

Smart Speakers

The New Customer Interface for Electric Utilities Research results from the California IOUs

Smart Speaker Pilot Components



UBIQUITOUS TECHNOLOGY
already widely adopted in homes across segments in markets nationwide.



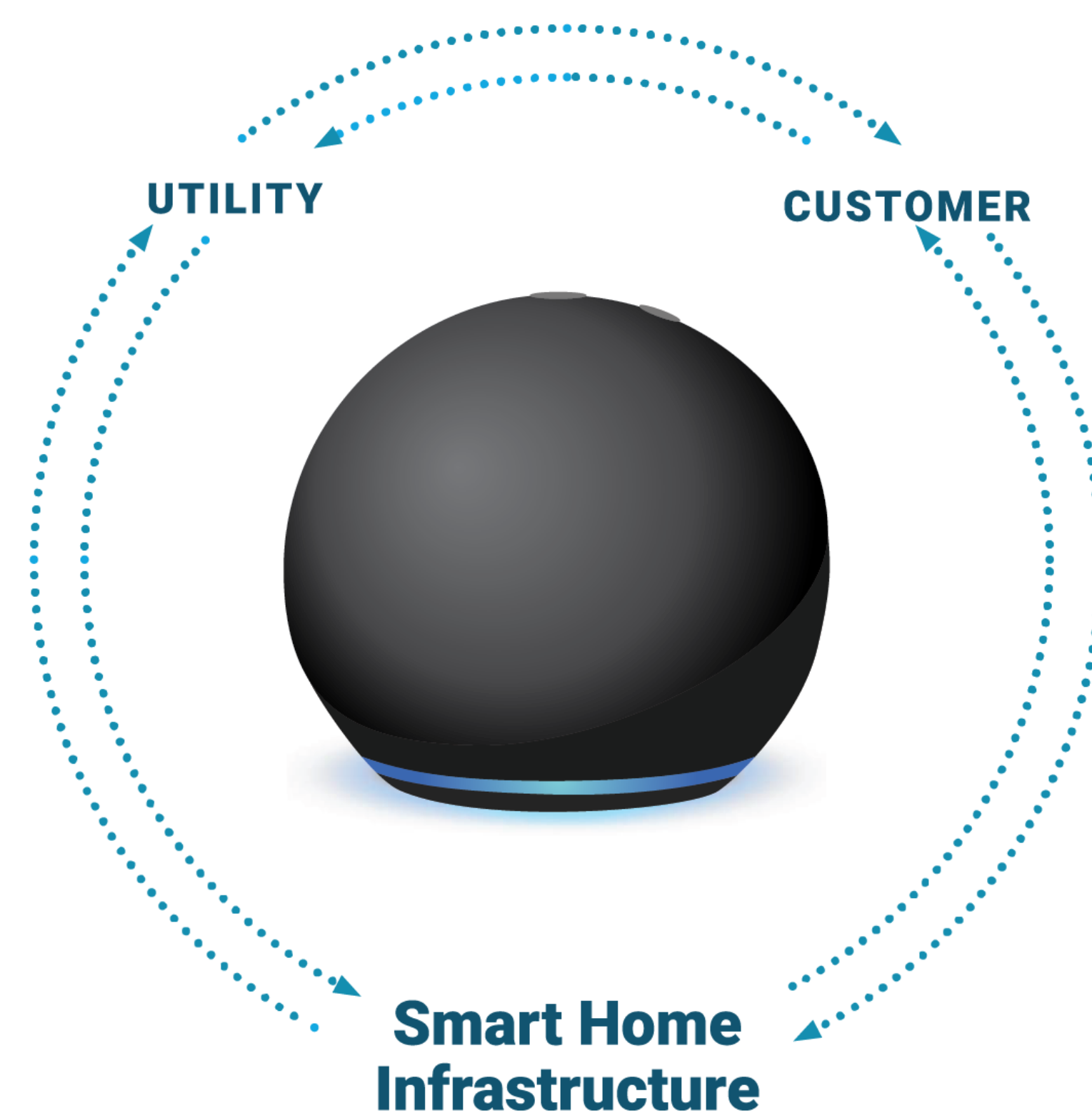
TWO WAY COMMUNICATION
between utilities and customers about energy management, outages and alerts.



AUTOMATIC OPTIMIZATION
creating energy and economic savings using new and existing smart technology.



ENERGY EDUCATION
about energy savings, rebates, energy efficiency programs and other services.



Pilots in California



Leveraging Time of Use

- ▶ 63 customers
- ▶ Energy Expert Alexa Skill
- ▶ Messaging on energy optimization and TOU
- ▶ Enabled smart switches, lights, ecobee thermostat
- ▶ Connected to SCE smart meter

Smart Speakers for TOU

- ▶ Target 500 customers
- ▶ Energy Expert Alexa Skill
- ▶ Education via speakers, display and/or mobile app
- ▶ Messaging on energy optimization and TOU
- ▶ Using Alexa color ring for notification

Voice Activated Assistant for Energy Savings

- ▶ 7 customers
- ▶ Energy Facts Alexa Skill
- ▶ Controllable smart technologies
- ▶ Notifications on TOU
- ▶ Feedback on usage against baseline
- ▶ Thermostat automation



Results

SCE

- ▶ TOU 5-8PM saved 10% on summer weekdays.
- ▶ TOU 4-9PM saved 9.7% on summer weekends.
- ▶ High participation rate of 69%.

SDG&E

- ▶ Average savings of 5 kWh per day.
- ▶ Engagement consistent with notifications.
- ▶ Automation reduces HVAC use but does not translate to lower energy use.

PG&E

- ▶ Formal results available end of 2022.
- ▶ Initial testing shows customer acceptance.
- ▶ Study assumes notifications maintain customer interest.



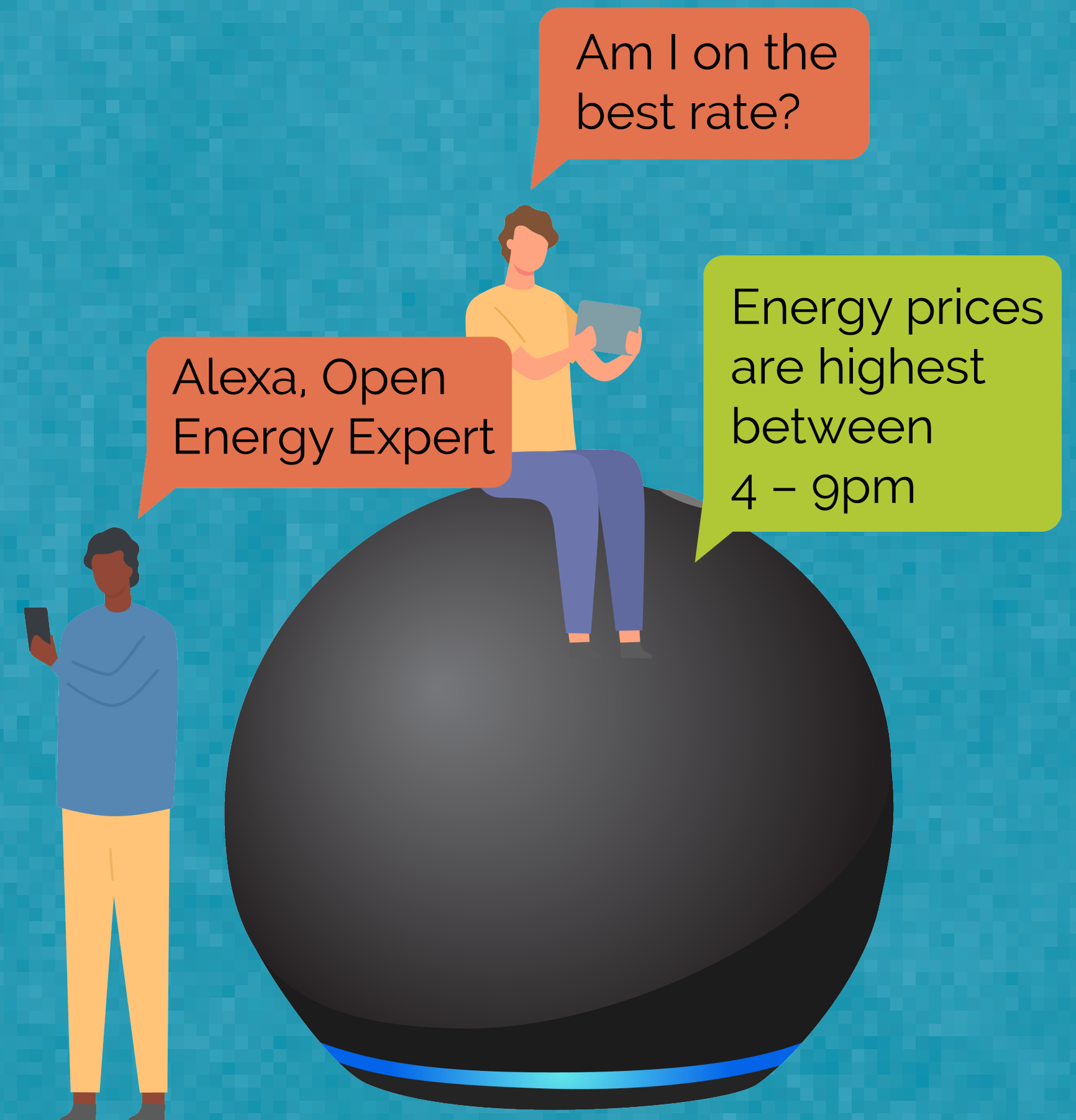
Key Takeaways

- ▶ Customers are interested in energy management using Smart Speaker technology.
- ▶ Smart Speakers can enable dynamic rate management.
- ▶ Smart Speaker + app is simpler and more effective than relying on hardware installation.
- ▶ Strategic recruitment and regular engagement is key to participation.

Energy Expert Overview

What is it

Energy Expert Alexa Skills was developed by SCE to enable customers to interact with their home's energy use using their smart speaker.



What it does

- ✓ Engages customers in optimizing plug load, lighting and smart thermostats through messaging, analytics, and end device integration.
- ✓ Provides customers with cost estimates, TOU pricing, rate plan comparison and historical data.
- ✓ Allows customers to plan for PSPS and high price alerts, facilitate solar energy surplus, prepare for future price intervals and automate home equipment by time/kWh price and by room using the Policy Series Controller.

Next Steps

SCE is working to expand the Smart Speaker pilot to Phase Two, enrolling a larger sample size, adding a smart phone app, increasing outreach and engagement and testing. Energy Expert's ability to drive participation in existing programs and optimize smart devices using automation. A long term goal includes collaboration with the TOU program team to support SCE opt out TOU program.