



Process Evaluation of CA IOU Direct Load Control Programs

DRMEC Roundup
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Christopher Dyson, KEMA

Overview of Presentation

- Summary of evaluation task
- Program background, cross-comparison
 - Age, size, customer mix, control options/devices, incentives, implementation structure
- Key process evaluation findings & lessons learned
 - Marketing/recruitment
 - Program implementation
 - Participant comfort
 - Program satisfaction ratings

Summary of Evaluation Task

- Cross-comparing program characteristics & process evaluation findings of Direct Load Control (DLC) programs operated by California IOUs (PG&E, SCE and SDG&E)
- Information primarily from
 - KEMA process evaluations of 2007, 2008 PG&E SmartAC programs
 - KEMA process evaluation of 2008 SDG&E Summer Saver program
 - 2006 Itron process evaluation of SCE Summer Discount program
- Research sponsored by CA IOUs and regulators (the Demand Response Measurement and Evaluation Committee or DRMEC)

Program Background, Cross-Comparison

Program Age, Size

- SCE Summer Discount program much older than PG&E, SDG&E programs, which are still in initial growth phase.
- In August 2009 PG&E proposed scaling down growth target from 432,000 total devices by 2011 to 269,000 devices by 2011.

Program Characteristic	PG&E SmartAC	SCE Summer Discount	SDG&E Summer Saver
Date of Program initiation	2007	1985	2005
# of Program Participants (as of Sept. 2009)	142,504	354,098	41,834

Program Characteristics: Customer Mix, Control Devices/Options

Program Characteristic	PG&E SmartAC	SCE Summer Discount	SDG&E Summer Saver
Customer mix	Almost exclusively residential, < 1% commercial	97% residential, 3% commercial	82% residential, 18% commercial
Control devices	~ 80% AC control switches ~ 20% smart thermostats	100% AC control switches	100% AC control switches
Cycling options	<p><i>Switch</i> - 50% cycling</p> <p><i>Smart thermostat</i> - max 4 degree increase</p>	<p><i>Residential</i> - 50%, 67%, 100% cycling options</p> <p><i>Commercial</i> - 30%, 40%, 50%, 100% cycling options</p> <p><i>Base plan</i> - up to 15 control events</p> <p><i>Enhanced plan</i> - unlimited # of control events</p>	<p><i>Residential</i> 50%, 100% cycling options, weekday vs. 7-day options</p> <p><i>Commercial</i> 30%, 50% cycling options weekday vs. 7-day options</p>

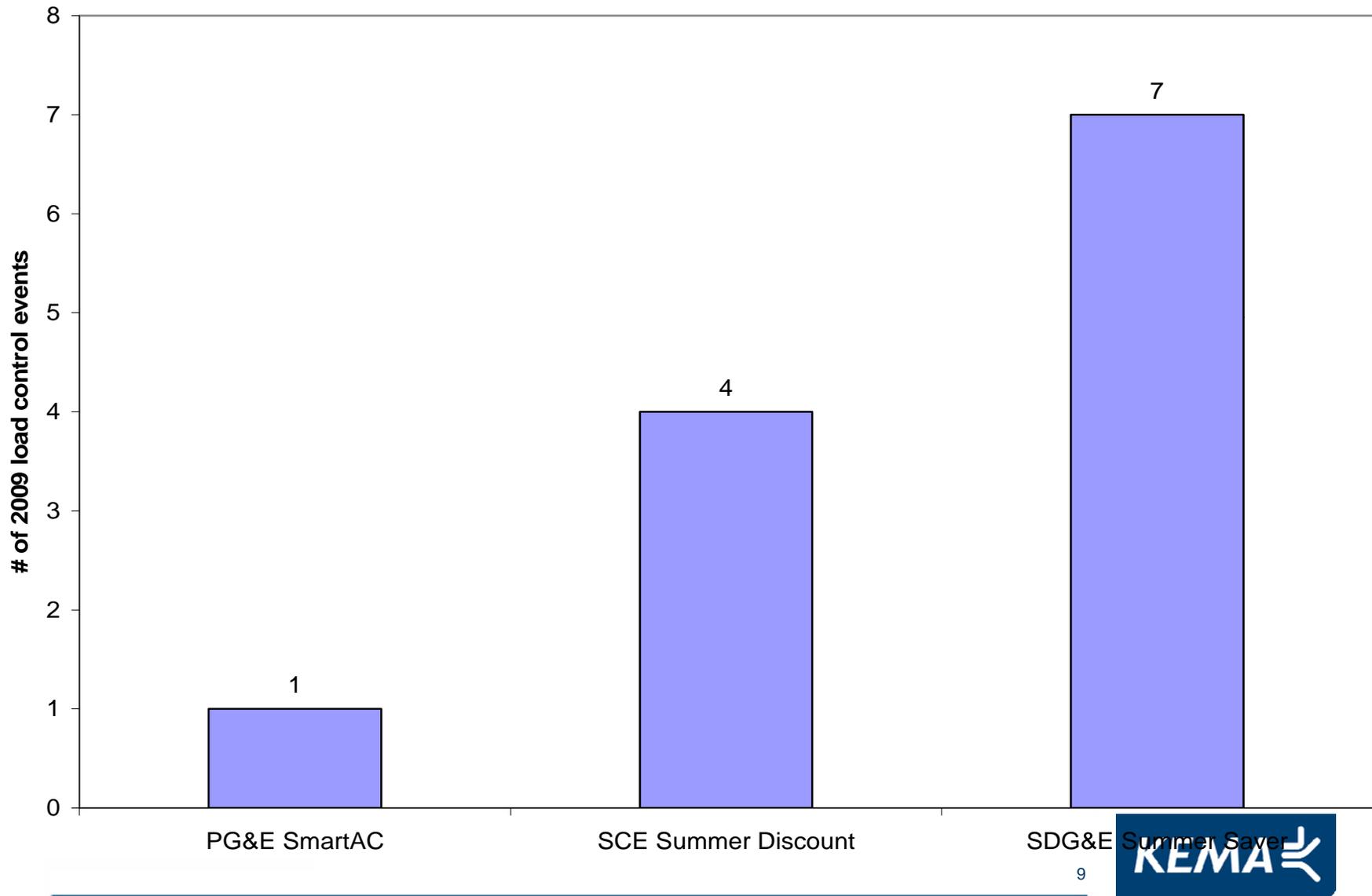
Program Characteristics: Incentives

Incentive Characteristic	PG&E SmartAC	SCE Summer Discount	SDG&E Summer Saver
Incentive payment form	One-time check	Monthly bill credit	Yearly bill Credit
Incentive levels	<p>One-time \$25 payment</p> <p>Free smart thermostat</p> <p>Considering testing higher incentive</p>	<p><i>Residential Base Plan</i> 50% - \$0.05/ton-day 67% - \$0.10/ton-day 100% - \$0.18/ton-day</p> <p><i>Commercial Base Plan</i> 30% - \$0.014/ton-day 40% - \$0.042/ton-day 50% - \$0.07/ton-day 100% - \$0.20/ton-day</p> <p>Enhanced plan pays double rates of base plan, \$150 max incentive</p>	<p><i>Residential</i> 50% - \$12/ton-yr 100% - \$46/ton-yr \$10/yr extra for weekends</p> <p><i>Commercial</i> 50% - \$15/ton-yr 30% - \$9/ton-yr \$10/yr extra for weekends</p> <p>Minimum - \$25/year</p>

Program Characteristics: Implementation Structure

Program Function	PG&E SmartAC	SCE Summer Discount	SDG&E Summer Saver
Marketing, recruitment	Initially outsourced, now primarily in-house	Primarily in-house	Primarily outsourced
Installation/maintenance of control devices, scheduling appointments	Outsourced	Outsourced	Outsourced
Customer interface (program hotline/website)	Outsourced	In-house	Outsourced

2009 Load Control Events



Key Findings

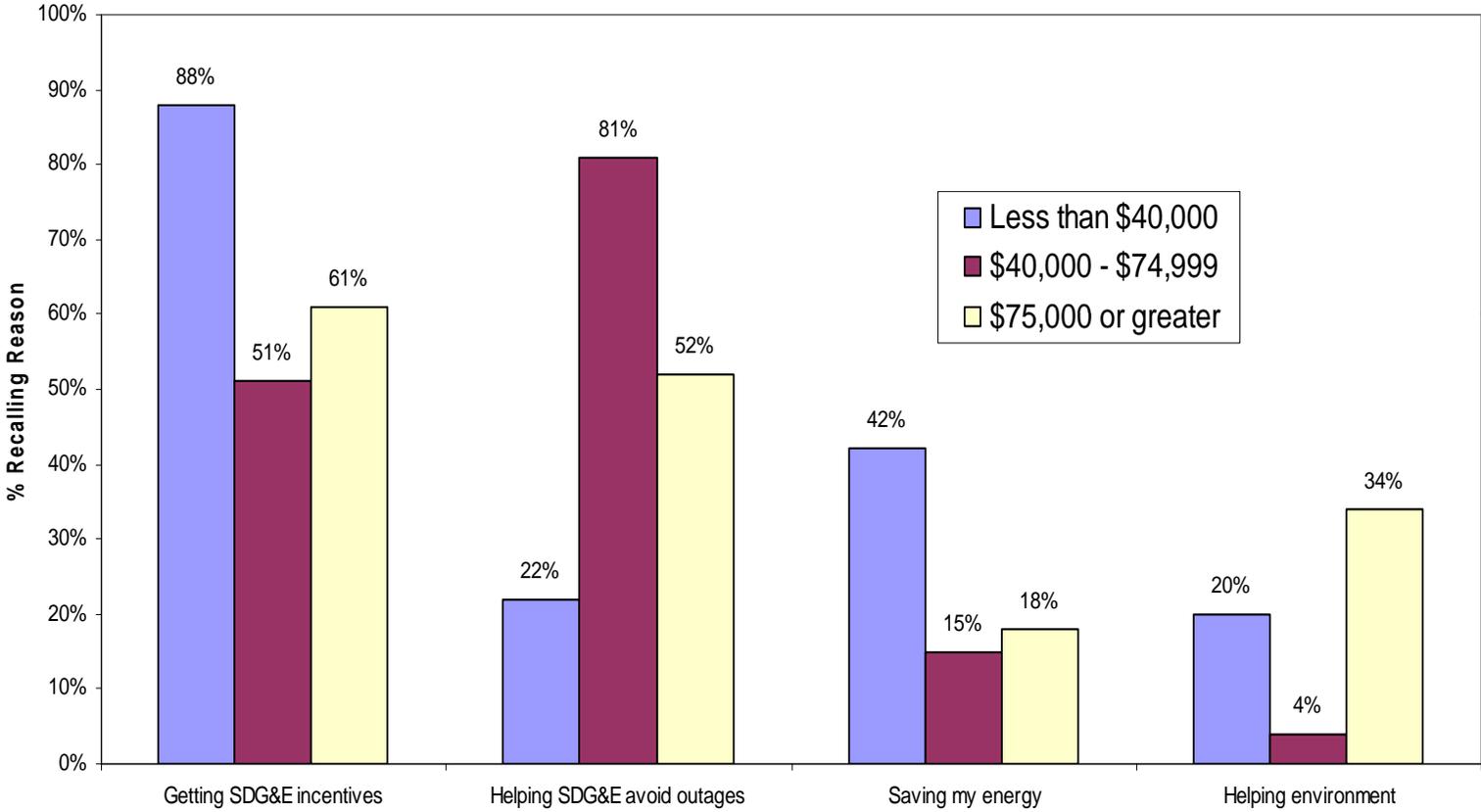
Key Findings: Marketing, Recruitment

- Direct mail is preferred residential recruitment approach for all programs
 - Relatively inexpensive.
 - Easily targeted to individual customers.
 - Results are easily measured.
 - Pace of the outreach is easily controlled.
 - Can convey more information
- For commercial customers, “feet on the street” is preferred recruitment method
- PG&E is going to experiment w/ intense multi-channel marketing effort

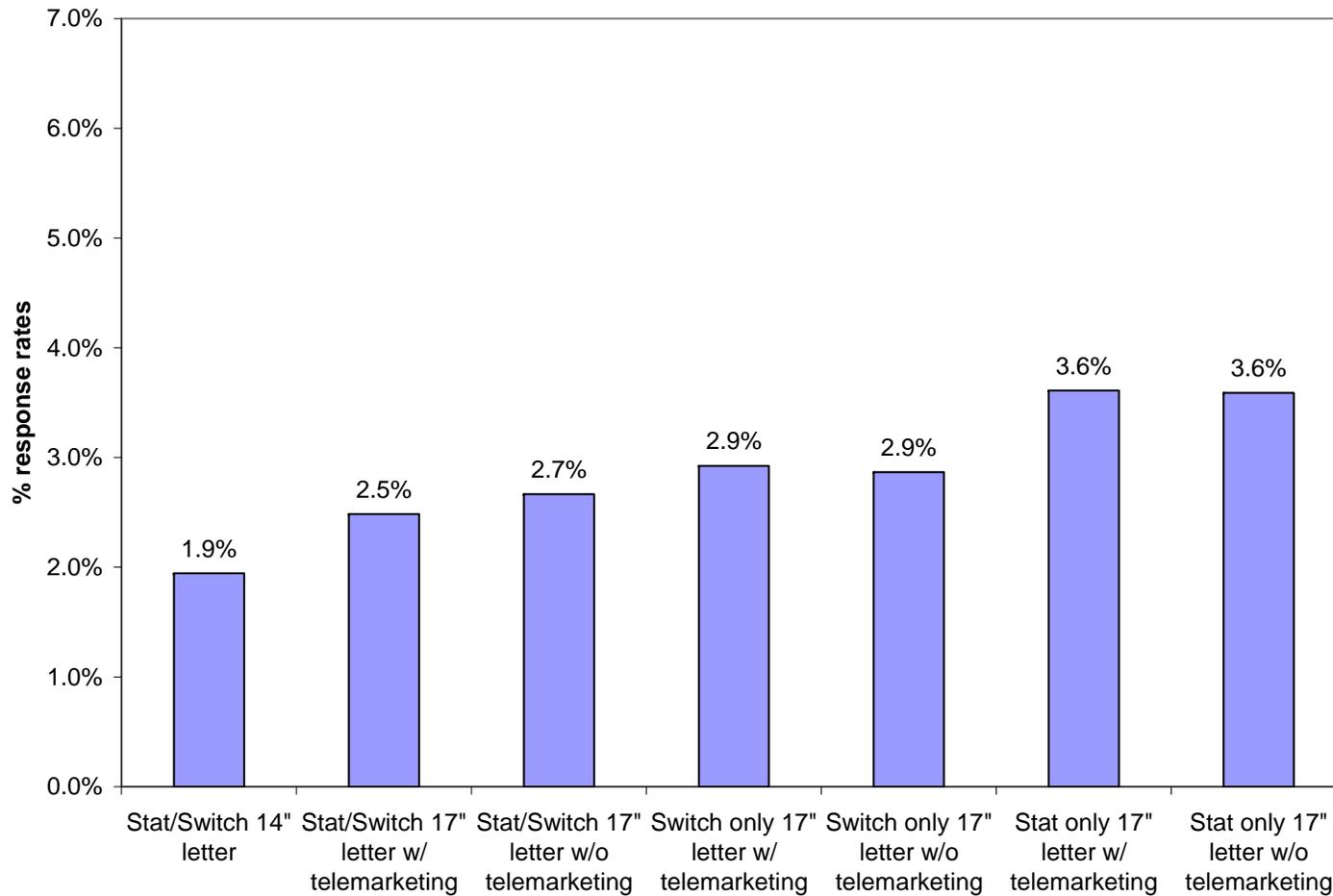
Key Findings: Direct Mail Lessons Learned

- Coordinate mailings with program press events
- Vary look of materials to avoid reader fatigue
- Test materials via focus groups and pilot mailings
- Customize marketing messages/languages
- Target customers with high propensities to join
- Use sweepstakes, gifts as enticements
- Use multiple touch points
- Avoid marketing to low-usage customers
- Include positive survey results in marketing pieces
- Personalize mailings
- Try to find right balance b/w providing key program information & making materials too dense

SDG&E Participant Recall of Sales Pitches: By Income



PG&E Test Mailing Results



Key Findings: Other Marketing Lessons Learned

- Improve call center training, route high-bill customers to program call center
- Cross-promote EE and DR programs
- Frequently survey participants, non-participants, dropouts
 - Survey of SDG&E dropouts found large % would have stayed w/ program if knew about other cycling options
- Adopt opt-out approach for move-ins
- Complex program options (e.g., SCE, SDG&E) can be real customer education challenge
 - Really need to test materials to insure consumer recalls key program features

Key Findings: Program Implementation

- Important to closely coordinate market and field activities
 - In 2007 PG&E greatly expanded/improved direct mail efforts & promoted smart thermostats
 - Contractor had trouble keeping up with installation requests
- Make sure smart thermostats are easy to use, reliable, with good customer education
 - Survey evidence found that many participants, especially seniors, had trouble using p-stats
 - PG&E switched to more user-friendly model
- Make sure program is scalable
 - Manual processes might work when program is pilot-sized, but not later

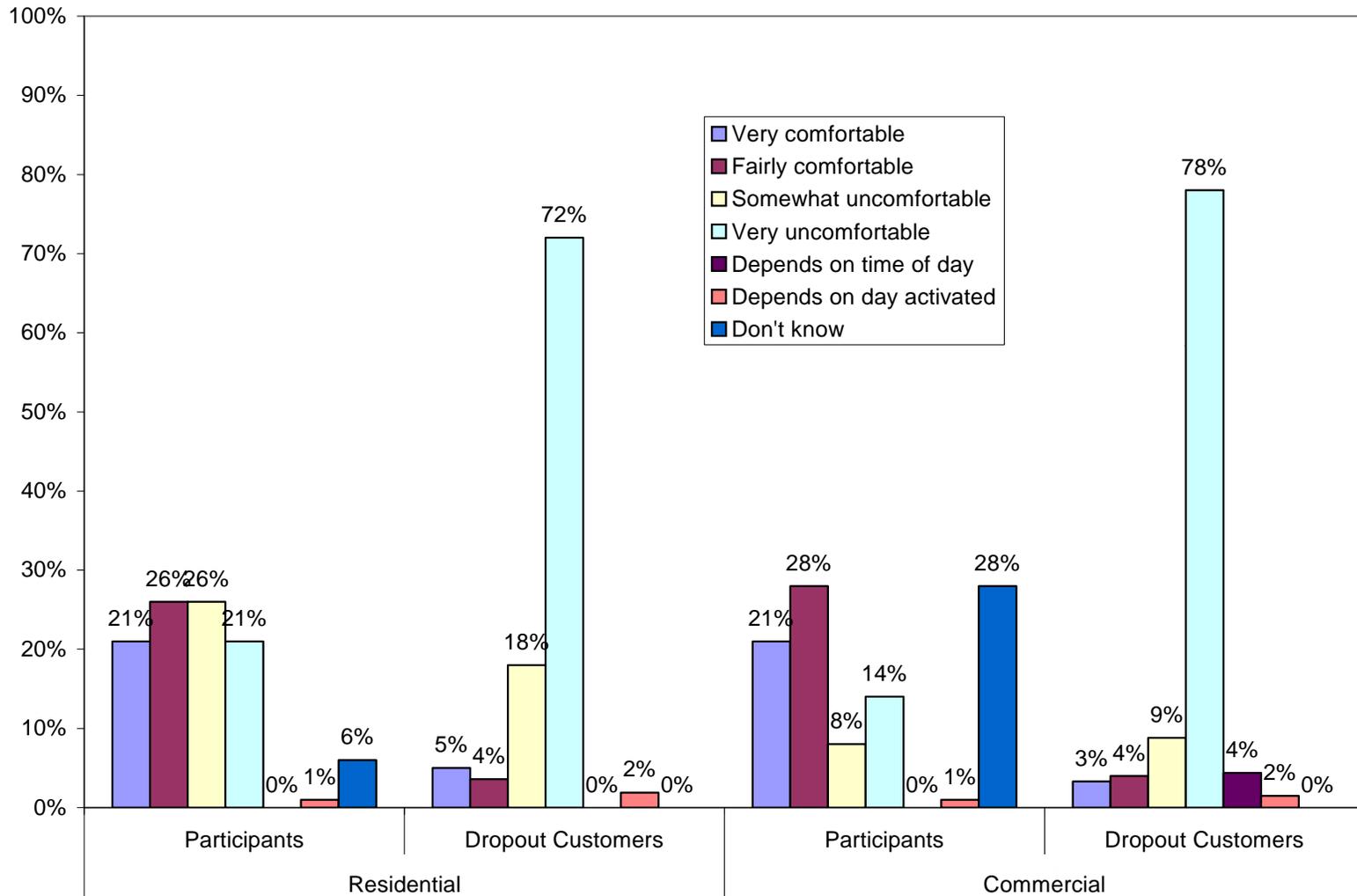
Key Findings: Participant Comfort

- Sometimes marketing materials downplay level of discomfort to help recruitment.
 - But can backfire – lead to high dropout rates
- Do you allow customers to override a control event?
 - Offering this option can help recruitment – especially w/ small commercial customers
 - But don't want to make override too easy
 - SDG&E Smart Thermostat program has 30-40% override levels. They could just push a button on their thermostat

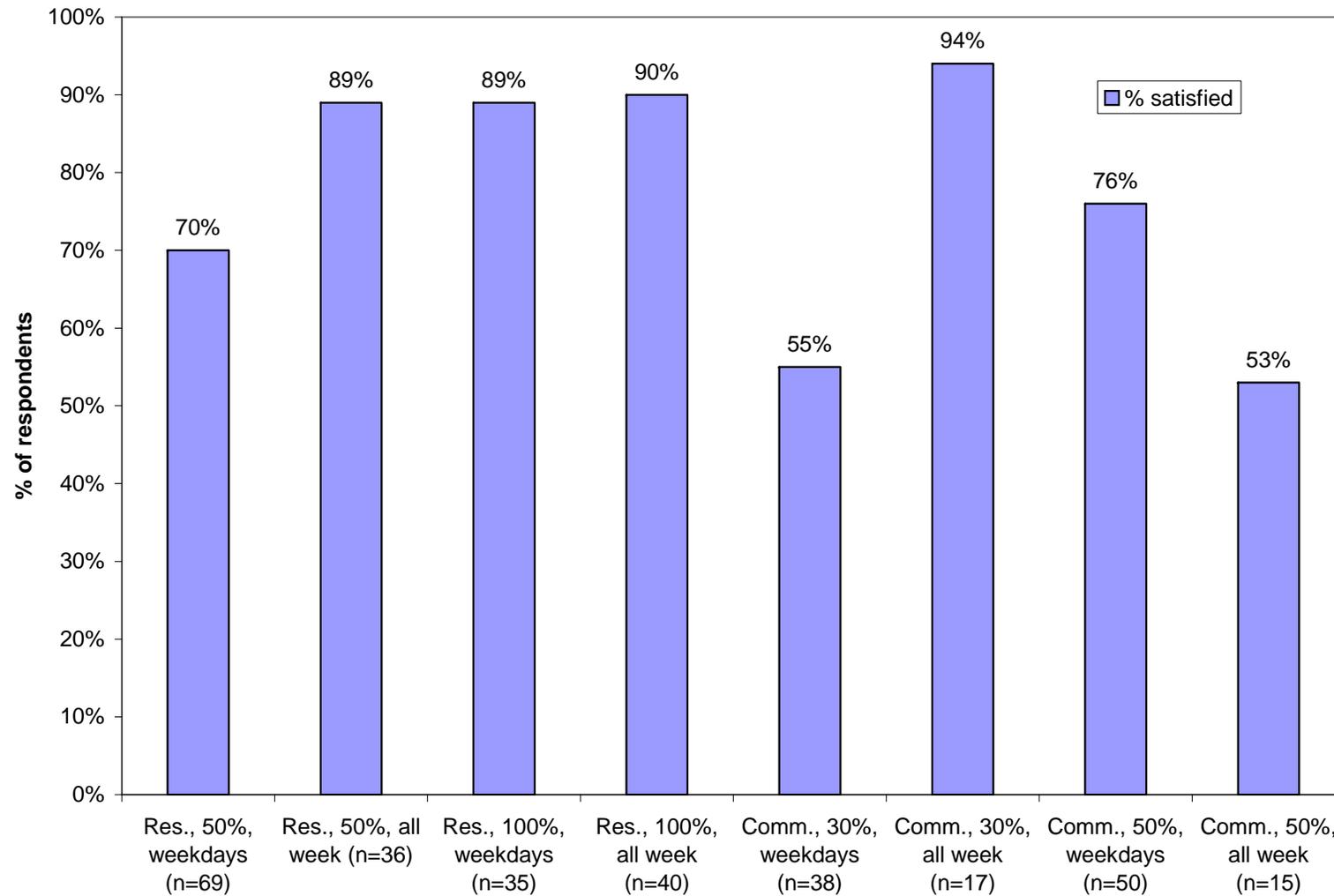
Key Findings: Participant Comfort

- Surprise, surprise: Customer comfort depends on intensity of heat wave
 - Surveying PG&E customers after relatively mild hot day : 24% who recalled event were uncomfortable.
 - Surveying SDG&E customers after more intense heat wave: 47% who recalled event were uncomfortable
- But there are also natural variations in customer heat sensitivity
 - Heat-sensitive customers may self-select themselves to lower-cycling options, leading to counter-intuitive results
 - Or they may simply drop out

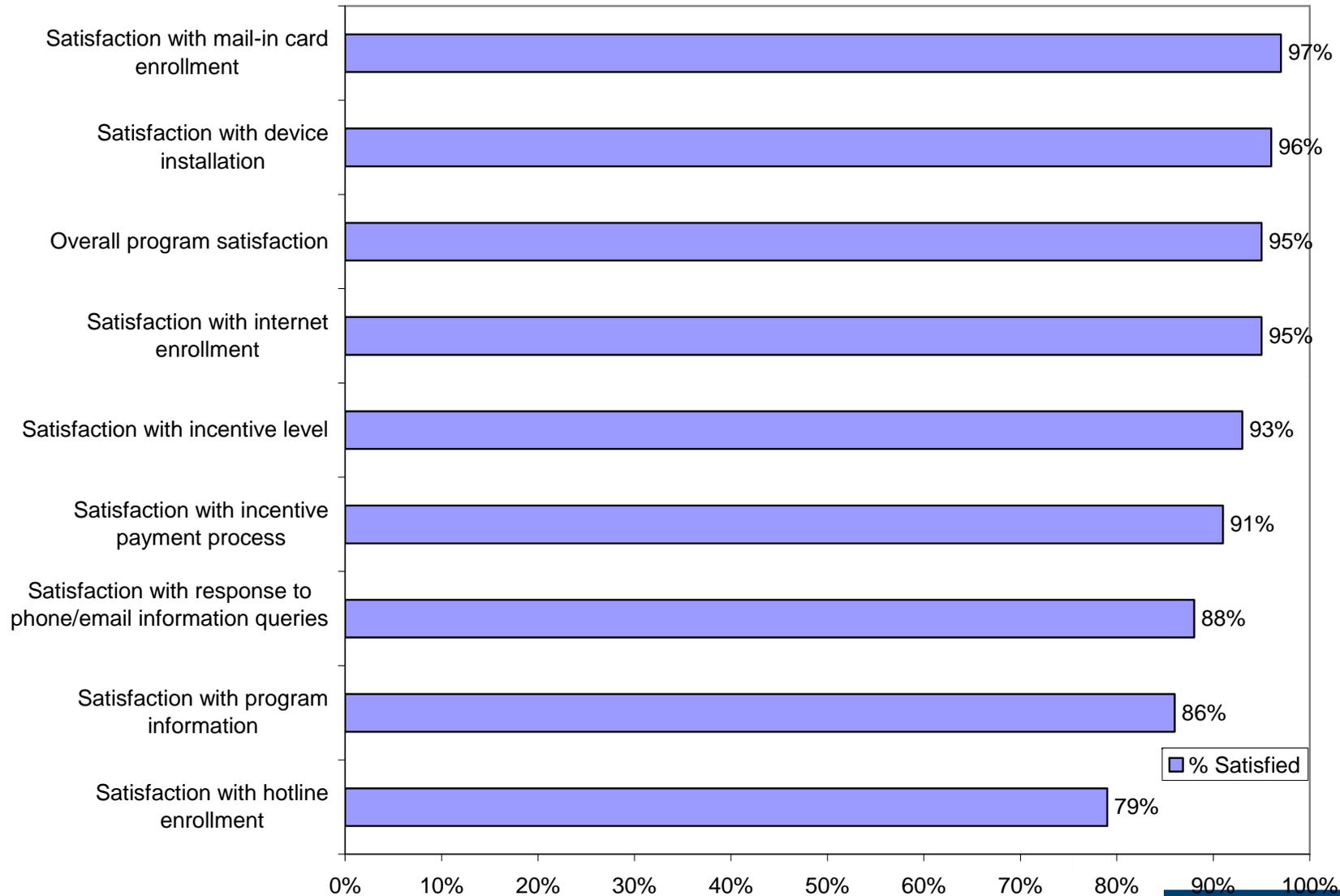
Participant Comfort: SDG&E Parts vs. Dropouts



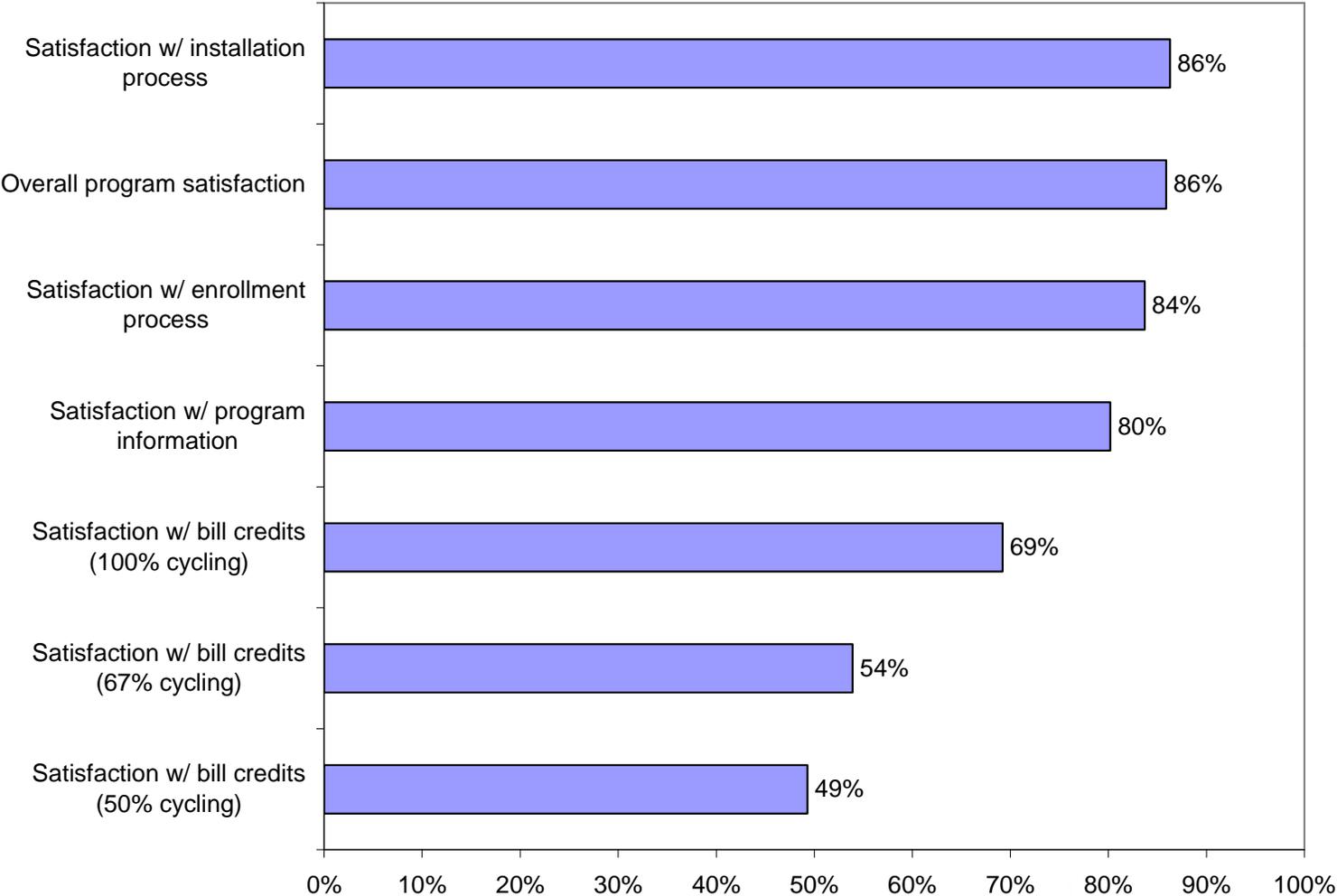
SDG&E Participant Satisfaction by Cycling Category



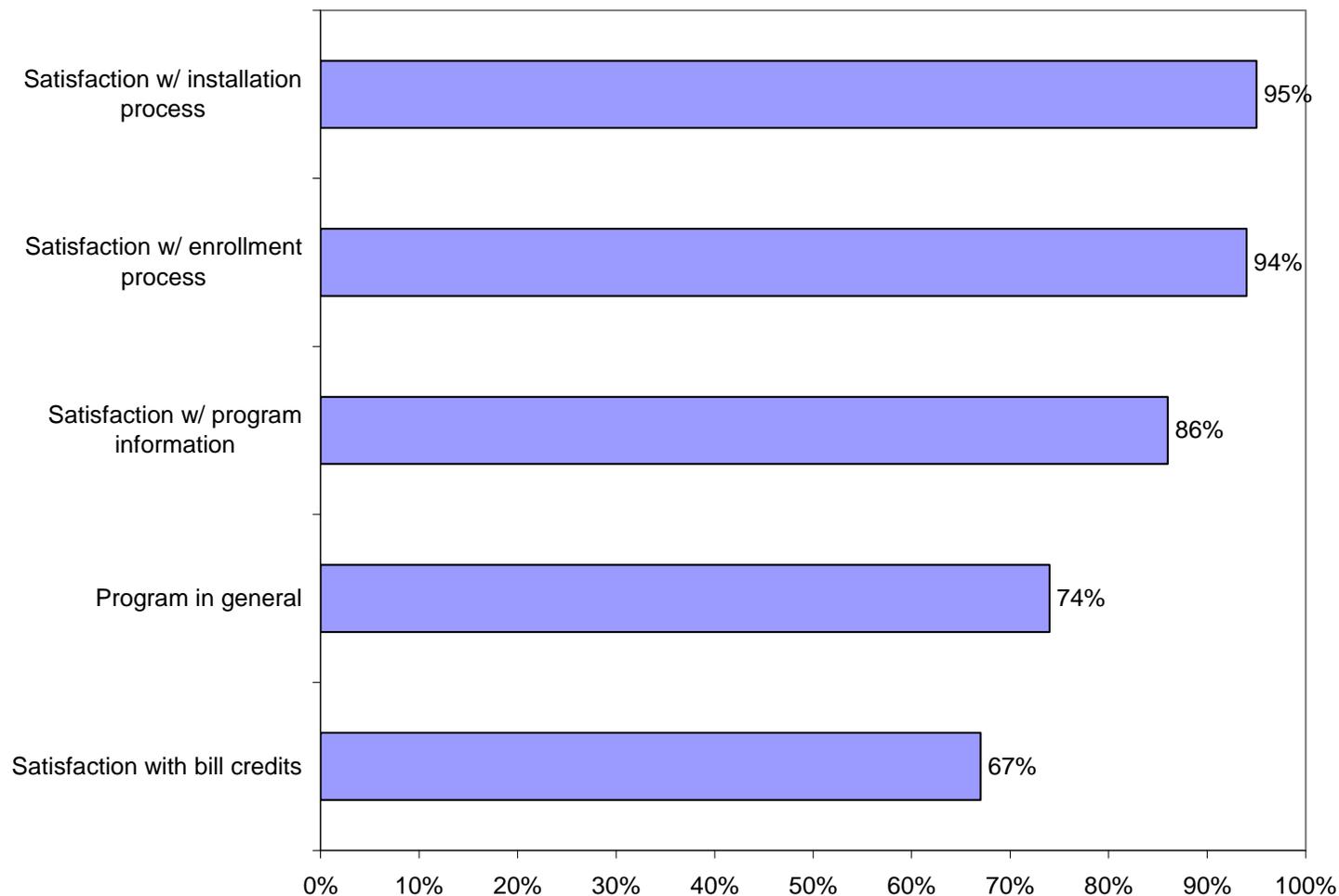
2008 PG&E Satisfaction by Program Characteristic



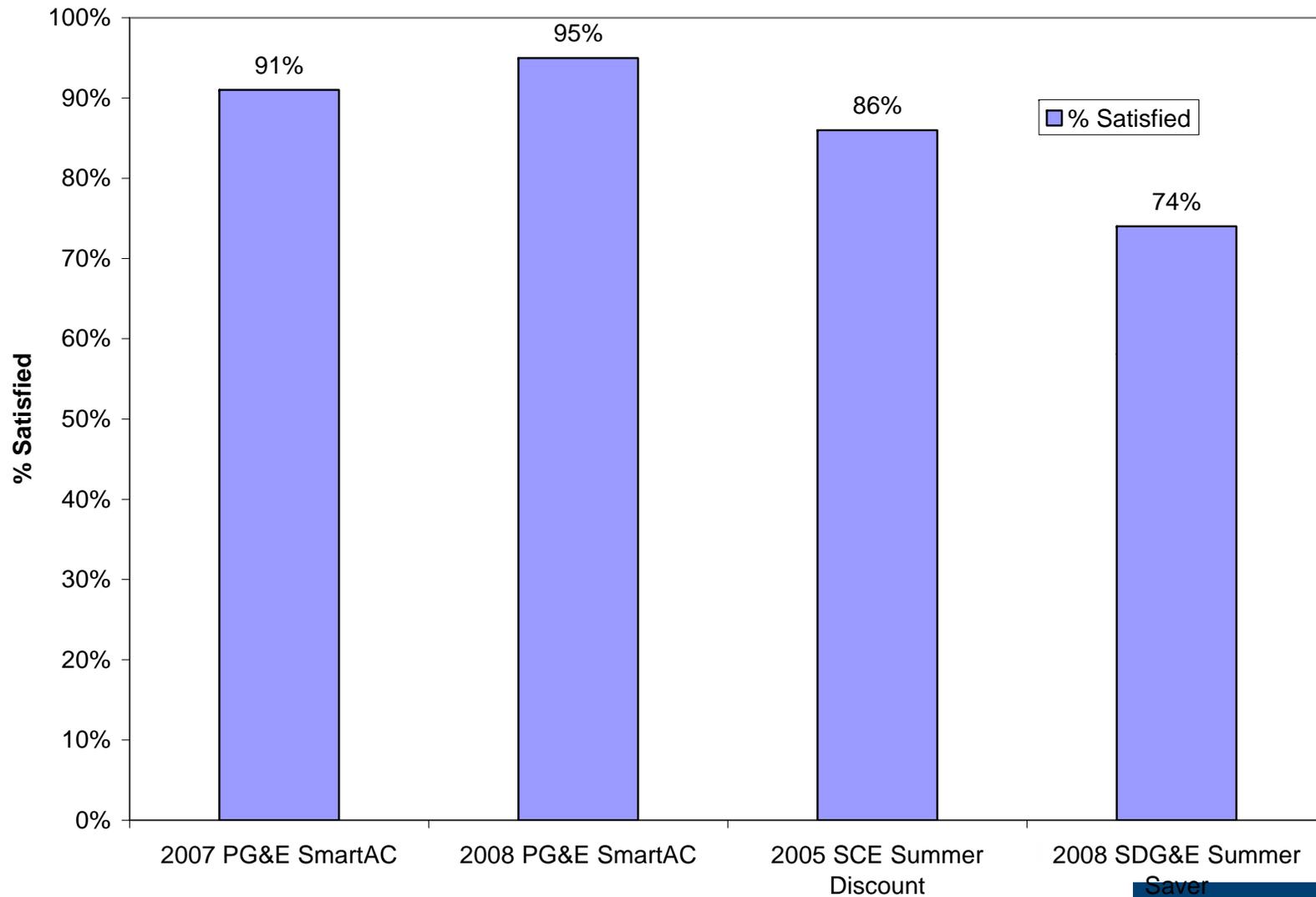
2005 SCE Satisfaction by Program Characteristic



2008 SDG&E Satisfaction by Program Characteristic



Overall Satisfaction – by Program





For more information contact:

Christopher Dyson
Senior Consultant
KEMA Inc.
608-259-9152
cdyson@kema.com