Paving the Way for a Rich Mix of Consumer Behavior Programs

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              Jane S. Peters, Research Into Action
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IEPEC Webinar 2/26/15

White paper

■ www.calmac.org/publications/
Residential_Behavior_White_Paper
_5-31-13_FINAL.pdf

Q: Why do we need to push the envelope to create a broader set of behavior programs?

- What's wrong with the set of programs out there now?

- Won't potential suppliers come up with ideas for new services on their own?
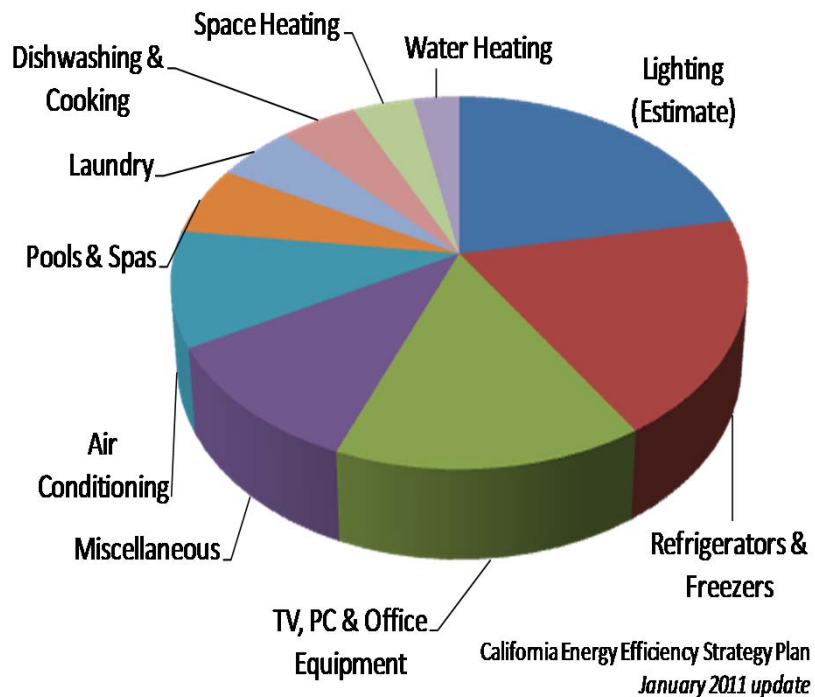
The behavior program landscape

- Behavior-based efficiency programs that the CPUC permitted utilities to run as "resource acquisition" are narrowly-defined as "comparative energy use" programs.

- The CPUC and the IOUs committed to study how the definition could be broadened.

- The IOUs anticipated that the white paper would jump-start these efforts.

- An all-parties public meeting followed the white paper's release with one goal being an expanded definition of behavioral programs.

Q: What do DSM people mean by energy-related "behavior" and "behavior program"?
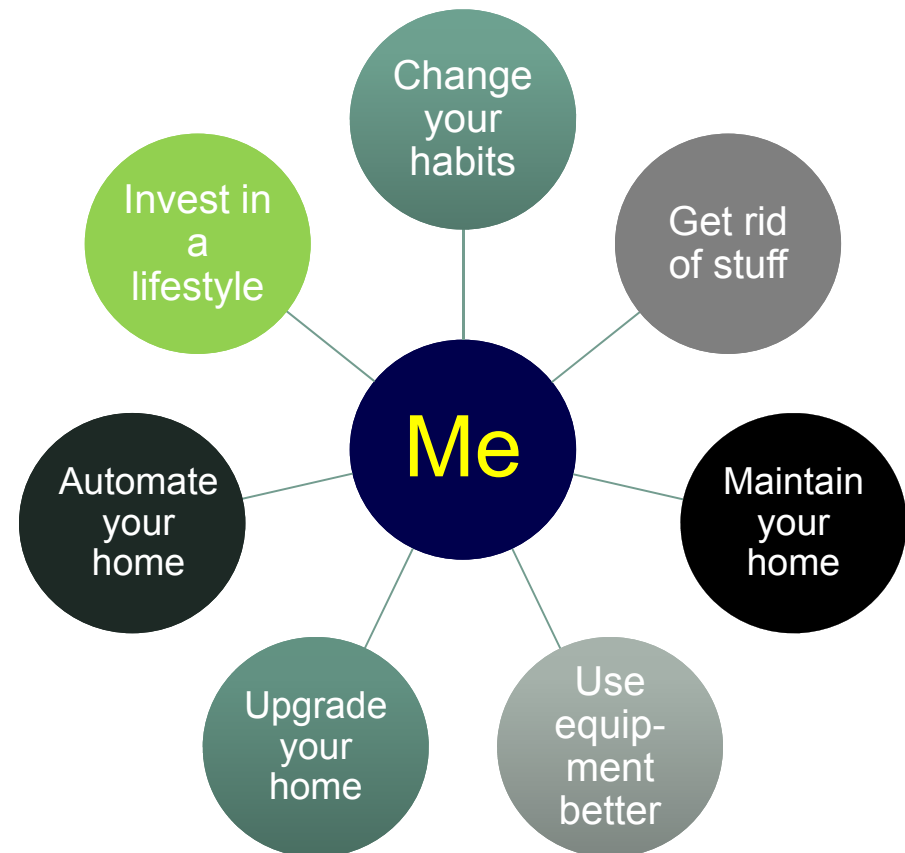
Behavior schemes vary widely

End Use

Space Heating
Dishwashing & Cooking
Water Heating
Laundry
Lighting (Estimate)
Pools & Spas
Air Conditioning
Miscellaneous
TV, PC & Office Equipment
Refrigerators & Freezers

California Energy Efficiency Strategy Plan
January 2011 update

Consumer-Based

Change your habits
Invest in a lifestyle
Get rid of stuff
Me
Automate your home
Maintain your home
Upgrade your home
Use equip-ment better

"Behavior program" definitions have many faces

- More Limited
- More Expansive

So we chose "*behavior change interventions*"

- Target *any* behavior affecting energy use
- Are rooted in social science research
- Are consciously matched to behaviors
- Yield evaluable effects

■ But interventions ≠ programs

Q: What do different behavioral theories tell us about how to influence change in energy-related behaviors?

- Which theories have DSM programs historically tapped?

- In what places in the in the program process can social science theories be used to encourage change?

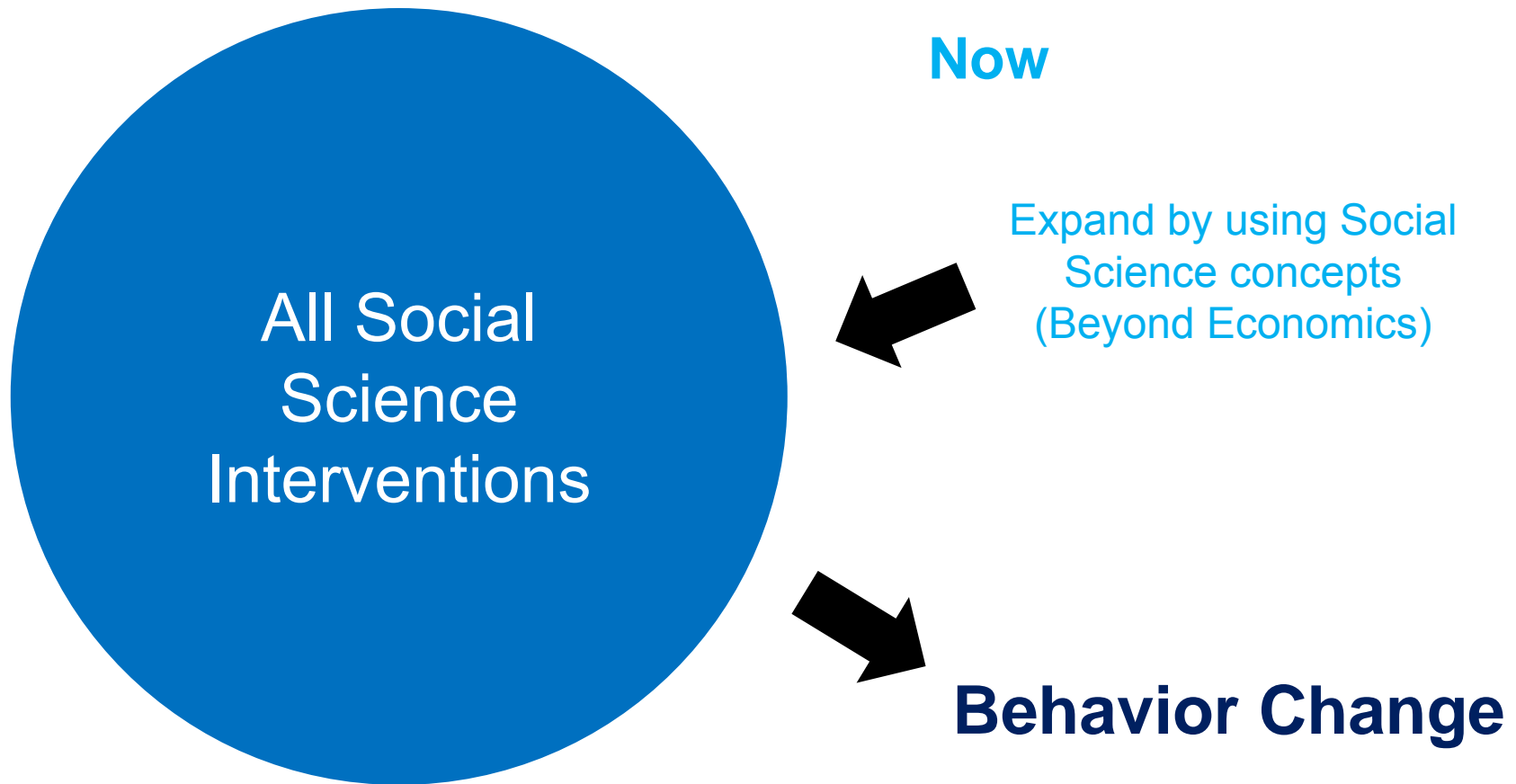# History: traditional approach to energy programs

Economics
+
Technical
Info
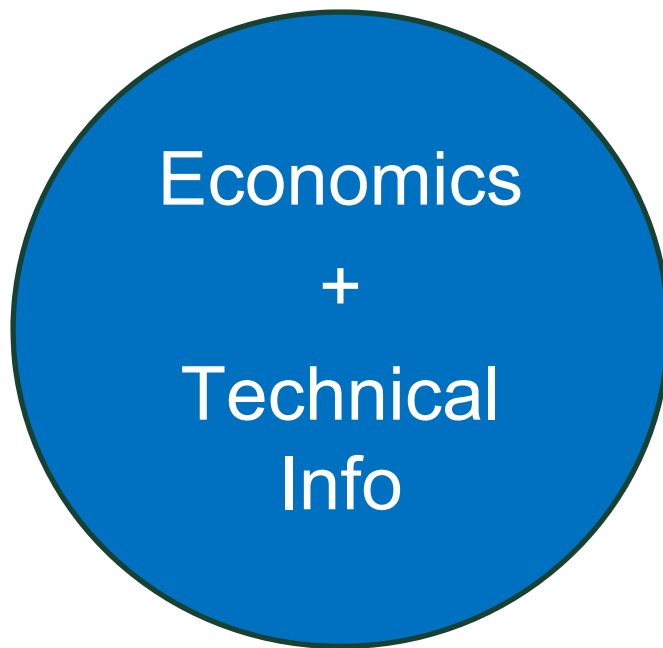
In past

Programs focused on one Social Science discipline
(neo-classical economics)

↓

Behavior Change

Now: expansion of traditional approach

Now

All Social Science Interventions

Expand by using Social Science concepts (Beyond Economics)

Behavior Change

Expand

Socially-Focused Theories

- Anthropology
- Sociology
- Legal Theories
- Macroeconomics

Individual-Focused Theories

Psychology

Social Psychology

Microeconomics

Science & Technology Studies

- Adoption & Diffusion of Technology
- End-User Studies
- Cybernetics and Learning Theory
- Design Theory & Environmental Psychology

Q: Where & how can we use behavior interventions?

Stand-Alone Program

Augment Effects of An Existing Program

Program Recruitment Phase

Behavior Interventions Can Be Used At Many Points In Many Ways

Encourage Participation in Other Programs (e.g. Audit → Rebate)

Influence Purchase Decisions

How We Use Program Equipment

Any Energy Habit

Any Combination of Above
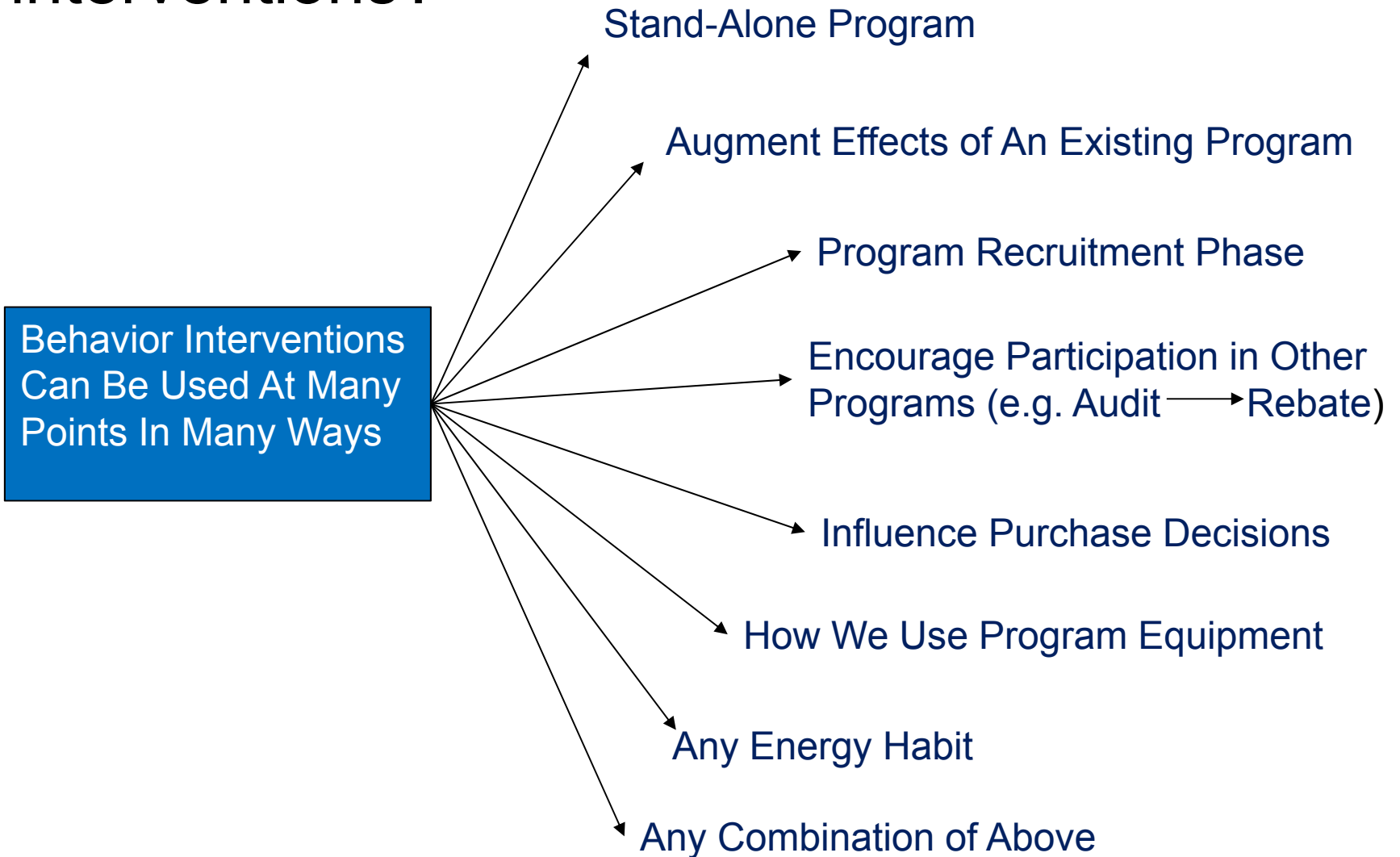
Q: What are some of the behavior change intervention strategies supported by social science theory that take us "outside the box" of traditional DSM programs?

Behavior change interventions

Behavior interventions

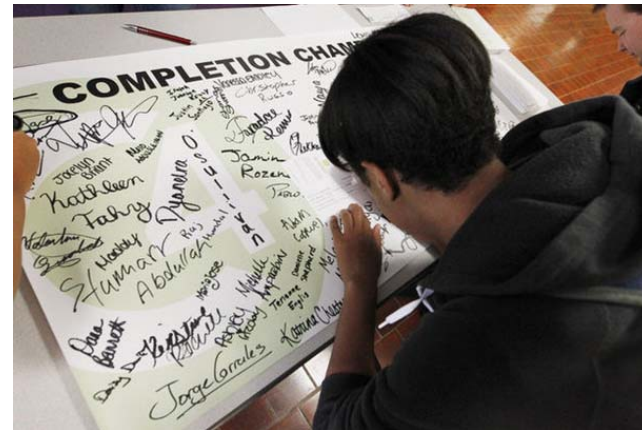| Traditional:	Underused:
• Financial Incentive • Energy Pricing • Leveraging Sunk Cost • Legal • Information	• Commitment • Feedback • Follow-through • Framing • In-person Interactions • Rewards or Gifts • Social Norms • Stacked Interventions

Goals and commitment

- Setting clear reachable goals motivates people

- Making a public commitment motivates people to follow through

We like to be in the norm

Q: How might these strategies be used in energy efficiency programs?

What are some examples of programs that might draw on the broader set of behavior change interventions?

Messaging that helps us make better decisions

Feedback
Benchmarking
Social norms

Products that help us make better decisions

Feedback
Goal setting / follow-through
Competition

Defaults
Feedback

What if we combined these strategies to create more effective program models?

School-based education on household energy use and "norms"

SmartMeter "Learning" and "Feedback" App

What if we combined these strategies to create more effective program models?

Parent-student energy "homework" for points toward inter-classroom competitions
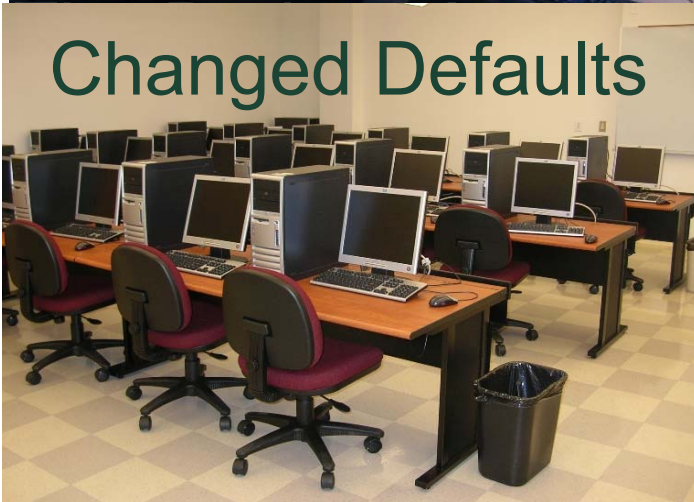
What if we combined these strategies to create more effective program models?

Schools whose residents reduce their usage the most receive
a donation for art or music programming

Imagining 'smarter' design with testing


Plattsburgh Green Machine
Please turn computer & monitor off before you leave

Changed Defaults

	No Prompt	Prompt
Default: Stay ON	3%	11%
Default: Stay OFF	15%	**48%**

Defaults
Prompts

Avoiding take-back

▪Translation to intervention to reduce take-back
- ▪Build on the investment the homeowner has made to reduce energy use
- ▪Frame the issue in terms of the loss of the benefit of that investment (loss aversion)

▪ Direct messaging to home upgrade participants

  ▪ Highlight investment made

  ▪ AND the potential loss of its benefits if they increase their usage

▪ Avoid going one step forward and two steps back
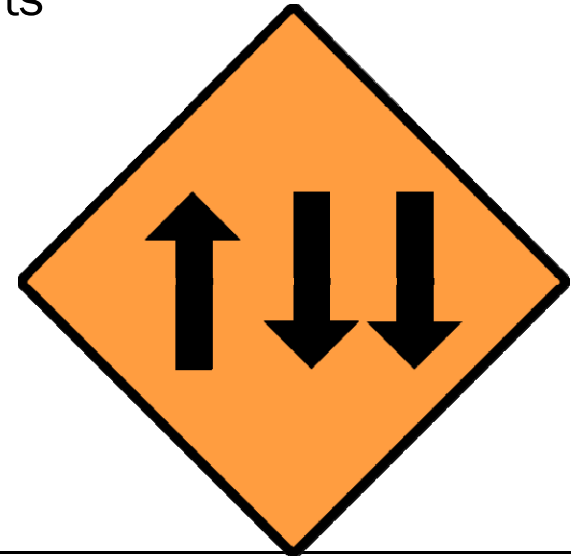
Framing
Loss Aversion

Q: What new programs are utilities in California beginning to offer that make use of these strategies?

Draft proposal for broadening the definition of behavior-based programs

- Apply approaches drawn from the social and behavioral sciences to affect energy use
- Identify and deploy one or more intervention strategies:
  - Commitment
  - Feedback
  - Follow through
  - Framing
  - Social norms/diffusion
  - Rewards or gifts
  - In-person and trusted community messenger interactions
- *Evaluate using full/quasi-experimental design, pre-post evaluations, or other approved methods*
- *Evaluate on ex-post basis, but may use ex-ante savings values if approved by CPUC*

Behavior-based initiatives underway in California

Program/Trial	Description	Type(s) of Behavioral Intervention
Home Energy Report (HER)	This is a direct mailing program that provides residential customers with neighborhood comparative energy usage information. Uses a randomized control trial (RCT) design.	Social Norming, Framing, Feedback
Residential Audit Programs	**Home Energy Efficiency Surveys (HEES); Home Energy Advisor (HEA)** SCE's HEES program is a multi-language , multi-modal (e.g., mail-in, onsite, and phone) homeowner/renter survey with feedback recommendations for next steps. PG&E and SCE's HEA is an online homeowner/renter audit tool designed to motivate ongoing engagement and involvement. A quasi-experimental design is used for impact evaluations.	HEES: Feedback, Rewards/Gift (i.e., energy kit). HEA: Feedback, Commitment, Follow-Through
HEES Enhancement Program	SCE's combined intervention of a mail-in HEES survey and a HER that targets high bill and high usage customers. This program design includes a RCT assignment.	Feedback, Framing, Social Norming
HEES Enhancement with Community Outreach Pilot	This is a behavior pilot using a multi-prong program design approach, leveraging all of the above HEES Enhancement program design plus community outreach. For measurement, a quasi-experimental design is required.	Feedback, Social Norming, Framing, Reward/Gift
Smart thermostat trials	These trials (Nest, and others under consideration) assess the impact of smart thermostat feedback on energy use behavior using a quasi-experimental design.	Feedback
Manage-Act-Save	This SDG&E trial provides targeted messages, energy tips and program recommendations. The intervention is designed to enhance customer learning by testing customer analytics and segmentation techniques.	Competition, Feedback, Social Norming
Marketplace trials	This PG&E trial provides information, education and advice to consumers who are searching online for appliances and electronics. The platform is designed to serve as a sort of "kayak.com" and "Consumer Reports" by providing efficiency scores , the lifetime cost of ownership, reviews, tips for use, price, vendor locations, and incentives/rebates processing.	Framing
Cool California Carbon Challenge	California Air Resource Board's "Cool California" challenge is a layered design whereby cities compete with each other to recruit residents who could earn points for tracking and reducing household energy consumption and motor vehicle emissions, as well as for taking simple one-time actions, like inviting friends, uploading stories and completing a research survey.	Commitment, Goal Setting, Feedback, Social Networking, Competition
Business Energy Report (BER)	PG&E is designing "round two" of a comparative feedback program that provides small and medium businesses and organizations (SMBs) participants with sector-specific comparative energy usage information. Employs an RCT design.	Social Norming, Framing, Feedback
Business Competition trials	PG&E is designing a competition for large and SMB business customers that involves partnerships with local governments, aligned non-profits and business organizations, chambers of commerce, and major employers. Marketing and customer engagement campaign to promote EE portfolio and behavior changes by engaging property managers, tenants, and facility managers. Prizes awarded to winning communities.	Competition, Goal Setting, Social Networking.

Q: What implications do these newer program designs have for evaluators?

- Needs throughout program life
- Distance between planners & evaluators
- Measurement challenges
- How might improve evaluation results

Embedding evaluation in design and delivery

Where we think about evaluation now

Where we should be thinking about evaluation

Product design and specification

Target markets

Implementation strategy

Message development

Delivery

Program outputs

Program outcomes