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**NARUC Joint Meeting**

**Committee on Energy Resources and the Environment**

**Committee on Electricity**

**California Statewide Pricing Pilot**

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***Lessons Learned***

**Roger Levy**

**Demand Response Research Center**

**DRRC**  
Demand Response Research Center



# Demand Response – the Vision

1

**No more rotating outages – EVER !**

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**Efficiency and demand response fully integrated under a unified default tariff / incentive structure.**

2

- **Demand response is a condition of service.**
  - **All customers, all load participates.**
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3

- **Major appliances come “DR Ready” from the factory.**
  - **All buildings are “DR Enabled” .**
- 

4

**Full automated system integration between the ISO, utilities and customers.**



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# California Statewide Pricing Pilot

# State Demand Response Objectives

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- Integrate energy efficiency with demand response
- Economic Response – Let the customer decide.
- Reliability Response – Provide the utility with control.
- All customers – not just a select few.

# Summary Conclusions

## System Impacts

Residential CPP rates can, within five years of deployment reduce California's peak load by 1,500 to over 3,000 MW.

## Conservation and Peak Load Impacts

Dynamic rates encourage greater conservation and peak demand impacts than conventional inverted tier or time-of-use rates.

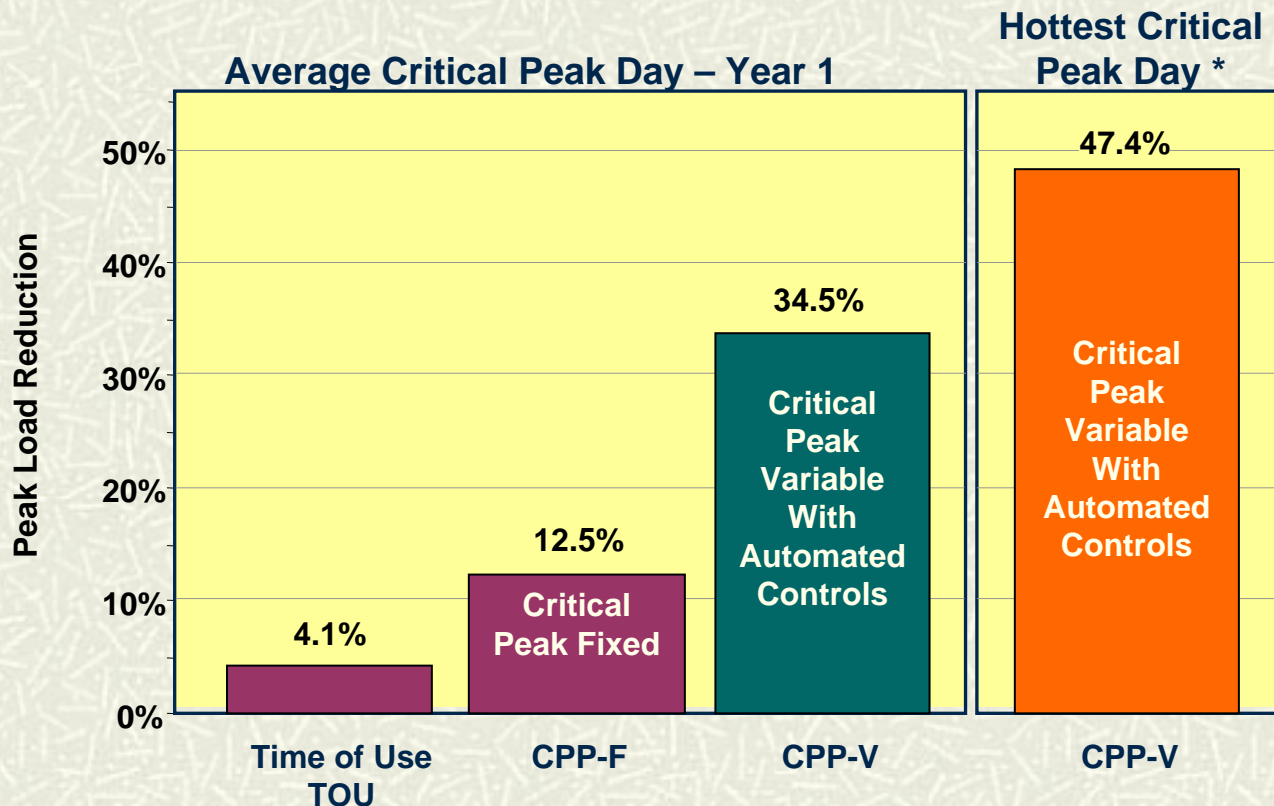
## Customer Acceptance

Residential and small to medium commercial and industrial customers understand and overwhelmingly prefer dynamic rates to existing inverted tier rates.

# Residential Load Impacts

## Rate and Technology

### Critical Peak Impacts By Rate Treatment



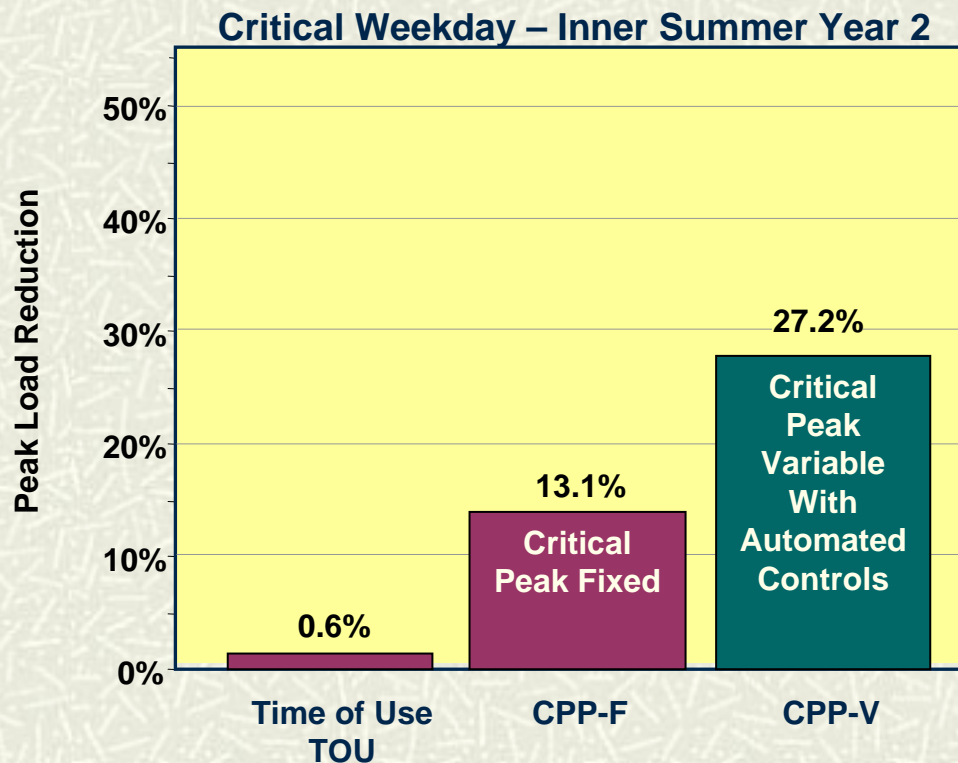
Source: Statewide Pricing Pilot Summer 2003 Impact Analysis, Charles Rivers Associates, August 9, 2004, Table 1-3, 1-4,.



# Residential Load Impacts

## Rate and Technology

### Critical Peak Impacts By Rate Treatment

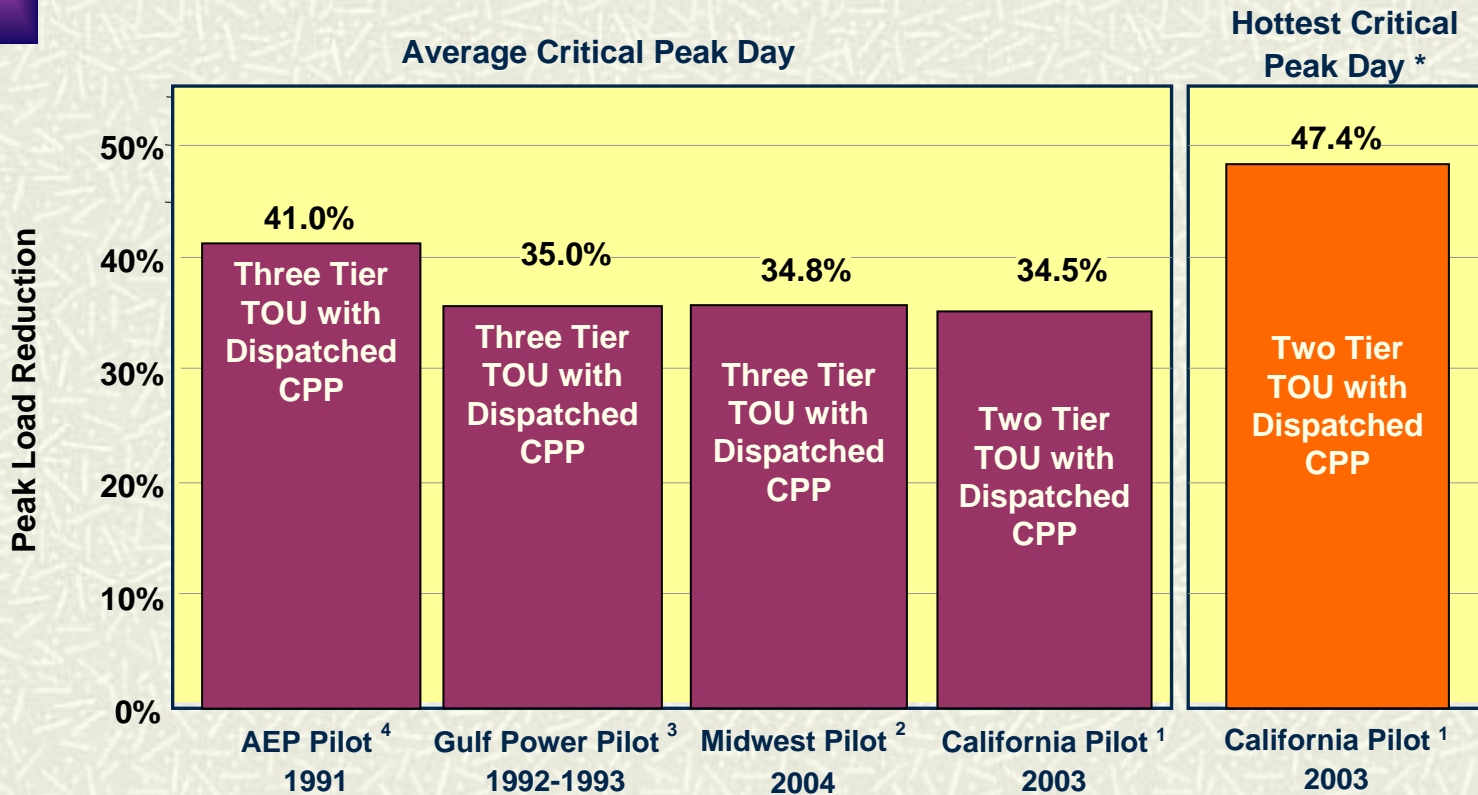


Source: Impact Evaluation of the California Statewide Pricing Pilot, CRA, March 16, 2005, Table 1-1, 4-3.



# Residential SPP Impacts

# Consistency



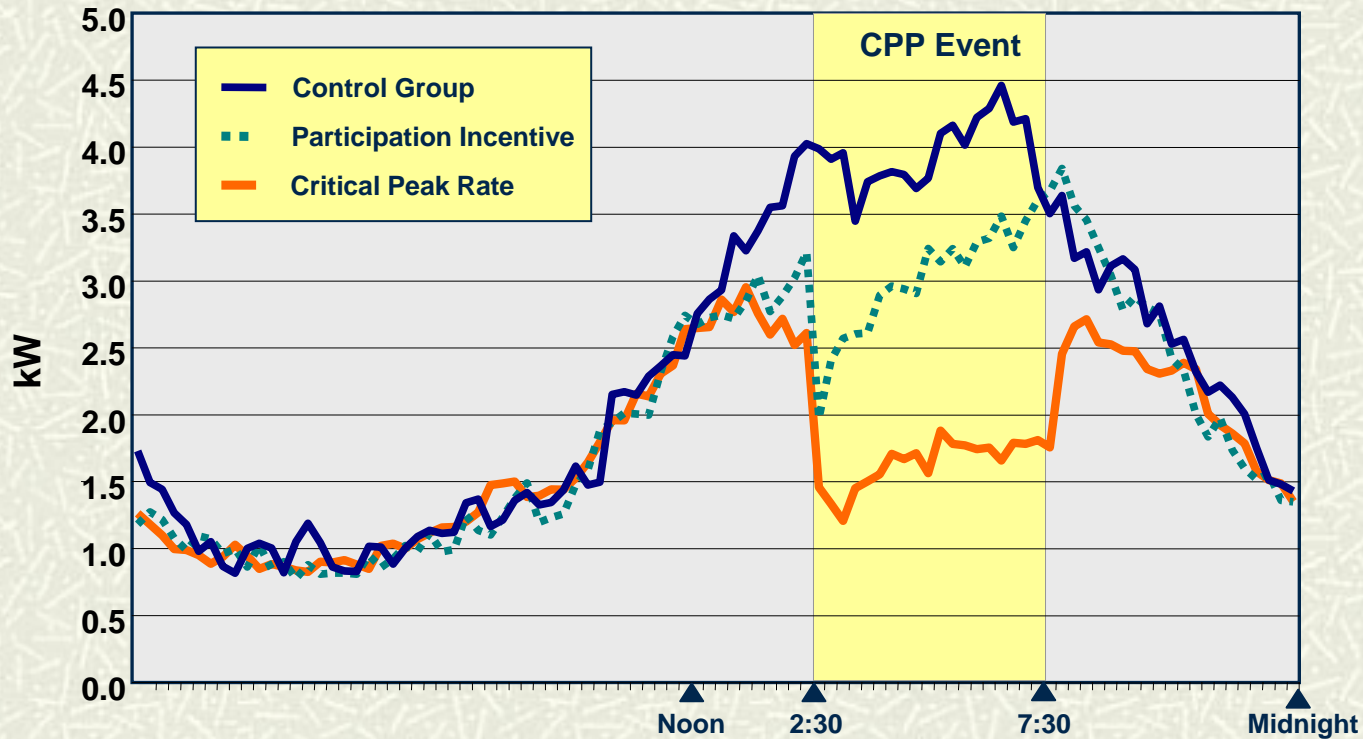
Source:

1. Statewide Pricing Pilot Summer 2003 Impact Analysis, Charles River Associates, Table 1-3, 1-4, August 9, 2004. Hottest day impacts on page 105.
2. Private communication, residential pilot study, May 2005.
3. Results of the Pilot Residential Advanced Energy Management System, Gulf Power, November 1994.
4. Levy Associates case study report, July 1994.

# Residential SPP Impacts

# Incentives

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

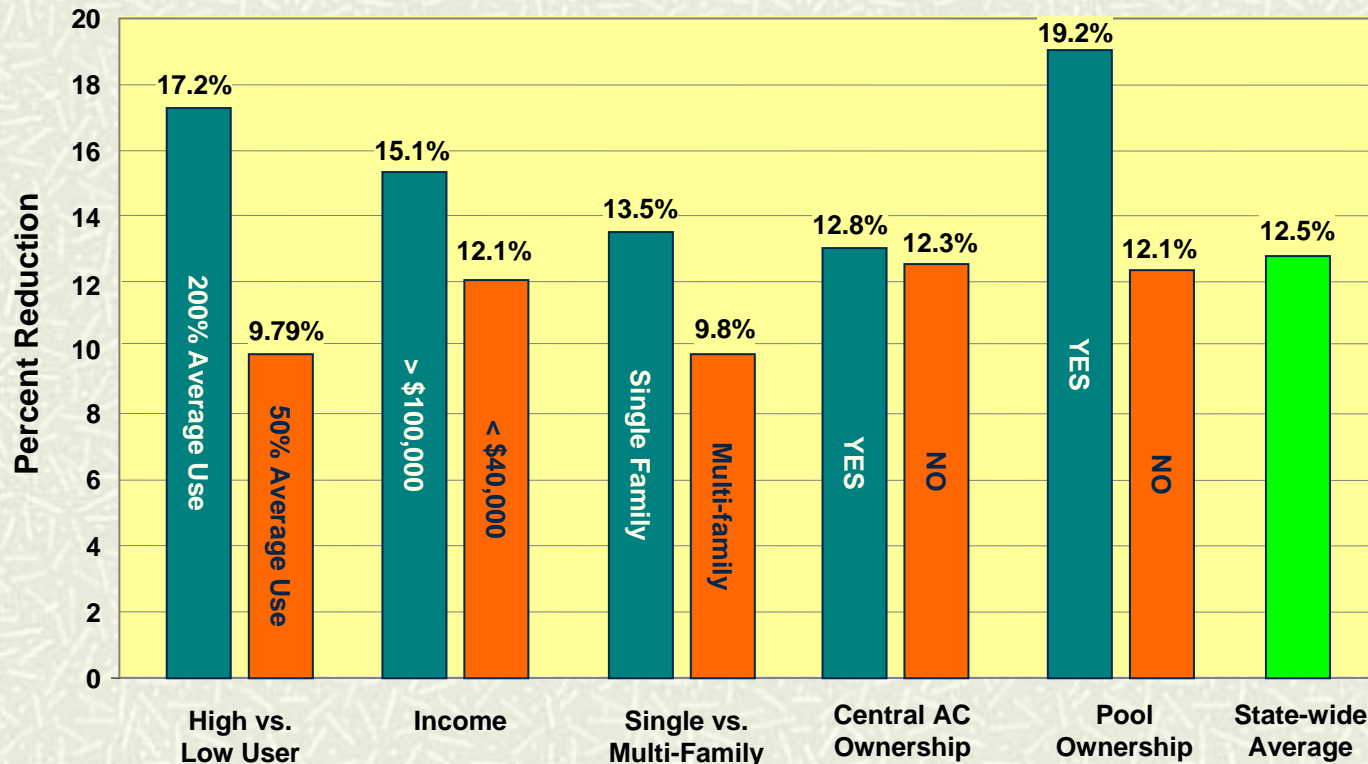


Hot Day, August 15, 2003, Average Peak Temperature 88.5°

# Residential SPP Impacts

# Demographics

## Percent Reduction in Peak Period Usage (CPP-F) Year 1



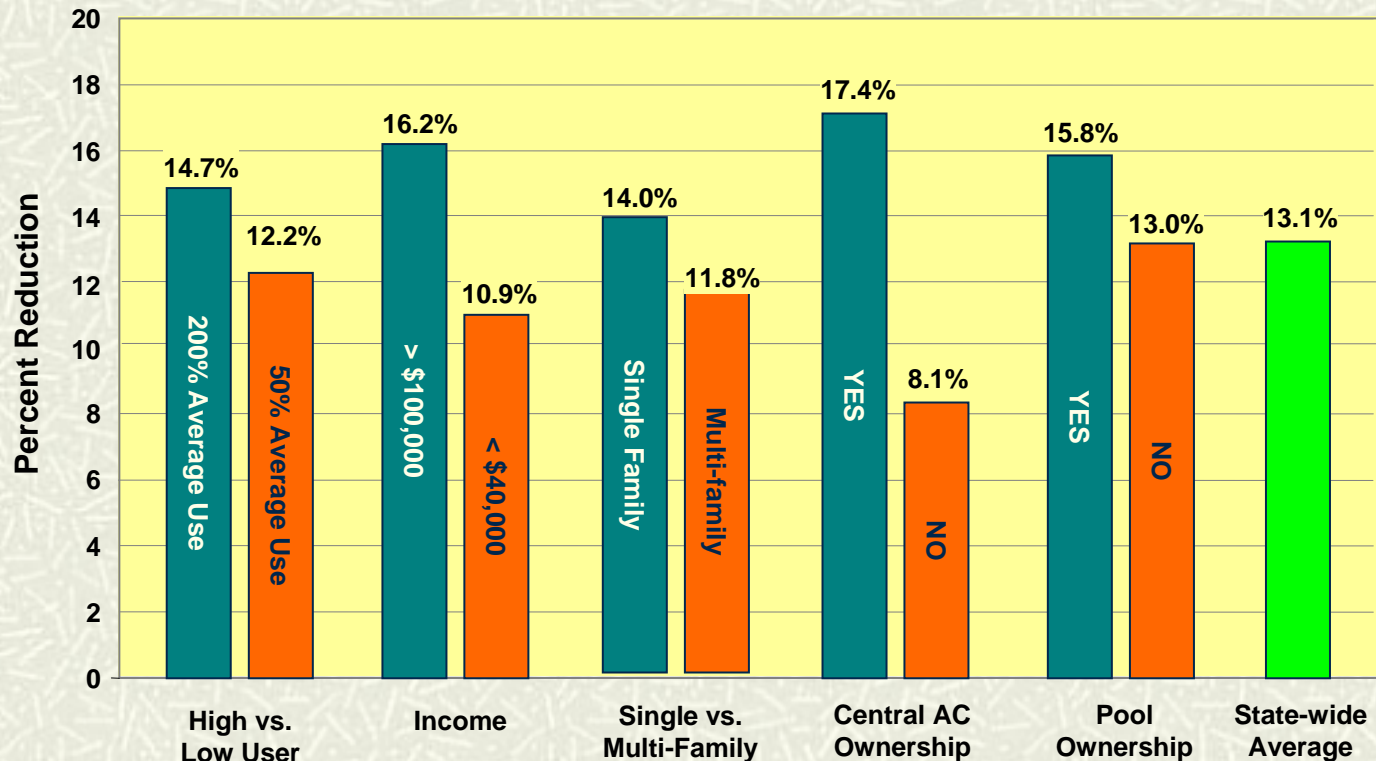
Source: Statewide Pricing Pilot, Summer 2003 Impact Analysis, CRA, August 9, 2004, Table 5-9, p.90



# Residential SPP Impacts

# Demographics

## Percent Reduction in Peak Period Usage (CPP-F) Year 2

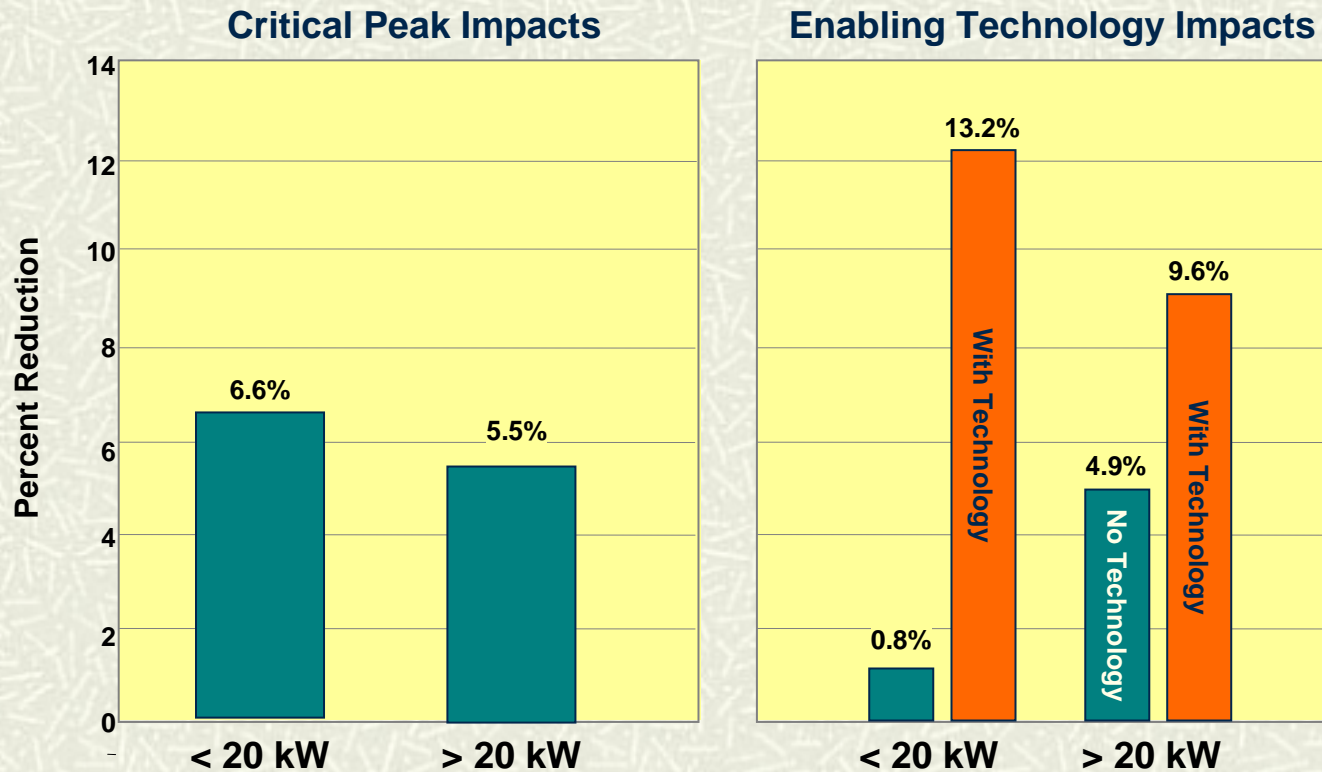


Source: Statewide Pricing Pilot, Summer 2003 Impact Analysis, CRA, August 9, 2004, Table 5-9, p.90

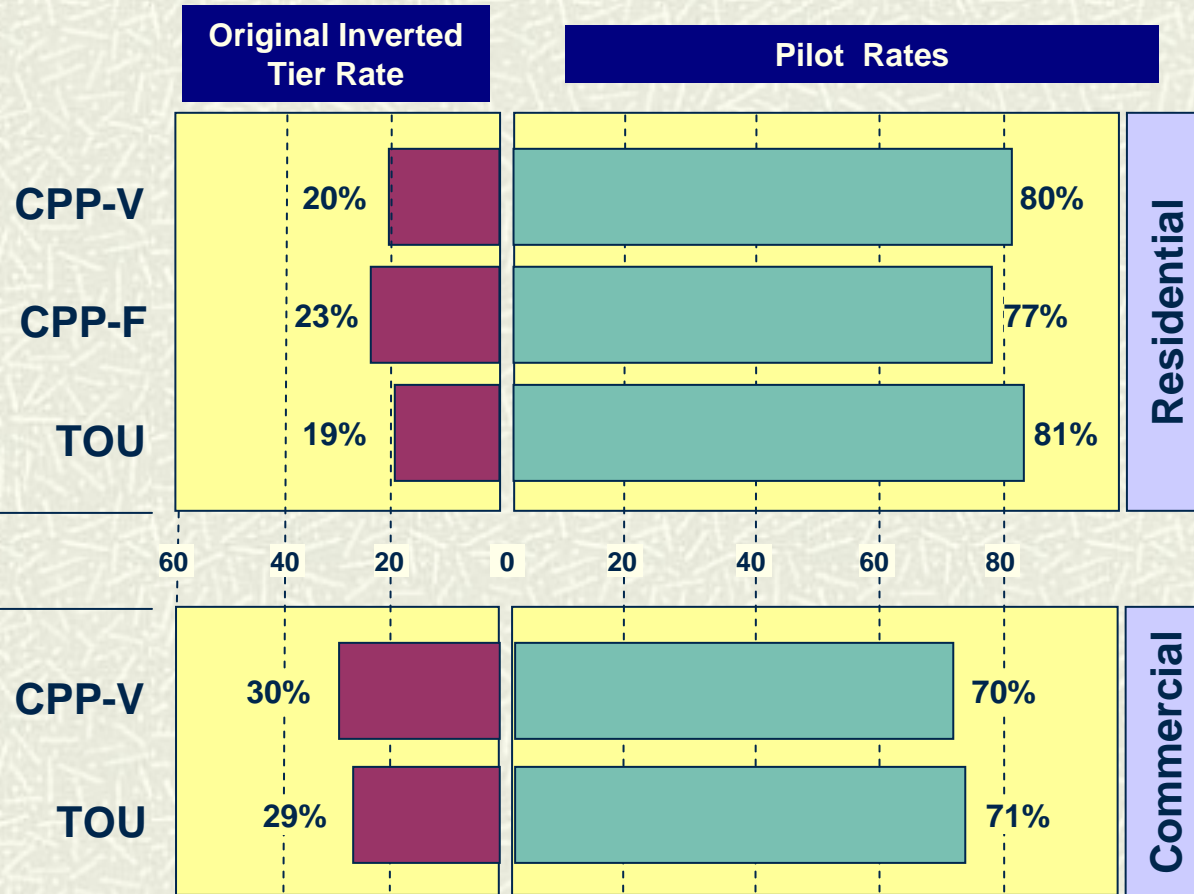


# Small C/I Load Impacts

## Rate and Technology



# SPP – Customer Rate Preferences





# Contact Information

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## Demand Response Research Center (DRRC)

**Mary Ann Piette, Director**

**Phone: 510 486-6286**

**email: [mapiette@lbl.gov](mailto:mapiette@lbl.gov)**

**Roger Levy**

**Program Development and Outreach**

**Phone: 916-487-0227**

**email: [RogerL47@aol.com](mailto:RogerL47@aol.com)**



August 2, 2006



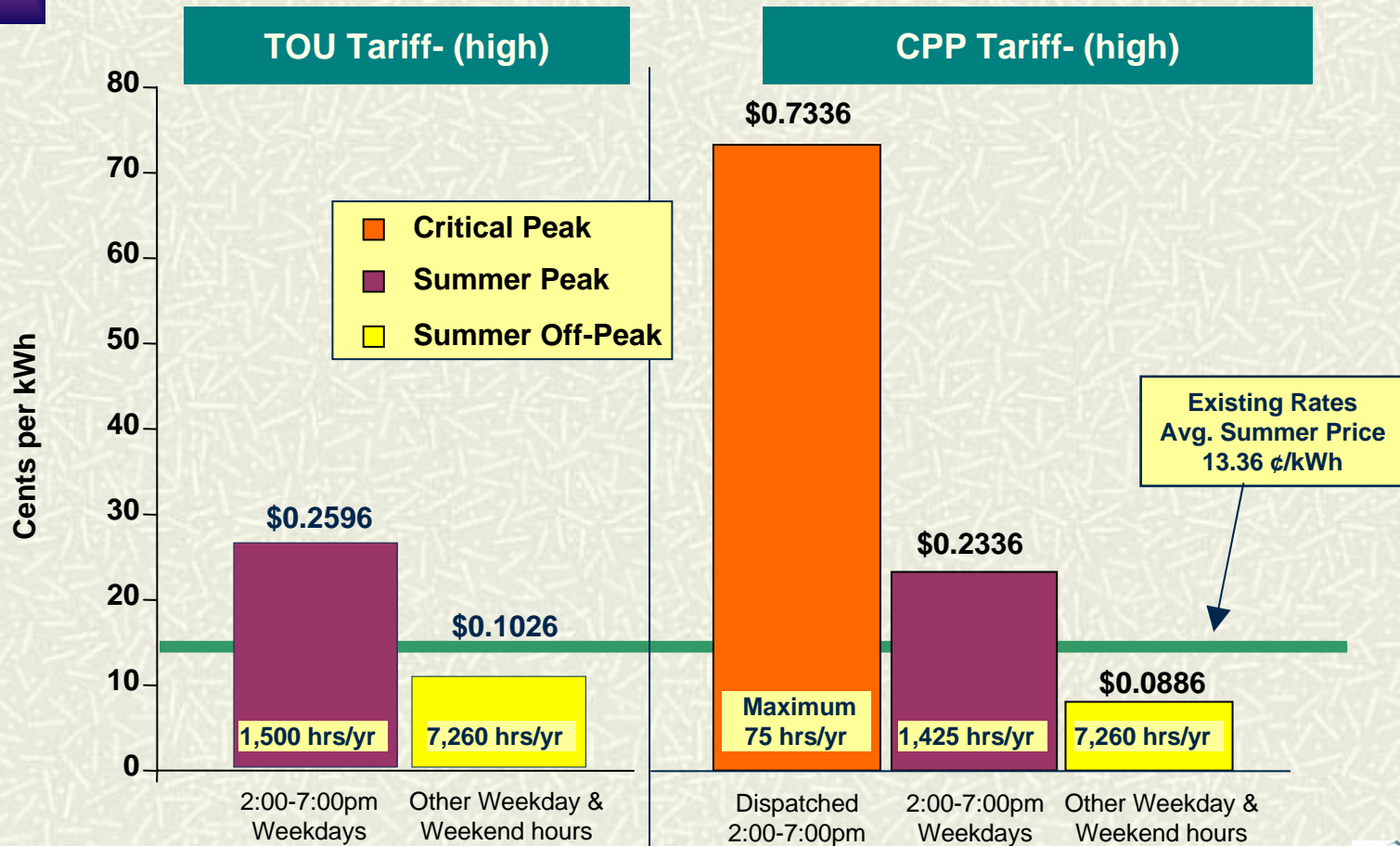
# Demand Response Defined.

1. Demand Response applies rate designs, incentives and technology to induce changes in customer demand. <sup>1</sup>
2. Demand Response is the action taken to reduce load in response to:<sup>2</sup>
  - a) Contingencies that threaten the supply-demand balance and/or
  - b) Market conditions that raise supply costs.

1. CPUC definition, Demand Response Settlement, Draft Decision 03-06-032, March 2006  
2. Demand Response Research Center, presentation, December 2005.

# Residential SPP Rates

## Rate Design



# SPP Bill Impacts

## Average Bill Impacts (summer / winter 2003)

**Bill Savings**

**Bill Increases**

	Residential				Commercial / Industrial	
	CPPV	CPPF	TOU	Info Only	CPPV	TOU
Participants (%)	71.1%	73.7%	70.0%	79.0%	80.3%	58.2%
Average Monthly Savings (%)	5.1%	5.5%	4.5%	5.4%	12.2%	9.6%
Average Monthly Savings (\$)	\$53	\$35	\$29	\$19	\$1,521	\$869
Participants (%)	28.9%	26.3%	30.0%	21.0%	19.7%	41.8%
Average Monthly Increase (%)	4.0%	6.2%	3.0%	10.0%	5.0%	10.0%
Average Monthly Increase (\$)	\$39	\$44	\$30	\$9	\$224	\$600