electric Rates

1. **Customers don't understand how electricity use is measured.**
2. **Customers don't understand how electricity is priced.**
3. **There is an uncertain and inaccurate link between how customers use energy, what they pay and what they get in service value.**
4. **Bill accuracy – customer's must trust their supplier. No other choice.**

Source: Residential Customer Understanding of Electricity Usage and Billing, Momentum Market Intelligence, WG3 Report, January 29, 2004. pviii-ix.

Customer Acceptance

Statewide Market Research
Customer Understanding of Dynamic Rates

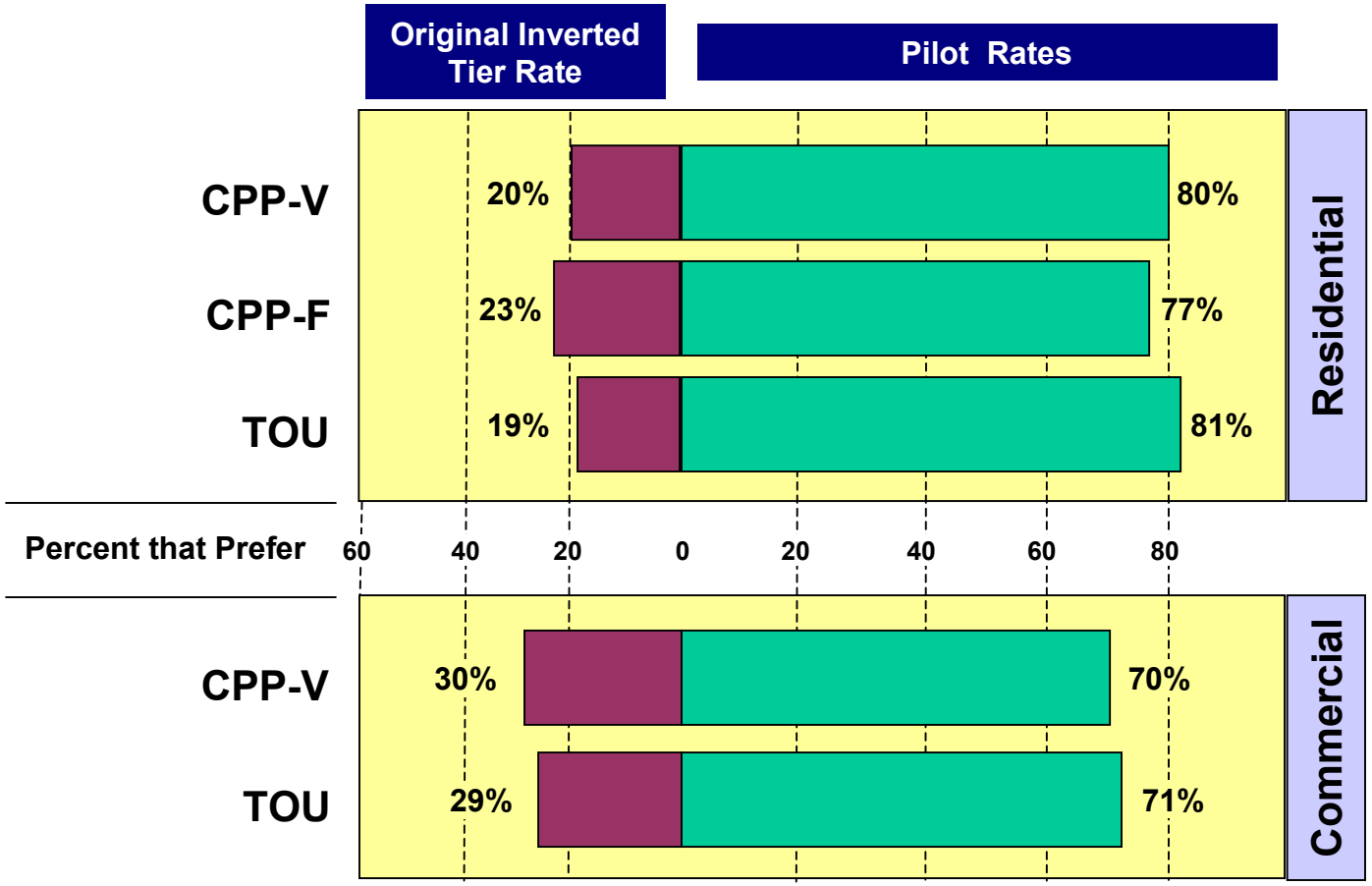
1. **"..most respondents could easily understand the logic of time-differentiated electricity prices,.."**

2. **"..customers understood time-differentiated pricing (at least the on-peak / off-peak variety) more easily than they understood the notion of inclining block [tiered] or declining block pricing."**

Source: Residential Customer Understanding of Electricity Usage and Billing, Momentum Market Intelligence, WG3 Report, January 29, 2004, p16.

Customer Acceptance

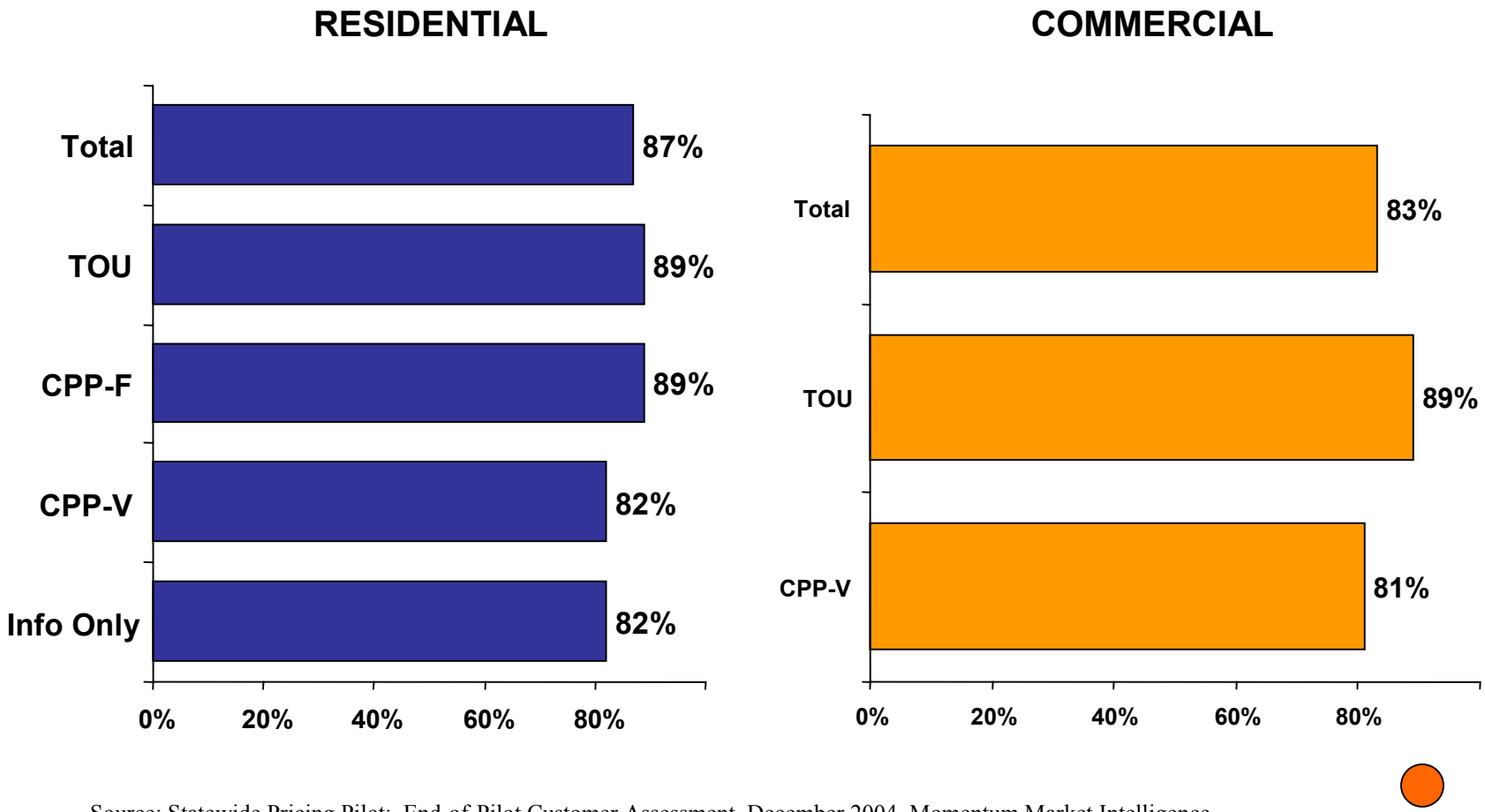
SPP Participant Rate Preference - 2003



Source: SPP End-of-Summer Survey Report, Momentum Market Intelligence, WG3 Report, January 21, 2004, p23-24.

Customer Acceptance

Participants Stating the Pilot Rates are Fair - 2004



Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

Customer Acceptance

Residential participants Interested in continuing on a dynamic rate even without a supplementary participation incentive - 2004

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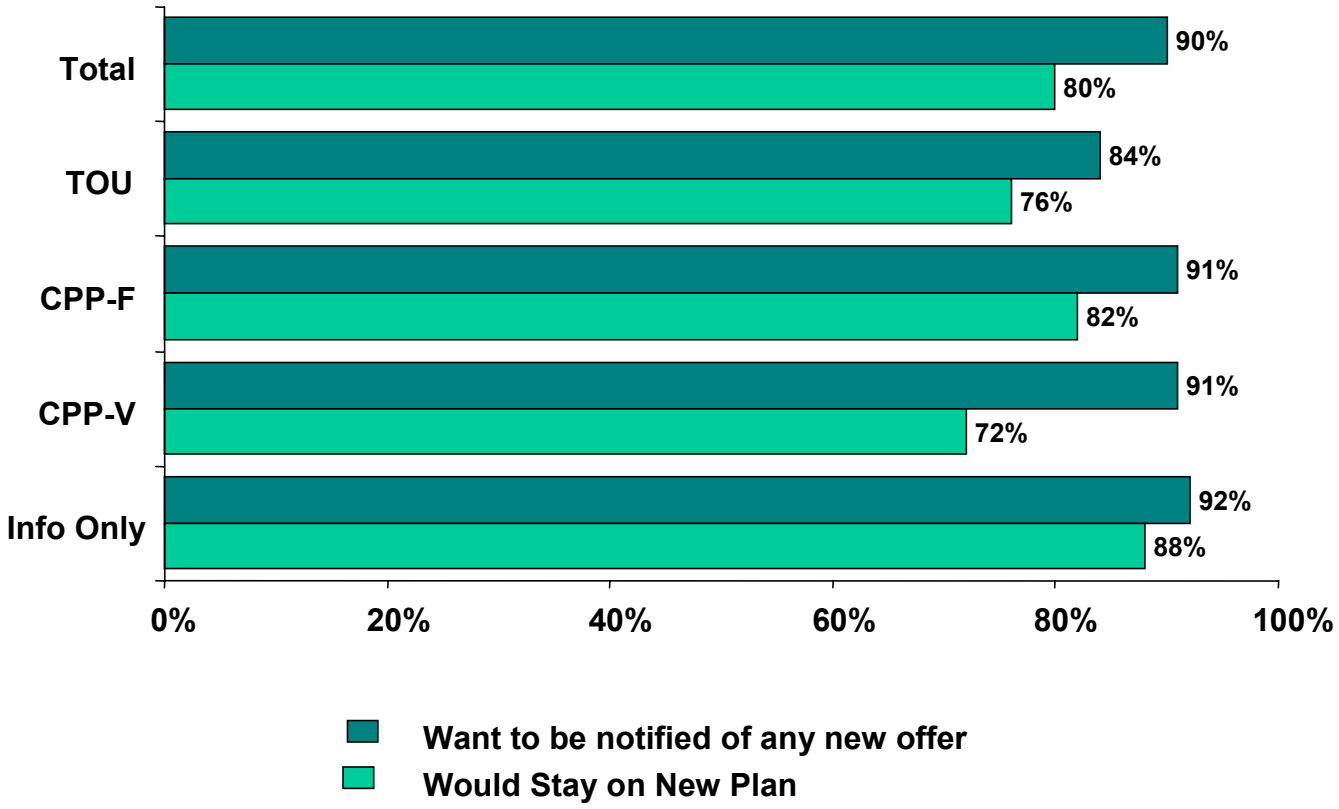
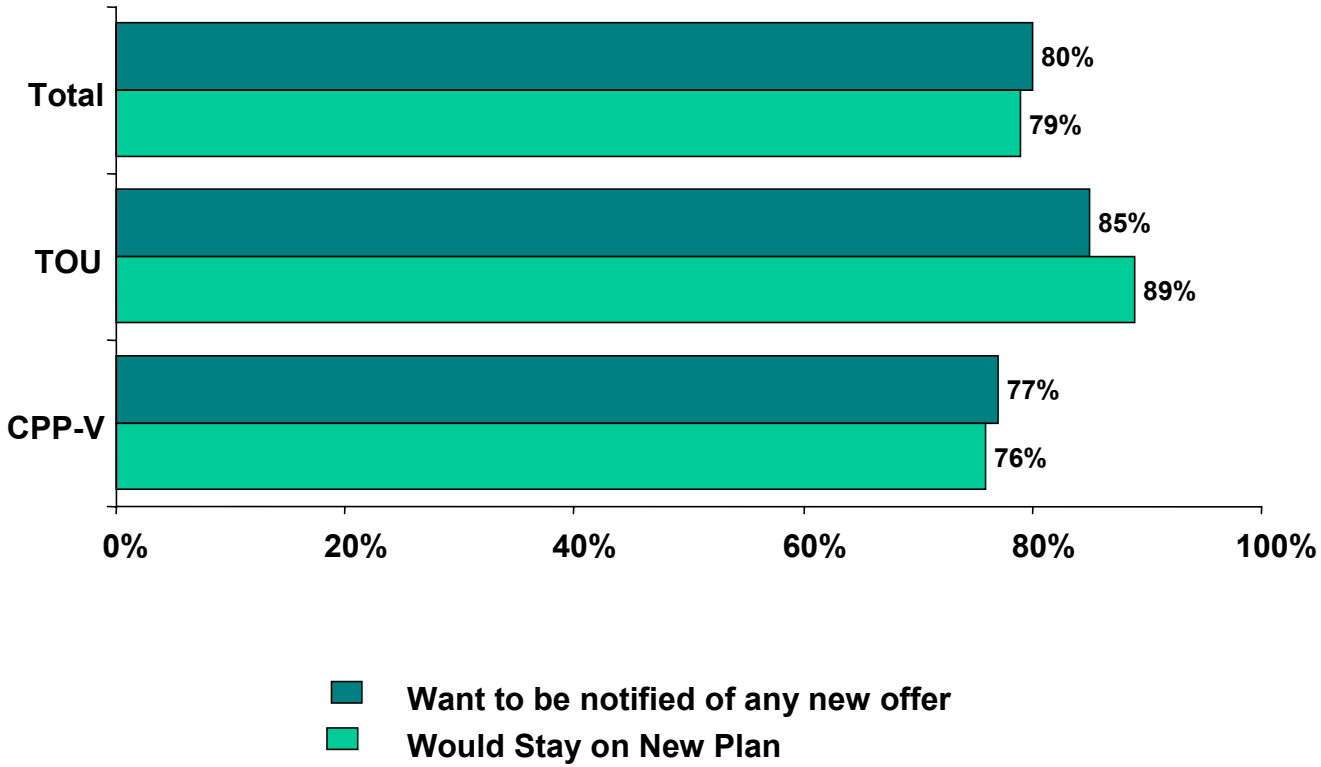


Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

Customer Acceptance

Commercial participants Interested in continuing on a dynamic rate even without a supplementary participation incentive - 2004

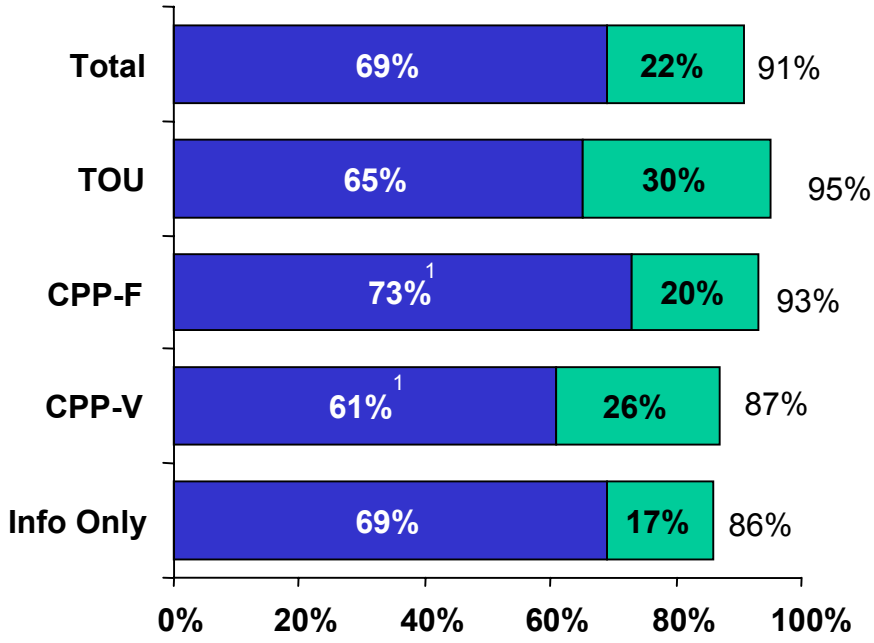


Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

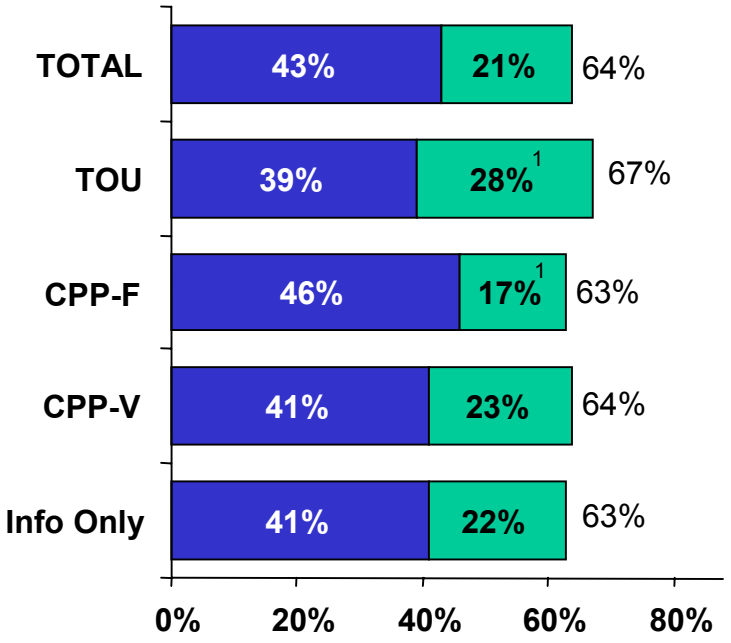
Customer Acceptance

Residential participants express a strong interest in having dynamic rates offered to all customers.

Should dynamic rates be offered to all customers?



Should all customers be placed on a dynamic rate and given an option to switch to another rate?



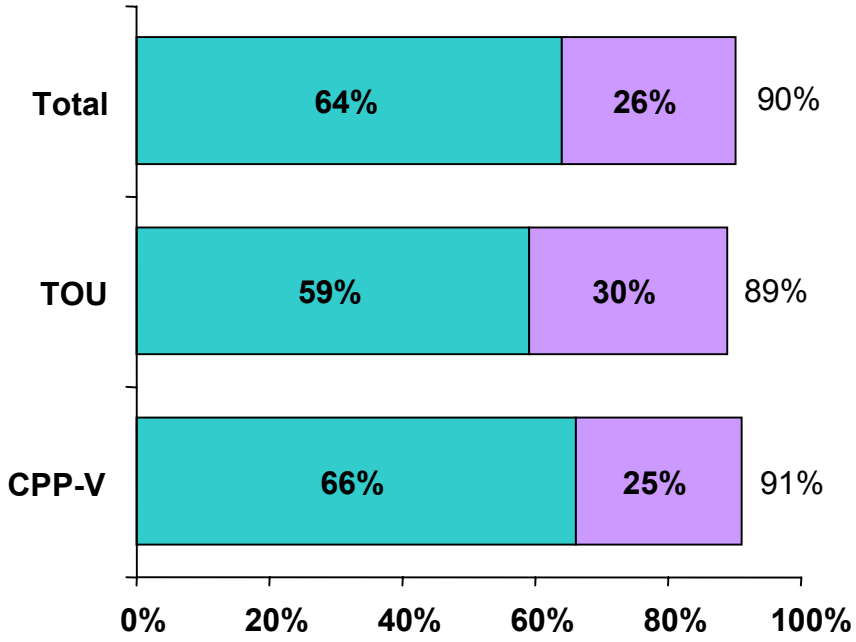
Definitely
Probably

Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

Customer Acceptance

Commercial participants express a strong interest in having dynamic rates offered to all customers.

Should dynamic rates be offered to all customers?



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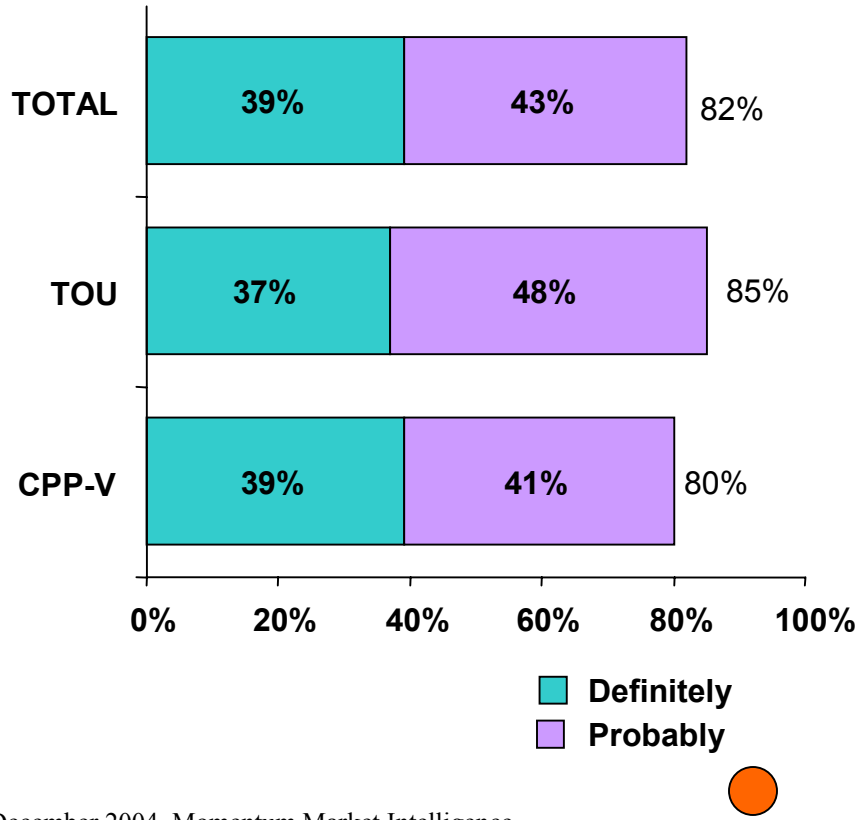


Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

Automated Demand Response System (ADRS)

ADRS

Conclusions

- On summer non-event days ADRS equipped homes
  - used 34% less on-peak electricity (3.7 kWh per home) than comparable homes on inverted tier rates (A03 control)
  - used 18% less on peak electricity (1.6 kWh per home) than comparable homes on CPP-F rates (A07 control).
- Over the twelve Super Peak days, ADRS equipped homes
  - consumed 50% less Super Peak energy per day (7.4 kWh per home) than comparable homes on standard rates (A03 control)
  - consumed 26% less super peak electricity per day (2.5 kWh per home) than comparable homes on CPP-F rates (A07 control)
- ADRS equipped homes total daily usage was 5% lower than that of the control group (A03 control) on non-event weekdays and 12% lower on Super Peak days.
- ADRS equipped homes total daily usage was 2% lower on both Super Peak and non-event weekdays than comparable homes on CPP-F rates (A07 control).

Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Research Objectives

Technology Demo

- Assessment of technology capabilities / ease of use
- Logistics of technology deployment

Program Evaluation

- Energy consumption analysis (pre- and post-pilot)
- Pilot technology effectiveness
- Economic analysis of pilot and large-scale rollout
- Cost effectiveness analysis from the societal, utility and customer points of view

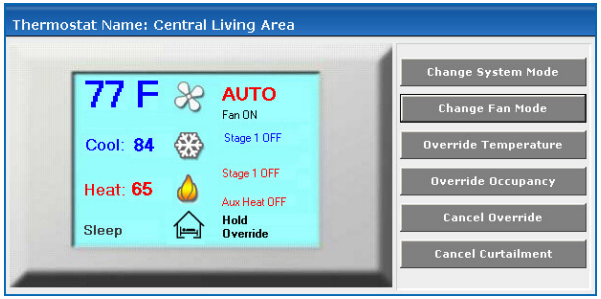
Customer Satisfaction

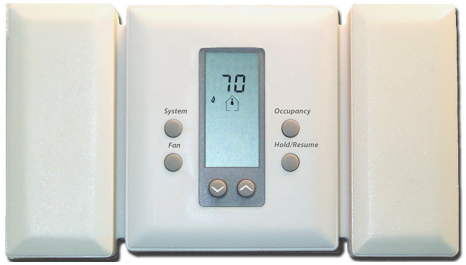
- Motivation to join pilot
- Relative importance of ADRS features
- Overall customer experience with the technology
- Customer satisfaction

Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Technology Components

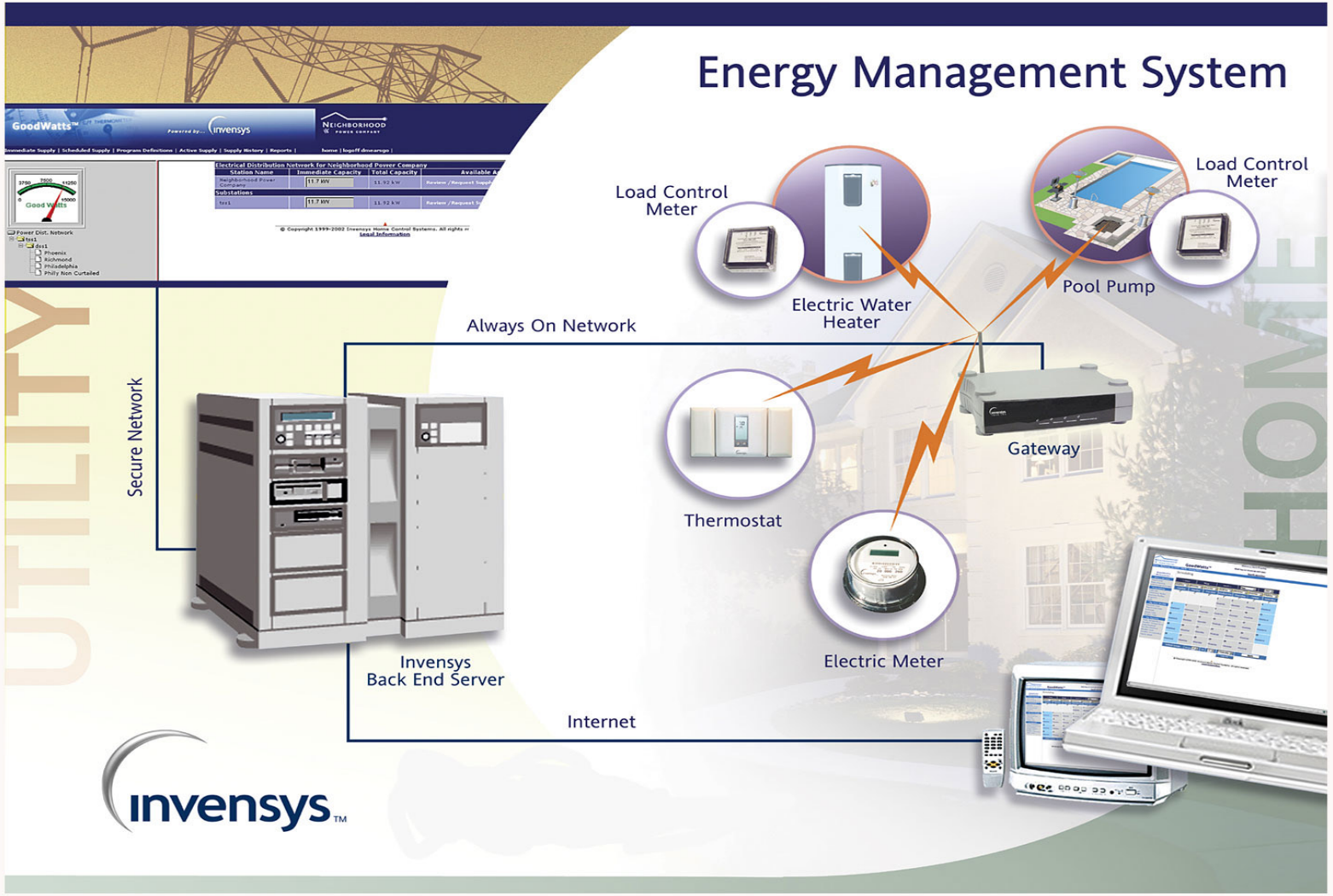




Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Technology Components



Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Technology

ADRS Customers were provided with a full compliment of automation technology and real-time access to energy and price information

- The ADRS enabling technology includes:
  - Two-way communicating interval whole house meter
  - Wireless internet gateway and cable modem
  - Smart thermostat(s)
  - Load control and monitoring device (LCM)
  - Web-enabled user interface and data management software
- Technology programmed to automatically respond to electricity prices
- Via the Internet, pilot participants can
  - View real time interval demand and trends in historical consumption
  - Set climate control and pool runtime preferences
  - Program desired response to increase in electricity price
    - Change in thermostat temperature set point
    - Reschedule operation of LCM controlled appliance
- ADRS continuously displays current electricity price on the thermostat and the Web

Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Sample Design

ADRS and control group customers were segmented into Low / High Consumption strata for analysis purposes

Characteristics of Treatment and Control Group Populations and Distribution of Homes, September 2004

	A03 – Control Group			A07 – Control Group			ADRS Participants		
Rate	Standard tiered-block pricing			CPP-F			CPP-F		
Technology	Not Provided			Not Provided			Invensys		
Price Response	Monthly billing			Manual Shift and Save			Automated Shift & Save		
Pools Penetration	23.1%			23.7%			25.6%		
Participants	PG&E	SDG&E	SCE	PG&E	SDG&E	SCE	PG&E	SDG&E	SCE
Low Stratum	2	3	14	10	1	16	22	15	4
High Stratum	12	3	22	21	5	38	49	7	65
Total	14	6	36	31	6	54	71	22	69

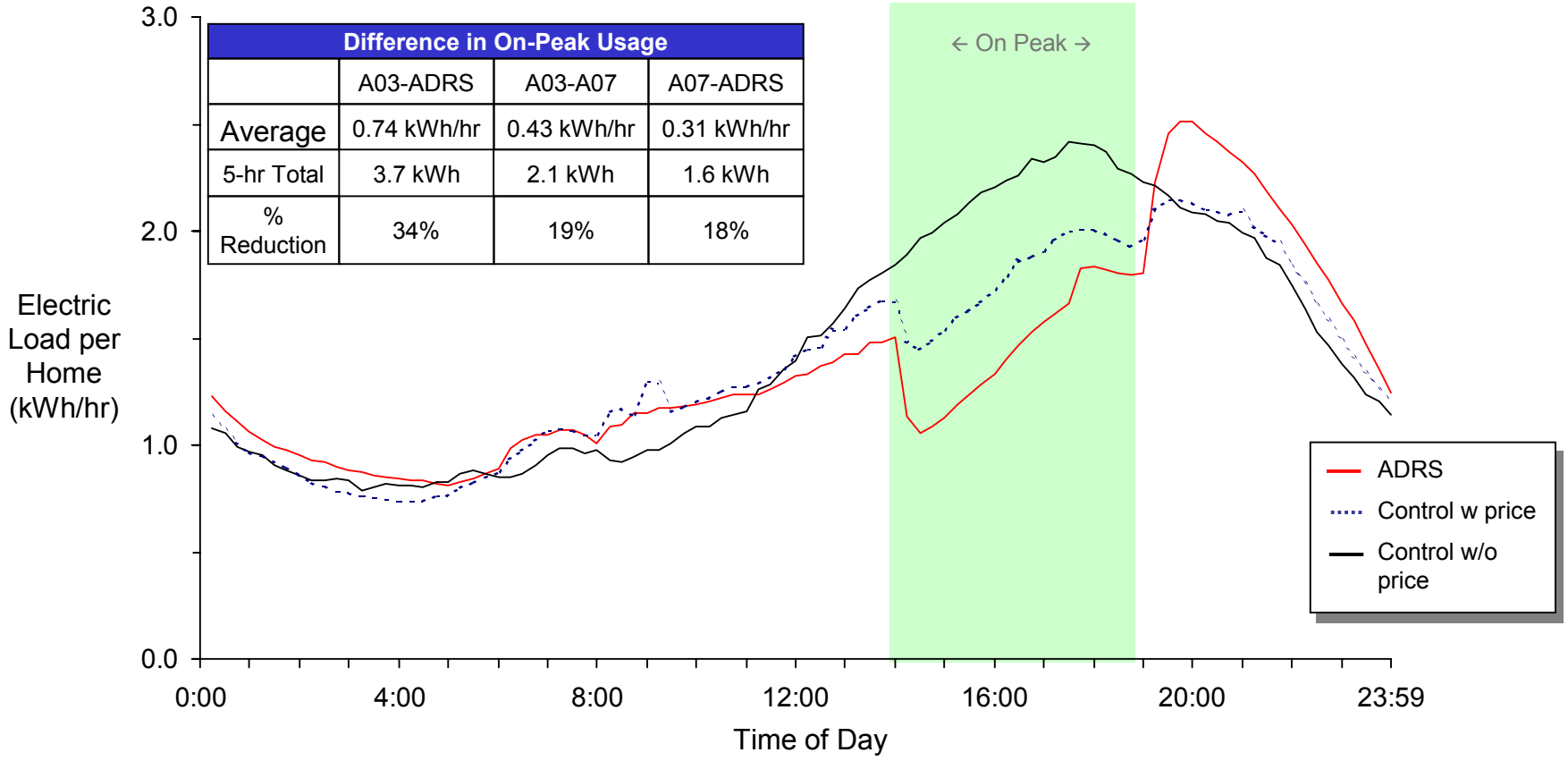
Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Load Impacts

Average Non-Event Weekday Load Profile
July through September

Difference in On-Peak Usage			
	A03-ADRS	A03-A07	A07-ADRS
Average	0.74 kWh/hr	0.43 kWh/hr	0.31 kWh/hr
5-hr Total	3.7 kWh	2.1 kWh	1.6 kWh
% Reduction	34%	19%	18%



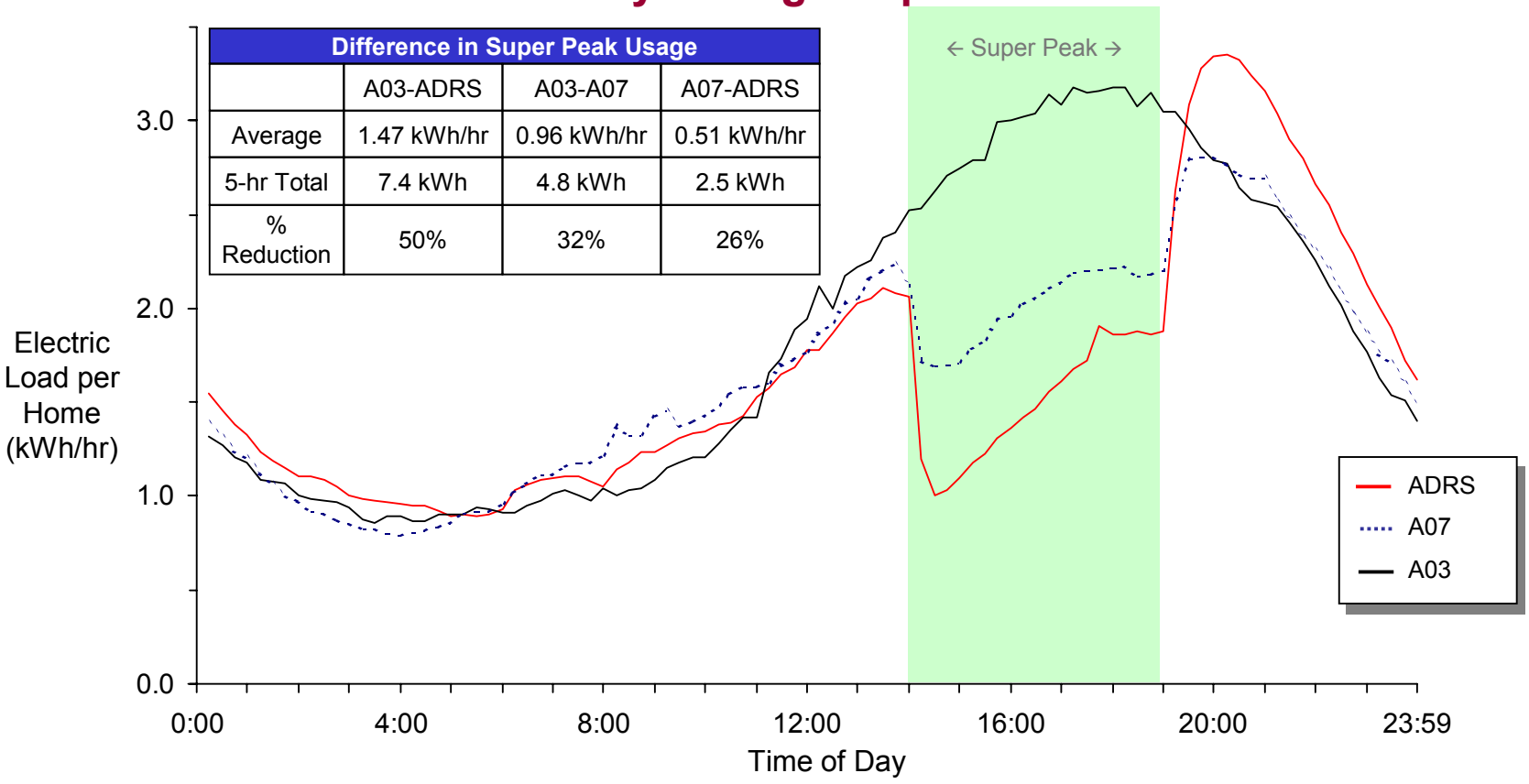
Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Load Impacts

Average Critical Peak Weekday Load Profile
July through September

Difference in Super Peak Usage			
	A03-ADRS	A03-A07	A07-ADRS
Average	1.47 kWh/hr	0.96 kWh/hr	0.51 kWh/hr
5-hr Total	7.4 kWh	4.8 kWh	2.5 kWh
% Reduction	50%	32%	26%



Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Bill Impacts

88% of the ADRS customers realized bill savings during the summer of 2004 (not annualized)

	SCE	PG&E	SDG&E	Total
Net Savers	**67 (96%)**	**57 (79%)**	**20 (95%)**	**144 (88%)**
Net Losers	**3 (4%)**	**15 (21%)**	**1 (5%)**	**1 (5%)**
Savings Amount				
Max	$432.22	$53.90	NA	
Median	$100.53	$48.94	NA	
Average	$108.31	$160.28	NA	
Loss Amount				
Max	($17.69)	($45.05)	NA	
Median	($9.68)	($24.20)	NA	
Average	($40.74)	($20.86)	NA	

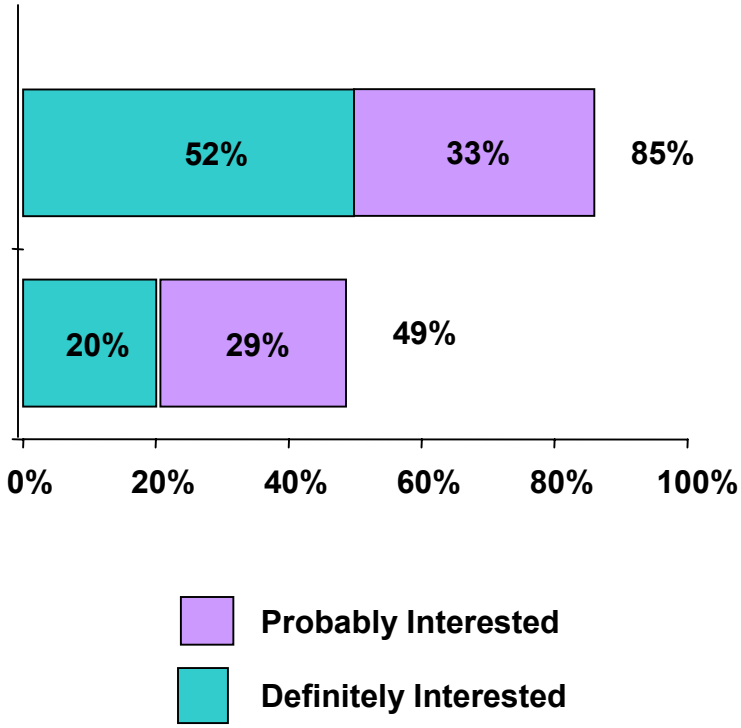
Source: ADRS Load Impact Presentation, December 18, 2004.

ADRS

Customer Acceptance

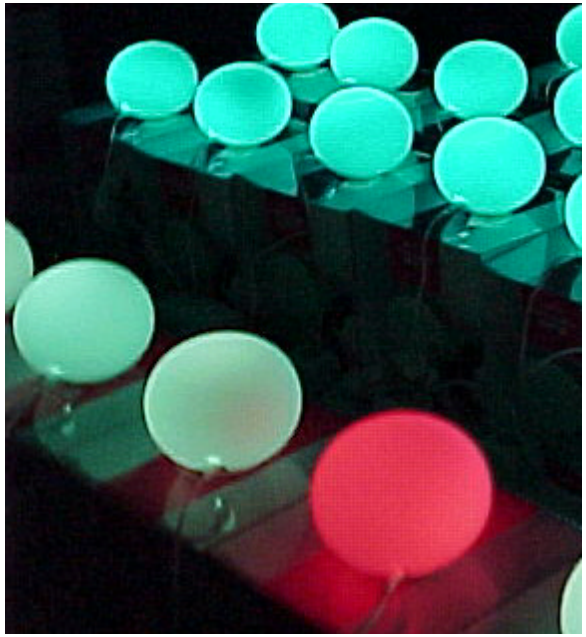
Would continue with the program if it remained free.

Would continue with the program if there were an additional $5 monthly charge..



Source: ADRS Customer Insight: Research Results, Boice Dunham Group, A Report to Working Group III, January 7, 2005.

Information Display Pilot



To view this email as a web page, go here.

Smart Shift & Save Plan

SDGE — A Sempra Energy utility

Your Account Number: 555121

Dear SUSAN,

The ***Smart Shift & Save Plan*** allows electricity prices to adjust based on demand shifts. Here is some important information about your usage and how you can make a difference.

Your Report Card

This month you used **12% of your energy On-peak.** That's **6% less** than the average customer.

- Way to go! Keeping your peak usage low is a great way to save money.

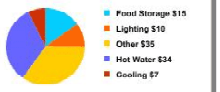
On the **Critical Peak days**, your peak energy use increased from an average of **4 kWh per day to 6 kWh**. This brought you an excess charge of $1!

- Focus on the Super Peak days to maximize your savings on the Smart Shift & Save Plan.

We can create a more secure energy future for California if customers like you reduce energy use by **20% on Critical Peak days**. Last month your energy use **increased by 50%**.

- Using the tips and energy savings tools can help you reach your goals.

Peak Period Electricity Cost



The chart above shows your energy usage during the peak hours last month. The estimated costs above were calculated based on data from your advanced meter and survey information you provided.

Visit our Super Peak homepage to maximize your savings and learn more.

Quick Tips

Dry Clothes off-peak...Save $12
Your dryer is one of the biggest energy users of your appliances, so avoid running it entirely during peak hours. The monthly savings above is an estimate for drying your clothes during off peak instead of peak hours.

Flip the switch...Save $5
Turn off unnecessary lights - especially the high-wattage floodlights typically recessed in the ceiling. We've estimated the monthly savings for turning off 50% of the lights in an average home during peak hours.

Put off those Dishes...Save $1
Even though your water heater uses gas, your dishwasher still uses energy for its motor and dryer. The savings above is an estimate of how much extra you spend each month if you run your dishwasher during peak hours.

All of these steps can save you energy & money while helping the community and environment on a larger scale. Find even ***more information*** about your usage, how to save, and the Smart Shift & Save program on our super peak homepage at www.energyprism.com.

This email was sent to: **ssmith@hotmail.com**

This email was sent by: **Unsubscribe Smart Shift & Save Plan c/o Nexus**
16 Laurel Ave, Ste. 100 Wellesley, MA, 02481 United States

Go here to leave this mailing list or modify your email profile.
We respect your right to privacy. View our policy.

Information Display

Objective

Assess the load impact of providing enhanced information treatments to customers, over and above the impact of enabling technology and the rate/price

Information Treatments

- Glowing Orbs for Notification
- Monthly Email Newsletter for Feedback on Peak Usage/Costs

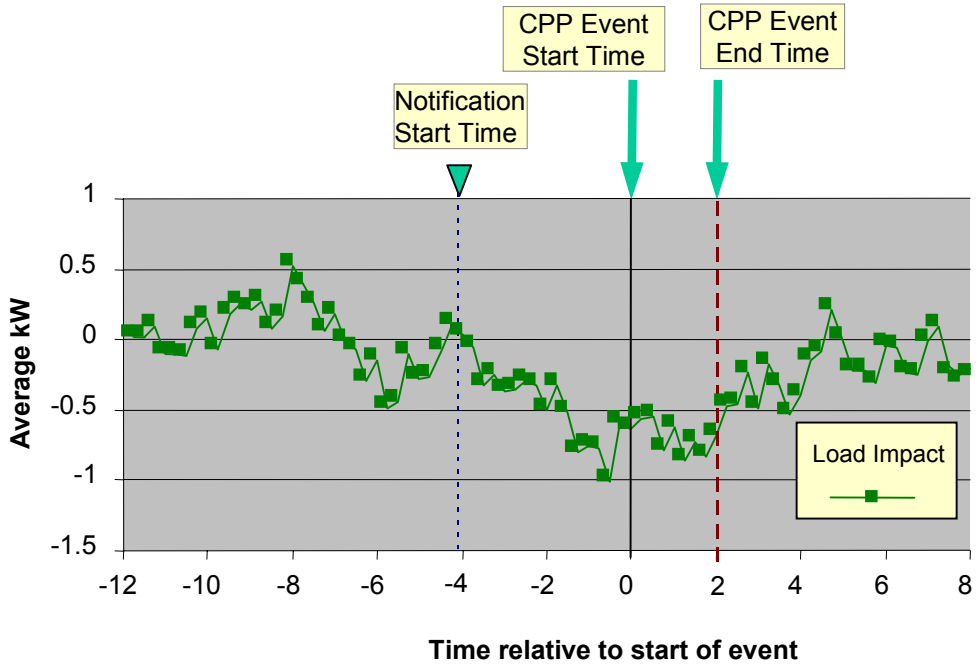
Conclusions

- **There is anecdotal evidence that residential customers respond to 'notification' information by reducing load during a critical peak period.**
- **There is insufficient evidence to fully evaluate commercial customer response.**

Information Display

Load Impacts

Residential (SDGE) Load Impact
(Average for 2-hour event days)

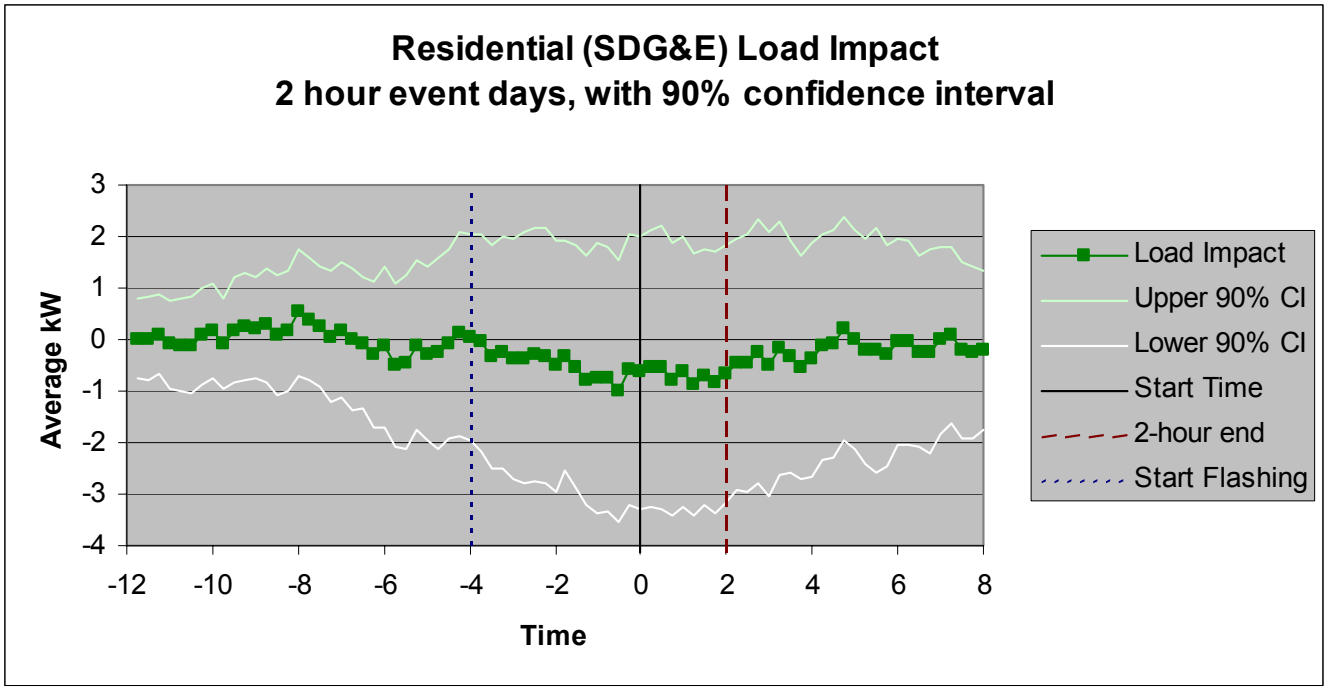


Source: California Information Display Pilot, Load Impact Analysis, EPRI Solutions Presentation to Working Group 3, January 7, 2005.

Information Display

Load Impacts

Residential Response to Notification Information
(not Statistically Significant)



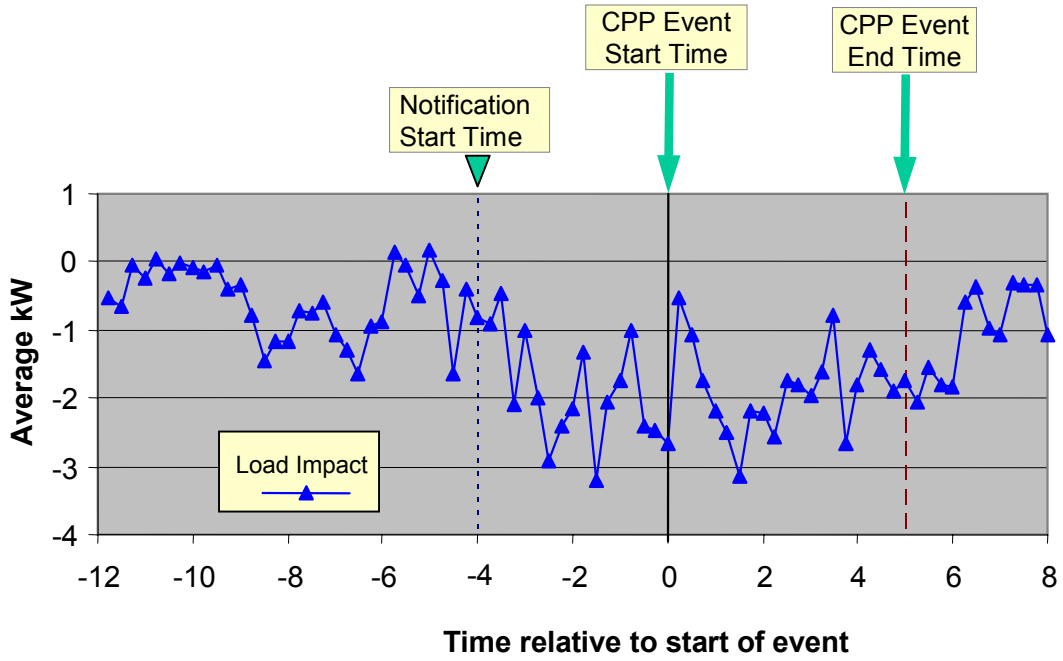
Source: California Information Display Pilot, Load Impact Analysis, EPRI Solutions Presentation to Working Group 3, January 7, 2005.

Information Display

Load Impacts

Commercial (SCE) Load Impact

(Average for 5-hour event days)

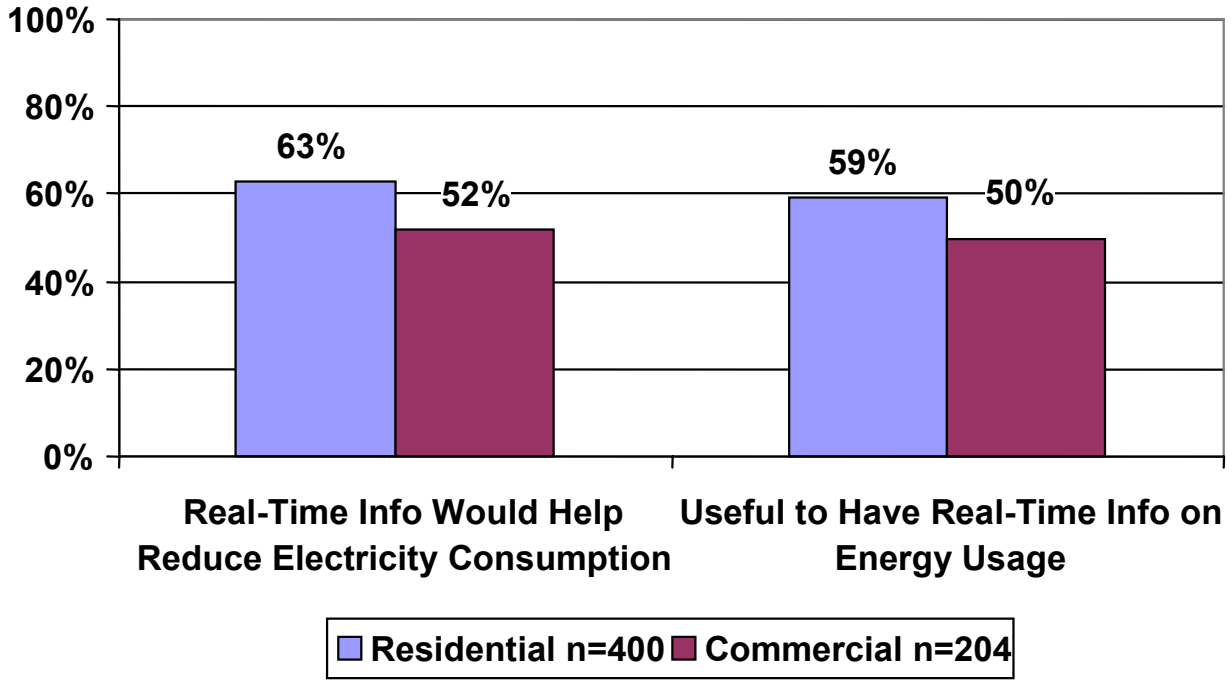


Source: California Information Display Pilot, Load Impact Analysis, EPRI Solutions Presentation to Working Group 3, January 7, 2005.

Information Display

Customer Response

Percentage of customers that feel that real-time information displays would be useful



Source: California Information Display Pilot, General and Pilot Research Findings, Opinion Dynamics Corp. January 6, 2005.

Next Steps

- Continuing Research on Persistence of Impacts for Residential Customers choosing to remain on tariffs
- Expansion of Information Display Research
- Use of Class Level DR results in Business Case Analysis of Advanced Metering Deployment