



INNOVATIVE RESIDENTIAL CUSTOMER FEEDBACK PROGRAMS: THE PROMISE OF SMART METER DATA

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Opinion **Dynamics**



DNV·GL

Study Objectives

- CPUC study to better understand where California stands in terms of:
 - Realizing benefits from smart meter data for residential behavior feedback efforts
 - Understanding future residential behavior feedback savings potential
 - Guiding future efforts to support EE /DR impacts and emission goals (AB 32)
- Focuses on 2013-2014 IOUs, ratepayer funded, or vendor residential behavioral feedback efforts

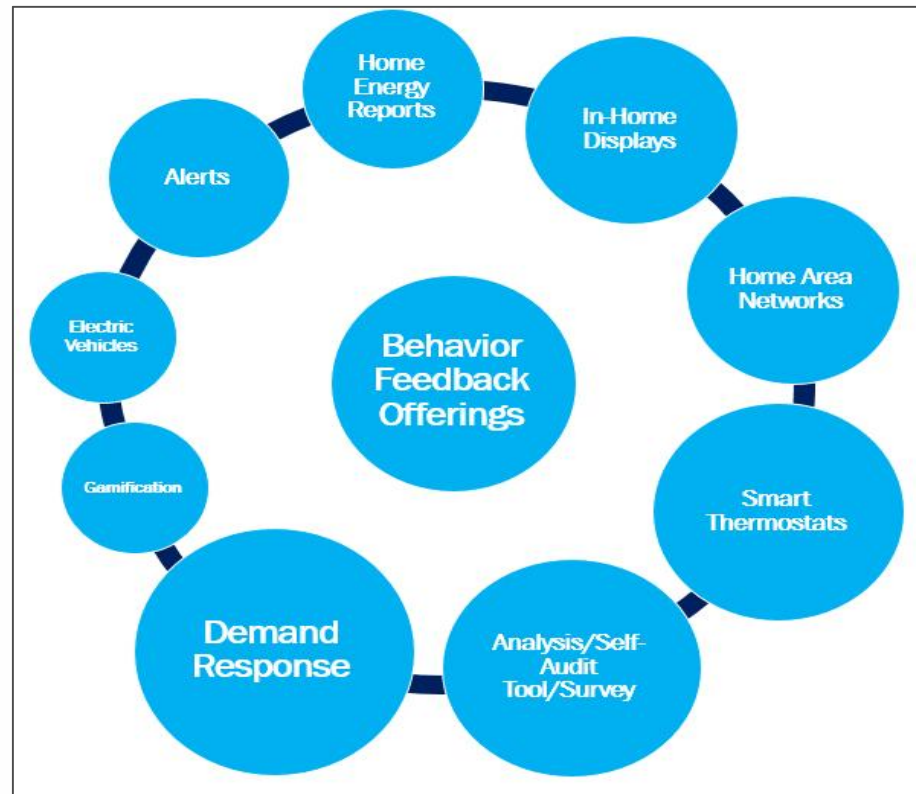
Smart Meters support reduced energy use via customer engagement

- The three electric IOUs have 90% saturation of Smart Meters as of 2013
- Substantial Smart Meter investments (\$5.5 billion, projecting \$6 billion in benefits)
- Includes assumptions about benefits from behavior feedback efforts from smart meters
 - Invested \$168-\$211* million, projecting \$1 - \$1.4 billion in multiple benefits from these efforts using smart meter data

California ecosystem is complex: broad, varied, and multifaceted

- California's ratepayer-funded efforts use a variety of:
 - Offerings
 - Behavior intervention strategies
 - Data sources

Menu of California Residential Behavior Feedback Services and Products



Note: Study provides case studies for smart thermostat, Pre-Pay, gamification, disaggregation and dynamic pricing pilots

California behavior feedback efforts align with nationwide efforts

- California efforts:
 - Leverage multiple intervention strategies
 - “Feedback-only” makes up largest share, followed by energy pricing and financial incentives
 - Competitions, rewards, and commitment are smallest share
- California is comparable to North America
 - HER are most widely adopted
 - Most leverage multipronged intervention strategies



* Indicate strategies employed in California

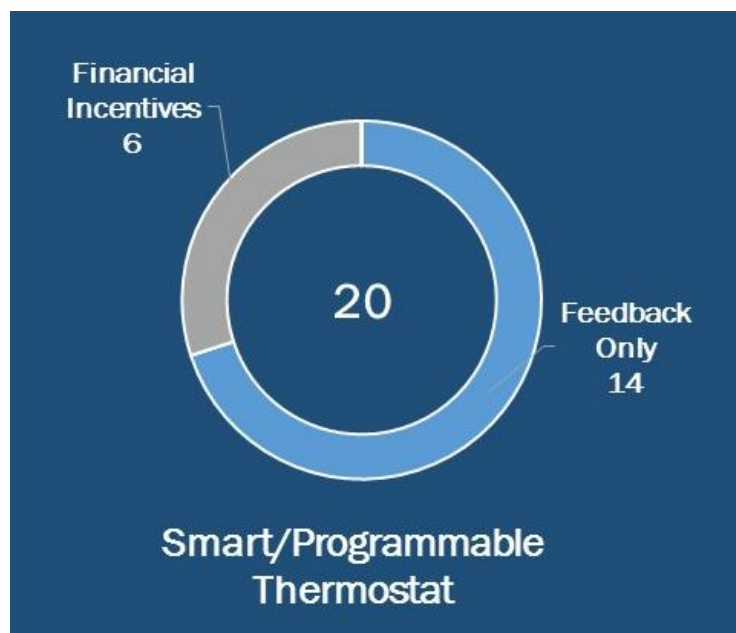


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Intervention strategies employed vary by offerings



Intervention strategies employed vary by offerings



Most California efforts leverage smart meter data

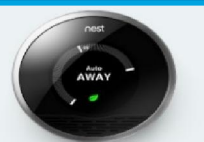
- Majority (66 or 80%) of the 83 IOU-administered California residential behavior feedback efforts leverage smart meter data
- Of these, 12% (8 of 66) use Green Button Connect

Type of Data Used to Provide Feedback



Smart Meter Data (AMI-enabled programs)

- Leverages AMI data to provide feedback (tends to be about whole home energy use, not disaggregated)



Other Customer Data (Non-AMI)

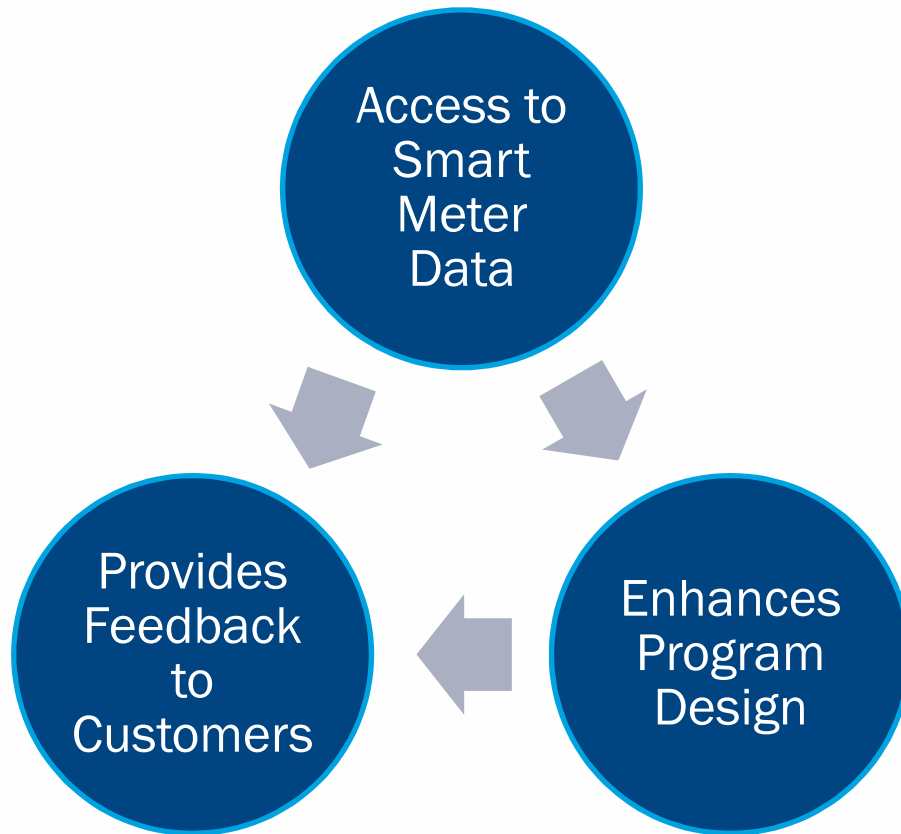
- Leverages other sources of data (e.g., occupancy, temperature, other) to provide feedback



Hybrid Approach (AMI and non-AMI data)

- Leverages AMI and other sources of data to provide feedback

Vendor access to smart meter data can provide benefits to customers, but vendors face barriers



Market experts and vendors suggested that barriers are shifting from infrastructure for data access to privacy and cost-effectiveness

Innovative engagement efforts are proliferating with data



Questions?

- Report can be accessed here:
http://www.calmac.org/publications/PY2013-2014_Behavior_Market_Characterization_Report_Final_Volume_I.pdf

Volume I:

- Provide background on policy decisions for AMI and behavior efforts
- Categorize CA's ratepayer funded residential behavior feedback efforts
- Examine current data tracking for key metrics and progress to date
- Describe national efforts to identify any potential gaps in CA
- Characterize vendor efforts in CA and the barriers they face in providing their services to residential customers
- Provide guidance to develop improved interventions
- Volume II contains detailed methodologies, findings, data collection, and additional results
- CALMAC Study ID: CPU0109.01



Thank you!

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