

It's not TOU, it's me

How smart speakers can help utilities keep residential customers on TOU

Randy Robinson, Southern California Edison

Orly Hasidim, Universal Devices

Monica Thilges, APTIM



Introductions



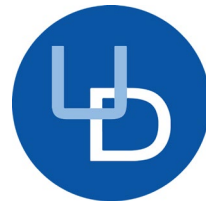
Randy Robinson



Orly Hasidim



Monica Thilges





Agenda

The situation

The opportunity

What we've learned

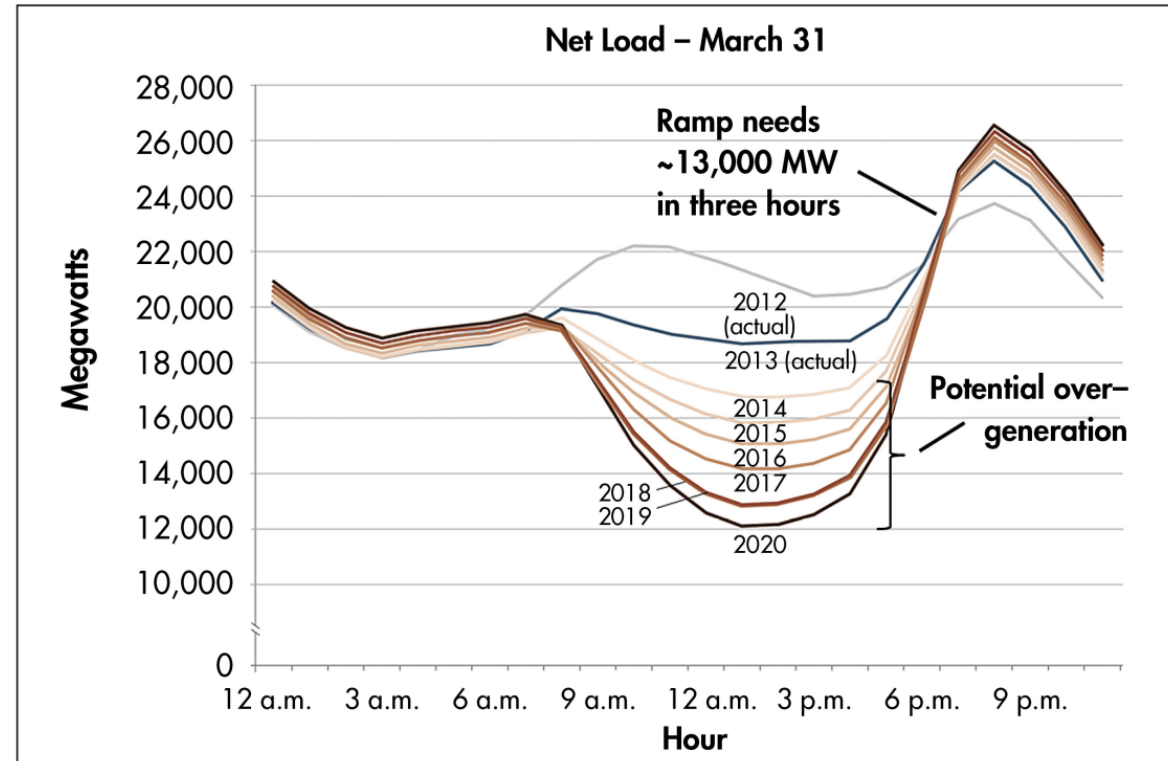
What we're doing now

Key takeaways

The Infamous Duck

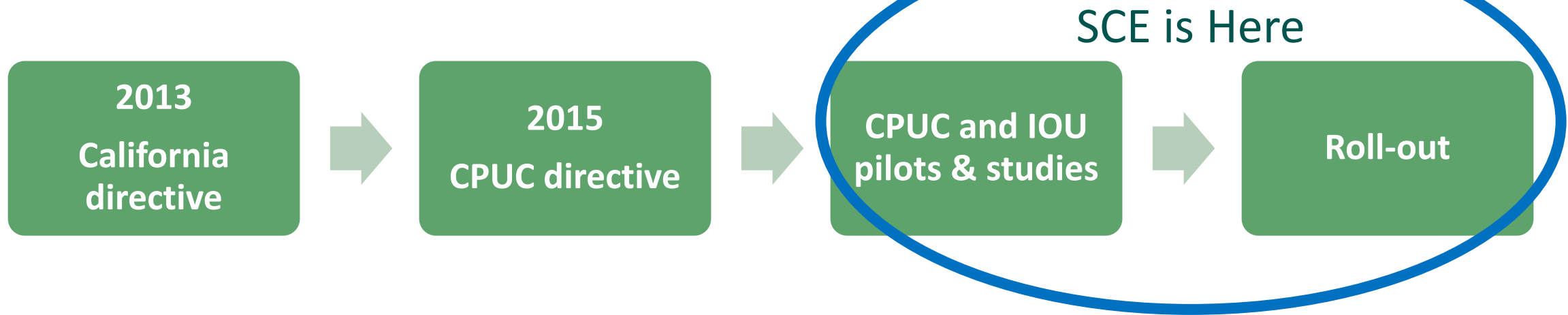


Figure 1: Net load on the CAISO system



Source: CAISO

California: TOU is Happening



Emphasize customer education and outreach that enhances understanding and acceptance of new rates



Consider tools that are engaging and provide details on energy use and bill impact

Residential TOU: Perceptions are Mixed



Pros

- Better for the environment
- Potential to save \$\$\$
- Improved grid reliability
- Do the right thing

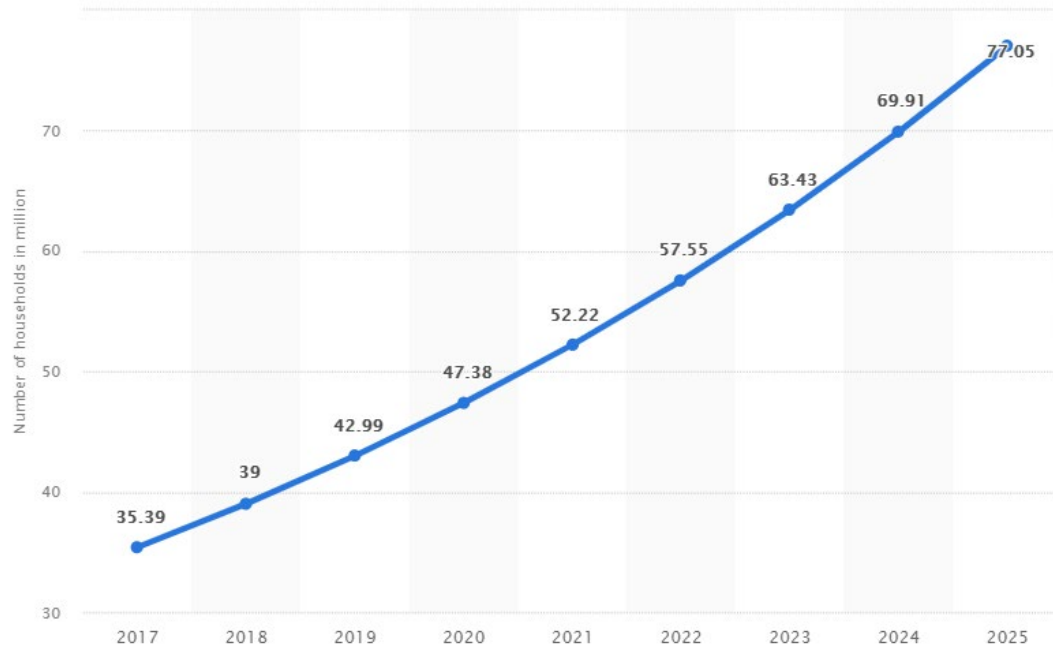


Cons

- Confusion about rates, fear of “surprise” bill
- Feedback is monthly
- Familiar with energy costs, not kWh or kW
- Can be complicated and high effort

But Homes are Getting Smarter

Number of Smart Homes in the U.S. is expected to be **77 million in 2025**.



SMART HOME REVENUE FORECAST US 2025

46.77bn USD

NUMBER OF SMART HOMES IN THE US

47.4m

SMART HOME DEVICE SHIPMENTS IN THE US 2020

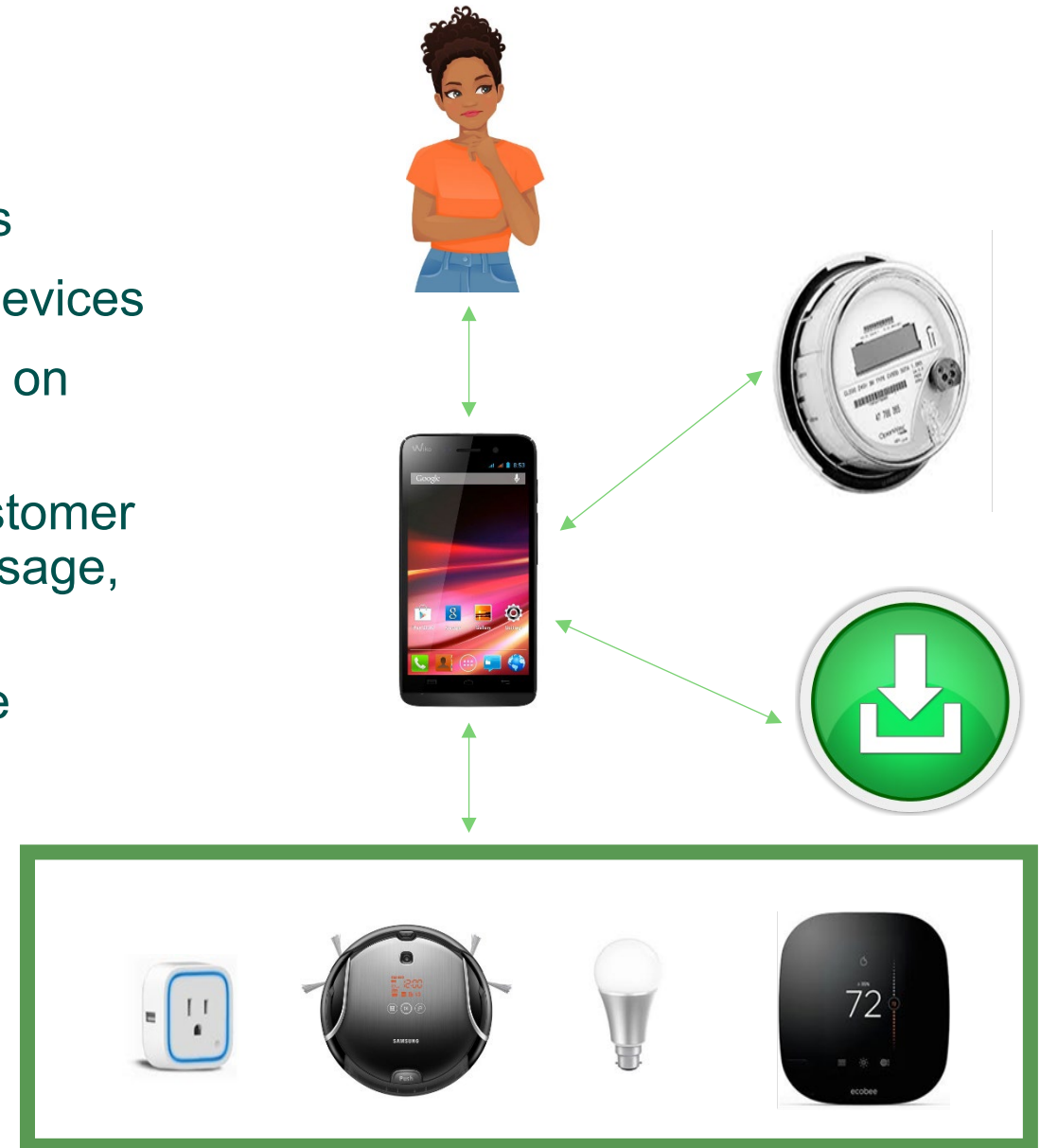
35.2m

The Solution: There's an App for That

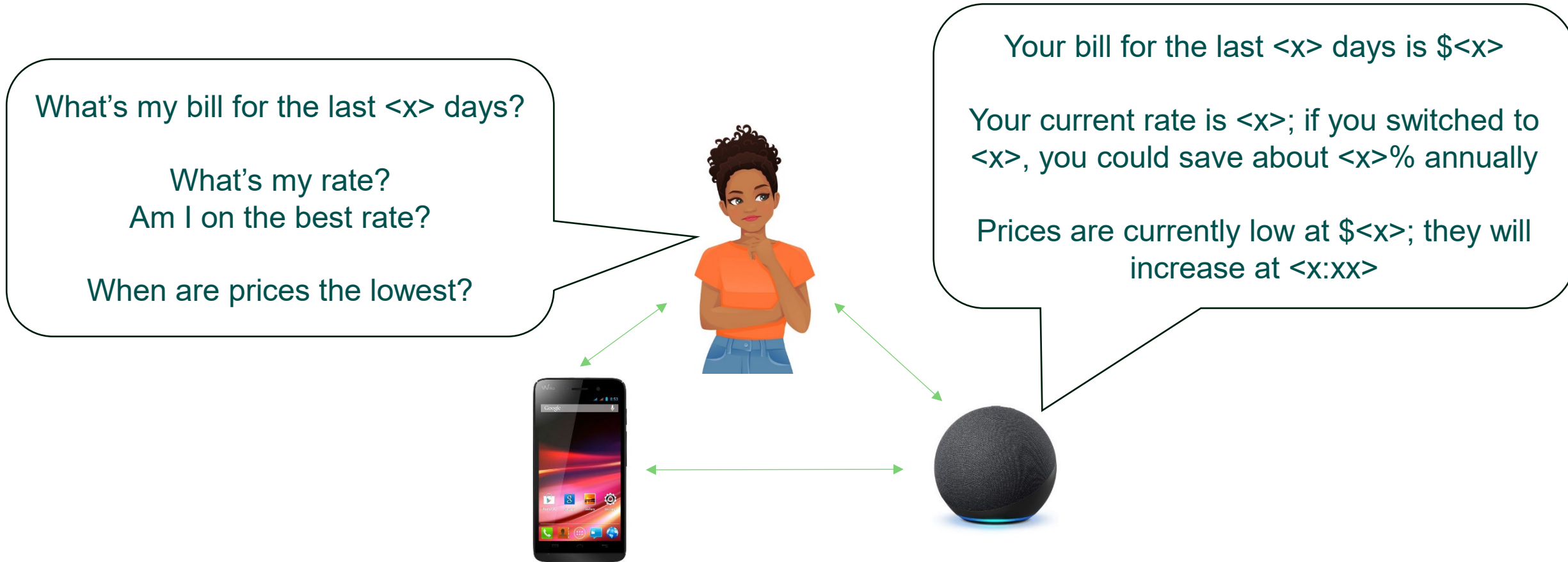
Meet the Energy Expert App

- ▲ Links to utility account and in-home smart devices
- ▲ Allows for automation and optimization of smart devices
- ▲ Proactive notifications, education and information on energy savings
- ▲ Near real-time responses based on individual customer data related to billing, energy management and usage, outage information and alerts
- ▲ Easy download from Google Play or the AppStore

Enables customers to better understand and optimize energy usage and costs



Supersize It: Smart Speaker Interface



Leverages Energy Expert Alexa skill to create a two-way channel of communication between the utility and customer on the customer's terms

Energy Expert Video

https://youtu.be/p00_iXaq4-8

SCE Smart Speaker Pilot

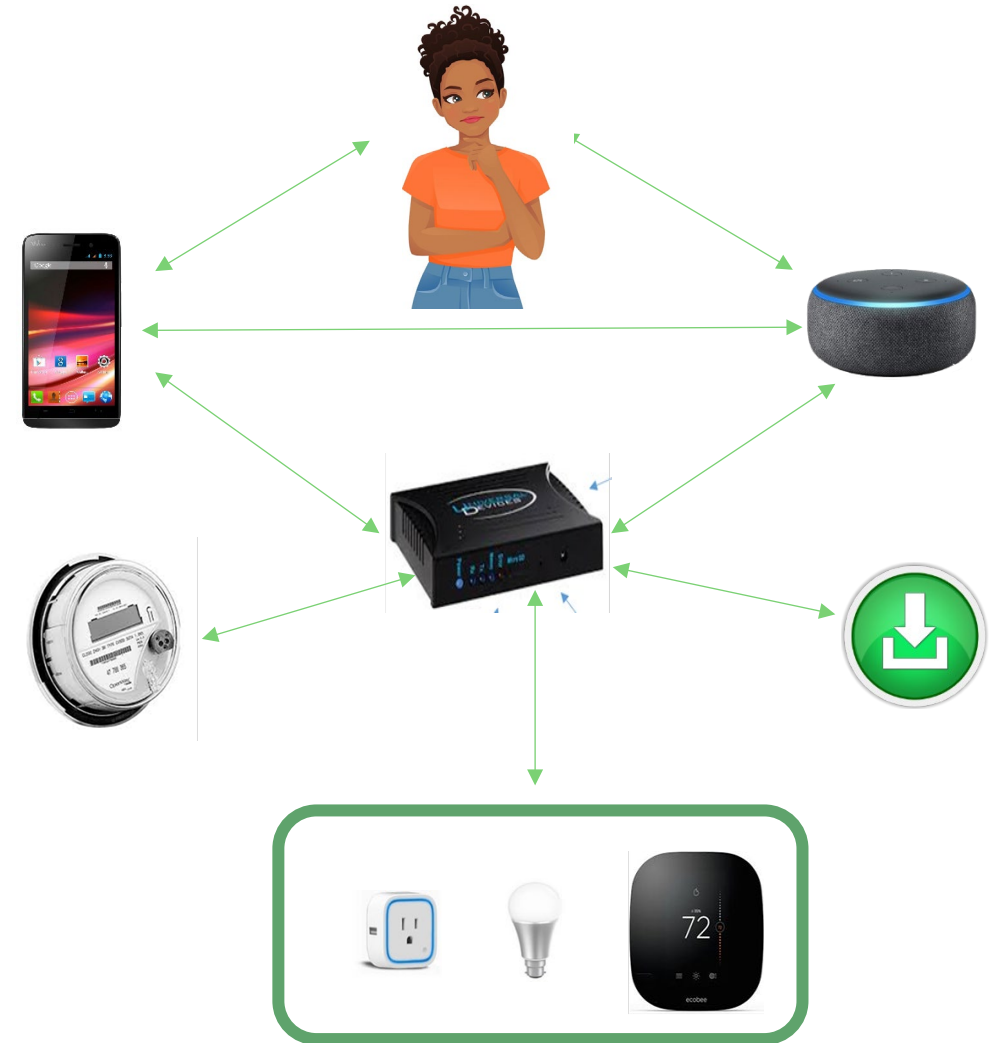
Big question:

If you build it, will they come?

Target: 200 customers

Installed in each home:

- ▲ Energy Expert app and Alexa skill
- ▲ Energy management hub
- ▲ Ecobee thermostats (up to 2)
- ▲ Wi-Fi light bulbs (up to 4)
- ▲ Smart plugs (up to 6)

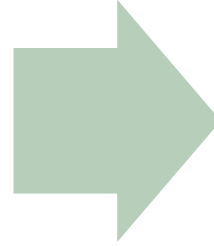


*Pilot configuration required hardware installation

SCE Smart Speaker Pilot Outcomes

Objective #1

Better understand how customers interact with and use the smart speaker and other connected technologies



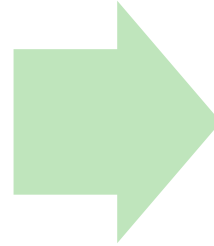
Result

Top customer command was to get electricity cost and optimize my devices

Most used devices were smart appliances, thermostats and interior lighting

Objective #2

Determine how the technology experience affects customer satisfaction



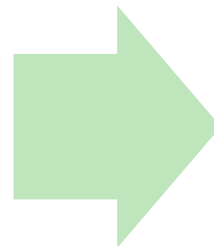
Result

More than 15% abandoned participation when confronted with hardware installation

High participation rate of 69%

Objective #3

Estimate change in customer energy use that can be attributed to the Universal Devices Gateway with Smart Speaker and associated Alexa skills



Result

Higher rate class on **TOU 5-8PM saved 10%** or 0.22kW on summer weekdays

Higher rate class on **TOU 4-9PM saved 9.7%** or 0.23kW on summer weekends

Challenge: COVID resulted in only 91 enrolled participants and created challenges with in-home installations

SCE Smart Speaker Pilot Lessons Learned



1

Installation of hardware is a significant obstacle to participation

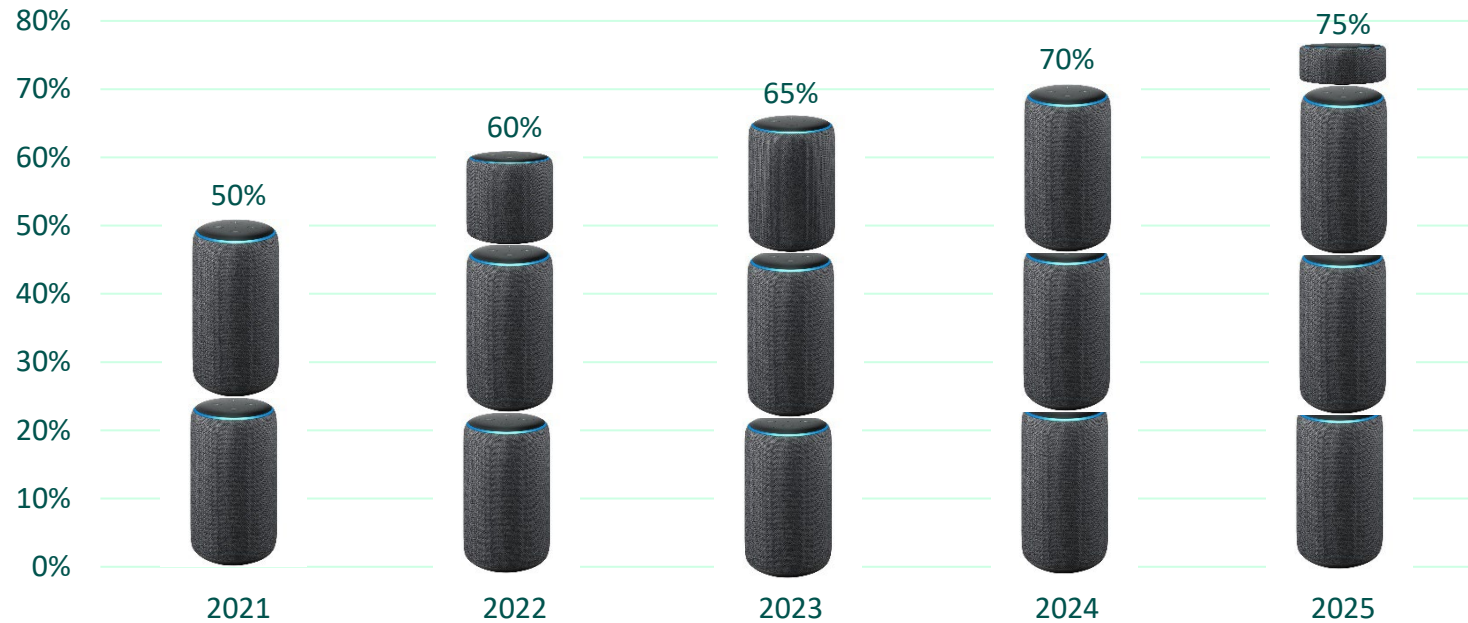
2

High usage customers are more likely to participate in load shifting

3

Ongoing customer engagement through alerts and notifications is vital to success

And Smart Speakers Are Definitely a Thing



Alexa Super Bowl Ad 2022



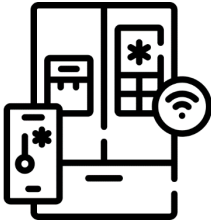
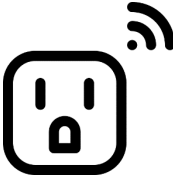

Rapid growth: 75% of homes will be equipped with at least one smart speaker by 2025

Cross age group appeal: Ownership rates are nearly equivalent across age groups

Increased engagement: 48% of owners use it more often now than they did in the first month of ownership

Virality: 61% of new owners have encouraged their friends to buy one

Why Smart Speakers – Part Deux

<p>If a customer has one of these ↓</p> <p>How likely are they to have one or more of these? →</p>	 Smart Speaker	 Smart Thermostat	 Smart Appliances	 Smart Plugs / Powerstrips / Outlets	 Smart Light / Switch
n=	750	539	372	438	424
Smart Speaker		63%	70%	78%	79%
Smart Thermostat	45%		63%	59%	59%
Smart Appliances	35%	44%		46%	50%
Smart Plugs / Powerstrips / Outlets	46%	48%	54%		63%
Smart Light / Switch	45%	47%	58%	61%	

Source: SECC's Smart Home and Energy Data: What do consumers want?

Pitching Phase II Pilot to Support SCE's TOU Rollout



Increased
scale



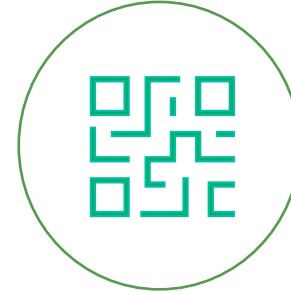
No hardware
installation



Multiple Customer
Segments



Robust education
& outreach



Expanded program
capabilities

Key Learnings



Higher usage residential customers have greater ability to shift load and are more willing to participate in load shifting with current rate design

Smart speaker technology is an ideal platform to improve the customer TOU experience; no new equipment required

This technology concept can help more customers be successful with TOU – and potentially real time rates - and offers a lot of additional potential benefits

There are many ways that utilities can roll out this solution – just need to integrate with software and Alexa skill and promote to customers

Want to stay in the loop?
Check out www.dret-ca.com





Questions?

