SmartGrid consumer collaborative

listen, educate, collaborate

2017 Consumer Symposium

2017 State of the Consumer Report

#SGCC2017

Panelists

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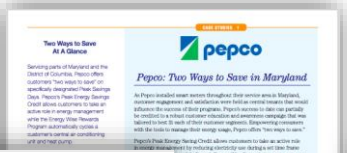
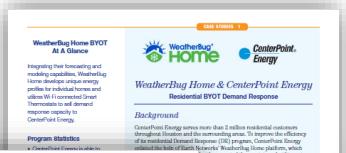
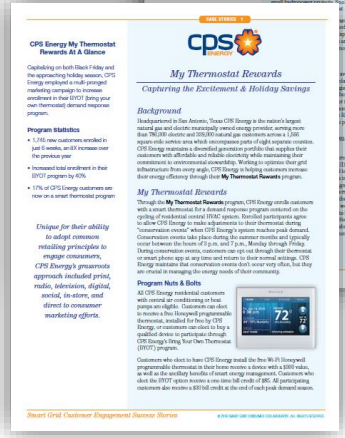
SGCC Research in 2016







#1: Consumer interest transcends technology

Awareness and interest are similar regardless of where you live

Consumer need drives interest; policy and offers encourage adoption

A utility endorsement is a plus when encouraging new technologies

#2: Marketing effectiveness is key to adoption

How the offer is framed makes a big difference!

Control and choice:

81% prefer residential solar because they have control over their system

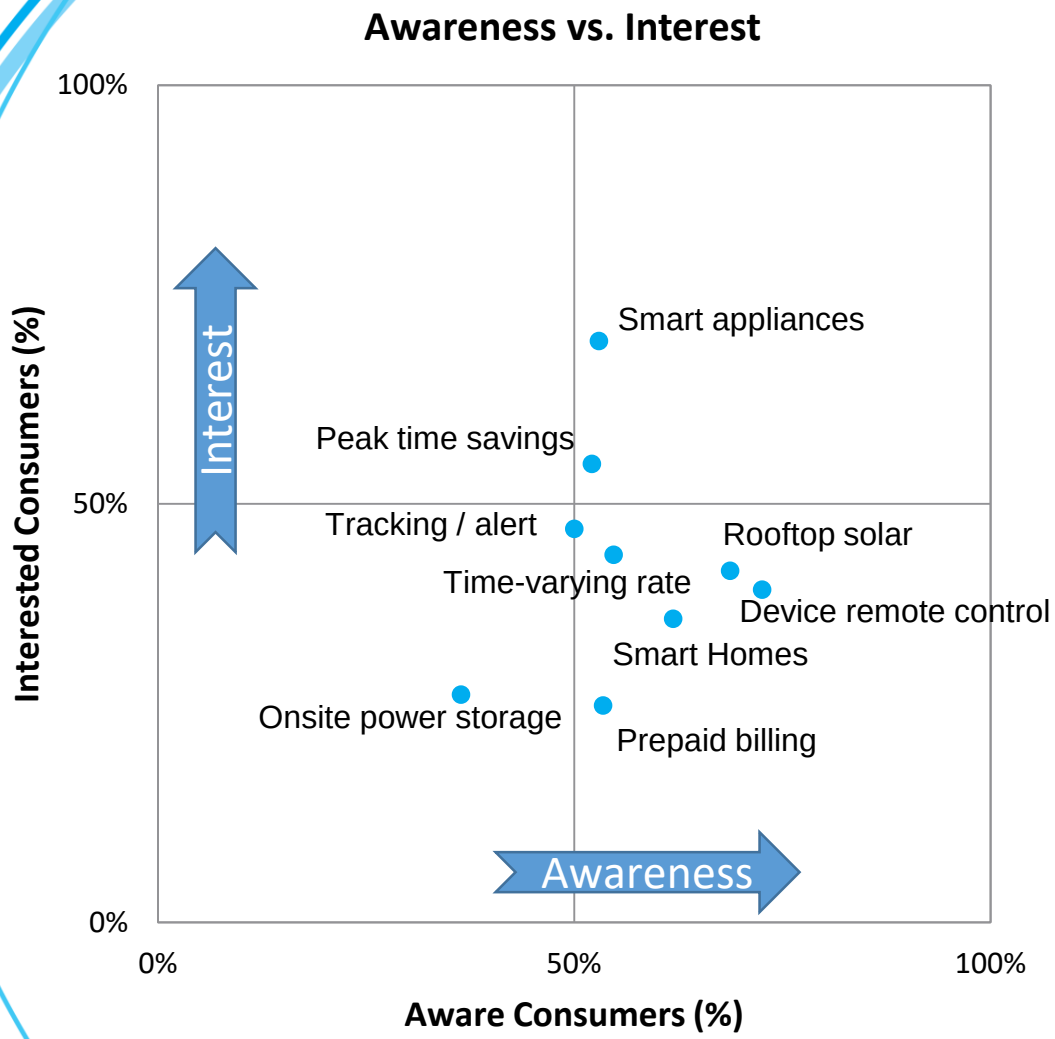
55% will choose a TOU rate over a standard rate plan if given a choice of varying premium/discount levels

Segmentation:

Savings Seekers are interested in many Smart Grid-enabled technologies, but they're not very aware

Status Quo consumers are neither aware or interested, so it is an uphill battle to get them to adopt

Build awareness AND interest



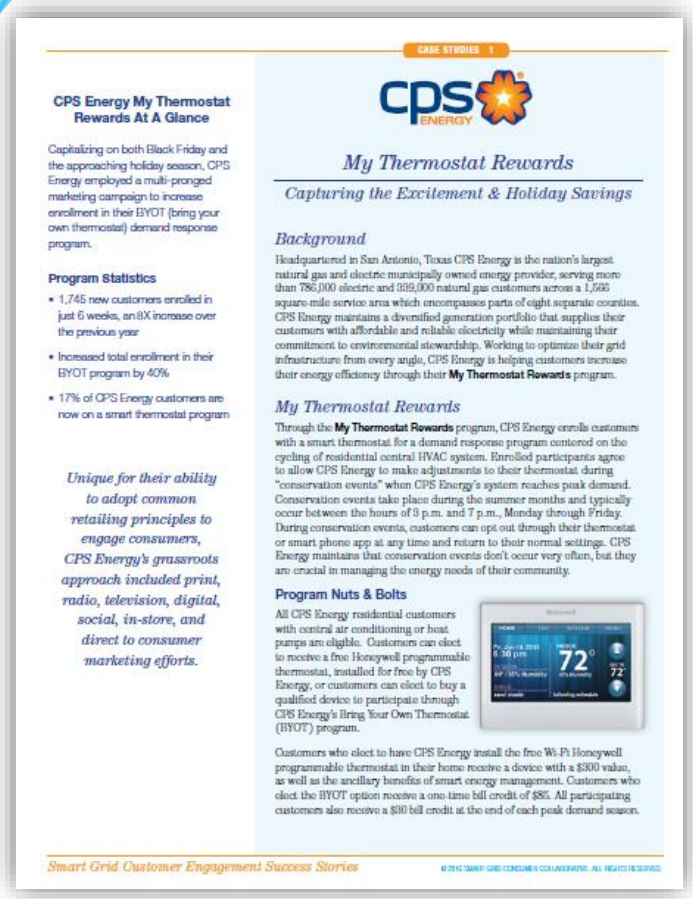
Awareness building program?

- Education campaign
- Broad-based offering
- Multi-channel promotion
- Broad-based message around savings, reliability & environmental concerns

Interest building program?

- Carefully configure the offer
- Target those most likely to adopt
- Personalize the offer
- Pilot and experiment to find the best mix

CPS – My Thermostat Rewards



CASE STUDIES 1

CPS Energy My Thermostat Rewards At A Glance

Capitalizing on both Black Friday and the approaching holiday season, CPS Energy employed a multi-pronged marketing campaign to increase enrollment in their BYOT (bring your own thermostat) demand response program.

Program Statistics

- 1,745 new customers enrolled in just 6 weeks, an 8X increase over the previous year
- Increased total enrollment in their BYOT program by 40%
- 17% of CPS Energy customers are now on a smart thermostat program

Unique for their ability to adopt common retailing principles to engage consumers, CPS Energy's grassroots approach included print, radio, television, digital, social, in-store, and direct to consumer marketing efforts.

CPS ENERGY

My Thermostat Rewards

Capturing the Excitement & Holiday Savings

Background

Headquartered in San Antonio, Texas CPS Energy is the nation's largest natural gas and electric municipally owned energy provider, serving more than 786,000 electric and 339,000 natural gas customers across a 1,566 square-mile service area which encompasses parts of eight separate counties. CPS Energy maintains a diversified generation portfolio that supplies their customers with affordable and reliable electricity while maintaining their commitment to environmental stewardship. Working to optimize their grid infrastructure from every angle, CPS Energy is helping customers increase their energy efficiency through their **My Thermostat Rewards** program.

My Thermostat Rewards

Through the **My Thermostat Rewards** program, CPS Energy enrolls customers with a smart thermostat for a demand response program centered on the cycling of residential central HVAC system. Enrolled participants agree to allow CPS Energy to make adjustments to their thermostat during "conservation events" when CPS Energy's system reaches peak demand. Conservation events take place during the summer months and typically occur between the hours of 3 p.m. and 7 p.m., Monday through Friday. During conservation events, customers can opt out through their thermostat or smart phone app at any time and return to their normal settings. CPS Energy maintains that conservation events don't occur very often, but they are crucial in managing the energy needs of their community.

Program Nuts & Bolts

All CPS Energy residential customers with central air conditioning or heat pumps are eligible. Customers can elect to receive a free Honeywell programmable thermostat, installed for free by CPS Energy, or customers can elect to buy a qualified device to participate through CPS Energy's Bring Your Own Thermostat (BYOT) program.

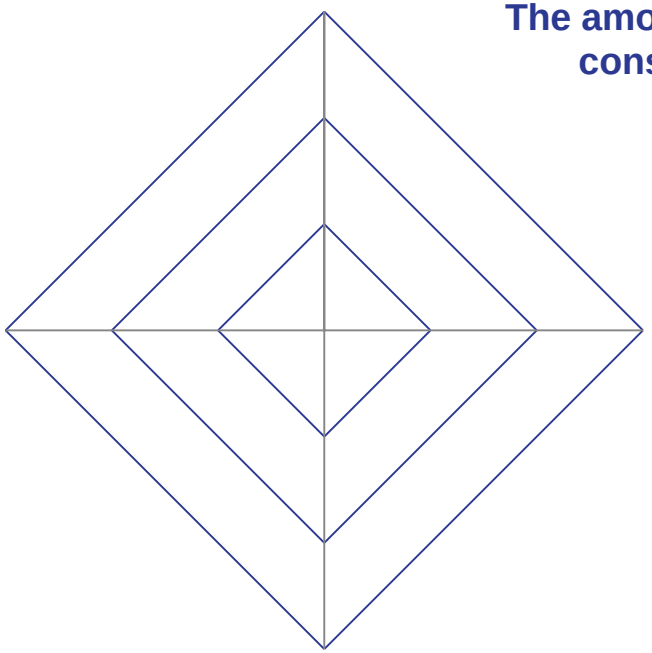
Customers who elect to have CPS Energy install the free Wi-Fi Honeywell programmable thermostat in their home receive a device with a $300 value, as well as the ancillary benefits of smart energy management. Customers who elect the BYOT option receive a one-time bill credit of $85. All participating customers also receive a $30 bill credit at the end of each peak demand season.

Smart Grid Customer Engagement Success Stories

Adopt common retailing principles to engage consumers.

- **Multi-channel marketing campaign** included print, radio, television, digital, social, in-store, and direct to consumer marketing efforts.
- **Partnered with home improvement retailers** during peak shopping season.
- **Provided consumer choice** of several high-end thermostats (deeply discounted via a bill rebate).

#3: Program design matters (in general)



Control

The amount of control the consumer retains

Incentive

The size of the benefit + any inducements

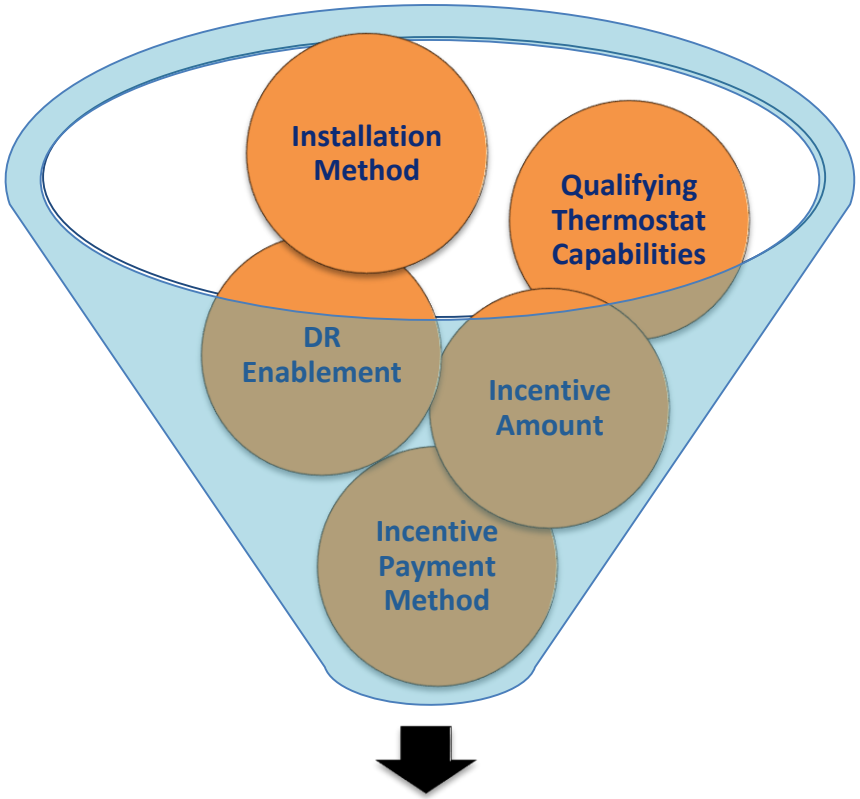
Information Sharing

The level of personal information the consumer must share

Transaction Burden

Consumer investment ($, time and effort)

Program design matters (in specific)



Smart Thermostat Utility Program

Best configuration for highest interest?

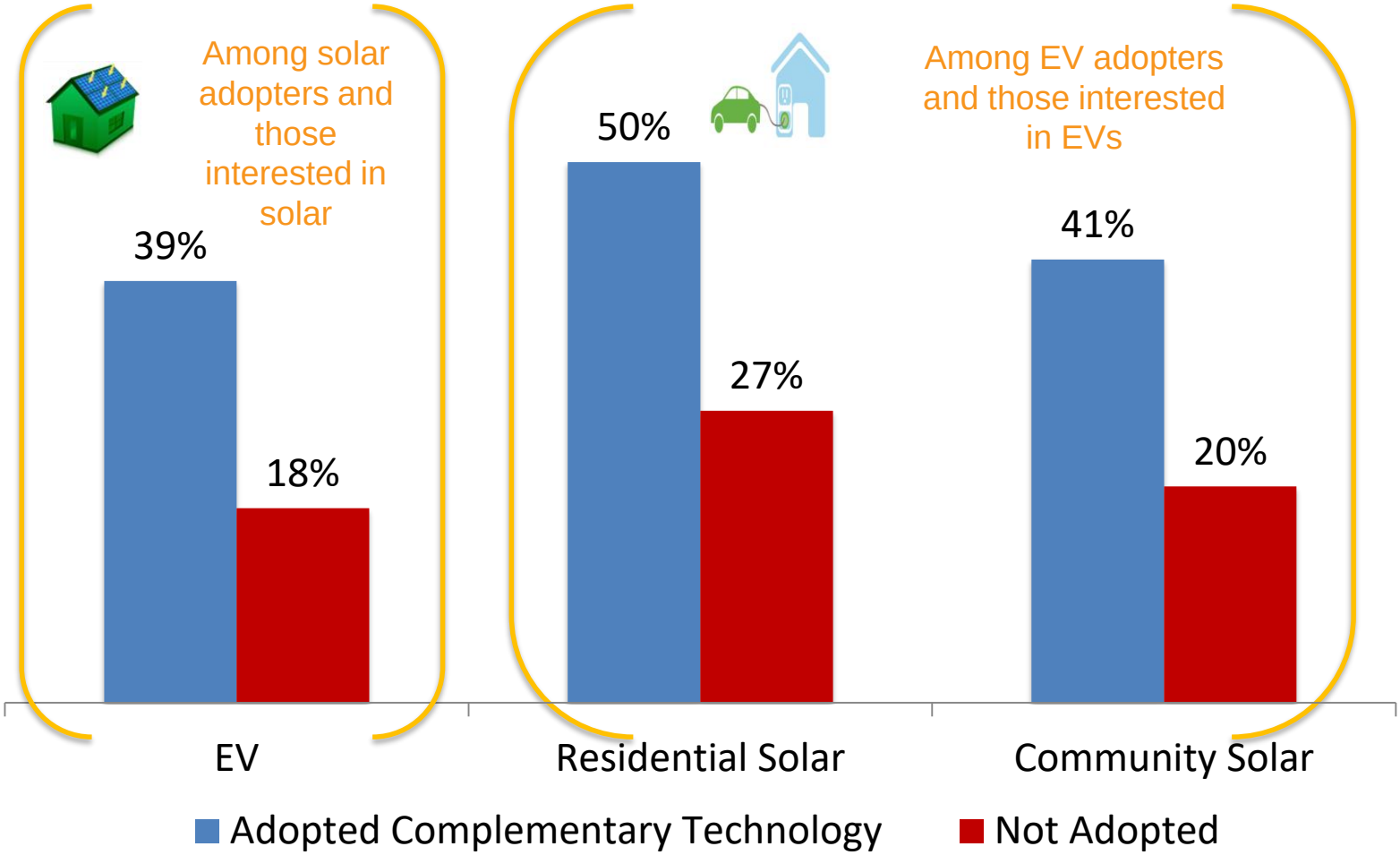
- DIY installation
- Programmable with weather adjustment capabilities
- No DR capability
- Rebate
- $250 incentive

68%

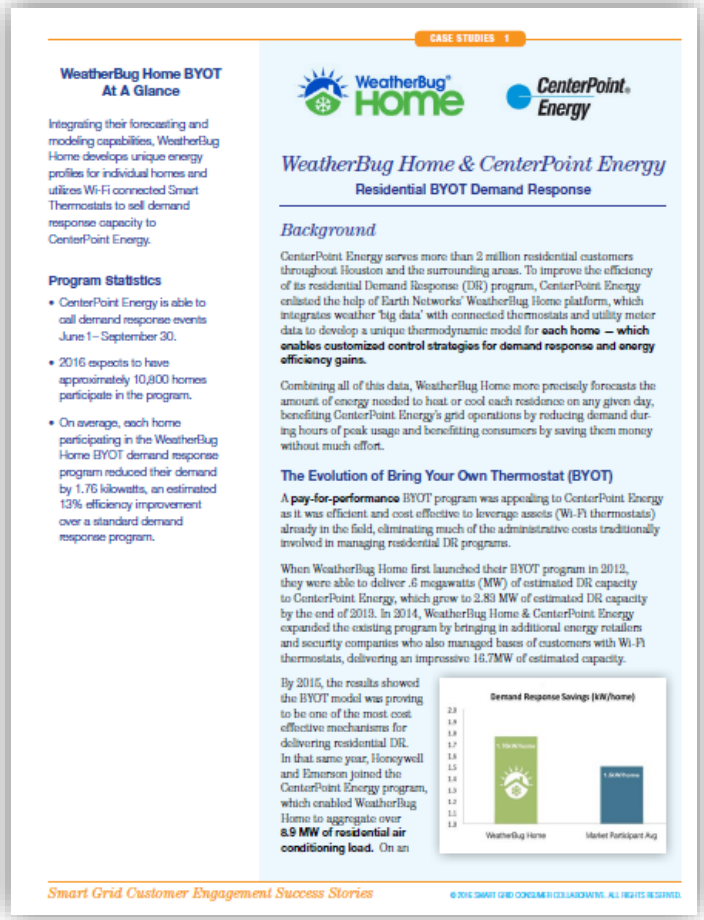
Try a few tweaks…

- Reduce the incentive to $150 — 68%
- Reduce the incentive to $50 — 64%
- Add DR capability — 54%

Leverage what you know; partner for more



CenterPoint and WeatherBug Home BYOT



CASE STUDIES 1

WeatherBug Home BYOT At A Glance

Integrating their forecasting and modeling capabilities, WeatherBug Home develops unique energy profiles for individual homes and utilizes Wi-Fi connected Smart Thermostats to sell demand response capacity to CenterPoint Energy.

Program Statistics

- CenterPoint Energy is able to call demand response events June 1– September 30.
- 2016 expects to have approximately 10,800 homes participate in the program.
- On average, each home participating in the WeatherBug Home BYOT demand response program reduced their demand by 1.76 kilowatts, an estimated 13% efficiency improvement over a standard demand response program.

WeatherBug Home CenterPoint Energy

WeatherBug Home & CenterPoint Energy

Residential BYOT Demand Response

Background

CenterPoint Energy serves more than 2 million residential customers throughout Houston and the surrounding areas. To improve the efficiency of its residential Demand Response (DR) program, CenterPoint Energy enlisted the help of Earth Networks' WeatherBug Home platform, which integrates weather 'big data' with connected thermostats and utility meter data to develop a unique thermodynamic model for **each home — which enables customized control strategies for demand response and energy efficiency gains.**

Combining all of this data, WeatherBug Home more precisely forecasts the amount of energy needed to heat or cool each residence on any given day, benefiting CenterPoint Energy's grid operations by reducing demand during hours of peak usage and benefitting consumers by saving them money without much effort.

The Evolution of Bring Your Own Thermostat (BYOT)

A **pay-for-performance** BYOT program was appealing to CenterPoint Energy as it was efficient and cost effective to leverage assets (Wi-Fi thermostats) already in the field, eliminating much of the administrative costs traditionally involved in managing residential DR programs.

When WeatherBug Home first launched their BYOT program in 2012, they were able to deliver .6 megawatts (MW) of estimated DR capacity to CenterPoint Energy, which grow to 2.83 MW of estimated DR capacity by the end of 2013. In 2014, WeatherBug Home & CenterPoint Energy expanded the existing program by bringing in additional energy retailers and security companies who also managed bases of customers with Wi-Fi thermostats, delivering an impressive 16.7MW of estimated capacity.

By 2015, the results showed the BYOT model was proving to be one of the most cost effective mechanisms for delivering residential DR. In that same year, Honeywell and Emerson joined the CenterPoint Energy program, which enabled WeatherBug Home to aggregate over **8.9 MW of residential air conditioning load.** On an

Smart Grid Customer Engagement Success Stories

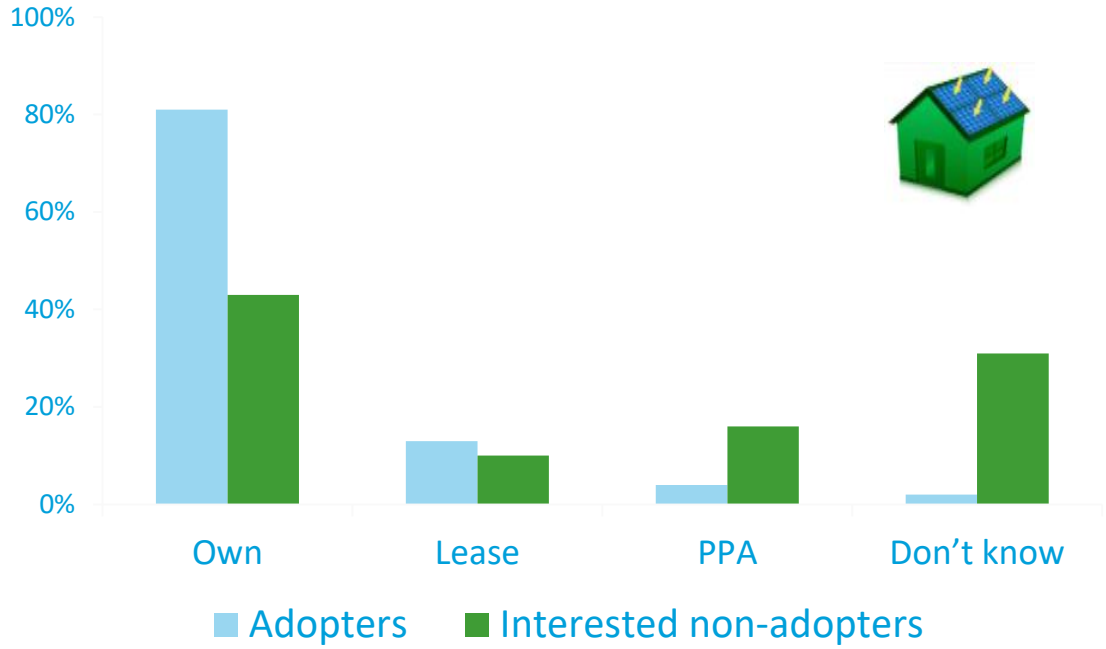
Balance the program elements so everyone wins!

- **BYOT (wifi-connected) l**everaging current investment and eliminating the need for an incentive.
- **Partner to add value** with an add-on app that adjusts for weather while maintaining comfort – a key consumer need.
- **Automate where possible**, reducing administrative costs for the utility and the "transaction burden" for the consumer.

#4: Overcome the cost barrier

The top three barriers consumers cited to adopting rooftop solar (and the second-most cited barrier to adopting an EV) were related to **financial issues**

Acquisition model for solar



The "Shared Economy"

The Policy Environment

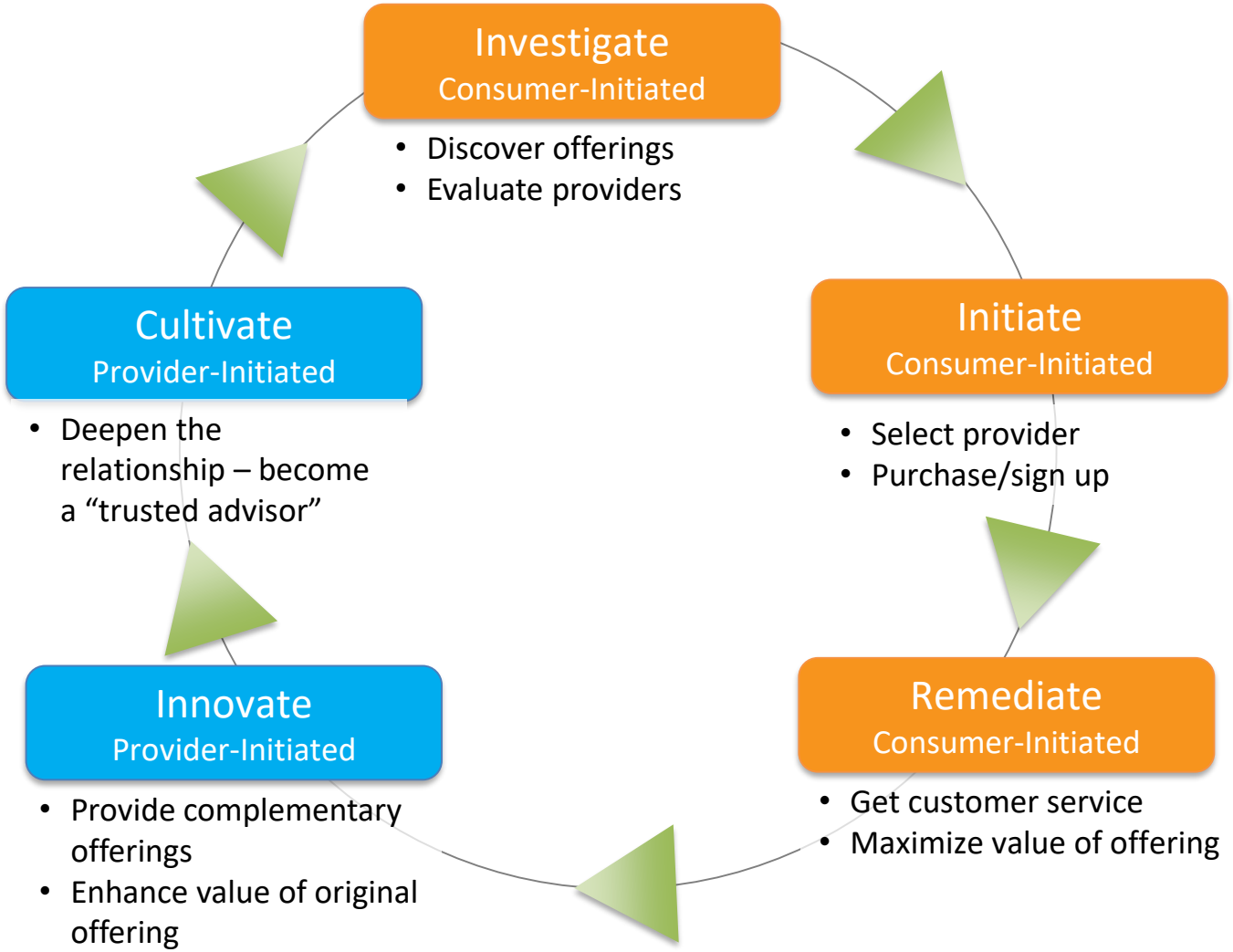
Arcadia Power: beyond a PPA or lease

Innovation with a low up front cost from a 3rd party payment processor

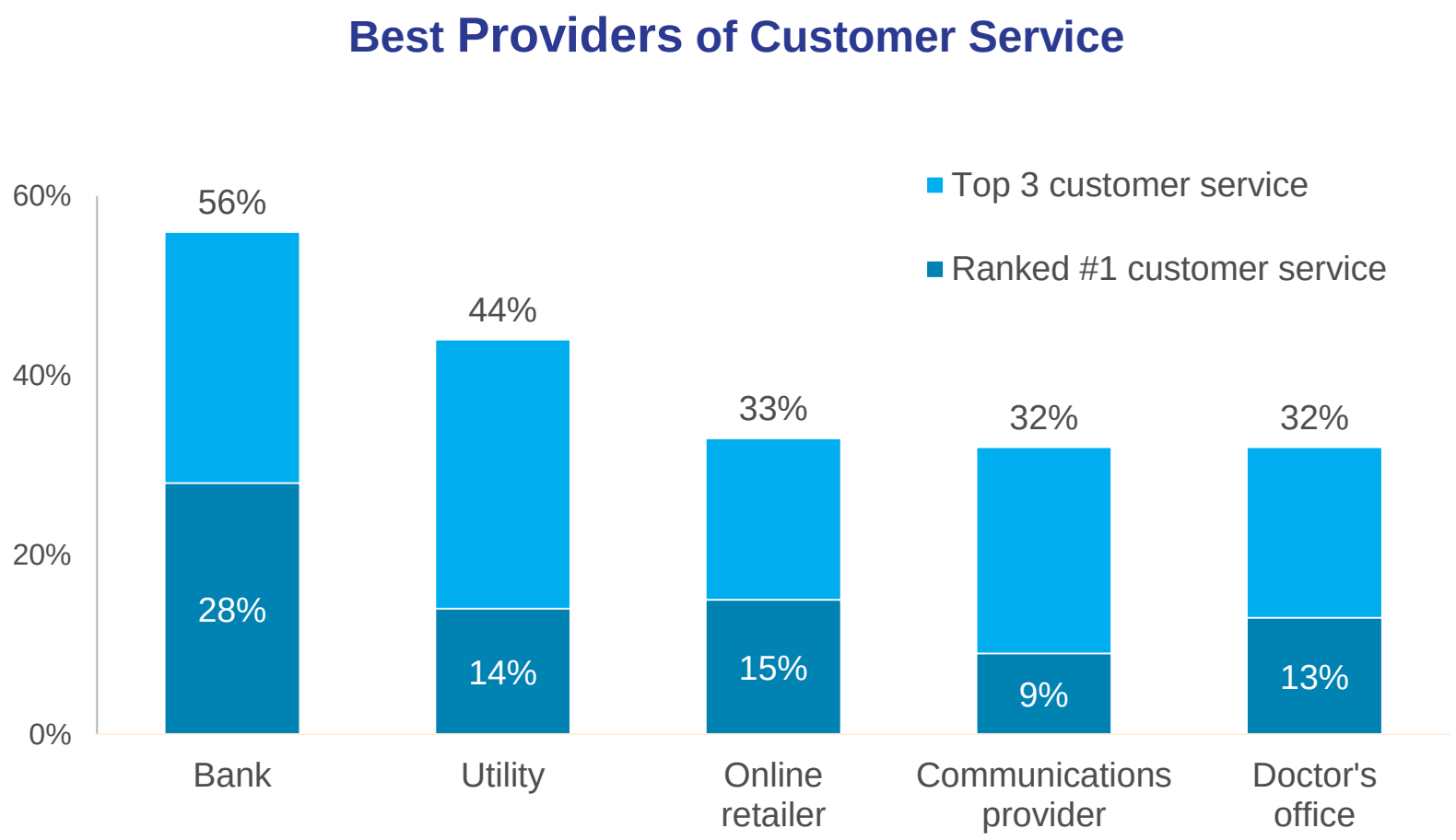
- **Purchase solar panels for a community solar project**
- **Revenues applied to your utility bill –** wherever you live and anywhere you might move
- **Available to anyone –** renter, homeowner, high-rise resident - multiple or single panel subscribers

#5: Remember post-purchase engagement

The customer-electricity provider relationship is no longer just about starting/stopping service and problem resolution.



Remediate? Focus on customer care

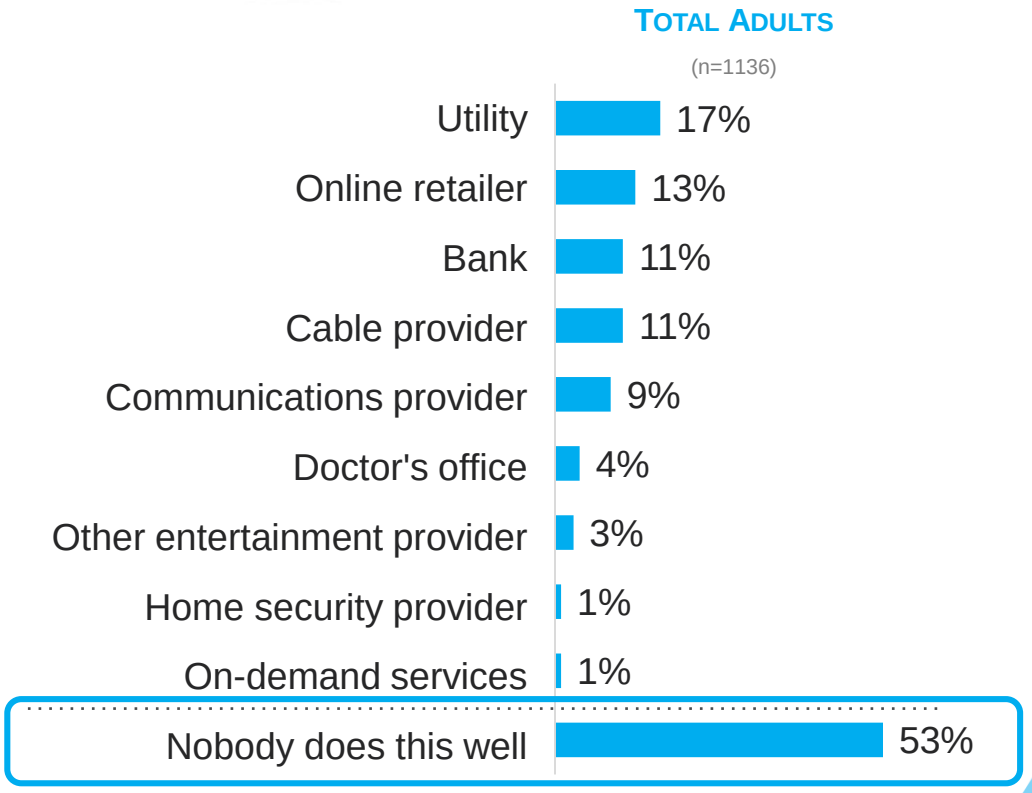


Cultivate? Deepen the relationship

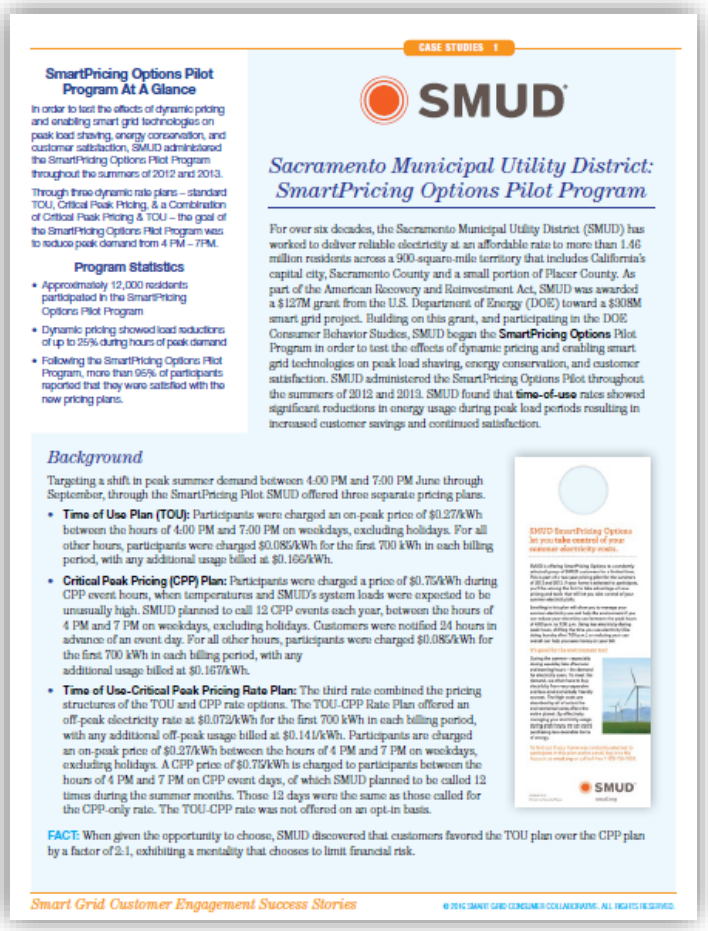
Receive personalized product/service offers

53% of consumers do not believe ANY of their service providers do this well!

Utilities have access to customers' energy consumption history and this, coupled with other useful Customer Information System (CIS) data, can be mined to develop tailored offers customers value and find useful.



SMUD Smart Pricing Options



CASE STUDIES 1

SMUD

Sacramento Municipal Utility District: SmartPricing Options Pilot Program

For over six decades, the Sacramento Municipal Utility District (SMUD) has worked to deliver reliable electricity at an affordable rate to more than 1.46 million residents across a 900-square-mile territory that includes California's capital city, Sacramento County and a small portion of Placer County. As part of the American Recovery and Reinvestment Act, SMUD was awarded a $127M grant from the U.S. Department of Energy (DOE) toward a $308M smart grid project. Building on this grant, and participating in the DOE Consumer Behavior Studies, SMUD began the **SmartPricing Options** Pilot Program in order to test the effects of dynamic pricing and enabling smart grid technologies on peak load shaving, energy conservation, and customer satisfaction. SMUD administered the SmartPricing Options Pilot throughout the summers of 2012 and 2013. SMUD found that **time-of-use** rates showed significant reductions in energy usage during peak load periods resulting in increased customer savings and continued satisfaction.

SmartPricing Options Pilot Program At A Glance

In order to test the effects of dynamic pricing and enabling smart grid technologies on peak load shaving, energy conservation, and customer satisfaction, SMUD administered the SmartPricing Options Pilot Program throughout the summers of 2012 and 2013.

Through three dynamic rate plans – standard TOU, Critical Peak Pricing, & a Combination of Critical Peak Pricing & TOU – the goal of the SmartPricing Options Pilot Program was to reduce peak demand from 4 PM – 7PM.

Program Statistics

- Approximately 12,000 residents participated in the SmartPricing Options Pilot Program
- Dynamic pricing showed load reductions of up to 25% during hours of peak demand
- Following the SmartPricing Options Pilot Program, more than 95% of participants reported that they were satisfied with the new pricing plans.

Background

Targeting a shift in peak summer demand between 4:00 PM and 7:00 PM June through September, through the SmartPricing Pilot SMUD offered three separate pricing plans.

- **Time of Use Plan (TOU):** Participants were charged an on-peak price of $0.27/kWh between the hours of 4:00 PM and 7:00 PM on weekdays, excluding holidays. For all other hours, participants were charged $0.085/kWh for the first 700 kWh in each billing period, with any additional usage billed at $0.166/kWh.
- **Critical Peak Pricing (CPP) Plan:** Participants were charged a price of $0.75/kWh during CPP event hours, when temperatures and SMUD's system loads were expected to be unusually high. SMUD planned to call 12 CPP events each year, between the hours of 4 PM and 7 PM on weekdays, excluding holidays. Customers were notified 24 hours in advance of an event day. For all other hours, participants were charged $0.085/kWh for the first 700 kWh in each billing period, with any additional usage billed at $0.167/kWh.
- **Time of Use-Critical Peak Pricing Rate Plan:** The third rate combined the pricing structures of the TOU and CPP rate options. The TOU-CPP Rate Plan offered an off-peak electricity rate at $0.072/kWh for the first 700 kWh in each billing period, with any additional off-peak usage billed at $0.141/kWh. Participants are charged an on-peak price of $0.27/kWh between the hours of 4 PM and 7 PM on weekdays, excluding holidays. A CPP price of $0.75/kWh is charged to participants between the hours of 4 PM and 7 PM on CPP event days, of which SMUD planned to be called 12 times during the summer months. Those 12 days were the same as those called for the CPP-only rate. The TOU-CPP rate was not offered on an opt-in basis.

FACT: When given the opportunity to choose, SMUD discovered that customers favored the TOU plan over the CPP plan by a factor of 2:1, exhibiting a mentality that chooses to limit financial risk.

Smart Grid Customer Engagement Success Stories

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TOU pricing program shifts focus from adoption to retention

- **Automatic "opt in"**
- **Multi-channel retention program engages at all levels** – social networks, online games, infographics, email, direct mail, YouTube videos
- **Consumer success = program success**

#6: Adjust the business model

It's about the money: Consumers are willing to pay for products and services they understand and value

- **Over 50%** of consumers are willing to pay for energy concierge services, personalized savings suggestions via an app and automated heating and cooling services
- **58% of solar adopters and 60% of EV owners** are willing to pay more than $25/month for backup grid power

It's about the ecosystem: Leverage existing expertise to create new opportunities

- **Take advantage of consumer propensity to "look to the utility for information"** by delivering information clearly and easily and in a personalized way
- **Develop partnerships** that couple utility expertise with solution suppliers to make adoption easy and seamless for consumers
- **Advocate for policy change and financial incentives** that ease adoption

Summing up…

What have we learned?

- It's not about technology, rather it's consumer need
- Marketing effectiveness makes a difference
- Program design matters
- Alternative acquisition models are making headway
- Post-purchase care can make a huge difference